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Company Information

ASX Code	LMB
Share Price	A\$0.09
Ord Shares*	96.3m
Options	-
Performance Rights	22.5m
Market Cap	A\$9.0m
Cash (Oct 13 est)	A\$1.0m
Total Debt	A\$0m
Enterprise Value	A\$8.0m

*22.25M escrowed until June 2014

Directors

Non-Exec. Chairman	Rick Anthon
MD & CEO	Richard Trevillion
Exec. Technical Director	Craig Rugless
Non-Exec. Director	Rod Williams

Substantial Share Holders

HSBC Custody Nominees	16.7%	
Pathfinder Exploration	13.2%	
Norvale Pty Ltd	8.8%	
JP Morgan Nominees	4.7%	
Richard Trevillion	3.5%	
Top 20 hold 66.5%		

Company Details

Address	Level 5, 10 Market Street , Brisbane, Qld, 4000
Phone	+617 3212 6203
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1 Year Price Chart



Lamboo Resources (LMB)

Quality flake graphite projects advancing towards production

Recommendation: Speculative **BUY**

Key Points

- Maiden JORC Resource of 5.3Mt @ 4.9% graphite at 'Target 1'
- Only 10% of 'Target 1' prospect adequately tested leading to potential x10 increase to current resource
- Nearby prospects provide additional ~10km of prospective strike
- Scoping and Pre-feasibility study underway with Mining Licence application already submitted
- Near term production of flake graphite deposits assets in South Korea

Lamboo Resources is an advanced graphite exploration company with quality projects located in favourable jurisdictions. Following the release of a maiden JORC resource at Target 1, preparations are being made to advance the project into production as early as 2014. The advanced and highly prospective South Korean projects also provide near term production potential.

Company Overview

Lamboo Resources (ASX: LMB) continues to make steady progress at the McIntosh flake graphite project (located in northern WA) and at its three South Korean flake graphite projects (called Geumam, Taewha & Samcheok).

At the McIntosh project, Lamboo released a maiden JORC Resource of 5.3Mt @ 4.9% TGC (Total Graphitic Carbon) covering the north-eastern end of 'Target 1'. Encouragingly, only 10% of the interpreted strike length of the graphitic schist horizon has been tested, paving the way for meaningful resource upgrades as drilling continues along strike and at depth.

Lamboo has also identified an additional four high priority targets at McIntosh, increasing the prospective strike length by an additional ~10km. A further 15km of geophysical anomalies (proven to have a high correlation to graphitic schist horizons) have also been identified at the neighbouring 'Black Rock' project, which is currently under application.

The South Korean projects cover three different project areas, each of which were historically mined by open cut operations. The three deposits have a combined JORC Resource estimate of 0.57Mt @ 7.5% TGC and offer significant exploration potential. Processing of the flake graphite ore is relatively straight forward as demonstrated by the historical operators who employed a simple flotation processing route to produce a large flake carbon-graphite concentrate on site. A 'Mining Right' was recently granted over the Samcheock project paving the way for further exploration and potential early start-up of mining operations.

Investment Thesis

Targeting a doubling of the resource in the near term

Large flake size at McIntosh

Potential for a x10

just Target 1

uplift in resource from

The initial JORC Resource of 5.3Mt @ 4.9% TGC was broadly in line with the company's stated exploration target and provides Breakaway with confidence that Lamboo will reach its next stated objective, which is to double the resource in the near term.

Breakaway is also encouraged by the large flake size of the graphite mineralisation from the McIntosh area. Flake graphite of a size >425 μ m (0.425mm) as appears the case for ~15% of the mineralisation at Target 1, commands a significant premium trading in a price range of \$3,000-\$35,000/t.

With only ~10% of 'Target 1' adequately drill tested, potential exists for a x10 increase to the current resource from just this target alone. As already demonstrated within the McIntosh project area, the EM anomalies have a high correlation to the interpreted graphitic schist horizon which hosts the graphite mineralisation. The McIntosh project hosts a total of five target areas with a combined (interpreted) graphitic schist horizon strike length of over ~10km, potentially **leading to substantial resource upgrades as drilling continues**.



McIntosh and Blackrock Project Areas

Source: Lamboo Resources

Breakaway is further encouraged by the additional 15km of prospective anomalies within the Black Rock tenement (currently under application) which bode well for the identification of further graphitic mineralisation and potential resource upside.

On the path to production

A recently completed capital raising of A\$ 1m (@ 6cps) will support Lamboo as it embarks on engineering and baseline environmental studies as well as associated metallurgical test work. An application for a Mining Licence at McIntosh has already been submitted although parameters around the potential size and cost of the operation are yet to be fully assessed.

Total of 25km of

prospective strike

Feasibility studies have commenced



South Korean projects

Near term production potential

Favourable jurisdiction with strong local market

Established infrastructure allows for shortened lead times

Substantial opportunity for rerating as the company advances The acquisition of the South Korean projects brings significant exploration potential and **a near term production opportunity** for delivery of a high quality flake graphite product into the world's largest flake graphite end-user market.

South Korea has a sophisticated Mining Act and is a stable democracy. There are no mining royalties, 25% corporate tax rate and a highly productive labour force with an established infrastructure network. South Korea hosts major steel and automobile industries, with strong relationships with Australian companies. Domestic flake graphite consumption is more than 20,000 tonnes per annum. In addition, companies such as Samsung, LG Chemicals and Hyundai are deeply involved with technological developments in electronics, batteries and automobiles, the principle sectors that are driving new demand for flake graphite.

All three projects were previously in operation, and as such, local infrastructure is well established, providing a shorter lead time and cheaper CAPEX requirements to advance the projects into production. Not to be underestimated, these projects also come with established relationships which provide a valuable pathway for sale of product to the end users.

Peer Comparison

Comparison Table

	LMB		SYR	(TSX) NGC
Name	Lamboo Resources		Syrah Resources	Northern Graphite
МСар	A\$ 9m		A\$ 432m	A\$ 37m
Main Deposits	Geumam, Taehwa & Sancheok	McIntosh	Balama	Bissett Creek
Graphite Carbon Grade	5%-18.9% TGC	5% - 8.6% TGC	10.2%	1.9% TGC
Location	South Korea	East Kimberly, WA	Mozambique	Canada
JORC Resource	0.57Mt @ 7.5% TGC Significant exploration potential	5.3Mt @ 4.96%TGC Significant exploration potential	1.15Bn tonnes @ 10.2% TGC	93Mt @ 1.90% TGC
Metallurgical Studies	Yes	Ongoing	Yes	Yes
Mining	Open Cut - Drill, Blast, Excavator, Haul Truck	Open Cut - Drill, Blast, Excavator, Haul Truck	Likely open cut	Open Pit, Drill, Blast, Excavator, Haul Truck
Processing Plant	1,500tpd grinding, Flotation, Acid Leach	Un-assessed	Un-assessed	2,500tpd Grinding, Floatation
Infrastructure	Sealed Roads, Direct Access to ports	Sealed Roads, Direct Access to port Wyndham (280km)	Port Access	Port Access

Source: Lamboo Resources and Breakaway

Lamboo has a modest market capitalisation compared to its higher profile peers, as outlined in the table above. There is significant potential for a revaluation as the company advances its projects through the resource delineation and feasibility assessment phases, which are already underway.



Project Review

McIntosh Flake Graphite Project

The McIntosh Graphite Project encompasses an area of ~660km² covering the Paleoproterozic Tickalara Metamorphics which host the graphite schist horizons. The image below illustrates the tenement outline as well as the contiguous ELA's, which are currently in the final stages of being granted.



Five defined targets

Source: Lamboo Resources

Earlier this year, Lamboo Resources announced a maiden JORC Resource of 5.3Mt @ 4.9% TGC (Total Graphitic Carbon) at its McIntosh Graphite project. The resource currently only includes mineralisation at the north-eastern end of the 'Target 1' prospect.

McIntosh JORC Resource

Project Area	Ore Type	JORC Category	Tonnes (t)	Graphite Grade (%TGC)	Contained graphite (t)
Target 1 Graphite	Primary	Indicated	3,615,000	4.89	177,800
	Oxide	Inferred	350,000	5.03	17,600
	Primary	Inferred	1,359,000	4.93	67,000
	Oxide + Primary	Total Resource	5,323,000	4.91	262,400

Source: Lamboo Resources *Assumes a 2% TGC Cut-off

Sulphide ore is denser, giving larger graphite content per m³

Maiden JORC Resource

The oxidised zone extends to an average depth of ~20m and demonstrates similar flake graphite characteristics (grade and quality) to that of the primary zone which extends below the oxide zone. The main difference between the two zones is the specific gravity (SG). The average SG for the oxidised zone is 2.38 while the primary zone is 2.72, reflected by the higher sulphide content. The higher SG values in the primary zone result in increased tonnes of graphite per cubic metre of ore for the same grade of graphitic carbon.

The image below shows 'Target 1' and illustrates the concentration of drilling towards the north-east of the interpreted graphitic schist which encompasses the current 'JORC Resource zone'. A RC drill campaign has recently traced the Target 1 graphite schist horizon over a distance of at least 2,500m to the south-west presenting significant resource upgrade potential.





Mineralisation open along strike and at depth

Drilling concentrated

along a 400m strike

Source: Lamboo Resources

The image below shows the Target 1 graphite block model and drill holes (looking north west) and highlights the consistency of the graphite mineralisation, with the vast majority grading 4-6% TGC.

Target 1: Block Model



Grade consistency

Source: Lamboo Resources



Additional Targets

Four nearby targets show similar characteristics to Target 1 Within the immediate vicinity, Lamboo also has identified an additional four high priority targets (Targets, 2, 3, 5, 6), increasing the prospective strike length by an additional ~10km. This 'prospective strike length' is set to increase significantly with the 'Black Rock' prospect (currently under licence application) expected to add a further 15km of prospective strike.

Targets 2 and 3

Both Targets 2 and 3 appear to be larger than Target 1 and have also recently been assessed by auger, RC and diamond drill campaigns. Results indicate high-grade flake graphite mineralisation with similar characteristics to the mineralisation identified at Target 1.

Studies are currently underway to determine whether there is already sufficient drill data for an initial JORC resource estimate over these two areas.





than Target 1

Both Targets 2&3

appear to be larger

Source: Lamboo Resources





There may already be sufficient data for a JORC estimate



Target 5

Geological mapping and (limited) RC drilling at Target 5 has confirmed the presence of a coarse flake graphitic schist, extending over a strike length of ~1,200m x 30m wide, extending to at least a depth of 100m (limit of drilling). Highlights from one RC hole include **17m @ 5.77 TGC from 26m including 5m @ 10.73% TGC** (Hole T5GRC112). Breakaway is further encouraged by the presence of coarse flake graphite (>500µm) which typically trades at a significant price premium.





Source: Lamboo Resources

Target 6

Four RC drill holes have been completed at Target 6 which resulted in multiple intervals of visual flake graphite over broad downhole widths (in excess of 80m in two of the holes). Encouragingly, these broad intercepts of mineralisation correlate well with geophysical anomalies and high grade rock chip samples in the area, reaffirming confidence in the significant resource potential of this prospect.

Target 6: Local Geology and Drill Hole Locations



Source: Lamboo Reosurces

mineralisation identified

Broad widths (+80m) of down hole graphite

Large flake size makes

this target highly

prized

Significant resource potential



Upcoming Drilling

Resource definition drill campaigns earmarked for next field season

Following the maiden JORC Resource at 'Target 1', Lamboo is now in the process of planning a drill campaign to test the remainder of the 'Target 1'. Preparations are also underway to conduct 'resource definition' drilling campaigns at Targets 5 and 6, earmarked to commence during the next field season.

Metallurgy

Relatively straight forward processing

As part of ongoing metallurgical studies, Lamboo recently sent a 100kg sample of RC chips from Target 1 to Nagrom Laboratories. Test work indicated an 88% recovery was achievable for the flake graphite in the 'rougher float'. A further regrind and potential "caustic bake" technique could then be undertaken to establish final concentrate values.

Test work is still at an early stage however the results are highly encouraging. Chinese 'Yantai Jinyuan Mining Machinery Co' has since been engaged to carry out further test work to determine the best possible processing flow sheet, as well as identifying possible end users.

Flotation of primary graphite mineralisation



Source: Lamboo Resources

The ease of separation from the host rock is further illustrated in the two images below with the flake graphite floating in 'drill rig' water produced during the drilling of Target 1.

Flake Graphite – Floating on water produced from the drill rig



Source: Lamboo Resources

Test work ongoing



South Korean Projects

Lamboo's South Korean flake graphite projects encompass three deposits, namely Geumam, Samcheok and Taewha. The image below shows the relative locations of the three projects and the regional graphite trends on which they lie.

South Korean Project Locations



3 projects in South Korea

Previously mined

Modest JORC Resource with substantial

exploration potential

Source: Lamboo Resources

The projects are at various stages of advancement, however each has been the subject of previous mining operations and all host Inferred JORC Resource estimates, as summarised in the table below.

Project Resource Table

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Deposit	JORC Category	Tonnes (t)	Grade (% Cg)	Comments	
Geumam	Inferred	200,000	10%	Contains an open cut mine and mill - contains fine to jumbo grade flake graphite	
Samcheok	Inferred	200,000	5%	Historical open cut operations - contains fine to coarse grade flake graphite – 'Mining Right' recently granted	
Taewha	Inferred	170,000	7%	Historical open pit and underground mining - Contains coarse to jumbo grade flake graphite	

Source: Breakaway Research

Cg – Carbon graphite



Samcheok Project

Mineralisation outcrops over at least 300m – likely to lead to resource upgrades The Samcheok deposit is located on the east coast of South Korea, ~215km from Seoul and ~13km south east of the port of Samcheok. The project currently hosts an Inferred JORC Resource of 200,000t @ 4.8% Cg. The resource is hosted within steeply dipping (60-75°) graphite schist with the current target at least 300m strike x 80m width. Historical reports (1977) indicate the graphite bed is 60-80m thick and can be traced over an outcrop length of 300m (yet to be adequately tested), providing confidence further drilling will lead to resource upgrades.

Historically mined The site previously hosted an open pit mining operation and (as with the other projects) employed a simple flotation processing route to produce a large flake carbon-graphite concentrate on site.

Mining Right granted Lamboo was recently granted a 'Mining Right' (equivalent to Australian Mining Lease) over a 68ha site within the Samcheok project area for a period of 7 years. A further application, immediately south of the granted Mining Right, is currently pending and likely to be granted in the near term.

Geumam Project

Geumam currently hosts a JORC Inferred Resource of 200,000t @ 10% Cg for 20,000tHigher grade resourceof contained carbon-graphite. The mineralisation is hosted within moderately dipping
graphite schist beds which extend for at least 5km along strike with widths ranging
from 50 to 200m. Regionally, the deposit lies on a north-south graphite trend which
extends for ~100km (as illustrated in the previous image).

Lamboo recently carried out a rock chip sampling program targeting five prospects within the Geumam project area. Encouragingly, a 20m continuous zone of high grade graphite assaying up to 18.90% Cg was identified, highlighting the prospectivity of the area. Lamboo has since formulated an exploration target in the range of 17-28Mt with a grade range of 5% to 10% Cg.

Historically, the Geumam deposit was mined as an open pit operation (with the site still hosting the original mill) and employed a relatively simple flotation processing route to achieve a recovery of ~79.5%, to produce a carbon-graphite concentrate of grading 88.7%. Further beneficiation was achieved by sulphuric acid leaching which upgraded the final product to high purity flake graphite grading 98.5% Cg. The attractiveness of this project is enhanced by an end user factory located within 15km.

A Drilling Permit was recently granted over the project area and a 21 hole diamond drill program targeting JORC upgrades in size and category is set to commence imminently.

Taewha Project

Infrastructure in place – previously mined

Very high grade rock

Exploration target of

17-28Mt @ %-10% Cg

Drilling set to

commence

chip samples recovered

Taewha hosts a current Inferred JORC Resource of 170,000t @ 6.8% Cg for ~11,560t of contained carbon-graphite however Lamboo has an exploration target of ~2Mt @ 7% Cg for this project area, (based on the dimensions of the interpreted graphitic schist).

The deposit was formally mined as an open pit and underground operation and used a conventional flotation processing route to achieve a recovery rate of ~89.3% and produce a concentrate with a grade of ~92.4% Cg.

What is graphite and what is it used for?

Versatile properties make graphite a sort after material

Graphite



Source:Indmin.com

Extensively used in the steel industry

Li-ion batteries consist of 10-30 times more graphite than lithium Graphite (chemical symbol 'C') was named by Abraham Gottlob Werner in 1789 from ancient Greek "to write/draw". The key properties of graphite include; an excellent conductor of heat and electricity, the highest natural strength and stiffness of any material, maintaining its strength and stability to temperatures in excess of 3,600°C and high resistance to chemical attack. It is also one of the lightest of all reinforcing agents and has high natural lubricating properties.

In nature, graphite is found usually associated with feldspar, mica, quartz, pyroxene, rutile, pyrites, and apatite. These impurities are associated with vein graphite. The impurities with amorphous graphite are shale, slate, sandstone, quartz and limestone.

Depending upon the mode of occurrence and origin, it is graded into three forms:

- Flake found in metamorphosed rocks as vein deposits.
- Crystalline (lumpy) found as fissure filled veins.
- Cryptocrystalline (amorphous) form in metamorphosed coal beds.

If you took a very close look at a graphite pencil lead you will see layer upon layer of carbon atoms, multiple two dimensional planes that are loosely bonded to their neighbours. The reason graphite works so well as a writing material, and industrial lubricant, is because the layers of atoms slip easily over one another. The layered structure facilitates easy cleavage along the planes. Each of these single layers of atoms is known as graphene. Separating the individual layers of graphite sets the electrons free and allows carbon to behave differently.

Traditional demand for graphite is largely tied to the steel industry where it is used as a liner for ladles and crucibles. It is also used as a component in bricks which line furnaces ("refractories") and as an agent to increase the carbon content of steel. In the automotive industry it is used in brake linings, gaskets and clutch materials. Graphite also has a numerous other uses in batteries, lubricants, fire retardants, and reinforcements in plastics.

Lithium-ion Batteries

While there are numerous and wide ranging uses for graphite, the most important application (and the sector likely to be responsible for significant demand growth) is in lithium-ion batteries found in electric vehicle batteries and used to power modern consumer electronics. Importantly, only flake graphite can be used in these batteries.

In a lithium-ion battery, lithium is the cathode and flake graphite is anode, however, 10 - 30 times more graphite is required in these batteries than lithium. The lithium-ion battery industry is growing at a rate of 30 - 40% annually and it is estimated that up to 6 million electric vehicles could be manufactured in 2020, each requiring ~40 lbs of flake graphite for its battery system, whilst the electric motorcycle and scooter markets are growing at an even faster rate.

Lithium-ion batteries are also crucial to the consumer electronics industry for applications as varied as power tools, cell telephones, laptops, tablets and media players.



Demand and outlook for graphite

During 2010 the European Commission included flake graphite amongst 14 materials it considered high in both economic importance and supply risk while the British Geological Survey listed flake graphite as one of the materials to most likely be in short supply globally. The US government has also declared flake graphite a critical material.

Worldwide production of natural graphite (as opposed to synthetic graphite) was 1.1Mt in 2012, which is a similar scale to the nickel market (~1.3Mtpa). Of this production, flake accounted for 55%, amorphous 44% and vein 1%. China is the dominant world producer (yet is still a net importer), accounting for ~79% of total world output, however, the graphite is primarily amorphous and low grade flake.

wond mine production and reserves					
Country	2011 (kt)	2012 (kt)	Reserves (kt)		
United States	-	-	-		
Brazil	73	75	360		
Canada	25	26			
China	800	750	55,000		
India	150	150	11,000		
North Korea	30	30			
Madagascar	4	5	940		
Mexico	7	8	3,100		
Norway	2	7			
Romania	20	7			
Russia	14	14			
Sri Lanka	4	4			
Turkey	10	10			
Ukraine	6	6			
Other Countries	7	7			
World Total	1,150	1,100	77,000*		

World mine production and reserves

Source: USGS *World Resources are estimated to exceed 800Mt

Industrial demand for graphite has been steadily growing at around 5% p.a. and significant further growth in the industry is expected from the incremental demand created by numerous green initiatives including lithium-ion batteries, fuel cells, solar energy, semi-conductors, and nuclear energy. Many of these applications have the potential to consume more graphite than all the current uses combined. Importantly, only flake graphite can be upgraded to 99.9% purity, suitable for making lithium-ion batteries.

Significant demand growth expected from growth in Li-ion batteries for electric cars.

1.1*Mt of natural* graphite produced per

annum

Anticipated demand for graphite with and without the battery market



Source: Lamboo Resources

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Graphite quality and associated pricing

In addition to the grade and in-situ quantity, the size distribution of graphite flake within a resource is a vital parameter for evaluating its value. In general, the larger the flake size, the more valuable the graphite.

various graphite product comparisons						
Graphite Product	Carbon Content (%)	Mesh Size	Graphite Size	Price (US\$/t)	Comparable grain size	
Jumbo Flake	99-99.9%	+40	>425µm	\$3,500 - \$35,000	Beach sand	
Large Flake	90-97%	+60-40	180 - 425µm	\$2,000 - \$3,000	Sugar, fine sand	
Medium Flake	85-97%	+100-80	150 - 180μm	\$1,500 - \$2,500		
Fine Flake	90-97%	+400-100	37 - 150μm	\$1,400 - \$2,400	Portland Cement	
Amorphous	80-85%	-400	<37µm	\$600-800	Silt, plant pollen	
Synthetic	99.95%			\$7,000 - \$20,000		
Sources Lambas Descurses						

Various graphite product comparisons

Source: Lamboo Resources

The McIntosh and three South Korean projects contain flake graphite sizes ranging from fine to jumbo flake.

The chart below shows a 10 year price chart for a medium flake graphite and illustrates a generally upward price trend over this period due to increasing demand. The emergence of electric vehicles and the potential boom in lithium-ion battery demand into the foreseeable future is likely to continue to buoy the graphite price.

Historical Graphite Price Chart

Price Range for +80 mesh, 94-97%C graphite (US\$/tonne)



Upward price trend

Larger the flake size, the greater the value

Source: Industrial Minerals





*Director CV's extrapolated from company website



Analyst Verification

We, Grant Craighead and Andrew McLeod, as the Research Analysts, hereby certify that the views expressed in this research accurately reflect our personal views about the subject securities or issuers and no part of analyst compensation is directly or indirectly related to the inclusion of specific recommendations or views in this research.

Disclosure

Breakaway Investment Group (AFSL 290093) may receive corporate advisory fees, consultancy fees and commissions on sale and purchase of the shares of Lamboo Resources and may hold direct and indirect shares in the company. It has also received a commission on the preparation of this research note.

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