

QUARTERLY ACTIVITIES REVIEW FOR THE PERIOD ENDING 30 JUNE 2017

Talga Resources Ltd

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Corporate Information

ASX Codes **TLG, TLGOA**

Shares on issue **202.4m**

Options (listed) **44.9m**

Options (unlisted) **30.7m**

Company Directors

Terry Stinson

Non-Executive Chairman

Mark Thompson

Managing Director

Grant Mooney

Non-Executive Director

Stephen Lowe

Non-Executive Director

OVERVIEW

Australian technology minerals company, Talga Resources Ltd (**ASX: TLG**) (“**Talga**” or “**the Company**”) is pleased to report its activities for the quarter ending 30 June 2017. Highlights included:

COMMERCIAL DEVELOPMENT

- Commercialisation strategy progresses with multiple graphene product milestones including commencement of joint development with Chemetall (part of BASF) and first revenue from associated value-added samples.
- Multiple new graphene and graphite technical development and sales initiatives commenced – feedback and insights from industry engagements guiding strategy and process expansion.
- Construction products advanced with excellent concrete thermal conductivity and strength test results achieved - engagement with industrial partners underway and post-quarterly period MoU signed with global market giant Heidelberg Cement.
- Energy products strategy boosted with high performance graphene anode Li-ion battery test results achieved as work continues with partners on flexible printed batteries and polymer redox flow-batteries.

PROCESSING DEVELOPMENT

- Graphene process facility upgrades continue with new exfoliation cell installed and commissioned. Processing improvements reduce time, costs and improve recoveries while testing designs for future automated operations.
- Processing advances and plant scale-up provides important data for feasibility studies, project and product planning and permitting applications. Product testing further validates market suitability of Talga materials and the Talga graphene production process.

MINERAL RESOURCES AND EXPLORATION

- Vittangi graphite JORC (2012) resource increased in size, grade and status to **12.3 million tonnes grading 25.5% graphite** using a 17% lower cut-off.
- Cobalt developments include:
 - High grade historic cobalt intercepts on Talga’s new Ahmavuoma project located, including **52m @ 0.24% Co, 0.59% Cu, 0.17g/t Au** which includes **21m @ 0.38% Co, 1.12% Cu, 0.42g/t Au (AHM4)**.
 - Metallurgical testing of Kiskama underway and drill permitting approved on Lautakoski project.

CORPORATE

- ~\$12m capital raising completed with institutions and major shareholders designed to fund Talga through to expiry of December 2018 options.
- Strong focus on promotional activities and media/investor engagement.



COMMERCIAL DEVELOPMENT

Accelerating demand for conductive and functional materials

Talga progressed the execution of its strategy for the commercialisation of graphene 'products' across four key target markets being; coatings (anti-corrosion and other functions), energy (batteries and transmission), construction (building materials) and composites (epoxy resins).

The Company is developing value added 'fit for purpose' products via Talga's UK subsidiary located in Cambridge and raw materials at Talga's German based test facility in Rudolstadt. Larger scale operations are planned for Sweden. Talga has also identified key minerals within its wholly owned resources portfolio that have the potential to enhance shareholder returns in the growing energy storage industry segment.

Growing global demand for conductive materials reinforces Talga's technology mineral developments and supports the Company's strategies. Many high growth products require conductive materials that can store or transmit energy. Talga's highly conductive natural graphite ore can be used, in either processed or raw form, to make conductive additives for many of the world's fastest growing material products. Talga's other mineral assets contain cobalt, copper and gold which also have roles in conductive and energy technology products, including Lithium-ion ("Li-ion") batteries.

In particular, Talga's advanced bulk graphene process and product technologies, coupled with its growing base of graphene product prototypes, is supporting the Company's commercial engagements with industrial end users. Additionally, the Company is emerging as a globally significant player at a time of growing interest in critical minerals. Governments are now actively taking action to ensure these critical materials and technology opportunities are developed and sustainably managed.

COATINGS PRODUCTS

Chemetall program underway and first graphene coating revenue

Talga's most advanced product development work is in the coatings sector. A joint development program is currently underway with German industry leader Chemetall (part of BASF) to co-develop and commercialise graphene-enhanced metal surface coatings.

The Chemetall work program commenced in June with Talga product development representatives working alongside Chemetall technical counterparts in their Frankfurt facilities to run corrosion tests on a range of metal substrates. Talga formulated graphene dispersions (Fig 1) were provided to Chemetall as the precursor material to design a range of coating systems.

Figure 1. Aqueous dispersions of few layer graphene made at Talga facility in Germany for coating products.



As per the terms of the joint development agreement ("JDA") with Chemetall, all samples used in testing are being purchased at agreed prices and graphene loadings. The first trial campaign required only a modest quantity of Talga sample graphene enhanced products, however, it is expected that the quantum of future samples will increase as the testing program expands. Talga invoiced Chemetall during June for the first samples provided under the JDA.

Within the last quarter, and in addition to the work being undertaken with Chemetall, Talga has progressed engagements with other coatings companies who are either at:

1. initial testing (characterisation) stage of delivered graphene dispersions and enhanced 'products';
2. initial performance testing stage of Talga coatings applied to their substrates; or
3. the commercial negotiation stage for collaboration or joint development.

CONSTRUCTION PRODUCTS

Talga is targeting large volume applications for its graphene products and the construction sector is a major consumer of materials that can be improved with the addition of graphene and its derivatives. In particular graphene additives in concrete can provide new functionality and higher performance to cope with the demands of growing urbanisation. Functional additives also show promise to lower the volume of concrete required for building modern cities, housing, roads, bridges, railways and energy grids. To this end Talga has developed and commenced testing graphene enhanced cement and concrete products.

Thermally conductive concrete

During the period, Talga released initial test results using Talga graphene to make concrete thermally conductive. The results showed 30% gains in thermal conductivity against existing market leading products (see ASX:TLG 10 April 2017) and ~300% conductivity increase over untreated concrete. Importantly, Talga's concrete additive achieved commercial level performance with extremely low loadings of graphene, blended with raw, unprocessed Vittangi graphite ore, leading to the possibility of utilising 100% of Talga's Vittangi resource in such products.

These recent test results provide near term commercialisation confidence in thermally conductive concrete, part of the USD\$17 billion specialty concrete and cement market. Applications include underground power cable installations (Fig 2), underfloor heating, domestic geothermal installations and emerging applications such as snow and ice-free roads, runways and paths.

Concrete strength increased

During the period, German laboratory Betotech completed testing on concrete prototypes formulated with Talga graphene and graphite to increase strength. Test results showed significant increases in strength over the base high performance reference concrete. Strength results of the Talga enhanced concrete ranged up to **60.5 newton/mm²** ("N/mm²") in **compression** strength and **8.2 N/mm²** in **flexural** strength (the strength measurement 1.0 N/mm² is equivalent to 1.0 megapascal or ~145 pounds per square inch).

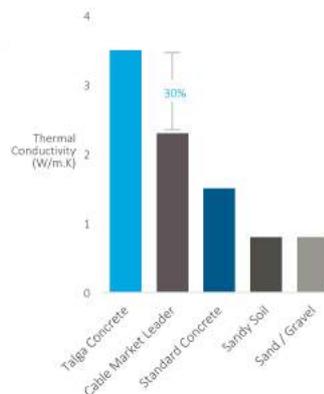
The results were highly encouraging for an initial concrete test work campaign and optimisation alternatives will be investigated with industry partners to further improve performance.

Figure 2. Talga graphene and graphite products increase thermal conductivity of concrete to enable power cables to be buried underground and improve heat dispersion, power efficiency and costs.

CONSTRUCTION PRODUCTS – CONCRETE

Thermally conductive concrete is a growing market which has potential to be an early adopter of graphene enhanced products

-  Graphene added to concrete enable electrical or thermal conductivity
-  Applications: heat dissipation, underfloor heating, road-bridge-tarmac snow melting
-  German government plans upgrades to >7,500 kilometres of high voltage electric power lines
-  30% more thermal conductivity than market leader



Thermal concrete in underground power line application

See ASX:TLG 10 April 2017

Post the end of the quarter, Talga entered into a memorandum of understanding (“MoU”) with Heidelberg Cement AG. Heidelberg Cement is a world leading concrete/cement business in aggregates, cement and ready-mixed concrete and can produce ~200 million tonnes cement per annum. The MoU provides for joint business opportunities associated with Talga’s graphite and graphene based materials in Heidelberg Cement concrete applications for the building and construction sector.

Figure 3. Talga graphite and graphene products for Li-ion battery programs.

ENERGY PRODUCTS – LITHIUM ION BATTERIES
Higher performance and lower cost Li-ion, flow and alkaline batteries with more eco-friendly manufacturing

ROLL-TO-ROLL MANUFACTURE OF LI-ION BATTERY ELECTRODES

Graphite anode for Li-ion battery

- Talga micrographite in Li-ion batteries requires less harmful processing steps
- Excellent stability and >99.7% efficiency without capacity fade
- Industrial style Li-ion 'pouch' cell testwork and commercial-style roll to roll anode formulations work
- Targeting improved Li-ion with less toxic eco-impacts by enabling water-based chemistry and lower manufacturing inputs
- Test programs for new-gen Li-ion batteries

See ASX:TLG 17 February 2016, 10 October 2016, 22 March 2017

ENERGY PRODUCTS

Further outstanding Lithium-ion battery results

Over the past quarter, Talga has continued to advance its energy storage technology development and testing. Talga’s is testing and proving performance on a range of graphene and graphite products and will use these results to engage with industry at a deeper level within the value chain compared to traditional raw material providers.

In addition to the ongoing battery development work with industry partners Zinergy UK Limited (flexible printed batteries) and Jena Batteries GmbH (redox flow batteries), Talga also announced test results during the quarter from the next stage of its lithium ion anode program, underway at the Warwick Manufacturing Group (“WMG”) Energy Innovation Centre, Coventry UK.

Talga anodes showed outstanding electrochemical performance, delivering up to **~27% more energy density** than current commercially available Li-ion graphite anodes (see ASX:TLG 7 June 2017). In addition, the Talga materials used in the tests were produced without a number of processing steps commonly used in industry.

Talga is working on developing products used across different parts of Li-ion batteries including:

- economically viable high performance replacement for spherical graphite in anodes;
- conductivity enhancing additive for current anodes and cathodes;
- next generation silicon-graphene anodes; and
- anti-corrosion and conductive coatings for cell, case and pack components.

These product developments are aligned with major battery and clean-tech initiatives underway in Europe, including plans by Northvolt AB to build a Li-ion battery “gigafactory” ~400km from Talga’s Vittangi project and Volvo Car Group moving to electric-only vehicles from 2019. With the surge of European battery manufacturing growth, Talga is positioning to leverage its advantages of geography, economics, quality and scale to capture the maximum value possible.

MINERAL RESOURCES, EXPLORATION AND PROCESSING

Increased size and quality of world's highest grade graphite mineral resource

During the quarter Talga revised the Vittangi Project graphite resource for permitting and long term planning purposes. The global JORC (2012) mineral resource now stands at **12.3 million tonnes grading 25.5% graphite** ("Cg") using a 17%Cg lower cut-off, a substantial increase in size, grade and confidence with 87% of the resource now in the JORC 'Indicated' category. See Table 1 and the ASX release of 27 April 2017 for details.

The current graphite resource starts at surface and extends over 1.6 kilometres and has been drill tested in part to 220m depth. The deposit remains open along strike and at depth.

Notably, tonnage in the JORC Indicated category is now double that used in the 2014 scoping study which proposed a ~20 year mine life. Additionally, the resource now defines a high grade domain of 2.0 million tonnes @ 32.6% graphite using a 30%Cg lower cut-off, which would be a significantly higher grade feed than the ore mined during trial mining.

An estimated 175-250 million tonnes of JORC compliant graphite exploration targets remain to be drill tested (see ASX:TLG 27 April 2017) across the top 100 metres of the Vittangi and Jalkunen projects.

Table 1. Vittangi project global Nunasvaara Mineral Resource Estimate (17% Cg lower cut-off, April 2017).

Resource Category	Tonnes	Graphite (% Cg)	Contained Graphite (Tonnes)
Indicated	10,700,000	25.7	2,749,900
Inferred	1,600,000	23.9	382,400
Total	12,300,000	25.5	3,136,500

Note: Due to rounding totals may not reconcile exactly.

Ramp up of Cobalt development assets in Tier 1 European jurisdiction

During the period, Talga completed an evaluation of its cobalt projects to position itself to maximise value from growing demand for Li-ion batteries (Fig 4).

At the recently acquired 100% owned Ahmavuoma project, a review of archived historic drill core resulted in the discovery of high grade intercepts of cobalt, copper and gold mineralisation over significant downhole widths (ASX:TLG 31 May 2017).

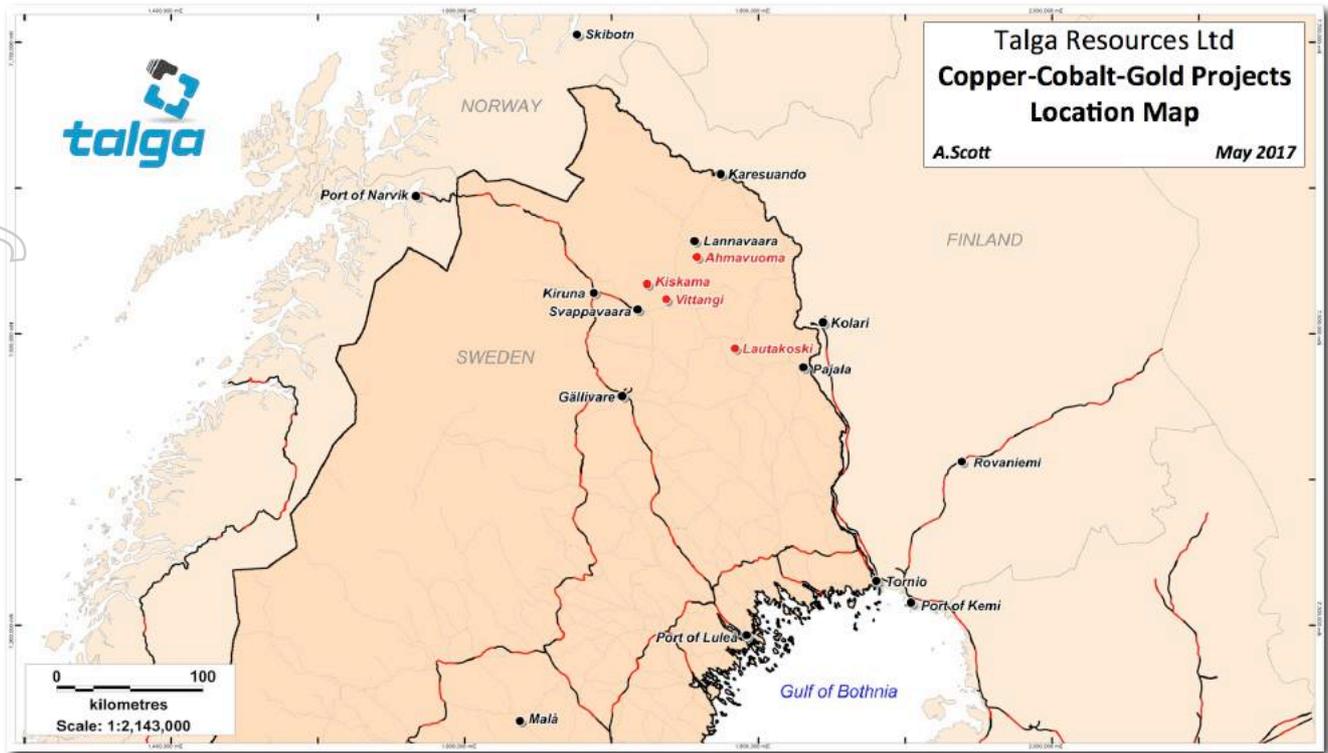
The highlight was the Discovery Zone prospect intercept of **52m @ 0.24% Co, 0.59% Cu, 0.17g/t Au** from 60m, including **21m @ 0.38% Co, 1.12% Cu, 0.42g/t Au** from 60m (AHM4). See ASX:TLG 31 May 2017 for drillhole location and assay details.

Further logging and sampling of the historical core is underway, as approximately half the downhole intercepts were not sampled previously. Reworked geophysical data shows multiple targets remain to be tested within the 40km² project area.

Other cobalt related activities included:

- Renowned IOCG geologist Peter Pollard worked in Sweden to review drill core from all the projects and derive vectors for targeting next step exploration activities.
- Re-logging of core and digitising of data started as prelude to sampling of historic core sampling and assaying for an expanded range of metals.
- Kiskama drill core transported to Simulus Laboratories in Perth for metallurgy testing to determine cobalt, copper and gold recovery. Results are being analysed and will be released as soon as possible.
- Detailed review of Lautakoski area results in new permits being pegged to expand project over identified mineralization sites and electromagnetic ("EM") conductors.
- Permits granted to drill several target EM conductors at the Lautakoski project.

Figure 4. Location of Talga cobalt, copper and gold projects in north Sweden.



German Test-work Facility

Talga has built a test work facility (“TWF”) with a technical team of 14 full time scientists and staff in Rudolstadt, Germany. Source material from trial graphite mining in Sweden is feeding scale up test work on what is a world’s first processing technique for the bulk production of graphene and it’s derivatives. Test work is providing the data to support successive plant scale up designs and provide samples for distribution to partners for industrial validation.

Talga previously announced the upscaling to Phase 2 of the TWF (ASX: 27 September 2016) whereby additional exfoliation cells, along with new recovery and upgrading equipment was being incorporated into the processing flowsheet at that time.

Phase 2 test work has now been completed on new unit processing technologies and methods that support better performance and better specification alignment with identified customer product performance requirements.

Over the period, Talga Germany has supplied graphite and graphene samples to customers and provides graphene to Talga UK to develop graphene enhanced products. The Talga UK scientists and laboratory facilities provide a unique value proposition in the industry taking Talga graphene and creating enhance products and formulations through functionalisation specifically designed to improve prospective customer products performance. Talga UK’s capabilities and facilities have recently been expanded to meet the growing requests for new products and formulations.

Note: Functionalisation means adding, at an atomic level, active elements or molecules to the graphene particles so they can disperse and work (become functional) in the target product material.

Talga now controls its graphene product supply chain, from graphite ore feedstock to fully functionalised graphene dispersions and value-added products tailored for use in customer products.

Expansion to Phase 3

Following Talga’s 2016 trial mining program the Vittangi project site has been largely rehabilitated. Talga now has sufficient ore to complete the necessary process testing and plant scale up exercises in Germany and potentially beyond to operations in Sweden.

Environmental consultants were engaged during the period to assist the Company in its preparation of hydrological modelling and waste stockpile management plans for future full scale mining operations.

The applications for the exploitation licence require an environmental impact assessment to be launched in addition to a pre-feasibility study.

Talga intends using the trial mine site as a rehabilitation 'test bed' to introduce best practice for mine closure planning and testing the regrowth of plant types that support reindeer herding. The local indigenous Sami group are engaged in the preparation of a Reindeer Impact Assessment Report that will accompany the exploitation application.

Resource Permitting

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Talga Technologies Limited

During the quarter, Talga appointed further support technical staff and commenced moving facilities to premises in the Cambridge Science Park.

Cambridge is a major hub for graphene technology and global leading aerospace, electronic, biotech and material technology companies. Local opportunities are also increasing for major state funded initiatives in the electric vehicle sector, as the UK government has announced intent to ban petrol and diesel vehicles by 2040 following similar plans announced in France, Norway, Sweden and Germany (Bloomberg New Energy Finance and public data).

Talga Technologies Limited (UK) staff presenting at Cambridge Graphene Centre.



CORPORATE

~\$12M Strategic Placement to Institutions and Current Major Investors

During the quarter Talga completed a \$12.3 million institutional placement. Talga issued 20.5 million new ordinary fully paid shares at an issue price of \$0.60 per share. Aside from introducing new global institutions to its register, the funding initiative was strongly supported by a group of Talga's major shareholders, including the Smedvig Family Office and Yandal Investments.

Proceeds from the placement are being applied towards Talga's commercial, processing, product development and mineral development programs in Europe, as well as for general working capital.

The funding initiative secured sufficient capital to progress development through pre-feasibility and processing scale-up stages. It also strengthened the register with new, long-term institutional investors coupled with significant follow-on investment from major shareholders.

Importantly, Talga's cash-flow budget now aligns with a significant potential cash inflow at or before December 2018 when ~\$24 million worth of listed and unlisted options are due to expire. Option holders are free to exercise their options at any time.

Gold Project Divestments

During the period the option granted to GBM Investments No.1 Pty Ltd to purchase the 100% owned Bullfinch gold project in Western Australia's Yilgarn region (see ASX:TLG 1 February 2017) lapsed. Talga retained the non-refundable \$50,000 'option fee'. Negotiations to divest what is the Company's only remaining West Australian gold asset are now at an advanced stage with several other parties.

Investor Relations and Analysis

Talga management and staff participated in multiple technical and investor events globally during the period including the Goldman Sachs 8th Annual Small & Mid-Cap Conference in Sydney, InvestorIntel's 6th Annual Cleantech & Technology Metals Summit in Toronto, IDTechEx Show in Berlin, Graphene 2017 in Barcelona and the Graphene Technology Day at Cambridge UK.

In addition to formal conference participation, a range of investor roadshows were completed in Australia, United States, Germany, Hong Kong and the United Kingdom. These activities, coupled with significant media and broker interaction, has also resulted in articles and research notes being published on Talga, including:

- Patersons Securities Limited research (see ASX:TLG 9 May 2017) that placed a AUD\$2.00 per share target price on Talga shares; and
- Subsequent to the period was an article in German financial magazine Der Aktionaer.

Note: All media/research can be viewed via Talga's website media coverage section.

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.

For further information, visit www.talgaresources.com or contact:

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About Talga

Talga Resources Ltd (ASX: TLG) is a technology minerals company enabling stronger, lighter and faster products for the coatings, battery, construction and carbon composites markets using graphene and graphite. Talga has significant advantages owing to 100% owned unique high grade conductive deposits in Sweden, a pilot test facility in Germany and in-house graphene product technology. Testing of Talga materials and products is underway with a range of corporations including industrial conglomerates Tata, BASF subsidiary Chemetall, Heidelberg Cement, UK listed Haydale and German based Jena Batteries.

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.

APPENDIX 1

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	100% 100%	100% 100%	
Jalkunen Project Norrbotten County, Sweden	Jalkunen nr 1 Jalkunen nr 2 Jalkunen nr 3 Kursuvaara Nybrännan nr 1 Nybrännan nr 2 Tiankijoki nr 1	100% 100% 100% 100% 100% 100% 100%		
Kiskama Project Norrbotten County, Sweden	Kiskama nr 1	100%		
Lautakoski Project Norrbotten County, Sweden	Lautakoski nr 1 Lautakoski nr 2 Lautakoski nr 3 Suinavaara nr 1 Suinavaara nr 2	100% 100% 100% 100% 100%		
Masugnsbyn Project Norrbotten County, Sweden	Masugnsbyn nr 1	100% 100%		
Pajala Project Norrbotten County, Sweden	Jukkasvaara nr 2 Lautakoski nr 4 Lehtosölkä nr 3 Liviövaara nr 2 Piipiönjoki nr 1 Suinavaara nr 3 Suinavaara nr 4	100% 100% 100% 100% 100% 100% 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 1 Vittangi nr 2 Vittangi nr 3 Vittangi nr 4	100% 100% 100% 100% 100% 100% 100% 100%		
Bullfinch Project Western Australia	E77/2139 E77/2221 E77/2222 E77/2251 E77/2350 P77/4106	100% 100% 100% 100% 100% 100%		