

SPEC BUY

Current Price **\$0.09**

Ticker: **PEK**
Sector: **Materials**

Pro-forma Shares on Issue* (m): **384.3**
Pro-forma Market Cap (\$m): **34.6**
Net Cash est (\$m): **6.7**
Enterprise Value (\$m): **27.9**
*Post conversion of CB

52 wk High/Low: **\$0.12 / \$0.05**
12m Av Daily Vol (m): **0.35**

Projects Name	Commodity	Location
Ngualla	Rare Earth	Tanzania

Reserve Tonnes (Mt)	REO (%)	Cont. REO (Mt)
20.7	4.5	0.941

Production Development stage	Production (kt)	C1 costs (\$/kg)
Detailed PFS	10.1	11.74

Directors	Role
Alastair Hunter	Non-Executive Chairman
Darren Townsend	Managing Director
Dave Hammond	Technical Director
Jonathan Murray	Non-Executive Director
Graham Scott	CFO/Company Secretary

Substantial Shareholders (Pro-forma)	Percentage
Appian Natural Resource Fund	16.0%
International Finance Corp.	4.0%



Thursday, 6 November 2014

Peak Resources – Ngualla

Magnetic attraction

Analysts | Matthew Keane | Patrick Chang

Quick Read

Peak Resources (PEK) is developing the advanced stage Ngualla Rare Earth Project (REO) in southern Tanzania. Argonauts' site visit this year confirmed our belief that the project will be a low cost, high margin operation with low technical risk compared to other REO projects. Ngualla benefits from a low strip ratio, low comminution requirements and high pre-leach upgrade via beneficiation resulting in low production costs and subsequently high margins. PEK delivered a comprehensive PFS demonstrating the viability of a low capex, low opex and long life project. Post PFS metallurgical work shows potential for increased recoveries achievable through floatation beneficiation. Argonaut sees upside potential from higher recoveries, lower opex and higher margins.

Event & Impact | Positive

Robust PFS: In March, PEK delivered a comprehensive positive PFS. Key outcomes included; a low strip ratio (LOM 2.2:1) of an oxidised Bastnaesite core requiring minimal blasting and comminution with metallurgy supporting simple processing. Furthermore, the project benefits from low costs (est. US\$12/kg AISC) and high margins (~56% EBITDA margin). With a 58 year mine life generated from only 22% of the total Resource, Ngualla generates a significant NPV₁₀ of US\$1B with a 39% IRR.

A REO stand out: As far as global REO projects go, Ngualla is a stand out, being one of the largest and highest grade outside China. The deposit is formed from a large scale carbonatite that has been deeply weathered exposing a high grade bastnaesite zone (4.5% REO). Weathering has removed high acid consuming carbonate minerals and the deposit is naturally low in radiometric elements.

REO; all about the process route: Contrary to the name, rare earths are not that rare. However, projects with a defined economic processing route are hard to come by. The key benefit to Ngualla's ore is its amenability to front end beneficiation and relatively low acid consumption. Most recent metallurgical test work has shown the potential to more than double the PFS beneficiated concentrate grade to 34% REO (previously 16%). This represents a ~7x upgrade to the feed grade with 92.4% mass rejection. Additional reduction of iron oxide minerals further reduces acid consumption in the leach circuit.

Strategic investor: PEK recently announced a US\$25m investment from Appian Natural Resources and International Finance Corp. (IFC) who, on an 80:20 basis, will attain 19.99% of TopCo and 37.5% at a project level. This investment will fund Ngualla through BFS to decision to mine.

Recommendation

Argonaut assigns a SPEC BUY recommendation to PEK.

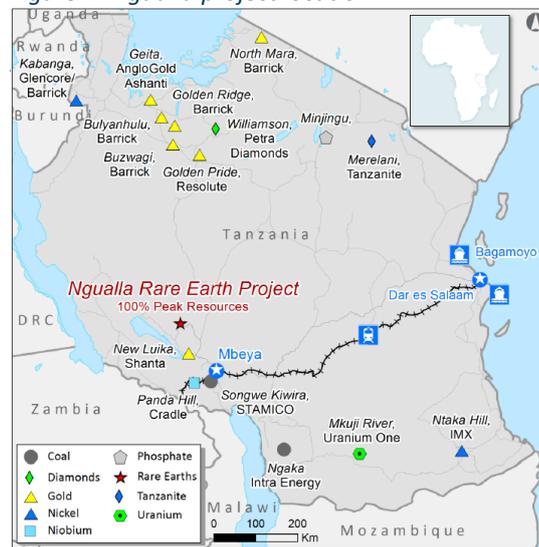
Overview – Magnetic attraction

Ngualla has progressed from discovery to detailed PFS in just 4 years

PEK’s Ngualla project (pro-forma 62.5% PEK, 30.0% Appian, 7.5% IFC) was discovered in 2010 and managed to deliver a comprehensive PFS in less than four years. The project will produce high quality rare earth oxides comprising a basket of high value, high demand elements with 71% of the value generated from neodymium (Nd) and praseodymium (Pr) which are used primarily in magnets. The project is located on a relatively barren hill with mineralisation from surface. It has a deep weathering profile which facilitates free digging and simple, low cost processing. Ngualla is located ~150km north of the major regional centre of Mbeya in Tanzania. Tanzania is a stable country with an established mining industry and stable Government.

The project is located in southern Tanzania northwest of the city of Mbeya

Figure 1: Ngualla project location



Source: PEK

Timeline to development

BFS is scheduled for completion in 2016 with first production slated for 2018

Following the PFS, PEK are progressing a BFS which is scheduled for completion in 2016. Construction is planned for 2017 before commencing production in early 2018.



Table 1: Project metrics

Metric	Unit	Value
First Production	Yr	2018
Throughput Rate	ktpa	355
Feed Grade	% REO	4.5%
Production Rate	ktpa	10
Capex	US\$m	367
Opex	US\$/kg	12
Realised Price	US\$/kg	29
EBITDA	US\$mpa	164
Free Cash Flow (steady state)	US\$mpa	121
EBITDA Margin (steady state)	%	56%
IRR (Company Reported)	%	39%

Source: Argonaut

Development capex of US\$367m with low opex and high EBITDA of US\$164mpa

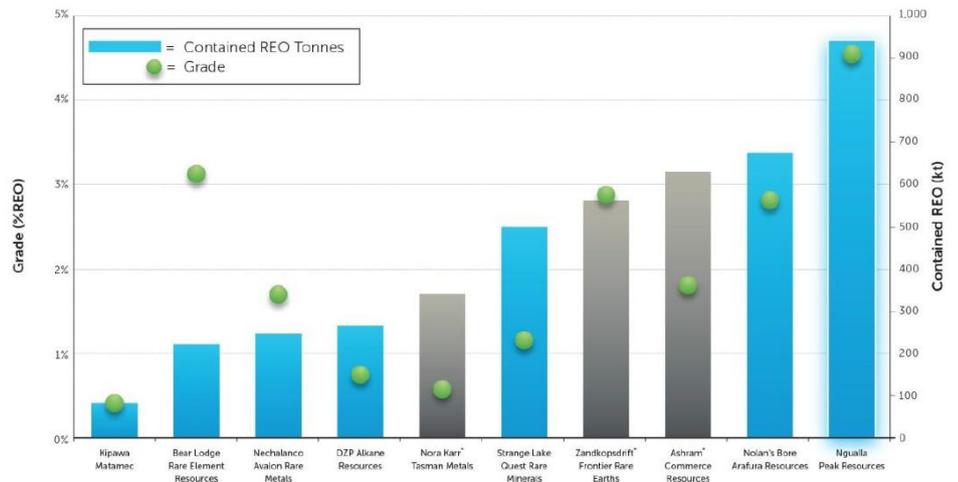
Grade and scale outside China

Ngualla has an Ore Reserve of 20.7Mt @ 4.5% REO...

Ngualla is a giant deposit with one of the largest, highest grade Ore Reserves of any REO development project boasting 20.7Mt @ 4.5% for 941kt REO. This is just 22% of the 4.4Mt contained REO Resource, but still substantiates a 58 year mine life. The average strip ratio of the project is less than 0.7:1 for the first five years and 2.2:1 LOM. Argonaut believes that the Resource estimation is conservative and infill grade control drilling will convert much of the interpreted waste/non-oxidised material to ore.

...making it the largest, highest grade REO undeveloped project outside of China

Figure 2: Comparison of global REO development projects



Source: PEK, excludes producing assets such as LYC's Mt Weld (Blue = Ore Reserves, Grey = mining schedule inventory)

Peak will produce 10ktpa consisting of products used mainly in magnets...

High demand products

PEK will produce 10ktpa annually comprising of four oxide products including Nd / Pr, mid-heavy REO, Lanthanum (La) and Cerium (Ce). The global REO market is small (~110ktpa) and Ngualla's output has been strategically scaled to not disrupt the supply demand balance. Nd and Pd are magnetic minerals and constitute 71% of the product value. These are high demand minerals (50% of global REO) and have a compound annual growth rate of 9-10%.

...constituting a high demand basket of REO products

Figure 3: REO global demand, price and PEK proportionate production forecast

		2013 WORLD MARKET			Forecast	Peak Planned Annual Production
Rare Earth Oxide		2013 Demand (tonnes) ^a	Price (US\$/kg) [*]	Value (US\$ M)	Average Annual Growth to 2017 (tonnes p.a)	(tonnes p.a)
Light Rare Earths	Lanthanum	31,700	\$7.56	240	2,275	3,042
	Cerium	39,850	\$7.80	311	2,861	4,542
	Praseodymium	6,075	\$93.96	571		
	Neodymium	18,925	\$70.01	1,325	3,081	2,240 combined
	Samarium	730	\$14.12	10	168	
Heavy Rare Earths	Europium	330	\$1,132.60	374		
	Gadolinium	1,360	\$46.50	63		
	Terbium	255	\$949.04	242		
	Dysprosium	780	\$540.38	422	706	245 combined
	Erbium	780	\$59.50	46		
	Yttrium	7,585	\$25.27	192		
	Ho-Tm-Yb-Lu	130	-	-	34	-
Total		108,500		\$3,795	9,125	10,069

^a Average Metal Pages Price for Calendar Year 2013 except for Erbium which is based on Ngualla PFS Price

^{*} IMCOA, Rare Earths Quarterly Bulletin 6, 5 February 2014

^{*} Critical Rare Earth, US DoE 'Critical Materials Strategy report, December 2011'

Source: PEK, IMCOA, Metal Pages

Amenable Geology

Ngualla's value is derived from the large, deeply weathered, REO concentrated core...

The deposit is formed by a large 1B year old carbonatite intrusion. Subsequent weathering of the central REO mineralised zone has enriched grades and weathered out acid consuming carbonates down to ~140m. Phosphates (monozite) are not present in the central zone of the ore body. The resultant rock is friable, barite / iron oxide rich with up to +3% Bastnaesite (carbonate, fluoride, REO mineral). The deposit benefits from low radionuclides, with only 14ppm uranium and 51ppm thorium in the Reserve.

...which is highly friable requiring limited blasting...

Figure 2: Friable weathered Bastnaesite zone in drill core and in a sample trench



Source: Argonaut

...and low power comminution

Site visit

Argonaut visited site this year...

Argonaut visited the Ngualla project in August 2014 and undertook an inspection of the proposed mining area, proposed plant site, exploration camp and core farm. Key takeaways from the site tour included:

- Geological simplicity (friable, largely homogeneous oxidised carbonatite)
- Large scale, with adequate drill spacing (~40m x 50m) over the Reserve area
- Strong technical team led by MD Darren Townsend and Technical Director David Hammond
- Good standing with the local community which will benefit social licence to operate
- A conservative Resource with up to 25% upside and potential to lower strip ratios

...taking away a view that the project has low mining, social and development risk

Figure 2: Ngualla deposit with drill access cuttings (facing north)



Source: Argonaut