

Strategic Metals & Rare Earths Letter

INTERNATIONAL

the independent information and advisory publication on investing in Strategic Metals & Rare Earths

October 2015

Heavy Rare Earths Oxides (HREO)		Light Rare Earth Oxides (LREO)		Critical Metals and Special Minerals	
europium (Eu)	erbium (Er)	lanthanum (La)	yttrium (Y)	lithium (Li)	
gadolinium (Gd)	thulium (Tm)	cerium (Ce)	scandium (Sc)	graphite (C)	
terbium (Tb)	ytterbium (Yb)	praseodymium (Pr)	niobium (Nb)	tungsten (W)	
dysprosium (Dy)	lutetium (Lu)	neodymium (Nd)	tantalum (Ta)	zirconium (Zr)	
holmium (Ho)		promethium (Pm)	beryllium (Be)	hafnium (Hf)	
		samarium (Sm)	gallium (Ga)	antimony (Sb)	
			indium (In)	cobalt (Co)	
			germanium (Ge)	magnesium (Mg)	

Market Comments:

After **Molycorp** filed for Chapter 11 bankruptcy in June 2015 with debts of approximately US\$ 1.7 billion, **Ucore Rare Metals** (Bokon Project) and **Rare Element Resources** (Bear Lodge Project), are the major exploration/development REE companies focused on the **United States**, despite having a market valuation of only US\$ 41.5 million (US\$ 32 million) and US\$ 19.0 million (US\$ 15 million), respectively.

In **Canada**, **Commerce Resources** and **Avalon Rare Metals** are leading the list of REE companies despite a market valuation of only Cdn\$ 19.5 million (US\$15.1 million) and Cdn\$ 18.3 million (US\$ 14 million), and the remaining 11 companies all valued at less than US\$ 7 million and as such not to be considered as a quality rated investment opportunity.

Some of the Canadian companies including **Avalon Rare Metals** (Nechalao Project), **Commerce Resources** (Ashram Project) and **Quest Rare Metals** (Strange Lake Project) are known to have projects with an economic viability, but are facing tightening regulatory requirements on safety and environment as well as first nation land rights.

These issues have been hardly paid attention to and together with the fall of REE prices, to be accounted for the collapse in REE market valuations.

In **Australia**, **Lynas**, not withholding its share price having decreased by 41% in the course of this year, at a market valuation of A\$ 139 million (US\$ 101 million) is valued as Australia's first ranked company by market valuation, followed by **Alkane Resources** A\$ 104 million (US\$ 75.5 million) and **Northern Minerals** valued at A\$ 81 million (US\$ 59 million).

Alkane is mainly focusing on zirconium and also a gold producer, which is estimated to account for at least 50% of the Company's market valuation.

Hastings Technology Metals valued at A\$ 31 million (US\$ 22.5 million), showing a strong market performance (+67%) is also noteworthy from an investment consideration.



September 24, 2015: Index at 110.6

Source: ACREI - Association of China Rare Earth Industry

Besides the significant decreased Northamerican REE market valuations, in **South Africa**, **Frontier Rare Earths** (Zandkopsdrift) and **Great Western Minerals'** (Steenkampskraal) have failed to prove the economic viability of their projects. As a result the market valuation of these two companies having collapsed since year-end 2014 by 70% and 86%, respectively.

In July 2015, **Great Western Minerals** announced an update regarding sale or investor solicitation process in relation to the Company's US\$ 90 million 8% Secured Convertible Bonds due 2017.

Frontier Rare Earths announced the delisting on the TSX as per September 30, 2015 accounted for by a loss of confidence in the ability of any of the junior rare earth developers to secure the financing required to develop their respective project through the conventional listed equity and debt capital market.

In this respect, it is to be noticed that the wholly-owned mining and mineral natural resource investment arm of the South Korean Government **KORES**, as Frontier's strategic partner, who still has the opportunity to acquire a major interest in the Zandkopsdrift Project and/or the Company's capital, did not support **Frontier** to provide the required staged funding (see my Investment Alert report on Frontier – September 2015).

Management says that despite the delisting this does not impact the further development of Zandkopsdrift to potentially facilitate a liquidity event for shareholders. However, considering the loss of its market valuation by 67% to Cdn\$ 7.2 million (US\$ 5.4 million), not recognizing the prospective results of the Company's recent Pre-feasibility Study (May 2015), showing a Net Present Value of US\$ 2.2 billion, a shareholders' equity of Cdn\$ 40.8 million and holding Cdn\$ 20 million cash as per June 30, 2015, gives a free play to management, which threatens to undermine the interests of shareholders.

In other countries of **Africa**, **Peak Resources** focused on Tanzania, is the only noteworthy company from an investment consideration.

Also dramatic is the collapse of the market performance of **Greenland Minerals and Energy (GMEL)**, which fully owns the Kvanefjeld Project, recognized as hosting the world's largest multi-element REE-uranium-zinc deposit. However, due to political turmoil in Greenland, resulting in a change of government in October 2013 there are rising doubts whether the lifting of the uranium ban in October 2013 may be reversed.

If so, this may have a negative impact on the approval of a mining licence application which has already been delayed by two years now. Consequently foreign investors are withheld to fund Kvanefjeld to commercial production targeted for 2019.

With the Company, at a current share price of A\$ 0.03 classified as a penny stock, representing a market capitalization of just US\$ 18.4 million compared with a share price of A\$ 0.46 at the time the uranium ban was lifted, representing a market capitalization of US\$ 247 million, GMEL is to be considered as an extremely undervalued takeover candidate albeit at the expense of outside shareholders.

Overview of global listed REE companies

		Trading symbol		Share price		Change in %	12 months prices		Total shares issued million	Market cap. million
October 31, 2015				Current	Year-end 2014		H	L		
US:				US\$	US\$		US\$	US\$		US\$
Molycorp Inc.	1)	MCPIQ	NYSE	0.072	0.880	-92	1.47	0.06	259.3	18.7
Texas Rare Earths Resources		TRER	OTCQB	0.210	0.210	0	0.44	0.16	41.4	8.7
				Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$
Ucore Rare Metals		UCU	TSX.V	0.250	0.225	11	0.44	0.20	197.6	49.4
Rare Element Resources		RES	TSX.V	0.295	0.430	-31	1.31	0.27	52.9	15.6
Canada:				Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$
Commerce Resources		CCE	TSX.V	0.090	0.235	-62	0.22	0.07	216.5	19.5
Avalon Rare Metals		AVL	TSX	0.115	0.185	-38	0.48	0.11	154.3	17.7
Pele Mountain Resources	2)	GEM	TSX.V	0.040	0.035	14	0.09	0.03	188.9	7.6
Quest Rare Minerals		QRM	TSX.V	0.080	0.200	-60	0.29	0.07	85.0	6.8
Search Minerals		SMY	TSX.V	0.050	0.060	-17	0.13	0.03	131.8	6.6
Canada Rare Earth	4)	LL	TSX.V	0.030	0.030	0	0.04	0.02	166.9	5.0
Matamec Explorations	3)	MAT	TSX.V	0.035	0.090	-61	0.07	0.02	137.0	4.8
Eagle Plains Resources		EPL	TSX.V	0.050	0.045	11	0.08	0.05	83.7	4.2
Int. Montoro Resources	2)	IMT	TSX.V	0.035	0.030	17	0.10	0.04	69.2	2.4
Medaillon Resources		MDL	TSX.V	0.025	0.050	-50	0.08	0.01	73.9	1.8
Cache Exploration		CAY	TSX.V	0.105	0.075	40	0.21	0.05	7.8	0.8
Canadian Int. Minerals		CIN	TSX.V	0.015	0.025	-40	0.05	0.01	33.5	0.5
Appia Energy		API	CNSX	0.010	0.235	-96	0.05	0.01	41.6	0.4
Australia:				A\$	A\$		A\$	A\$		A\$
Lynas		LYC	ASX	0.060	0.068	-12	0.07	0.03	3,488.0	209.3
Alkane Resources	5)	ALK	ASX	0.250	0.225	11	0.41	0.20	414.2	103.6
Northern Minerals	2)	NTU	ASX	0.170	0.220	-23	0.29	0.14	448.6	76.3
Hastings Technology Metals		HAS	ASX	0.080	0.048	67	0.10	0.05	384.0	30.7
Arafura Resources		ARU	ASX	0.060	0.067	-10	0.07	0.04	441.3	26.5
Western Europe:										
Sweden:				Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$
Tasman Metals		TSM	TSX.V	0.340	0.500	-32	0.99	0.33	66.1	22.5
Greenland:				A\$	A\$		A\$	A\$		A\$
Greenland Min. and Energy	6)	GGG	ASX	0.030	0.073	-59	0.11	0.03	787.7	23.6
NunaMinerals		NUNA	OMX-Cop.	0.990 *	0.870	14	7.10	0.57	27.6	4.4
* listing suspended as per February 18, 2015										
Central Asia:										
Kyrgyzstan:				Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$
Stans Energy		HRE	TSX.V	0.025	0.090	-72	0.14	0.01	168.0	4.2
1) announced execution of a restructuring support agreement with creditors on June 5, 2015; court approved \$ 130 million DIP Financing on July 20, 2015										
2) also uranium assets										
3) also gold and base metal assets										
4) vertically integrated REE business										
5) also gold producer										
6) world's largest undeveloped multi-element occurrence										

October 31, 2015

				Share price		Change in %	12 months prices		Net shares issued million	Market cap. million
Africa:				Current	Year-end 2014		H	L		
South Africa:				US\$	US\$		US\$	US\$		US\$
Frontier Rare Earths	7)	FREFF	OTC	0.020	0.180	-89	0.29	0.00	89.6	1.8
				Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$
Great Western Minerals	8)	GWG	TSX.V		0.035	-100	0.09	0.005	418.7	0.0
Tanzania:				A\$	A\$		A\$	A\$		A\$
Peak Resources	9)	PEK	ASX	0.060	0.070	-14	0.10	0.06	387.7	23.3
				Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$
Montero Mining and Exploration	10)	MON	TSX.V	0.035	0.010	250	0.06	0.005	71.0	2.5
Madagascar:				Euro	Euro		Euro	Euro		Euro
Tantalus Rare Earths		TAEN	Frankfurt	0.550	18.550	-97	18.58	0.12	4.2	2.3
Kenya:				Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$
Pacific Wildcat Resources	11)	PAW	TSX.V	0.015	0.010	50	0.04	0.005	295.1	4.4
Malawi:				A\$	A\$		A\$	A\$		A\$
Globe Metals and Mining	12)	GBE	ASX	0.020	0.035	-43	0.04	0.02	469.7	9.4
				Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$
Mkango Resources		MKA	TSX.V	0.025	0.100	-75	0.19	0.01	121.3	3.0
Namibia:				Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$
Namibia Rare Earths		NRE	TSX.V	0.045	0.195	-77	0.22	0.04	77.8	3.5

7) TSX delisting effective on September 30, 2015; still listed on US OTC

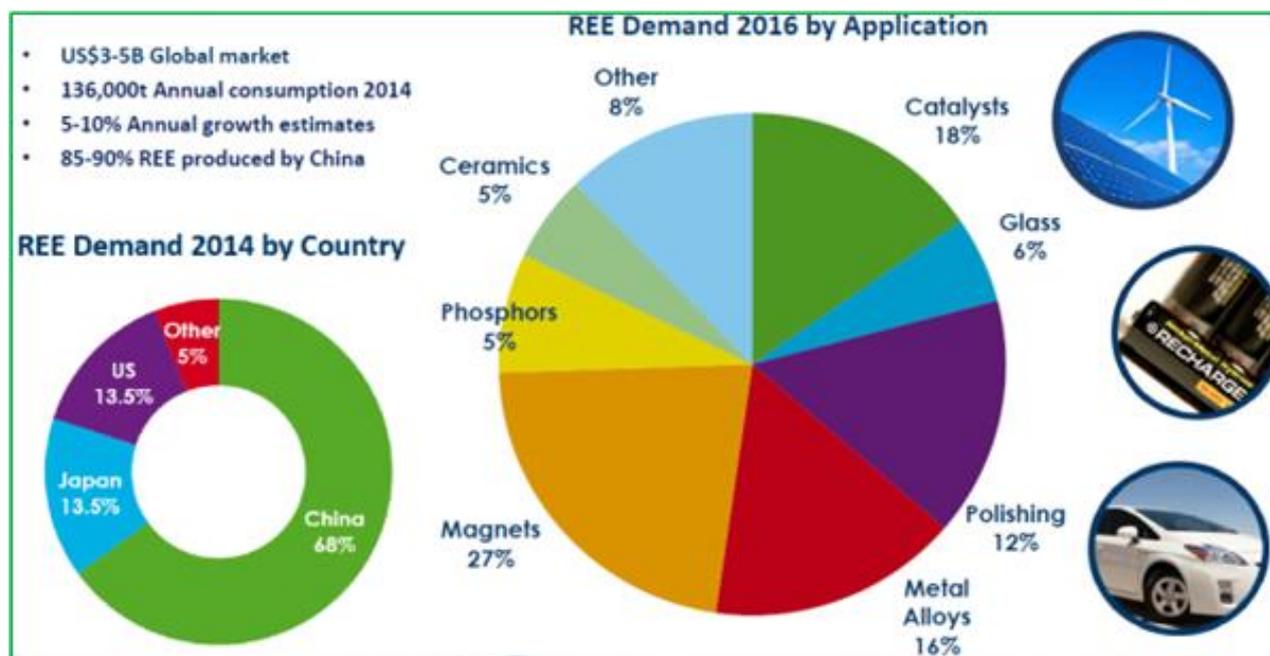
8) integrated REE processor (specialty alloys); sales and investor solicitation process (SISP) completed by July 13, 2015

9) also gold projects in Tanzania and Australia

10) also phosphate assets South Africa

11) also tantalum mine in Mozambique and gold-silver project in Nevada

12) also graphite project



Source: IMCOA

Lithium market transition 2004 to 2014 shows the emergence of China

Lithium has a number of important and interesting uses. In recent years, it has been used to make lightweight, efficient batteries. Components of lithium have also been used to treat a mental disorder known as bipolar disorder.

For a long time, most of the world's lithium was produced by an oligopoly of producers often referred to as the "Big 3". Prior to being acquired by Albemarle (NYSE – ALB), **Rockwood Lithium**, part of Rockwood Holdings (NYSE – ROC), was on that list. The other members of the club were Chile's Sociedad Quimica Mineora de Chile (NYSE – SQM) and **FMC** (NYSE – FMC), which operates in Argentina.

Those companies still produce the majority of the world's lithium, but China continues to take a huge chunk out as well and was the third-largest lithium producer counting in 2014 to terms of mined production, according to the US Geology Survey, following Australia and Chile. More importantly however, Australia does not currently produce lithium chemicals and China is producing more and more of them.

Even though Australia narrowly beat out Chile last year in terms of mined production, its largest mine, the Greenbushes Lithium Project, is majority controlled by China's Tianqi Group which mines Greenbushes, while Albemarle now owns a 45% interest in the Company via its acquisition of Rockwood.

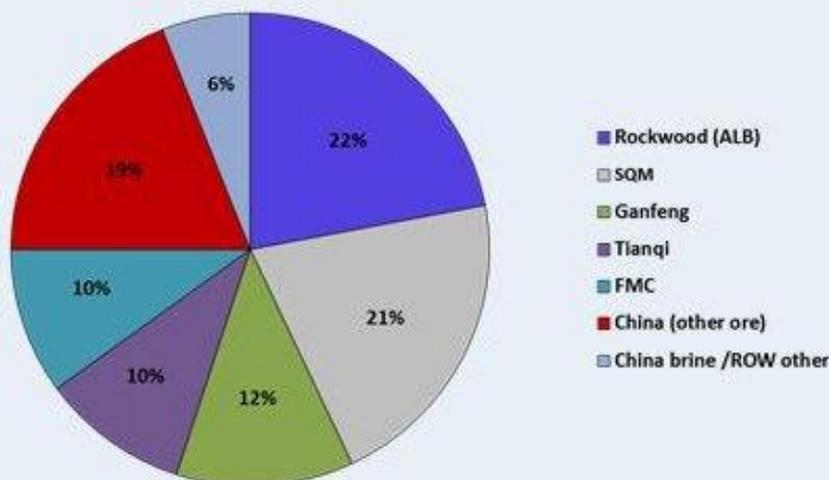


Market developments 2015

Benchmark Mineral Intelligence reports that compared to 2014 lithium carbonate prices are up 10-15% and lithium hydroxide 20-25%. FMC has reported recently that it is raising prices on its lithium products by 15%.

Global Lithium Market Share – 2014

Share based on sales of lithium chemicals stated in lithium carbonate equivalents (LCEs)



Overview of LITHIUM companies (by market capitalization)

	Trading symbol		Share price		Change in %	12 months prices		Total shares issued million	Market cap. million	
			Current	Year-end 2014		H	L		local	US\$
	October 31, 2015									
			Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$	
Western Lithium	TSX	WLC	0.375	0.530	-29	0.96	0.26	265.6	99.6	75.7
Nemasca Lithium	TSX	NMX	0.315	0.165	91	0.35	0.12	200.3	63.1	48.0
Pure Energy Minerals	TSX	PE	0.550	0.210	162	1.03	0.17	47.1	25.9	19.7
Dajin Resources	TSX.V	DJI	0.125	0.050	150	0.16	0.04	103.2	12.9	9.8
			A\$	A\$		A\$	A\$		A\$	
Pilbara Minerals	ASX	PLS	0.300	0.040	650	0.41	0.03	726.1	217.8	154.7
Galaxy Resources	ASX	GXY	0.080	0.020	300	0.08	0.02	1103.0	88.2	62.7
General Mining	ASX	GMM	0.170	0.020	750	0.22	0.02	269.2	45.8	32.5
Altura Mining	ASX	AJM	0.050	0.060	-17	0.09	0.01	838.8	41.9	29.8
Lithium Australia	ASX	LIT	0.110	0.040	175	0.15	0.04	134.4	14.8	10.5

► **Western Lithium** positioning itself as a major USA-based supplier is developing its wholly-owned Kings Valley, Nevada lithium deposit, which established a proven and probable reserve of 570,000 tonnes of Lithium Carbonate Equivalent (LCE) at a lithium cut-off grade of 0.32%, into a strategic scalable and reliable source of high quality lithium products. The company is pursuing the opportunity to be a supplier of specialty drilling additive, Hectatone™ and potentially other organo-clays for the oil and gas and other industries.

Western Lithium has completed a positive Pre-Feasibility Study for Kings Valley included in the Company's May 2014 NI 43-101 compliant Technical Report for the Project.

The operating life of the Kings Valley is 20 years, with expansion potential. The average annual cash flow and revenue once full production of 26,000 tonnes per annum is achieved, amounts to US\$ 124 million and US\$ 200 million, respectively. The Net Present Value is estimated (at 8% discount rate) at US\$ 552 million and the Internal rate of return (post tax) at 20%.

The Study demonstrates that Kings Valley could produce lithium carbonate at an estimated average cash cost, net of by-product credits, of US\$ 968 per tonne once estimated starting in year 2018/2019 for full production of 26,000 tonnes per year lithium carbonate is achieved.

Initial startup capital (Phase I), including contingency, is expected to be approximately US\$ 248 million. Capital costs for Phase 2 are estimated a IS\$ 161 million.

Western Lithium is currently focused on its commercial clay strategy with the goal of becoming a special supplier of Hectatone™ clay based drilling additives used in complex oil and gas exploration (particularly unconventional shale drilling).

The organo-clay plant built in Nevada began producing Hectatone™ products in January 2015 which typically sells in a range of US\$ 2,000 to US\$ 4,500 per short ton, depending on performance.

On September 4, 2015, Western Lithium's merger with Lithium Americas (TSX – LAC) became effective.

Lithium Americas has completed a NI 43-101 compliant Feasibility Study on its Cauchan-Olaroz Lithium Project in Jujuy, Argentina, on which it is reported that the Project hosts approximately 2.7 million tonnes of lithium carbonate equivalent (LCE) at a lithium cut-off grade of 354 milligrams per litre and which contemplates initial commercial production at a rate of 20,000 tonnes per year of LCE.

The Project is also committed for construction.

► **Nemaska Lithium** intends to become a lithium hydroxide supplier and lithium carbonate supplier to the emerging lithium battery market that is largely driven by electric vehicles. The Company's world-class Whabouchi Lithium Project is located in the James Bar Territory of Quebec, Canada.

In May 2015, Nemaska published a Feasibility Study with the following highlights: expected mine life 26 years; Life of Mine Revenue Cdn\$ 6.9 billion (annual average of Cdn\$ 267 million); Post-tax Net Present Value Cdn\$ 581 million at 8% discount (base case); Post-tax Internal Rate of Return 21.0%.

Total initial capital costs are Cdn\$ 448 million in CAPEX, Cdn\$ 52 million in Contingency; Cdn\$ 21 million in Working Capital. Payback of capital costs is 3.7 years.

The Study is based on a selling price of Lithium Hydroxide of US\$ 8,100/t FOB Valleyfield and a selling price of Lithium Carbonate of US\$ 5,000/t FOB Valleyfield.

Average Cost per tonne Spodumene Concentrate is accounted for at Cdn\$ 189/t FOB Whabouchi Mine; Average cost per tonne Lithium Hydroxide is accounted for at Cdn\$ 3,450/t (US\$ 3,105/t FOB Valleyfield); and Average cost per tonne Lithium Carbonate is accounted for at Cdn\$ 4,190/t (US\$ 3,771/t) FOB Valleyfield.

The yearly annual production is calculated at 213,000 tonnes of concentrate (6%), 28,000 tonnes lithium hydroxide and 3,250 tonnes of lithium carbonate.

On September 4, 2015, Nemaska announced that it had received the General Certificate of Authorization (CA) for the Whabouchi Lithium Mine from the Quebec Ministry of Sustainable Development Environment and the Fight Against Climate Change. The CA is the most significant permit to mining projects in Quebec and allows Nemaska Lithium to pursue project financing discussions to start mine construction.

On October 8, 2015, the Company announced the signing of an agreement in principle with the City of Shawinigan in Quebec for the acquisition of a part of existing manufactory facilities to build a 500 tonnes per year Hydronet plant.

► **Pure Energy Minerals** is focused on its 8,000+ acre flagship Lithium Brine Project, located in Clayton Valley South, Nevada, next to the only producing lithium operation in the United States – Albemarle's Silver Peak lithium brine mine. It contains an NI 43-101 compliant Inferred resource of 816,000 Lithium Carbonate Equivalent (LCE).

Lithium Brine is the easiest and lower costly type of lithium resource to meet. The brine is simply “mined” by drilling boreholes into the aquifers and pumping the brine to surface for lithium removal.

Global multinational technology partners POSCO and Tenora Batman and world-class research institutes SRI International and UBC towards demonstrating and deploying low-cost and earth friendly processing technologies to produce advanced lithium battery materials to meet the anticipated demand forecasts.

On September 15, 2015, Pure Energy entered into an agreement with Tesla Motors building its advanced lithium-ion US\$ 5 billion battery giga factory for the potential supply of lithium hydroxide for an annual purchase volume of product over a period of 5 years, providing that the Company meets certain terms and conditions related to the Project’s execution, product quality and timing of delivery. The Agreement sets a predetermined price that is below current market rates and is aligned with Tesla’s goal to continuously reduce the cost of its lithium batteries.

Pure Energy will conduct a mining study in the form of a Preliminary Economic Assessment (PEA), pre-Feasibility Study (PFS) or Feasibility Study (FS) to confirm the technical feasibility and economic viability of the Project.

► **Pilbara Minerals** is specializing in the exploration and development of the special metals tantalum and lithium. The Company is currently developing the wholly-owned Tabba Tabba Tantalum Deposit, located in the Pilbara region of Western Australia and is also drilling and developing the advanced wholly-owned Pilgangoora Tantalum-Lithium Deposit close to Tabba Tabba, which was acquired from Global Advanced Metals in July 2014.

Pilbara’s Tabba Tabba Project could supply approximately 70% of the annual market consumption of tantalum over two years. First production is targeted for November 2015.

On September 24, 2015, Pilbara announced an increase in its resource estimate for Pilgangoora from 3.8 million tonnes in July to 52.2 million tonnes, plus an increased Exploration Target from 50-60 million tonnes to 80-90 million tonnes. This marks the Pilgangoora Project the second largest hard rock spodumene deposit in the world, after Greenbushes, which has 120 million tonnes.

► **Galaxy Resources** is a lithium-focused resource company with assets spanning Australia, China, Canada and Argentina. In April 2014, the Company announced the divestment of its processing plant in Jiangsu Province, China, a deal which held an enterprise value of US\$ 173.2 million.

Galaxy is currently advancing plans to develop the Sal de Vida Lithium and Potash Brine Project in Argentina, which is situated in the Lithium Triangle, a region where Chile, Argentina and Bolivia meet and presently accounts for 60% of global lithium production. Sal de Vida is a proven high quality resource and has excellent promise as future to production facility.

The Company also owns the Mount Cattlin Spodumene Mine in Western Australia and the James Bay Lithium Pegmatite Project in Quebec, Canada.

► **Altura Mining** has a diversified exploration portfolio with key priorities in coal, iron ore and lithium. On September 14, 2015, the Company confirmed the status of world class deposit of its wholly-owned Pilgangoora Lithium Project, located in the Pilbara region of Western Australia, with a JORC compliant Mineral resource of 26.06 million tonnes grading 1.20% Li₂O, containing 315,000 tonnes lithium, of which 19.77 million tonnes (76% of total resource) in the Indicated Resource category.

Completion of the independent review paves the way for successful progression of a feasibility Study with a mine planning, scheduling and pit optimization study underway utilizing the results.

► **Lithium Australia** is targeting historical mining projects with waste lithium mica material ready for immediate proceeding in Western Australia as well as selected European deposits. The Company aims to control the greatest lithium (“LI”) resource base of any entity worldwide, producing battery grade Li carbonate from Li micas.

To provide it with access to Li mica deposits Lithium Australia has also entered into relationships with:

- European Metals - Ginovec (tin and lithium project (Czech Republic))
- Pilbara Minerals - Pilgangoora lithium and tantalum project (Western Australia)
- Focus Minerals - Coolgardie Rare Metals Venture; and
- Talison’s Mine, source of world’s highest grade lithium, currently supplies more than 30% of global lithium requirements and 75% of Chinese demand
- Tungsten Mining – Seabrook Rare Metals Venture (Western Australia)

Foremost, among these relationships is Lithium Australia’s association with Perth-based Strategic Metallurgy Pty, which has led to development of the innovative process technology the Company will use to achieve its goal.

In addition, **Lithium Australia** has applied for extensive tracts of ground surrounding Talison Lithium’s Greenbushes pegmatite mine in Western Australia.

Graphite market looking for strong growth

There are three main kinds of graphite being flake, amorphous and vein, while all are important for industries, **Flake graphite**, used for lithium-ion battery anodes, has become especially important since early 2014 when Tesla Motors announce that it would be building its advanced lithium-ion US\$ 5 billion battery giga factory, with production expected late 2016.

This immediately sparked predictions of how much of the metal the giga factory might require. The speculation has only continued as Tesla has taken further steps and most recently signed its first and second lithium supply deals.

Benchmark Mineral Intelligence, as an industry expert, said that if Tesla’s giga factory reaches its target capacity of 35 GWh by 2020, it may need 25,000 tonnes per year of lithium, 112,500 tonnes per year of flake graphite, 45,000 tonnes per year of spherical graphite and 7,000 tonnes per year of cobalt.

Other battery producers such as LC Chem, Foxconn and BYD and Boston Power are expected to have mega factories up and running by 2020, as production capacity of lithium-ion batteries including graphite is anticipated to more than triple.

Flake graphite can also be used in pebble-bed nuclear reactors, as well as in the refractory and steel industries. It is also used in fuel cells and vanadium-redox batteries.

Amorphous graphite is used in the refractory industry as well as and also in mechanisms like brake linings, gaskets and clutch materials.

Vein graphite is used in advanced thermal and high-fraction applications.

While the overall downturn in the graphic markets is well known, it can be tough to get an idea of exactly how much graphic costs, as it is not traded on an exchange. Instead, graphic miners will typically set up off-take agreements under which end-users agree to buy a specific amount of graphic over a particular period of time. However, now the consensus is that prices for flake graphite may start to rise as buyers become more concerned about impeding mega factory demand.

Benchmark Mineral Intelligence in particular is looking to increase transparency in the graphic sector by working to provide investors with accurate and up-to-date information on pricing.

Graphite production dominated by China

With Tesla and flake graphite currently gaining a lot of attention in the graphic market, participants try to guess how much the giga factory will impact the market graphite demand. Another key factor impacting the supply from China, by far the world's largest producer (approximately 70% world total).

Back in 2013, China ordered 55 graphic mines and processors in the city of Pingdu to cease production on environmental grounds. At the start of 2015, sanctions were increased – to date, output of the area remains restricted.

Based on the shutdowns coupled with impending mega factory demand, expected to boost graphic prices, this ultimately did not happen.

Country	in million tonnes
China	780.000
India	170.000
Brazil	80.000
Canada	30.000
North Korea	30.000
Turkey	30.000
Russia	14.000
Mexico	8.000
Ukraine	6.000
Zimbabwe	6.000
Total	1.154.000

Overview of GRAPHITE companies (by market capitalization)

October 31, 2015	Trading symbol		Share price		Change in %	12 months prices		Total shares issued million	Market cap. million	
			Current	Year-end 2014		H	L		local	US\$
			A\$	A\$		A\$	A\$		A\$	
Syrah Resources	ASX	SRU	3.150	3.130	1	4.70	2.39	230.5	726.1	515.5
Magnis Resources	ASX	MNS	0.360	0.240	50	0.58	0.15	329.9	118.8	84.3
Kibaran Resources	ASX	KNL	0.220	0.150	47	0.26	0.11	169.1	37.2	26.4
Triton Minerals	ASX	TON	0.200	0.190	5	0.71	0.13	69.7	13.9	9.9
Walkabout Resources	ASX	WKT	0.010	0.010	0	0.01	0.01	1378.0	13.8	9.8
IMX Resources	ASX	IXR	0.010	0.010	0	0.02	0.01	1159.0	11.6	8.2
			Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$	
Zenyatta Ventures	TSX.V	ZEN	1.020	1.500	-32	2.61	0.93	55.6	56.7	43.1
Canada Carbon	TSX.V	CCB	0.250	0.210	19	0.32	0.18	93.5	23.4	17.8
Alabama Graphite	TSX	ALP	0.165	0.170	-3	0.35	0.14	115.6	19.1	14.5
Graphite One Resources	TSX	GPH	0.090	0.090	0	0.14	0.07	190.1	17.1	13.0
Northern Graphite	TSX.V	NGC	0.295	0.630	-53	0.89	0.25	49.2	14.5	11.0
Focus Graphite	TSX.V	FMS	0.100	0.490	-80	0.53	0.10	127.6	12.8	9.7
Flinders Resources	TSX.V	FDR	0.240	0.470	-49	0.56	0.12	46.8	11.2	8.5
Great Lakes Graphite	TSX.V	GLK	0.065	0.040	63	0.15	0.03	98.0	6.4	4.8
Lomiko Metals	TSX.V	LMR	0.030	0.030	0	0.09	0.03	155.5	4.7	3.5
Caribou King Resources	TSX.V	CKR	0.095	0.060	58	0.22	0.04	20.5	1.9	1.5
Canada Strategic Metals	TSX.V	CJC	0.025	0.050	-50	0.11	0.03	70.9	1.8	1.3
			pence	pence		pence	pence		£	
StratMin Global Resources	AIM	STGR	4.500	6.630	-32	8.25	3.38	151.1	6.7	10.4

► **Syrah Resources** has exploration interests in some 6,056 square kilometres of tenements in south east Africa. The portfolio of projects covers graphite, vanadium, mineral sands and coal. The Balama Graphite Vanadium Project in northern **Mozambique** is the Company's premier project.

A mining concession application has been submitted by the Mozambique Government. Drilling commenced in May 2013 has so far shown that the Africa Zone remains the highest grade zone for graphite while the Mualia Zone the highest grade for vanadium. Within the latest phase of drilling the Ativa Zone has been upgraded to a Measured Resource.

The November 2014 MSA report stated that the Ativa Zone has 2.15 million tonnes of contained graphite at 9% TGC cut-off (10.9 million tonnes at 19.7% TGC and 0.39% V₂O₅ from 0 to 100 metres).

► **Magnis Resources** is a near-term graphite producer with its world-class 100%-owned Nachu Project in southeast **Tanzania** that is scheduled for production in late 2016 and it is the clear focus for the Company given its high distribution towards natural flake graphite in the Super Jumbo, Jumbo and Large flake categories. The world supply of such categories is very low making the Nachu Project highly valuable.

In November 2014, Magnis defined a maiden JORC compliant Mineral Resource for the Nachu Project of 156 million tonnes of 5.2% carbon graphite (CG) at 3% cut-off grade. The Mineral Resource is inclusive a total of 104 million tonnes Measured and Indicated resources (66% of the total resource estimate) and is derived from only 2% of Nachu tenements to date.

Other exploration companies focused on **Tanzania** include: **Kibaran Resources, Walkabout Resources** and **IMX Resources**.

Tungsten market trends

The tungsten market is relatively opaque due to its concentrated structure, with only a small number of tungsten concentrate suppliers and consumers outside of China. Typically sales occur under long-term contracts and it is common place for consumers to also have financial involvement in tungsten supply sources.

Prices to tungsten concentrates tend to follow the same trend as prices for ammonium paratungstate (“APT”), which is the key intermediary product in the tungsten supply chain.

The average APT price published by Metal Bulletin for the second quarter of 2015 was US\$ 242/mtu (FIB Europe), a 14% reduction from the average price for the previous quarter and US\$ 195/mtu by the end of August 2015.

During the June-quarter, the demand for tungsten concentrate remained sound in Japan and Europe as a result of steady output from the automotive sector. Demand in other regions slowed as a result of softening in the mining, oil and tracking industries and the economic slowdown in China.

Current market conditions appear to have resulted in some being withdrawn from the market and overall trading volumes are lower than in previous years. New supply from projects outside of China is expected to be limited for the next few years, which may result in a higher supply scenario.

Overview of TUNGSTEN companies (by market capitalization)										
October 31, 2015	Trading symbol		Share price		Change in %	12 months prices		Total shares issued million	Market cap. million	
			Current	Year-end 2014		H	L		local	US\$
			Cdn\$	Cdn\$		Cdn\$	Cdn\$		Cdn\$	
Almonty Industries	TSXV	ALL	0.470	0.650	-28	0.86	0.45	87.1	40.9	31.1
North American Tungsten	TSXV	NTC	0.010	0.040	-75	0.06	0.01	238.1	2.4	1.8
			A\$	A\$		A\$	A\$		A\$	
Wolf Minerals	ASX	WLF	0.300	0.260	15	0.45	0.23	809.4	242.8	172.4
Carbine Tungsten	ASX	CNQ	0.040	0.130	-69	0.18	0.04	309.9	12.4	8.8

► **North American Tungsten Corporation (“NATC”)** is the Western World’s largest producer of tungsten concentrate. The Company’s fully-owned Cantung Mine and Mactung Development projects in the Northwest Territories, Canada, make it one of the few tungsten producers with a strategic asset in the Western World. Mactung is one of the world’s largest known undeveloped high-grade tungsten-skarn deposits.

In November 2014, NATC filed a Technical Report on the Cantung Mine which was prepared in compliance with NI 43-101 standards. The report disclosed probable mineral reserves of 1.82 million tons with a grade of 0.81% WO₃. The updated reserves support a mine life beyond 2017 assuming normal operations. In addition, Indicated resources of 3.84 million tons with a grade of 0.80% WO₃ were reported.

The Company received a positive Environmental Assessment of the Mactung Project. The Yukon Environmental and Socio-economic Assessment Board ("YESAB") recommended that the Mactung Project be allowed to proceed without review "subject to terms and conditions that are listed in its final report". YESAB's recommendations were confirmed in Decision Documents issued by the federal and territorial governments. The Decision Documents will form the basis upon which the Yukon Water Board will regulate mining at Mactung.

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In the nine months ended June 30, 2015, NATC produced 206,352 MTUs tungsten concentrate compared with 211,061 MTUs for the same period in 2014. The average realized sale price as US\$ 236 MTU (9 months 2014: US\$ 292). The cost of sales per MTU as US\$ 237 (2014: US\$ 270).

Against total revenues of Cdn\$ 59.9 million, including Cdn\$ 1.53 million from copper, total mining operating costs were Cdn\$ 51.9 million (2014: Cdn\$ 55.9 million).

The Company reported a net loss of Cdn\$ 38.6 million in the first nine months of 2015 (2014: a loss of Cdn\$ 2.46 million).

On June 9, 2015, North American Tungsten Cor. ("NATC") commenced restructuring proceedings under the Companies' Creditor Arrangement Act ("CCCA"), but required interim financing to provide sufficient capital to effect an orderly restructuring of operations. On July 9, 2015, the Supreme Court of British Columbia approved a Cdn\$ 2.5 million interim financing with Callidus Financing.

On July 17, 2015, the Company commenced a Sale and Investor Solicitation Process (the "SISP"), which was approved by an Order of the Court, at which time the Court also extended the stay and other relief under the Company's Creditor Arrangement Act ("CCAA") to October 31, 2015.

► **Almonty Industries** specializes in acquiring distressed and underperforming operations and assets in tungsten markets. Almonty has completed its second optimization at its Los Santos Mine in northern Spain. The Company acquired the Project in September 2011 and has been focused on utilizing its expertise in order to improve operations, reduce costs and raise the tungsten recovery rate.

In May 2013, Almonty issued a revised NI 43-101 compliant technical report, extending the mining life to 9 years. Total Reserves are 3.87 million tonnes grading 0.28% WO₃ for 10,678 tonnes WO₃. Measured and Indicated resources are 2.76 million tonnes grading 0.32% for 8,874 tonnes WO₃.

Cash operating costs were reduced by over 35% and significantly increased cash flow from operations.

Almonty completed the acquisition of the Wolfram Camp tungsten/molybdenum Mine, located in Australia in September 2014 for \$ 18 million. The Company raised \$ 10 million and issued a \$ 7.5 million convertible debenture.

Through the acquisition of Wolf Mining Corp., completed on September 11, 2015, Almonty wholly-owns the Sangdong Tungsten/Molybdenum Project in South Korea. The Sangdong Deposit hosts one of the largest tungsten resources in the world and was the leading global tungsten producer for more than 40 years prior to closure in 1992. Low metal prices, not the exhaustion of resources, led to the Mine's premature closure.

Project financing is currently being explored and is expected to be underpinned by an as yet to be negotiated off-take agreement. The current series of definitive agreements are still in place with Tao Teck Industries of South Korea and are being reviewed by both partners.

Almonty intends to complete a non-brokered private placement of a secured convertible debenture in the principal amount of US\$ 4 million and a non-brokered private placement of 2.1 million common shares at a price of \$ 0.80 per share for aggregate gross proceeds of \$ 1.68 million, as well as complete an unsecured bridge financing of \$ 2.1 million, for combined gross proceeds of \$ 7.78 million.

► **Wolf Minerals** is a specialty metals company. With global demand for tungsten rising and future global production expected to be constrained, the Company has developed a large tungsten resource at its Hemerdon Project located in the southwest of England.

The 2015 Ore Reserve at its Drakelands Mine is 35.7 million tonnes at a grade of 0.18% WO₃, cut-off and is a 34% increase on the previous Ore Reserve reported in the Definitive Feasibility Study in 2011. Measured and Indicated resources are 58.6 million tonnes at a grade of 0.17% WO₃.

The construction of the Hemerdon Project commenced in February 2014 and was completed in the June 2015 quarter.

On September 23, 2015, Wolf announced that commissioning of the processing plant at Drakelands Mine has been completed. First shipment of concentrate has been dispatched to customers, Wolfram Bergbau and Hutton and Global Tungsten and Powders.

With full production scheduled for early 2016 and producing about 3.5% of forecast world demand in 2016, Wolf expects to be the second largest tungsten concentrate producer in the Western world.

► **Carbine Tungsten's** Mount Carbine Tungsten Mine located in northern Queensland, Australia, has advanced its stockpile project to contract award status. This was achieved through its Tailings Retreatment Project which commenced production in 2012 along with the re-awakening of the Hard Rock open-cut mine and which is scheduled to commence production in 2016.

Mitsubishi Corporation of Japan is the Company's long-term off-take and stockpile project funding partner and provided a US\$ 15 million secured loan for the first phase of Mount Carbin Hard Rock Project.

The Mount Carbin tungsten mineralization is similar to several other large tungsten deposits around the world, or example some of the deposits in southern China, Spain and southern United Kingdom, in that it is low grade.

With a first drilling program and resampling of historic drill core in 2010, this resulted in the announcement of a maiden JORC compliant Inferred resource estimate of 39 million tonnes of hard rock mineralization at a grade of 0.14% WO₃ at a cut-off of 0.05% WO₃ and comparable with other large tungsten deposits of similar geological style.

A large international tungsten equipment provider and turnkey engineering group, with which Mitsubishi has a prior working relationship, has visited the Mount Carbin site in order to provide a bid for the equipment supply and EPCM contract packages for the stockpile project.

Following on from the tailings re-treatment, Carbine Tungsten is now planning to re-treat the low grade stockpile over a period of ~4-6 years at a production rate of 100 tonnes WI3 per month, before it commences hard rock mining.