

# Peak Resources

INVESTOR PRESENTATION – London/Zurich

April 2017

34.20

the number  
you need to remember



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## Competent Person Statements

The information in this report that relates to Exploration Results is based on information compiled and/or reviewed by David Hammond, who is a Member of The Australian Institute of Mining and Metallurgy. David Hammond is the Technical Director of the Company. He has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and the activity which he is undertaking to qualify as a Competent Person in terms of the 2012 Edition of the Australian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves. David Hammond consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this statement that relates to the Mineral Resource Estimates is based on work conducted by Rod Brown of SRK Consulting (Australasia) Pty Ltd, and the work conducted by Peak Resources, which SRK has reviewed. Rod Brown takes responsibility for the Mineral Resource Estimate. Rod Brown is a Member of The Australian Institute of Mining and Metallurgy and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the activities undertaken, to qualify as Competent Person in terms of the Australian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 edition). Rod Brown consents to the inclusion of such information in this report in the form and context in which it appears.

The information in this announcement that relates to Ore Reserve estimates was based on information compiled by Ryan Locke, a Principal Consultant with Orelogy Consulting Pty Ltd, Orelogy are an independent consultant to Peak Resources. Ryan Locke, who is a Member of the Australasian Institute of Mining and Metallurgy, has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken to qualify as a competent Person as defined in the 2012 edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Ryan Locke consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

The information in this report that relates to metallurgical test work results is based on information compiled and / or reviewed by Mr Gavin Beer who is a Member of The Australasian Institute of Mining and Metallurgy and a Chartered Professional. Gavin Beer is the General Manager Metallurgy of the Company and has sufficient experience relevant to the activity which he is undertaking to be recognized as competent to compile and report such information. Gavin Beer consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to infrastructure, project execution and cost estimating is based on information compiled and / or reviewed by Lucas Stanfield who is a Member of the Australian Institute of Mining and Metallurgy. Lucas Stanfield is the General Manager - Development for Peak Resources Limited and is a Mining Engineer with sufficient experience relevant to the activity which he is undertaking to be recognized as competent to compile and report such information. Lucas Stanfield consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



- **Executive Summary**
- **The Market**
- **The Asset**
- **The Team**
- **The Investment Proposition**

ENABLING LOW CARBON TECHNOLOGIES

**NGUALLA RARE EARTH PROJECT:  
UNDERSTOOD - DE-RISKED - COMPETITIVE  
MANAGEABLE - READY TO BE DELIVERED!**



Peak Resources - where top class rare earth experience meets with a world class deposit and a perfect alignment with the market



- **NdPr “the” raw material for Permanent Magnet Motors**, the heart of the next industrial revolution
- **NdPr demand doubling by 2025**, driven by e- mobility demand growth and alternative energy
- **90% of Peaks future revenues is NdPr**, perfectly aligned with highest value segment of the rare earth market
- **Ngualla – a world class asset**, one of the world’s largest & highest grade NdPr deposits
- **Strong management team**, extensive operational, commercial rare earth experience and industry network
- Peak to become one of the **world’s lowest cost rare earth producers** based on the delivered BFS results
- **Perfect timing** in regard to market timing, bringing incremental capacity online with demand momentum

**You have seen the effect the rapidly expanding e-mobility market has had on Lithium and Cobalt – well we think NdPr is next**

**NGUALLA UNDERSTOOD – DE-RISKED – COMPETITIVE – MANAGEABLE – READY TO BE DELIVERED**



## **ENABLING LOW CARBON TECHNOLOGIES**

More than 30 different NdFeB magnet applications are in a regular car using NdPr, which is equivalent to approx 200gr NdFeB Magnets. A hybrid vehicle contains between 1.5-3kg NdFeB magnets, 1/3 of this is pure NdPr oxide.



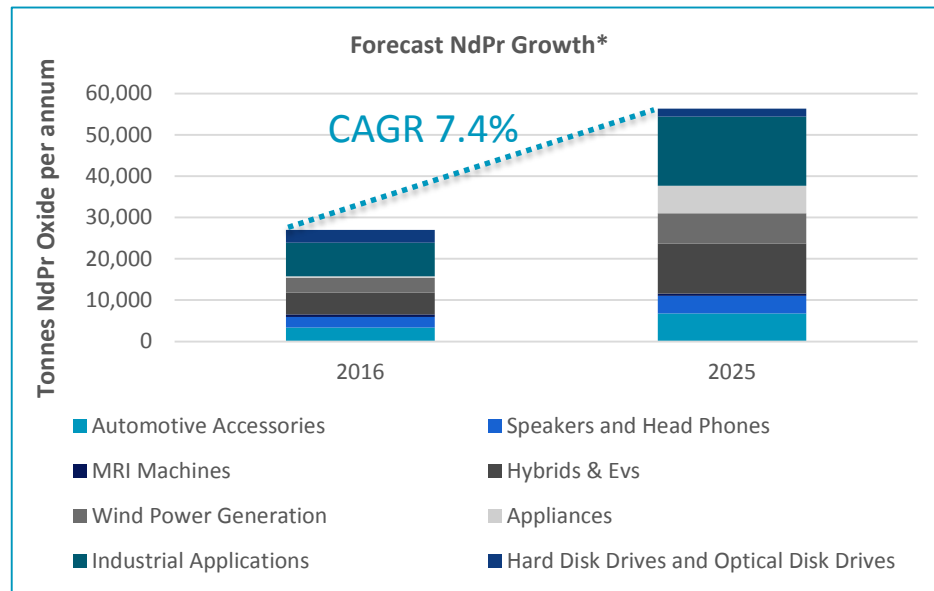
# The Market – Increasing Demand

The rare earth market by value is projected to grow from today's ~US \$ 2 billion p.a., of which ~80 % is permanent magnets, to ~US \$ 8 billion p.a by 2025\*



## +100% incremental demand

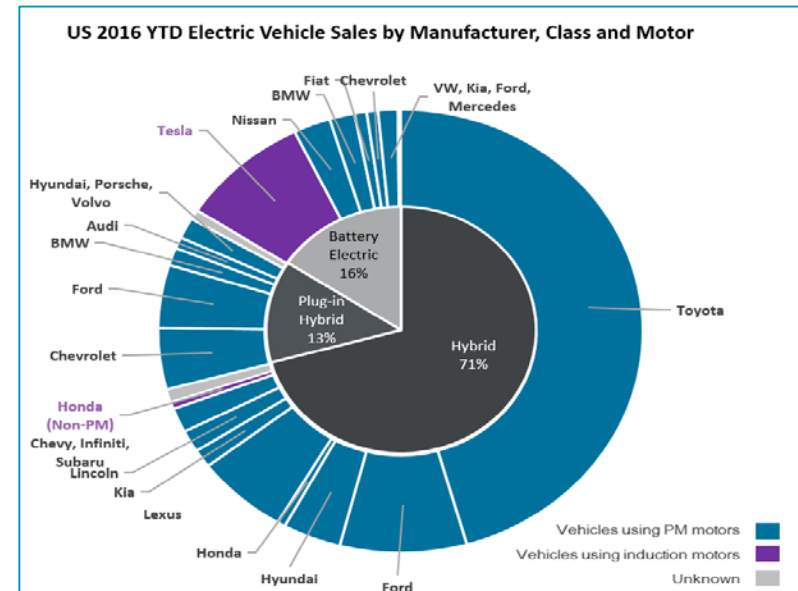
is projected. A strong uplift in the demand for NdPr/ permanent magnet motors required by the rapidly expanding electric vehicle market, which has been the main catalyst for significant increases in the price of lithium and cobalt since late 2015. Additionally, we see also significant growth contributors in the areas of drones, magnetocaloric fridges, wind energy and robotics. \*



\*Source: data from Adamas Intelligence April 2017

## +90% market share

among all car manufacturers/OEM's the permanent magnet motor is the leading engine technology. Additionally, all cars worldwide are using NdPr permanent magnets in a dozen other vehicle components.



Source: data from Hybridecars.com 2016 YTD August



Peak's proposed annual NdPr output of 2,420t is less than one years incremental demand growth and is equivalent to ...



## 2.4 million E-cars

under the assumption that each combustion vehicles which is converted to a electrified vehicles represents 1kg incremental NdPr oxide demand. [91.5 m vehicles](#) have been sold in 2016 approx. 2 to 3m were electrified.

OR

## 12,100 megawatts

each direct drive permanent magnet wind turbine generates between 2 to 6 megawatt performance. Each megawatt represent in average a demand of 200kg NdPr oxide. In other words with Peaks annual output could be build 6,050 x 2 MW or 3,025 x 4 MW or 2,016 x 6 MW Direct Drive Wind Turbines. 2015 the annual [new installations was 63 GW](#), 17% increase, resulting in a global installation base of 433 GW.

OR

## 40.3 million E-Scooters

under the assumption that each scooter requires 0.06kg NdPr oxide. Considering an estimated annual sales of [134 million combustion scooters](#) world wide we believe this application has significant potential.

## 484,000 Industrial Robots

under the assumption that each robot requires 5kg NdPr oxide. Considering that China today penetration rate is [10 times](#) lower than Japan we see significant market potential for this application.

OR

## 6 million Home Fridges

under the assumption that each [NdPr magnetocaloric fridges](#) represents 0.40g NdPr oxide demand. Peak Assumptions: 7.5 billion people on the planet. 1 fridge per 7 people.; Each fridge gets replaced every 10 years. (7.5bn people /7 people per fridge) / 10 years = 107 million refrigerators per year sold. In conjunction with the Kigali agreement and the phase out of HFC we see a significant market potential for NdPr magnetocaloric fridges.

OR

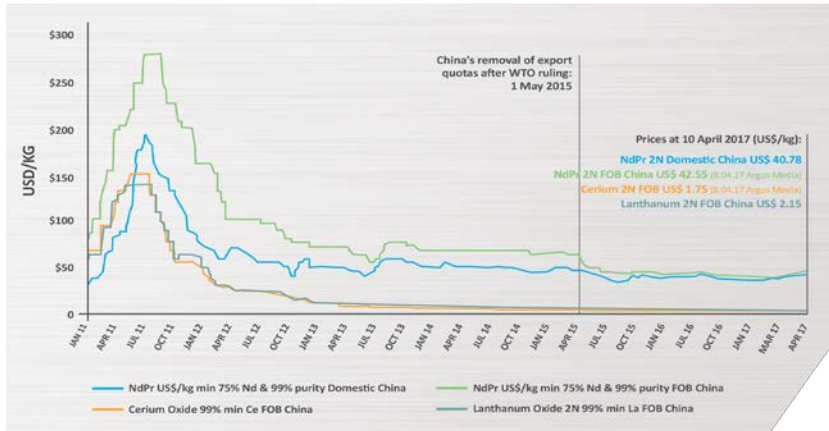
## 14.5 million Car Air Conditioners

under the assumption that each car air conditioner represents 0.166 kg incremental NdPr oxide demand. In consideration that today are sold 90million vehicles we believe this application has significant market potential.

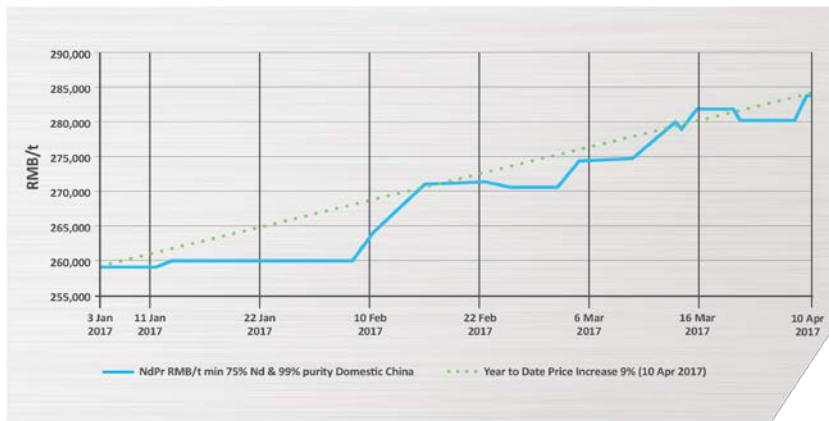




After more than 6 years of declining prices we believe that the recent price increases in 2017 support our understanding of demand projections and our view that pricing has likely bottomed out



SOURCE: Asian Metal, Argus Metals



SOURCE: Asian Metal

## After 6 years declining prices...

In October 2016, China's Ministry of Industry and Information Technology released its Rare Earth Industry Development Plan which aims to restrict rare earth production, refining and raw mineral exports.

Furthermore, the [Chinese Resources tax](#) which did not materialise yet in the market and the [upcoming environmental tax](#) in 2018 will be among other initiatives of the Chinese government increase the cost base of the Chinese producers and influence the pricing.

## +9.0% NdPr YTD

2017 had an exceptional start. The biggest light rare earth producer worldwide, the Chinese Company Northern Rare Earth Group known as Baotou has announced and implemented [3 consecutive price increases](#) since February 2017.

Based on above mentioned initiatives of the Chinese government and the industry trends on the demand side, coupled with the continued necessary efforts of the Chinese government to monitor more stringent compliance of the upstream business with the existing environmental regulations we believe that this could be the starting point for the turnaround.



In October 2016, China's Ministry of Industry and Information Technology released its Rare Earth Industry Development Plan which aims to restrict rare earth production, refining and raw mineral exports.



- China's total annual rare earth mining output to be restricted to no more than 140,000 tpa REO
- No new mining rights to be issued to companies other than the selected Six State Owned Enterprises
- China solvent extraction refining capacity to be cut by 33% to 200ktpa REO (from 300ktpa REO in 2015)
- Rare earth industry profit margins to be increased to 12 percent
- High end downstream rare earth product market penetration to be increased from 25% to 50%
- Environmental compliance to be increased from 40% to 90% for rare earth operations
- Primary export of rare earth raw materials to be reduced from 57% to 30% of total Chinese production
- Announcement of launching an new environmental tax by 2018

**Combined with increasing demand for the magnet metals, these internal China policies and the targeted expansion of high value downstream industry applications, China may well become a net importer of NdPr by 2025. China today supplies more than 90% of the global demand of rare earth.**

**A component of China's 5 Year Plan is to encourage the use and development of offshore rare earth resources and strengthen international co-operation.**



ENABLING LOW CARBON TECHNOLOGIES



**NGUALLA -  
ONE OF THE WORLD'S LARGEST AND HIGHEST  
GRADE UNDEVELOPED NEODYMIUM (Nd)  
& PRASEODYMIUM (Pr) RARE EARTH PROJECTS**

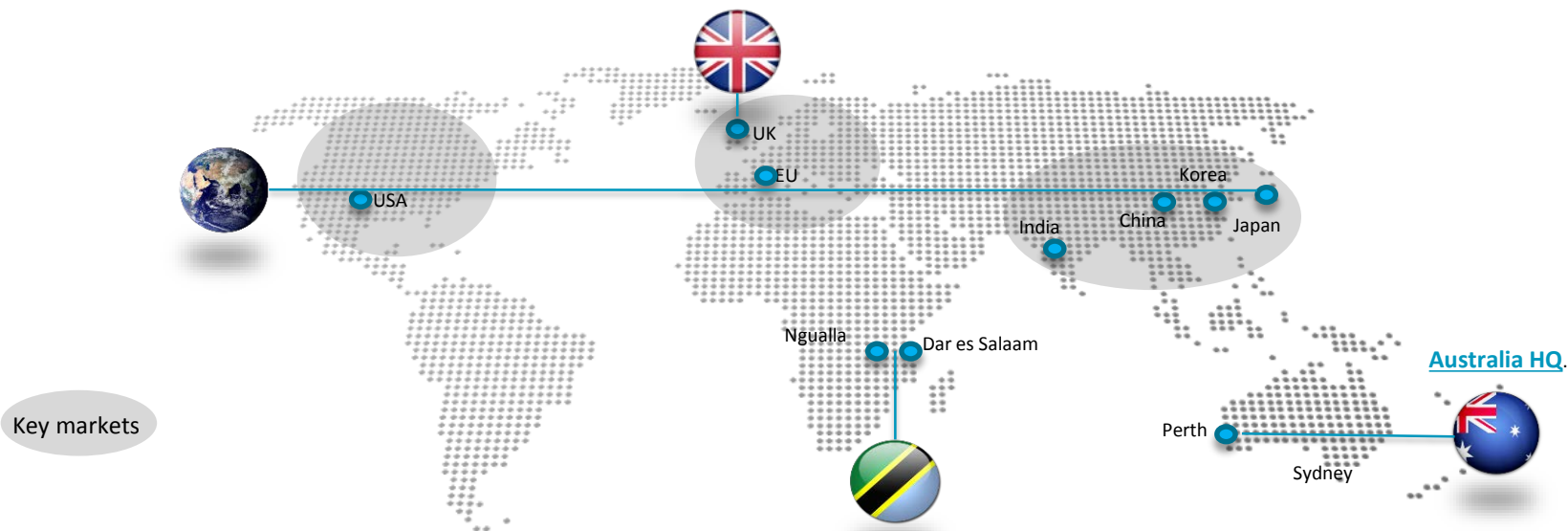


Peak to become one of the world's lowest rare earth producers. With a CAPEX of only USD 356 million incl. 15% contingency and OPEX of USD 83 million p.a.\*



## UK Tees Valley the location of Peak's Rare Earth Refinery

- **Capex:** US\$ 160 million incl. 15% contingency plus 5% owners costs **Opex:** US\$ 37million p.a.
- **Location:** Top logistics infrastructure + skilled labour + sustainable waste management facilities
- **Production:** Oxide = 2,400 tpa NdPr 2N; Carbonate = 6,940 tpa La; 3,005 tpa Ce & 530 tpa SEG/HRE



## Tanzania Ngualla Project, one of the largest and highest grade undeveloped NdPr deposits world wide

- Ore Reserve of 18.5 million tonnes at 4.8% REO; 22% of the total Mineral Resource;
- **Capex:** USD 196 million incl. 15% contingency plus 5% owners costs; **OPEX:** USD 46 million 30 year life of mine, Mill feed rate 624,000 tpa; Strip ratio 1.77; 28,300 tpa of 45% rare earth concentrate

\*See ASX Announcement "Higher grade Resource for Ngualla nearly 1 million" and ASX Announcement "Ngualla Rare Earth Project – Updated Ore Reserve" as of 12 April 2017 and : "BFS positions Ngualla as one of the world's lowest cost RE Projects" of 12 April 2017



**PEAK DEMONSTRATING  
POTENTIAL TO BE ONE OF THE  
WORLD'S LOWEST COST  
FULLY INTEGRATED  
RARE EARTH  
DEVELOPMENT PROJECTS**

Peak - a unique proposition where world class rare earth expertise meet with a world class deposit and a perfect alignment with the market



## FILTERING THROUGH TO THE #1 PROJECT

Globally we have identified 58 rare earth projects. If a project does not comply with below explained 4 criteria's ... it falls out of the bucket



**Filter 1:** “Does the project have an Ore Reserve or Mineral Inventory?”

**Filter 2:** “Are the project’s REEs hosted by a mineral that has been commercially produced and processed in the past (i.e. bastnaesite, monazite, or xenotime)”?

**Filter 3:** “Does the project aim to separate and purify REE products to market-desired specifications in-house, or are they reliant on a third party to make their products”

**Filter 4:** “Can the project be developed for less than US \$500 million?”

Source: [Benchmarking data](#) provided by: [Adamas Intelligence](#)



## Physicals Drive Economics



- One of the largest and highest grade NdPr deposits in the world
- 30 year mine life – simple low strip ratio open cut mining
- Focus of mining is in low phosphate/low carbonate bastnasite zone
- Deposit is non radioactive (an issue for some rare earth deposits)
- Pilot plant has successfully produced in excess of 50% REO grade mineral concentrate grades
- Peak have successfully pilot planted a mild temperature, selective leach process where we are able to use low strength acids. This allows Peak to reject up to 70% of the low value Cerium and allows for lower capital cost equipment in the plant



Leading the pack – set to become one of the lowest cost NdPr producers world wide



**34.20**<sup>#</sup> **OPEX INTENSITY**  
US\$/kg NdPr\*<sup>2</sup> Oxide LoM



Peak has one of **the lowest OPEX** as a full integrated producer per kg of NdPr among 58 development projects worldwide\*<sup>3</sup>

**4.96** **CAPEX INTENSITY**  
US\$/kg NdPr Oxide LoM



Peak has one of **the lowest CAPEX** as a full integrated producer per kg of NdPr among 58 development projects **worldwide**\*<sup>3</sup>

\*\*NdPr = Nd2O3 / Pr6O11 Mixed Oxide 2N – min 75% Nd2O3. <sup>††</sup>Benchmarking data provided by: [Adamas Intelligence](#)  
<sup>#</sup> US \$ 34.20 is the breakeven point for positive cash flow considering spot price 8.4.17 FOB China US\$ 42.55/kg Argus Media. OCBRTDA = Operating cost before royalties, interest, tax, depreciation and amortisation.  
See ASX Announcement: "[BFS positions Ngualla one of the world's lowest cost RE Projects](#)" of 12 April 2017



## **CONFIDENCE THROUGH EXPERIENCE**

Peak Resources' management team has extensive operational and commercial rare earth experience and industry networks

**ENABLING LOW CARBON TECHNOLOGIES**



## Rocky Smith

*Chief Operating Officer  
Development*

Chemist with over 35 years' operations and senior management experience in the mineral processing and chemical engineering sectors. Previously Managing Director of Molycorp's Mountain Pass Rare Earth Complex from 2009 to 2015. Achievements include the delivery of successful expansions resulting in a 230% increase in production capacity over a three year period as well as managing of operation budget in excess of US\$150 million

## Graeme Scott

*Chief Financial Officer/  
Company Secretary*

Fellow of the Association of Chartered Certified Accountants (UK) More than 20 years' experience in professional and corporate roles in both Australia and the UK. Has spent the last 10 years working in the resources sector in CFO and Company Secretarial roles for both ASX and TSX listed companies

## Darren Townsend

*Managing Director*

Mining Engineer with 20 years mining and corporate experience Extensive experience in managing ASX and TSX listed companies. East African experience incl. development of tantalum mine in Mozambique and resource drill out and permitting a niobium project in Kenya

## Michael Prassas

*General Manager- Sales,  
Marketing & Business Dev*

Over 15 years' experience in sales and business development. Former Global Account Manager Automotive Catalysis /Sales Manager of Rare Earth Systems for Solvay/ Rhodia.Has been responsible for sales of Rare Earth Mixed Oxides in EMEA Management skills include budget responsibility, project management, building stakeholder relationships and competing priorities in deadline-driven environments

## Dave Hammond

*Technical Director*

Exploration Manager with +25 years technical and management experience in leading teams in Africa and Australia in areas of exploration, resource definition, feasibility studies, permitting and government liaison. Formerly held senior roles with De Grey Mining Ltd and Sons of Gwalia. Previously with Billiton/Gencor in Africa. MSc in Mineral Exploration, DIC, BSc (Hons) Geology



**Peter Harold**

*Non-Executive Chairman*

Chemist with almost 30 years operational and corporate experience in the minerals industry specialising in financing, marketing and business development

Currently Managing Director of Panoramic Resources. Previous senior roles with Spectrum Rare Earths, Shell Australia, Australian Consolidated Minerals Limited and Normandy Mining Limited



**Jonathan Murray**

*Non-Executive Director*

Partner at independent corporate law firm Steinepreis Paganin

Specialising in equity capital raisings, acquisitions and divestments, governance and corporate compliance

Bachelor of Law and Commerce (majoring in accounting)



**John Jetter**

*Non-Executive Director*

Extensive international finance and M&A experience. Former Managing Director, CEO and head of investment banking of JP Morgan in Germany and Austria, and a member of the European Advisory Council of JP Morgan in London Experience in negotiating and executing rare earth off-take agreements



**Paul Rupia**

*Special Adviser*

Currently Chairman of DCB Commercial Bank Plc and has held this role since 2002. He has served in the Government of Tanzania at senior levels as Chief Secretary in the President's Office, Secretary to the Cabinet, Head of Civil Service, Principal Secretary in the Ministry of Foreign Affairs, Permanent Representative of Tanzania to the United Nations, Ambassador to Ethiopia and Deputy High Commissioner in the United Kingdom.



**Kibuta Ongwamuhana**

*Non-Executive Director PR NG Minerals*

Leading Tanzanian legal practitioner who specialises in taxation and corporate law. Managing partner of the legal firm, Ako Law in Dar es Salaam and an Advocate of the High Court and Court of Appeal as well as legal consultant to a number of government, non-government and private business organisations.

ENABLING LOW CARBON TECHNOLOGIES

**Peak Resources**  
**The Team - The Asset - The Market**  
**The investment proposition**



# The Investment Proposition - BFS Results\*

Offering a unique investment opportunity ... and an ethical, sustainable and 100% traceable place of origin rare earth supply chain solution



## US \$ 104 m p.a

Average Annual Cash flow

## US \$ 930 M

NPV<sub>8</sub> – Pre Tax and Royalties

## 25%

IRR – Pre Tax and Royalties

## 30 yrs

Life of Mine

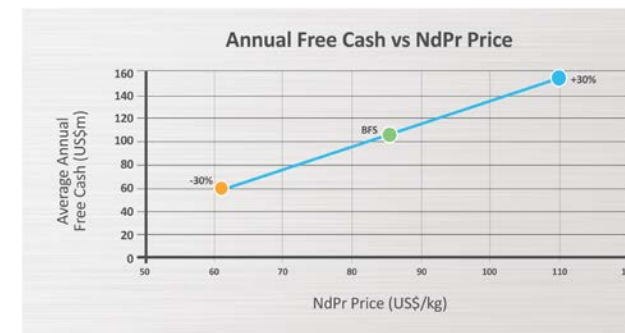
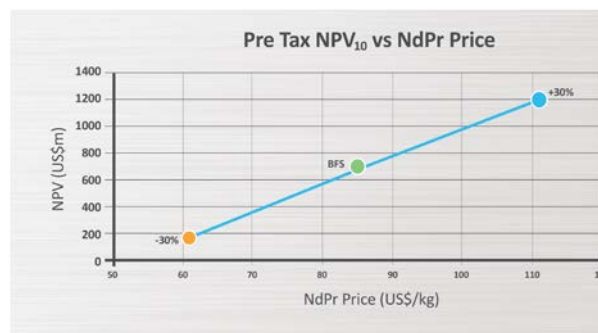
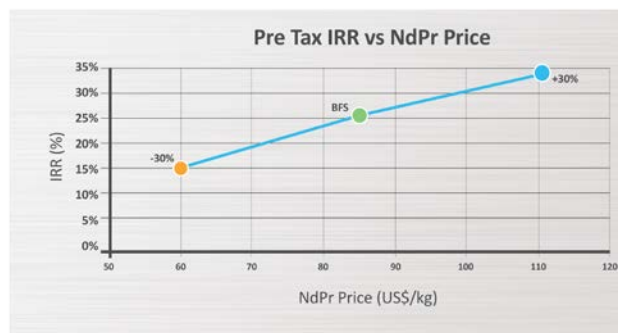
## US \$ 633 M

NPV<sub>8</sub> – Post Tax and Royalties

## 21%

IRR – Post Tax and Royalties

### Sensitivities:



\*See ASX Announcement: "BFS positions Ngualla as one of world's lowest cost RE Projects" of 12 April 2017



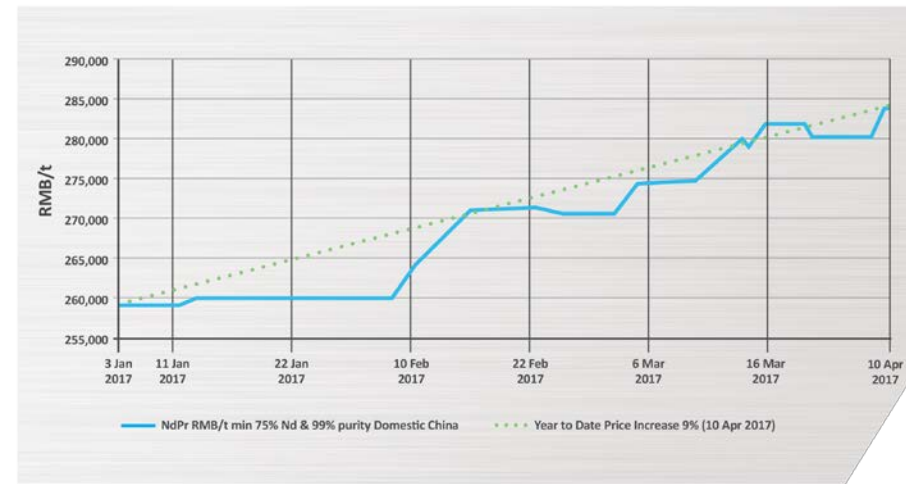
Peak is outperforming the market



## +34% Share Price YTD



## +9.0% NdPr YTD



SOURCE: Asian Metal

01 Jan 2017 258 RMB = US \$ 37.17/kg Dom China date; Asian Metal  
 17 Apr 2017 281 RMB = US \$ 40.79/kg Dom China date; Asian Metal



Peak Resources - where top class rare earth experience meets with a world class deposit and a perfect alignment with the market



- Peak is the only rare earth developer who has both deep in-house rare earth manufacturing and sales expertise and has infused this know-how into the engineering design and BFS
- Peak has de-risked the mine to product supply chain through extensive pilot plant operation and testing (> \$5M AUD) combined with real life operational know how and rare earth expertise
- Peak's track record shows that it has a steady, conservative and deliverable approach
- The management team is well connected in the industry and has the capability to build out the business team to deliver quality products with a reliable supply chain
- The management team has a good understanding who the customers are and their requirements

**We do what we say and say what we do based on real life experience**



With the completion of the BFS the aim is to engage with offtake partners and strategic investors to take the project through the FEED process and beyond.



- With the recent receipt of the Environmental Certificate advance Ngualla through mining licence process
- Ramp up discussions with potential offtake partners, debt financiers and strategic partners with special focus on e-mobility drive train manufactures
- Once funding secured commence Front End Engineering and Design (FEED)
- Carry out targeted exploration at Ngualla to advance other commodity potential
- Look for further business development opportunities in the NdPr space

**Peak are perfectly positioned with the rising market for NdPr driven by e-mobility and other low carbon technologies. Peak has a project with a comprehensive BFS showing lowest quartile Capex and Opex which positions us as the go to Company for exposure to this exciting sector**

**UNDERSTOOD – DE-RISKED- COMPETITIVE – MANAGEABLE- READY TO BE DELIVERED**





Peak - where top class rare earth expertise meet with a world class deposit and a perfect alignment with the market



**Peak Resources Limited**

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**Graeme Scott**

Non-Executive Chairman:  
**Peter Harold**

Managing Director:  
**Darren Townsend**

Technical Director:  
**Dave Hammond**

Non-Executive Directors:  
**Jonathan Murray, John Jetter**

