31 July 2018



QUARTERLY ACTIVITIES REVIEW FOR THE PERIOD ENDING 30 JUNE 2018

Talga Resources Ltd ABN 32 138 405 419

1st Floor, 2 Richardson St, West Perth 6005 Australia

T: +61 8 9481 6667 F: +61 8 9322 1935 www.talgaresources.com

Corporate Information

ASX Codes TLG, TLGOA Shares on issue 217.3m Options (listed) 43.9m Options (unlisted) 32.6m

Company Directors

Terry Stinson Non-Executive Chairman

Mark Thompson

Managing Director

Grant Mooney Non-Executive Director

Stephen Lowe Non-Executive Director

Ola Mørkved Rinnan

Non-Executive Director

Australian advanced material technology company, Talga Resources Ltd (**ASX:TLG**) ("**Talga**" or "**the Company**") is pleased to report its activities for the quarter ending 30 June 2018.

Talga is building a vertically integrated graphene and graphite products business with wholly-owned product technology, processing innovations and world class mineral resources enabling stronger, lighter, cleaner and more conductive materials for the battery, coatings, construction and other markets. Highlights of the June quarter included:

PRODUCT & PROCESSING DEVELOPMENT

- Breakthrough Li-ion battery results using commercial scale pouch cells with Talga anode
- · Successful conductive concrete tests using graphene
- Expanding innovations, technology and operations team and management
- Ongoing graphene product developments
- Wet commissioning of Phase 3 test plant in Germany commenced

COMMERCIAL DEVELOPMENT

- Market collaborations increase with 11 new companies entering graphene product engagements across target markets, including leading coatings, chemical, battery and polymer manufacturers and institutions
- Expanded pipeline of market opportunities as product development and supply programs underway with over 125 companies to date

MINERAL PROJECT DEVELOPMENT & EXPLORATION

- Vittangi project development advances
- · Cobalt and copper exploration restarted
- Iron ore projects rationalised

CORPORATE & INVESTOR RELATIONS

- Internal restructure of Swedish mineral assets to split cobalt and metal projects from graphene-graphite projects
- Balance sheet strengthened with \$8.5 million placement
- · Expanded project and management team
- · Outreach programs across mining, investor and product technology
- Substantial proceeds received from share divestments, exercised options and grants during period totalling ~\$1.4m
- Cash balance \$11.9 million (30 June 2018) and after placement settlement in July ~\$19.3 million



Managing Director, Mark Thompson: "The June quarter has been one of technical growth and business consolidation for Talga. Successful tests of products using Talphene[®] and Talphite[®] were delivered towards large volume applications in the energy (battery) and construction market (concrete) sectors.

Talga has seen a growing number of enquiries in the last quarter across Europe to Asia, for graphene product development collaborations and samples. Plus following our significant Li-ion battery test results in the reporting period, we are receiving more enquiries for samples of our high performance anode graphite material.

Talga is well positioned now with the Phase 3 expansion to deliver these larger scale samples and is expanding the team and facilities to produce Li-ion anode formulations directly for end users, alongside our graphene products.

Despite capital market fluctuations, the Li-ion battery market continues to rapidly expand and prices for precursor anode materials are still rising (see Fig 3). Talga would expect further premium pricing for its value-added high performance anode formulation compared to these raw materials."

PRODUCT AND PROCESSING DEVELOPMENT

Breakthrough Li-ion battery results

During the quarter Talga reported test results of its graphite anodes in commercial-size Lithium-ion ("**Li-ion**") battery cells (ASX:TLG 15 May 2018). The results show potential for Li-ion batteries using Talga graphite anodes to have higher energy, power but with less costly process steps used in standard battery anode manufacturing.

Highlights of the test results included 20% higher capacity (total energy), 20% higher power (fast charge/discharge, no capacity fade after 300 cycles (>99% energy retention) and 94% first cycle efficiency.

The 'pouch' Li-ion battery results were particularly significant, as they used Talga's particle engineered coating-free graphite as the sole active anode material. The tests also demonstrated the successful scale up of Talga's material from half-coin cells to commercial size pouch cell (the same scale cell used in EUmanufactured EV's such as the BMWi3, Nissan Leaf, Jaguar I-Pace and upcoming Porsche Mission E).

The economic potential is that this is a higher value use of Talga's graphite (not used in graphene products) compared to the much lower (US\$480/t) bulk raw material pricing used in previous studies.

Product development, testing and supply discussions are underway with a range of European and Asian based battery manufacturers and end users. In response to these engagements and coinciding with multiple UK-funded Faraday battery development programs, Talga plans to form a dedicated battery laboratory to accelerate development and integrate directly with end users.

To this end, the Company acquired battery making and testing equipment from the auction of a large USA based carbon product manufacturer during the period and expanded its technology and innovations team (see below).





Figure 2. 'Pouch' cell battery testing Talga's anode material and technology.



Figure 3. Benchmark Minerals graphite prices Jan - Jun 2018 for spherical uncoated <10 micron 99.95% C graphite concentrate FOB China. This is base material requiring coating and further treatment and additives to form Li-ion battery anode material approaching Talga's anode product.



Conductive Concrete

Talga has previously announced breakthrough increases in concrete thermal conductivity and strength using graphene additives developed in the Company's facilities in UK and Germany (ASX:TLG 25 Jun 2018). During the period the Company announced it had achieved very high levels of electrical conductivity in concrete, with samples attaining up to 0.05 ohm.cm volume resistivity.

This level of conductivity can enable a range of added functionality to concrete, including 'heating element', anti-static, EMI shielding, strain sensing and grounding/ lightning protection functions.

Future potential includes a role in dynamic and wireless charging of electric vehicles.

Concrete is the world's largest volume construction material (>5 billion tonnes/ annum) and is estimated to be valued at US\$450 billion annum.

Since the May announcement there has been strong interest received and talks are underway with groups across European and Asian markets. Note that Talga's current MoU with Heidelberg Cement is specifically on thermal conductive concrete applications, and does not include electrical conductivity products the subject of this work. *Figure 4.* Concrete test samples including graphene enhanced thermally conductive and graphite containing electrically conductive specimens.



Expanding in-house technology and innovation team

In response to the rapid growth of commercial engagements and the advancing stages of operational divisions in Europe, Talga has expanded its management and operational team.

New appointments included the addition of respected battery scientist, Dr Fengming Liu, to the Company's growing battery technologies division within Cambridge based Talga Technologies Limited. Dr Liu has 11 years industry experience in silicon-based Liion battery material synthesis and formulation development. As "Senior Scientist – Batteries" he is responsible for developing graphene for silicon and other new generation Li-ion battery anodes under 'Safevolt' - a Talga-led project granted financial assistance under the UK Government's 'Faraday' program.

Additional roles to support Faraday and commercial programs included the appointments of "Battery Research Scientists" Dr Zhou and Dr Wang, also based at Talga Technologies Limited in Cambridge.

Graphene Product Developments and Test Results Outlook

Upcoming graphene product test results are expected from a program at TWI (a world leading material research institute) near Cambridge to make high thermal and electric conductive epoxy resins for the aerospace and automotive composites markets.

A range of coatings products with significant volume potential are undergoing testing, with results expected in the first half of the next period. A coatings laboratory has been set up in Rudolstadt with an ASTM compliant salt spray chamber for testing anticorrosion graphene products test on 40 panels at a time.

Further and large scale battery anode and additive tests are underway, using both Talphite[®] and Talphene[®] and results are expected in the latter half of the next period.

Several despatches of developed products and samples were damaged in transport and whilst this delayed receipt of payments, the product development programs are continuing.

The phase 3 test processing facility in Rudolstadt, Germany was wet commissioned during the period. Initial tests indicate some performance parameters and product quality is exceeding design parameters but tests will be completed once full ramp up is achieved during the next quarter. **Figure 5.** Dr Fengming Liu (middle) here pictured with Talga Technologies Limited staff members Dr Claudio Capiglia, Director of Battery Technologies (left) and Dr Sai Shivareddy, Manager - Product Development (right).



Figure 6. Salt water spray test performed by Talga Advanced Materials GmbH staff at the Company's in-house laboratory facilities in its Rudolstadt test processing facility.



COMMERCIAL DEVELOPMENT

Market Engagements Increase

During the quarter, Talga completed non-disclosure agreements with 11 companies and institutions to engage on graphene and graphite product development and supply, taking the total to approximately 125 current such agreements to date. These include several global market leading companies in coatings, construction, chemicals, packaging, power tools and various OEM manufacturers to the automotive and aerospace industry.

While maturing of these to higher level commercial agreements is an iterative process, the nature of the interest received supports Talga's business and commercial strategies to be vertically integrated and capable of value adding to make fit for purpose graphene and graphite products, rather than just supplying raw materials.

Although the process to commercialisation is not linear, particularly for cutting edge material technology, the potential margins visible from these engagements are highly encouraging for future delivery of the full scale mine-to-market development in Sweden.

Figure 7. Overview of Talga's Advanced Materials GmbH site in the Rudolstadt chemical estate, Germany (left) and part of the Phase 3 exfoliation plant (right). For commercial reasons much of the plant will not be pictured.



MINERAL PROJECT DEVELOPMENT AND EXPLORATION

Swedish Mineral Projects

Main activities completed in the period in Sweden included progress of work for pre-feasibility study and mine permitting of the Vittangi graphite-graphene project ("Vittangi"). Further exploration activities include several cobalt-copper projects and programs, including processing of the 2017 drill core from Lautakoski with results expected in August. Work permits for exploration and resource definition drilling at the Kiskama cobalt project are underway, along with geophysical and geotechnical studies for targeting extensions to the IOCG mineralisation.

The Vittangi project pre-feasibility study ("PFS") was advanced with completion of the project infrastructure location options by ÅF Consultants and completion of metallurgical process flowsheet options by Core Resources. Pit design geotechnical assessment is being undertaken by Itasca Consultants and Golder Consulting has been appointed to complete the mining and closure study for the PFS.

Vittangi environmental work underway includes soil and site surveys and approvals for installation of water monitoring stations and ground water monitoring wells. Studies of potential acid-rock drainage and potential water quality impacts have continued, with determination of site specific design criteria on track for completion next quarter. Field archeological studies are planned to commence in the Autumn.

A review of the iron project tenements acquired during the Teck transaction in 2012 was completed, and several tenements including some JORC iron resources were relinquished.

Talga retains several adjacent and strategic iron project tenements and will look to divest these in the near future in any way that can retain some potential future value for Talga shareholders. Some non-core graphite prospects were also rationalised or relinquished during the period under review.

Tenement Interests

As required by ASX listing rule 5.3.3, refer to Appendix 1 for details of Talga's interests in mining tenements held by the Company. No new joint ventures or farm-in/farm-out activity occurred during the quarter. *Figure 7.* Talga Graphene AB staff geologist Mr Tom Kearney conducting surface water sampling as part of the Vittangi PFS studies.



CORPORATE

Restructure of Swedish Mineral Assets

Talga initiated an internal restructure during the period under review by establishing two new wholly owned Swedish domiciled subsidiaries for its graphite- graphene projects (Talga Graphene AB) and cobalt-copper-gold and iron projects (Talga Battery Metals AB).

The separation will maximise focus on Talga's core graphite-graphene projects, while enabling the value opportunity created by rapidly growing battery market demand for responsibly sourced cobalt.

Additionally, through forming a separate cobalt focussed vehicle, a range of increase funding, development and future commercialisation options are opened. This may include the opportunity for Talga shareholders by way of a potential spin-off of Talga Battery Metals AB assets, to be considered once further progress of the cobalt projects is achieved that may enhance valuation.

Balance Sheet Strengthened

During the period Talga raised gross proceeds of approximately \$8.5 million by issuing 13.1 million new ordinary fully paid shares at an issue price of \$0.65 per share ("**Placement**").

The aims of the Placement are to accelerate business growth and development whilst strengthening the Company's balance sheet, ensuring adequate funding heading into 2019.

The funds enable:

- Accelerating Li-ion battery graphite and graphene product development, including preparation of commercial scale anode products and samples towards supply/offtake agreements
- Drilling to convert graphite resources to reserves for advanced feasibility studies, project engineering and design
- Work to commence on unlocking value from non-core Cobalt projects by drilling and establishment of maiden JORC resources, exploration, metallurgy towards increasing value and preparation for potential cobalt divestment

Expanded project and management team

During the period Talga executed a consultancy agreement with its Charmain, Mr Terry Stinson, which sees him take on a much expanded and active role, focusing on the commercial and R&D business of the Company's operations (ASX:TLG 9 Apr 2018).

Mr Stinson will leverage his experience with international automotive, marine and aerospace companies such as Siemens, Mercury Marine, BMW, Mercedes, VW, Boeing and many others, to progress Talga's strategic, IP and commercial activities. He will also provide further leadership to the Company's European operations.

Subsequent to the period Talga has appointed Catherine Hanson as "Manager – Projects" for the overall Vittangi project development in Sweden. As a Chemical Engineer she has previously worked for leading mineral and metallurgical process firms where her responsibilities have included detailed design, feasibility studies with CAPEX and OPEX assessments and installation/commissioning of processing plants. Her most recent position as a Project Manager for SNC-Lavalin's business unit Atkins' Infrastructure saw Ms Hanson manage a range of UK infrastructure projects within a £2 billion framework industry alliance including Thames Water.

Outreach

During the period, the Company completed campaigns of outreach to the commercial and investment community, with a focus on business development.

Managing Director Mark Thompson presented Talga's "New Generation Battery Materials" at the European Battery Expo in Hannover, Germany and Chief Operating Officer Mr Martin Phillips presented Talga's "Sustainable Mining for European Battery Supply Chains" at the Euro Mine Expo in Skellefteå, Sweden. The Company's presentations are available on Talga's website.

Investor engagements were also conducted in Sydney, Melbourne and London during the period. Upcoming events include "Advanced Automotive Batteries" in Japan and "Graphite and Anodes 2018" in USA.

Figure 8. Talga Chairman Mr Terry Stinson (4th from right) with some of senior management and staff of Talga's Australian office and UK operations at Talga Technologies Limited facility in Cambridge.



Proceeds from Non-Core Asset Sales

During the reporting period, Talga sold its remaining shares in TSX Venture Exchange-listed Novo Resources Corp (TSX-V: NVO) ("**Novo**") through on-market transactions for cash consideration of AUD\$542,464 (net of brokerage fees). The sale followed a material gain in the market value of the shares since receiving them as part of the sale of Talga's Pilbara gold projects in 2016, and Talga retains a net smelter royalty on mineral production from all the projects.

Subsequent to the period the sale of 100% of Talga's Bullfinch gold project in Western Australia ("**Bullfinch**") (ASX:TLG 31 Oct 2017) to Torque Metals Pty Ltd ("**Torque**") was completed with receipt of the balance payment of \$250,000. Talga retains an ongoing 1.0% gross production royalty over Bullfinch, effective from after the first 5,000oz gold production, and Torque retains a right to buy the royalty at any time for \$1.7 million (ASX:TLG 19 Jul 2018).

Option Exercise Proceeds

The quarter saw Talga receiving notices to exercise listed and unlisted options resulting in the issue of 965,778 new ordinary fully paid shares, with incoming proceeds totalling \$454,583.

Proceeds from Grants

During the reporting period, the Company received various government/industry grants into its Australian, German and UK operations totalling AUD\$380,488.

Cash Balance

Talga closed the June quarter with approximately \$11.9 million cash-in-bank following partial proceeds of the placement being received in the period. After receipt of the final placement funds in July the Company had a cash balance of ~\$19.3 million.

For further information, visit <u>www.talgaresources.com</u> or contact:

Mark Thompson	Dean Scarparolo			
Managing Director	Company Secretary			
Talga Resources Ltd	Talga Resources Ltd			
T: + 61 (08) 9481 6667	T: + 61 (08) 9481 6667			

.....

About Talga

Talga Resources Ltd ("Talga") (ASX: TLG) is an advanced material technology company enabling stronger, lighter and more functional graphene and graphite enhanced products for the multi-billion dollar global coatings, battery, construction and carbon composites markets. Talga has significant advantages owing to its 100% owned unique high grade conductive graphite deposits in Sweden, a test processing facility in Germany and in-house product development and technology. Joint development agreements are underway with a range of international corporations.

No New Information

To the extent that announcement contains references to prior technical information, exploration results and mineral resources; these have been cross referenced to previous market announcements made by the Company. These had been disclosed to JORC 2012 standard. Unless explicitly stated, no new information is contained. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements that assumptions and technical parameters underpinning the relevant market announcement continue to apply and have not materially changed.

Tenement Holdings

Project/Location	Tenements	Interest at end of quarter	Acquired during quarter	Disposed during quarter
Ahmavuoma Project Norrbotten County, Sweden	Ahmavuoma nr 3 Ahmavuoma nr 4 Ahmavuoma nr 5	100% 100% 100%		
Aitik East Project Norrbotten County, Sweden	Suorravaara 2 Suorravaara 3 Suorravaara 4	100% 100% 100%		
Jalkunen Project Norrbotten County, Sweden	Jalkunen nr 1 Jalkunen nr 2 Jalkunen nr 3 Kursuvaara Nybrännan nr 2	100% 100% 0% 100% 100%		100%
Kiskama Project Norrbotten County, Sweden	Kiskama nr 1 Airivaara nr 100	100% 100%	100%	
Lautakoski Project Norrbotten County, Sweden	Jukkasvaara nr 2 Lautakoski nr 1 Lautakoski nr 2 Lautakoski nr 3 Lautakoski nr 4	100% 0% 100% 100% 100%		100%
	Suinavaara nr 1 Suinavaara nr 1 Suinavaara nr 2 Suinavaara nr 3 Suinavaara nr 4	100% 0% 100% 100% 100%		100%
Masugnsbyn Project Norrbotten County, Sweden	Masugnsbyn nr 101	100%		
Piteå Project Norrbotten County, Sweden	Gråliden nr 2 Önusträsket nr 2	100% 100%		
Raitajärvi Project Norrbotten County, Sweden	Raitajärvi nr 5	100%		
Vittangi Project Norrbotten County, Sweden	Maltosrova nr 2 Maltosrova nr 3 Mörttjärn nr 1 Nunasvaara nr 2 Vathanvaara nr 101 Vittangi nr 2 Vittangi nr 3 Vittangi nr 4	0% 100% 0% 100% 100% 100% 100% 100%		100% 100%
Bullfinch Project Western Australia, Australia	E77/2139 E77/2221 E77/2222 E77/2251 E77/2350 P77/4106	100% 100% 100% 100% 100% 100%		

. . . .