

*Neodymium and Praseodymium 'NdPr'
Biggest Blind Spot in the Global Commodity Market*

Peak Resources - Becoming one of world's lowest cost fully integrated NdPr producers

BEHIND EACH BATTERY IS A MOTOR

*Over 90% of all new energy vehicles will be equipped with an **NdFeB** permanent magnet motor.
0.5-1kg per is the incremental demand for **neodymium (Nd)** and **praseodymium (Pr)**
for each internal combustion vehicle (ICV) which gets replaced by an electric vehicle (BEV,PHEV,HEV).*



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Compliance Statement

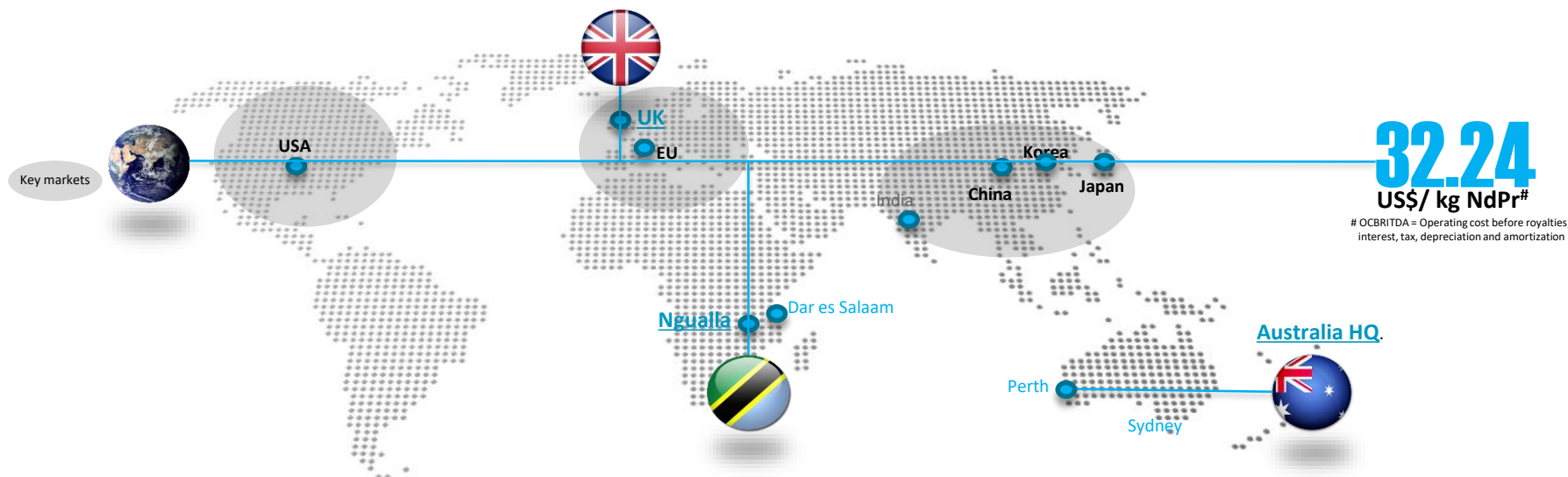
Information relating to Infrastructure, project execution, cost estimating, metallurgical test work, exploration results, Mineral Resource estimates and Ore Reserve estimates is extracted from the report entitled “Lower price deck delivers similar BFS results for Ngualla” created on the 12th of October 2017 and is available to view on <http://www.peakresources.com.au/asx-announcements/>. The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

Peak to become one of the world's lowest cost rare earth producers. With a CAPEX of only US\$ 365 million incl. 15% contingency, OPEX of US\$ 91 million p.a. and a 26 year Life of Mine.



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

- **Capex:** US\$ 165 million incl. 15% contingency plus 5% owners costs **Opex:** US\$ 40million p.a.
- **Location:** Top logistics infrastructure + skilled labour + sustainable waste management facilities
- **Annual Production:** 9,290 tpa of oxide equivalent = **Oxide 2,810 tpa NdPr 2N; Carbonate = 12,095tpa** = 7,995 tpa La; 3,475 tpa Ce & 625 tpa SEG/HRE
- **32.24 US\$/kg NdPr** - The breakeven point for **positive cash flow** considering total OPEX divided with only the 2,810 tpa NdPr oxide production



Tanzania Ngualla Project, one of the largest and highest grade undeveloped NdPr deposits worldwide

- **Ore Resource:** 214.4 mt at 2.15% REO; **Ore Reserve:** 18.5 mt at 4.8% REO; 22% of the total Mineral Resource, approx. 887,000 t REO
- **Capex:** US\$ 200 million incl. 15% contingency plus 5% owners costs; **Opex:** US\$ 51 million; **Life of mine:** 26 year ; **Mill feed rate** 711,000 tpa; **Strip ratio** 1.77; **Rare earth concentrate:** 32,700 tpa of 45%



*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 one of worlds lowest cost RE Projects" as of 12 April 2017 and "BFS Update - Lower price deck delivers similar BFS results for Ngualla" as of October 2017

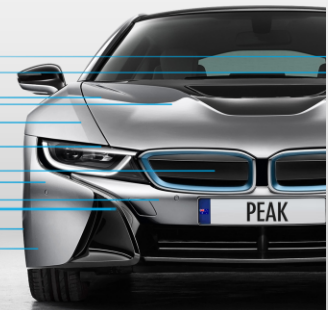


BEHIND EACH BATTERY IS A **MOTOR**

Over 90% of all new energy vehicles will be equipped with an **NdFeB** permanent magnet motor.

0.5-1kg per is the incremental demand for **neodymium (Nd)** and **praseodymium (Pr)**

for each internal combustion vehicle (ICV) which gets replaced by a new energy electric vehicle (48v mild Hybrid, HEV, PHEV, BEV)



Key Enabler - Governmental Legislation Underpins NdPr Demand



What does this mean? Required powertrain portfolios:

- **World of today – above 100g CO₂/km**
a portfolio of ICE, mild-hybrids and less than 10% electrification can meet the target
- **Mix of powertrains – below 100g CO₂/km**
a “portfolio game” with equal importance of ICE, PHEV & BEV & 48v mild hybrids can meet the requirements
- **EV World – below 50g CO₂/km**
achieving the target **only possible** with a portfolio mainly consisting of EV's and PHEVs

Energy efficiency regulation worldwide for electric motor and generators

According to a recent IEA study [electric motors](#) are responsible for **53% of global electricity use**. Industry standards [IE1-IE4/IE5](#) + further alignment on test procedures will support the continuous growth of PM motors/ generators



- China:**
 - NEV quota = 10% and 12% for 2019+2020; max points with +350km reach
 - By 2020 OEM's need to meet 5l/100km
 - Biggest single car market 2017 with 25.8m (EMEA 21m & NA=20.9m)
 - **Target 5m NEV stock by 2020.**
 - **Target 20%** of production + sales in 2025 = ~ 5-7m p.a.
 - ICE ban pending
- 10th October 2018:** EU Countries - EU commission (-15%/-35% based on 2021 values) and the EU Parliament (-20%/-40%) are in discussions to determine the new standards for 2025 and 2030. **VW CEO Mr. Dies commented:** In case the 40% target get implemented 50% of the new vehicle sales needs to be electrified by 2030.
- Japan:** County goal 30% NEVs of sales in 2030;
- US:** 8 states have set targets = 3.3m cars by 2025;

- India:** Only sales of NEV by 2030
- Ireland:** Sales ban of ICE by 2030
- Netherlands:** Sales ban of ICE by 2030
- Slovenia:** Sales ban of ICE by 2030
- Norway:** Sales ban of ICE by 2030
- Scotland:** Sales ban of ICE by 2032
- France:** Sales ban of ICE by 2040
- UK:** Sales ban of ICE by 2040
- Sri Lanka:** Fleet w/o ICEs by 2040
- Sweden:** Fleet w/o ICEs by 2045

Fossil Free Street Declaration Auckland, Barcelona, Cape Town, Copenhagen, London, Los Angeles, Mexico City, Milan, Oxford, Paris, Quito, Seattle, Vancouver,

Source: ICTT; national industry bodies, transportenvironment.org, [Mckinsey](#), Gov. announcements



- **China leads the way** with their quota system & 2025 target = 20% electrification (2017=25.8m)
 - Followed by **EU, establishing an indirect EV quota** with 2025/ 2030 legislation (2017 =21m)
 - **2025 EU** - Emission targets translate to **~15-20% electrification**
 - **2030 EU** - Emission target translates **~30-40% electrification**
-
- **Best in class technology! NdFeB magnet motors** offer **greater torque** than competing technologies, the **same values of current and voltage** and **more power by weight**
 - **~90%** of all electric vehicles **have a NdFeB permanent magnet motor**
 - **Each electric vehicle** represents approx. **1 kg incremental NdPr demand**

Automotive - NdFeB Permanent Magnet Motor - Best in class!

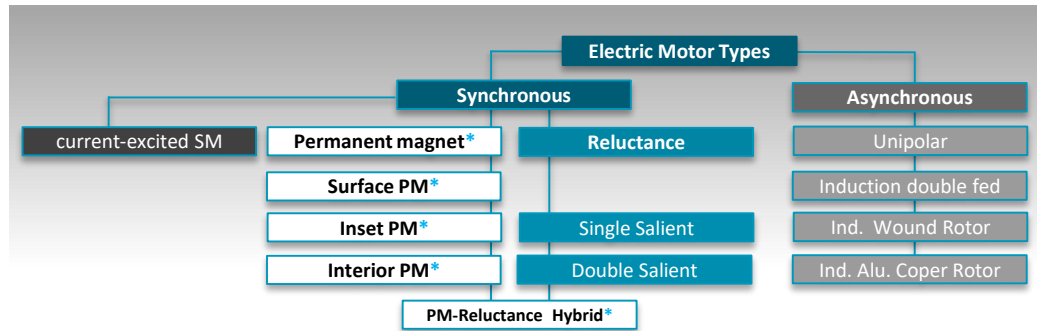
Synchronous Permanent Magnet Motors (PMM) - Best in class!

Technology: Enabling OEMs to design a more **cost optimized**, lightweight (up to 20% smaller and lighter) **vehicle and more efficient powertrain solutions** with a **15-20% smaller battery** at the same driving reach. The **battery** represent **~30% of a BEV vehicle manufacturing cost!**

Price sensitivity: Rare earth minerals represent between **0.23%* - 0.47%** of the total **vehicle** (42k US\$) cost or **8%* - 15%** of total **Driveline** (1200 US\$) cost or **12%* - 25%** of the total **electric motor** (800 US\$) cost
 *NdPr oxide 42 US\$/kg & Dy 180 US\$/kg

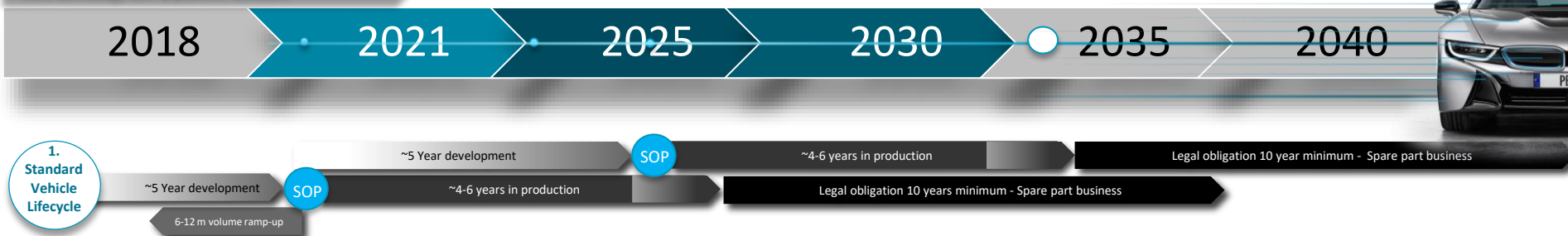
Market share: **~90%** of all EVs (PHEV, BEV, HV) have a PMM today

NdPr demand: Each NEV represents approx. **0.5-1 kg incremental NdPr oxide demand**



* Contain NdPr / NdFeB magnets

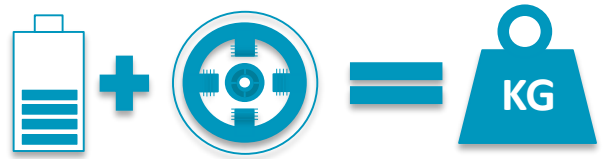
Core technology dev. & platform decisions



1. Standard Vehicle Lifecycle

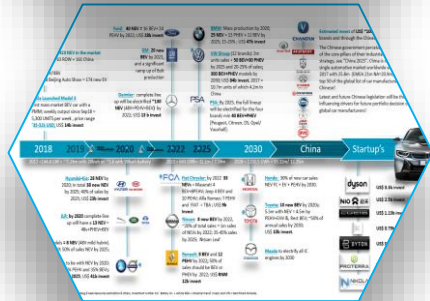
2. Technology Roadmap

3. Vehicle weight vs cost



Source: Mckinsey + others; image Pm & Ind Image Courtesy of New Energy and Fuel.com

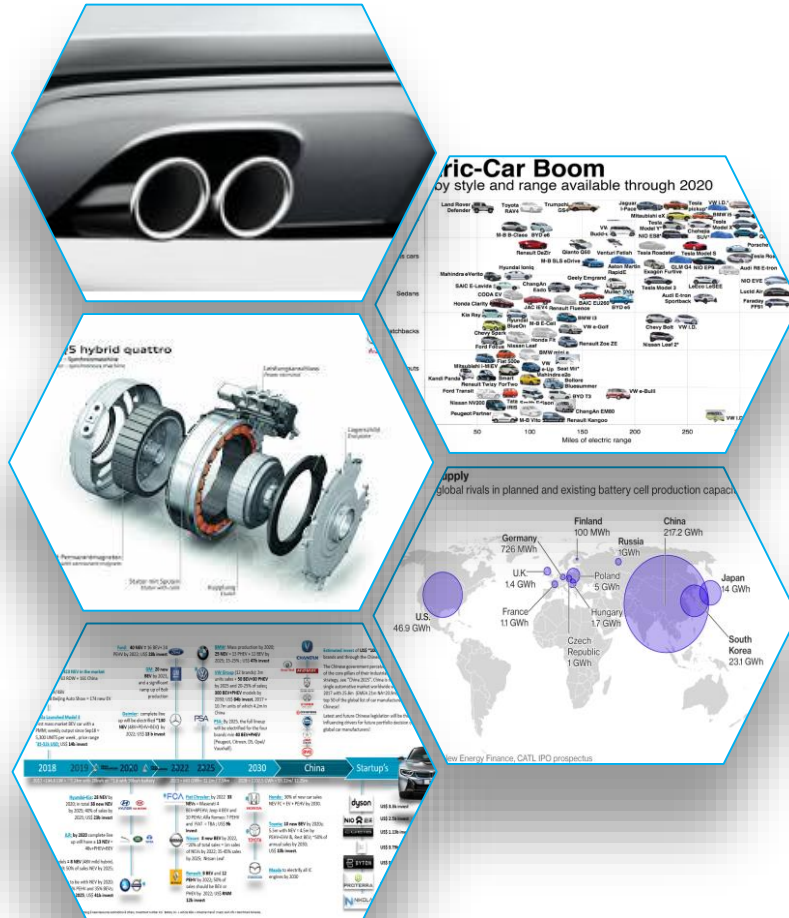




- **China leads the way** with their quota system & 2025 target = 20% electrification
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- **2025 EU** - Emission targets translate to **~20% electrification**
- **2030 EU** - Emission target translates **~40% electrification**

- **NdFeB magnet motors** offer **greater torque** than competing technologies, the **same values of current and voltage** and **more power by weight**
- **~90%** of all electric vehicles **have a NdFeB permanent magnet motor**
- **Each electric vehicle** represents approx. **1 kg incremental NdPr demand**

- The global **automotive industry committed ~ US \$400 b investment in EVs**
- **E-mobility** represents a total **new, incremental demand source for NdPr** operating in a multi million unit sales mass market.



Car manufacturers have announced **200 new EV model launches by 2019*** and **~700** by 2030**

*Source [McKinsey & Company](#) ** car manufacturer and market announcements

Available industrial lithium battery manufacturing capacity:

YEAR	Installed Industrial capacity	PHEV with 20kWh	Or BEV with 100KWh
2020	~350GWh	17.5 million	3.5 million
2022	~500GWh	25 million	5 million
2025	~800GWh	40 million	8 million

Source: Industry information + individual company announcements

Automotive - US\$ ~400b Invest* & ~700 New NEV 2018-30

YTD Oct. 2018: 423 NEV in the market

- 224 BEV = 63 ROW + 161 China
- 68 PHV
- 131 HV/48v
- 2018 Beijing Auto Show = 174 new EV

Tesla Launched Model 3
First mass market BEV car with a PMM; weekly output since Sep18 = 5,300 UNITS per week, price range **35-52k USD**; US\$ **14b invest**

Ford: 40 NEV = 16 BEV+ 24 PHEV by 2022; US\$ **28b invest**



BMW: Mass production by 2020; **25 NEV = 13 PHEV + 12 BEV** by 2025; 15-25%; US\$ **47b invest**

GM: 20 new BEV by 2023, and a significant ramp up of Bolt production



VW Group: (12 brands): 3m units sales + **50 BEV+30 PHEV** by 2025 and 20-25% of sales; **300 BEV+PHEV** models by 2030; US\$ **84b invest**. 2017 = 10.7m units of which 4.2m in China

Daimler: complete line up will be electrified **~130 NEV** (48v+PHEV+BEV) by 2022; US\$ **13 b invest**



PSA: By 2025, the full lineup will be electrified for the four brands min **40 BEV+PHEV** [Peugeot, Citroen, DS, Opel/Vauxhall].



Estimated invest of US\$ **~100b** across all Chinese brands and through the Chinese supply chain.

The Chinese government perceives E-mobility as one of the core pillars of their industrial transformation strategy, see "China 2025". China is now the biggest single automotive market worldwide (2017= China 25.8m, EMEA 21m, NA 20.9m).

Within the top 50 of the global list of car manufacturers 24 are Chinese!

Latest and future Chinese legislation will be the key influencing drivers for future portfolio decision of all global car manufacturers!



Hyundai-Kia: 28 NEV by 2020; in total **38 new NEV** by 2025; 40% of sales by 2025; US\$ **23b invest**



JLR: by 2020 complete line up will have a **13 NEV = 48v+PHEV+BEV**



Volvo: All new models = **8 NEV** (48v mild hybrid, PHEV + BEV) by 2019; 50% of sales NEV by 2025;



Gelly: 90% of sales to be with NEV by 2020; 65% PHEV and 35% BEVs; Target to launch **30 NEV by 2025**; US\$ **41b invest**

FCA Fiat Chrysler: by 2022 **33 NEVs** = Maserati 4 BEV+8 PHEV; Jeep 4 BEV and 10 PHEV; Alfa Romeo: 7 PHEV and FIAT = TBA; US\$ **9b invest**



Renault: **8 BEV** and **12 PHEV** by 2022; 50% of sales should be BEV or PHEV by 2022; US\$ **RNM 12b invest**



Honda: 30% of new car sales NEV FC + EV + PHEV by 2030.



Toyota: **10 new BEV** by 2020; 5.5m with NEV = 4.5m by PHEV+EHV &, Rest BEV; ~50% of annual sales by 2030; US\$ **10b invest**.



Mazda: to electrify all IC engines by 2030



US\$ **3.3b invest**



US\$ **2.5b invest**



US\$ **1.13b invest**



US\$ **0.79b invest**



US\$ **0.7b invest**



US\$ **0.6b invest**



US\$ **0.2b invest**

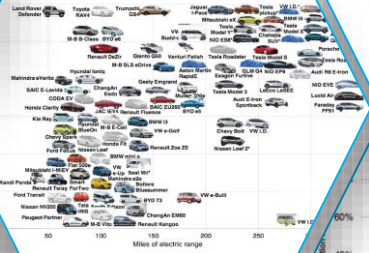


Source: Individual company announcements, Bloomberg & Peak Resources estimations & others, Investment number incl. Battery inv. + vehicle R&D + industrial manuf. invest





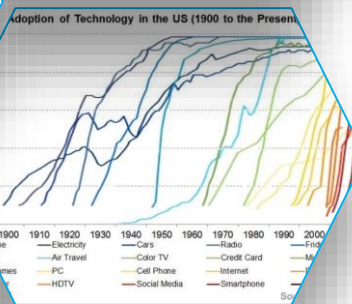
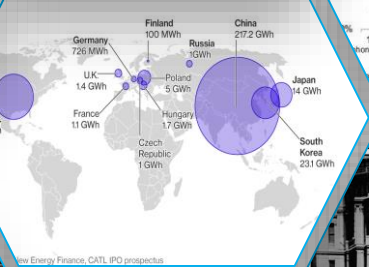
Electric-Car Boom
by style and range available through 2020



For the **Model 3**, Tesla made the decision to use a **NdFeB Permanent Magnet Motor** representing sales of 500k per year, an annual incremental demand of **500-600 tpa NdPr**.



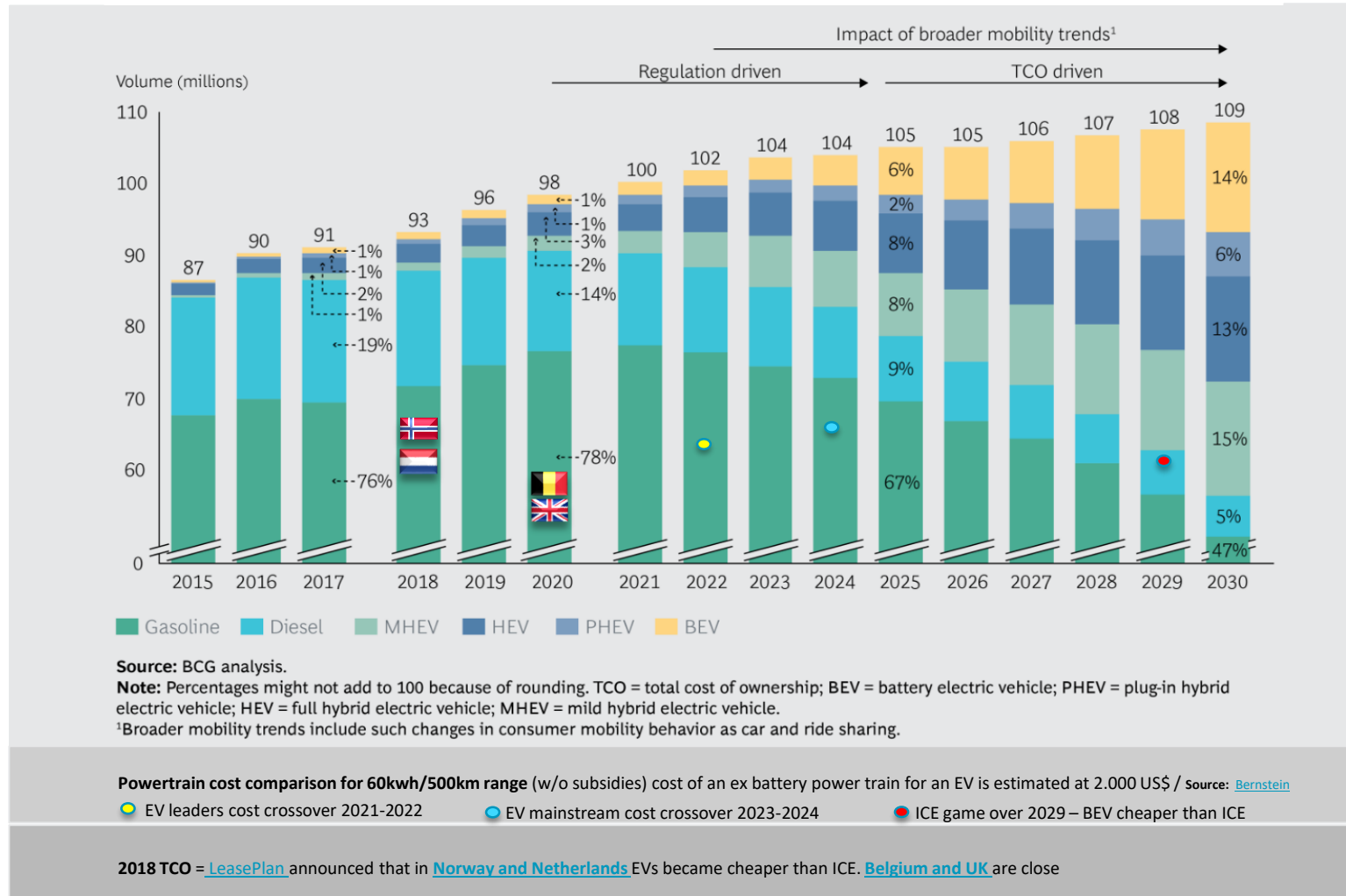
Apply
Global rivals in planned and existing battery cell production capacity



Adoption curves are accelerating year by year outpacing all expectations.



We believe the automotive landscape will **transform fundamentally** in the **next 5 years** starting with the urban areas.



Lithium battery manufacturing capacity

2020 = 350GWh
2023 = 500GWh
2025 = 800GWh

NEV Model announcements

2020 = ~+59 NEV*
2022 = ~+271 NEV*
2025 = ~+365 NEV*

Market share

~90%
NdFeB motors - No1
leading technology

NdPr oxide incremental demand

1 NEV = 1kg
1m NEVs = 1000t
27m NEVs = 27,000t =
25% of 105m vehicles p.a.

2017 global legal NdPr production

27,000 tpa NdPr[#]

All these facts indicate that the NdPr **supply risk** increases as electric vehicle sales rise!

NEVs are just one of the NdFeB megatrends – Just think what happens when you factor in developments in wind energy, mobile robotic solutions, Drones + E-planes, E-bikes, E- bicycles and consumer electronics etc.

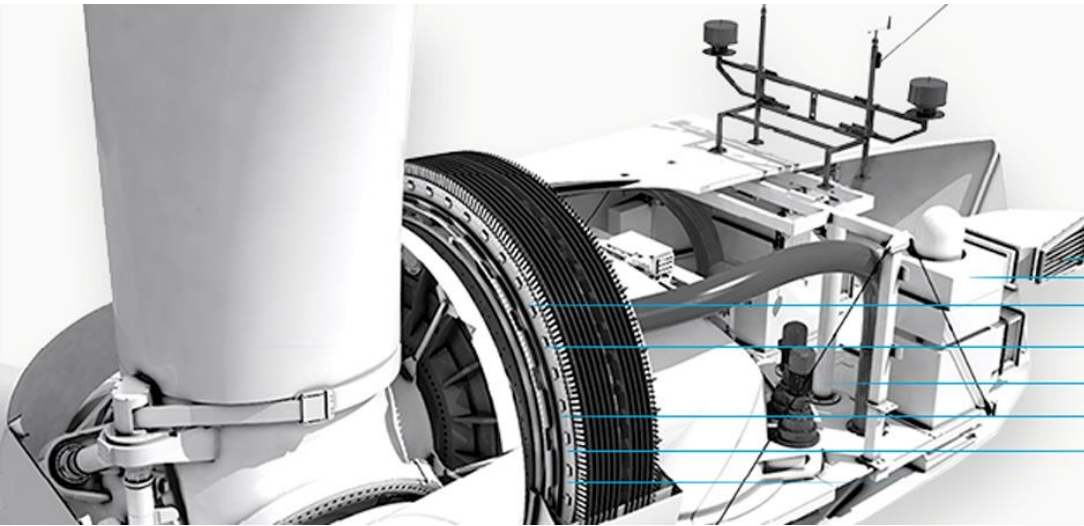
*New Models numbers without Chinese's OEM except Geely; PEAK estimate +30% on global numbers for China

[#]2017 = China 105k quota = 21k NdPr + Lynas '17 = 5,223 tpa NdPr; Peak estimation incl. Illegal production = 45kt pa

Learn more about the market and the individual dynamics and enablers.
Download our recently published **white paper of 115 Pages**:

“NdPr: The Biggest Blind Spot in the Global Commodity Market”

<http://www.peakresources.com.au/whitepaper/>



1 Megawatt from 200 kg NdPr Oxide

Each direct drive wind turbine uses a permanent magnet motor that generates between 2-6 MW of performance. Each megawatt requires approx. 200kg pure **neodymium** and **praseodymium**.

ENABLING LOW CARBON TECHNOLOGIES

CAPEX = Capital Expenditure
OPEX = Operation Expenditure
REO = Rare Earth Oxide
p.a. = per annum/ per year
NdPr = Neodymium Praseodymium oxide

ICV = Internal Combustion Vehicle
ICE = Internal Combustion Engine
EV = Electric Vehicle
HEV = Hybrid Electric Vehicle
PHEV = Plug-in Electric Vehicle
BEV = Battery Electric Vehicle
48v = 48v or MHEV = mild hybrid electric vehicle
NEV = New Energy Electric Vehicle (48v/MHEV,HEV,PHEV,BEV)

SOP = Start Of Production of a new vehicle model
NdFeB = Neodymium-Iron-Boron permanent magnets
PM = Permanent Magnet
PMM = Permanent Magnet Motor

kg = Kilogram
tpa = tonnes per annum/ per year
b = Billion
km = Kilometre
m = Million
K = Thousands
US\$ = United States Dollar

EU = European Union
ROW = Rest of the World
NA = North America
EMEA = Europe Middle East Africa

g = Gram
w/o = without
TCO = Total Cost Of Ownership
KWh = Kilowatt hour
GWh = Gigawatt hour

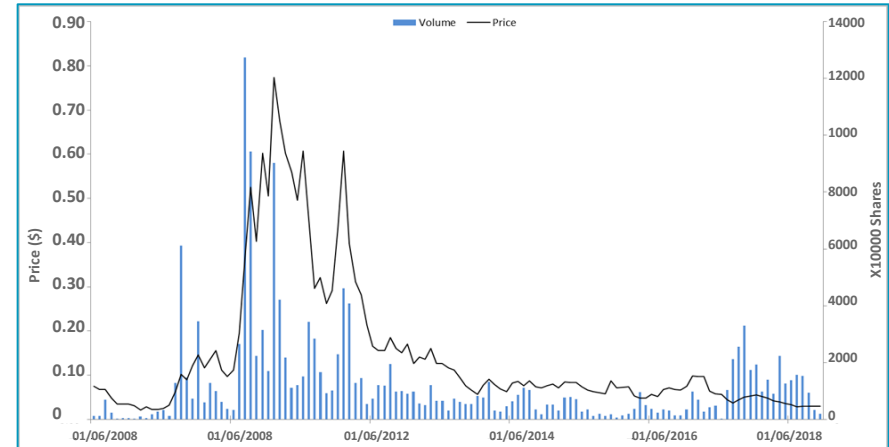
NGUALLA RARE EARTH PROJECT: **UNDERSTOOD** – DE-RISKED – **COMPETITIVE** – MANAGABLE – **READY TO BE DELIVERED**



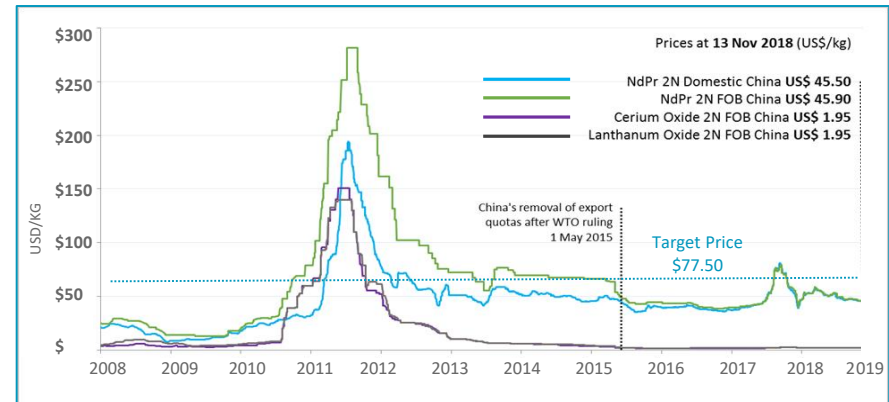
APPENDIX: Peak Resources Company Presentation

- Peak Resources Limited (ASX:PEK) is focussed on developing one of the **world's largest, highest grade and lowest cost Neodymium (Nd) and Praseodymium (Pr) (NdPr) rare earth projects.**
- NdPr is a key ingredient in NdFeB Permanent Magnet Motors (PPMs)** which are widely used in electric vehicle (EV) motors and direct drive wind turbines
- The Ngualla Project, located in Tanzania, has existing JORC Compliant Reserves of 18.5 mt at 4.8% Rare Earth Oxide (REO)** equating to 887,000t contained REO. Peak holds a 75% interest in the Ngualla Project alongside Appian Natural Resources Fund (20%) and International Finance Corporation (5%).
- Peak is looking to become the second fully integrated producer of NdPr Oxide outside of China with its Tees Valley Refinery to be constructed at the UK's fifth largest port, close to existing infrastructure and supplies of low-cost chemical reagents whilst providing access to European and Asian markets.**
- The NdPr price outlook is decidedly bullish with increased demand being driven by the adoption of EV and wind energy technologies.** China's historic supply dominance of rare earths, ~ 90% of the global supply, is undergoing structural changes due to environmental and supply side reforms which will reduce the overall volumes and availability of spot material in the market.

10 Year Share Price



10 Year NdPr Price



Source: Asian Metal and Argus Metals International



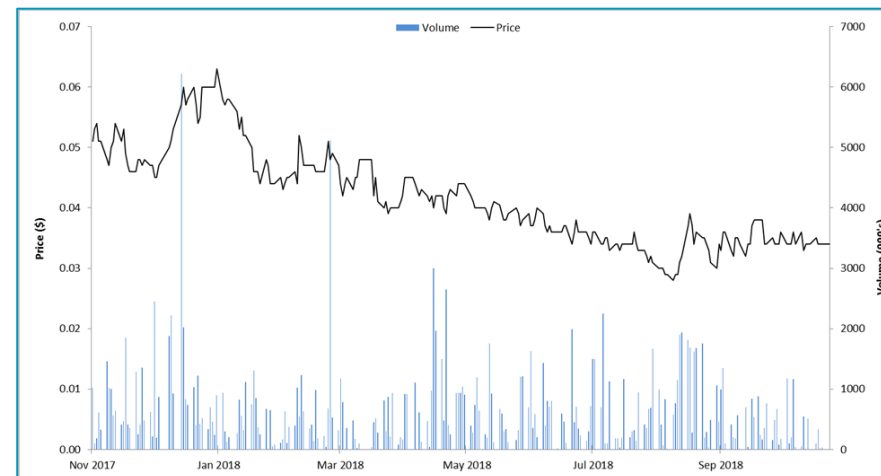
- **One of the Highest Grade, Lowest Cost NdPr Projects Globally:** Estimated US \$32.24/kg neodymium & praseodymium (NdPr) breakeven point for positive cash flows assuming no other sales revenues from other rare earth material except NdPr, total pre-production CAPEX of US \$365m and OPEX of US \$91m p.a. over a 26 year LOM with a post-tax NPV₈ of US \$612m and IRR 22% at NdPr price of US \$77.50/kg.
- **Simple Geology and Mining:** Large, high grade 4.8%, soft bastnasite ore body with mineralisation from surface allowing low cost free-dig open pit operation with a low strip ratio of 1.77:1.
- **The Right Team:** Extensive industry experience with Rocky Smith (CEO) ex-MD of Molycorp's Mountain Pass Rare Earth Complex, Michael Prassas (GM Sales), ex-Global Sales Account Manager Catalysis and newly appointed Peter Meurer (Chairman), current Non-Executive Chairman of Nomura Australia and former Vice Chairman of Citi and Merrill Lynch.
- **Advanced Project :** BFS completed, Tanzanian environmental certificates received, Teesside Refinery fully permitted - environmental certificate and Planning Permission received, further Project optimisation completed and mining licence application submitted.
- **Proven processing capabilities:** Fully proven piloted process, Mineralogy which is low in reagent consumption, High Grade 45% REO, low mass concentrate, Selective leach process, Low strength acids- no acid roast, use of conventional construction material e.g. Modular plastic tanks
- **Exposure to Forecast Increases in NdPr Price:** Peak offers excellent leverage to the favourable NdPr price outlook with 90% of revenue to be generated from NdPr.
- **Tight Capital Structure:** Circa 800m shares on issue with 34% held by top 10 including Appian Natural Resource Fund (14.06%) and International Finance Corp/World Bank (3.99%).
- **Compelling Valuation:** With an EV of circa A \$21m, Peak offers a compelling value proposition against its ASX listed peers.



Capital Structure (as at 16 November 2018)

Share Price (ASX:PEK)	3.0¢
Shares on Issue (Undiluted)	799.3m
52 Week Range	2.8¢/6.9¢
Market Capital	A \$24.0m
Cash As At 30 September 2018 Peak Resources	A \$5.2m
Appian Debt due September 2019	A \$ 2.0m
Enterprise Value	\$20.8m
Listed Options (Exercisable at \$0.06 expiring 14 June 2020)	61.1m
Unlisted Options Outstanding (Exercise Price A\$0.05- A\$0.15)	84.8m
1 Month Liquidity	9m shares for ~\$390k
6 Month Liquidity	78m shares for ~\$3m
12 Month Liquidity	169m shares for ~\$7m

12 Month Share Price Performance



Top Shareholders

Appian Pinnacle Holdco Limited	112,351,377	14.06%
International Finance Corporation	31,846,257	3.98%
J P Morgan Nominees Australia Limited	30,972,660	3.88%
CRX Investments Pty Ltd	16,427,337	2.06%
Sambold Pty Ltd	16,325,000	2.04%
Board (P. Meurer, D. Townsend & J. Murray)	4,563,753	0.57%

The Team

Experienced Management Team



Rocky Smith

Chief Executive Officer

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.



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.



Michael Prassas

General Manager- Sales, Marketing & Business Dev

Over 15 years' experience in sales marketing and business development. Former Global Account Manager Automotive Catalysis /Sales Manager of Rare Earth Systems for Solvay/ Rhodia.



Lucas Stanfield

General Manager Development

Mining Engineer with over 15 years mining and project management experience in Australia, Africa and the United Kingdom. Experienced in managing new projects, mine expansions and development studies.

Experienced Directors & Advisors



Peter Meurer

Non-Executive Chairman

Distinguished career of over 40 years in the Corporate Finance sector and is currently Non-Executive Chairman of Nomura Australia.



Jonathan Murray

Non-Executive Director

Partner at independent corporate law firm Steinepreis Paganin Specialising in equity capital raisings and acquisitions



John Jetter

Non-Executive Director

Former Managing Director, CEO and head of investment banking of JP Morgan in Germany and Austria.



Darren Townsend

Non-Executive Director

Former Managing Director of Peak Resources from 2014 to 2017. Mining Engineer with 25 years' mining and corporate experience.



Tony Pearson

Non-Executive Director

Former Managing Director HSBC Australia with over 15 year's banking experience, covering the Asia Pacific natural resources industry.



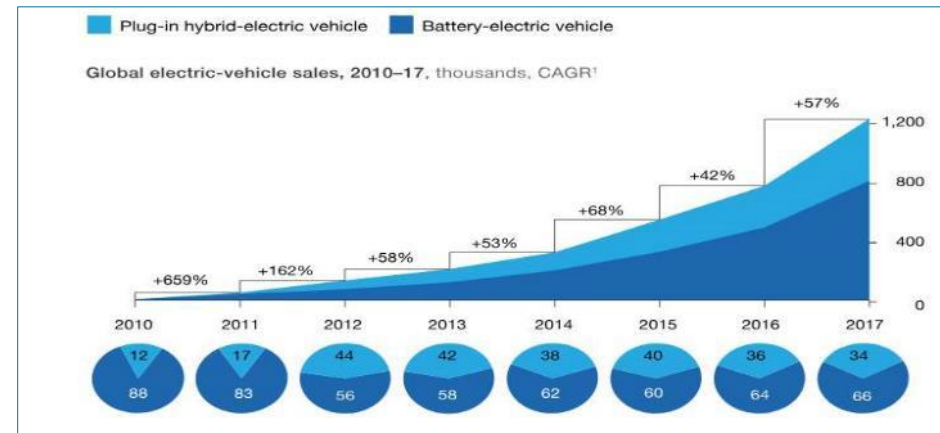
Kibuta Ongwamuhana

*Non-Executive Director
PR NG Minerals*

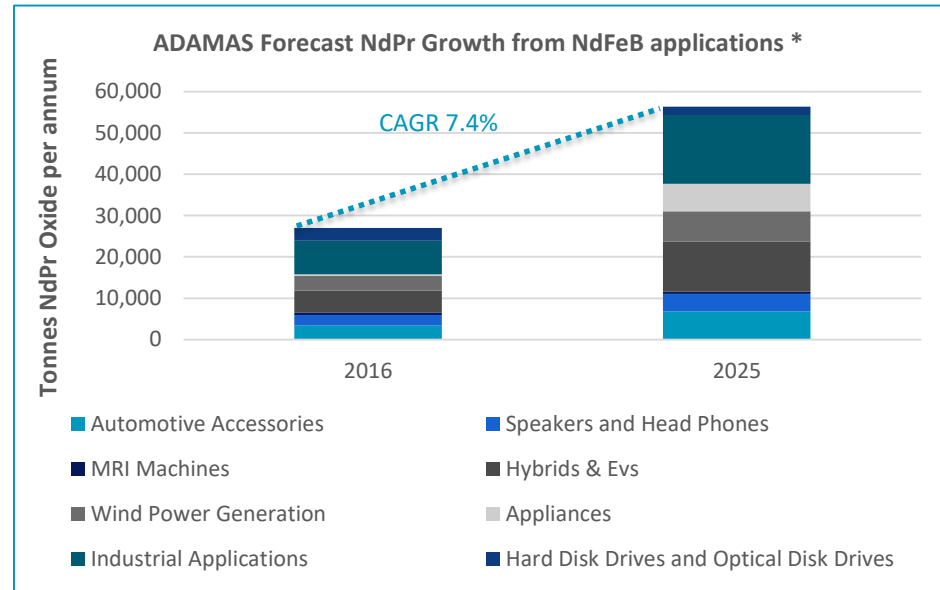
Leading Tanzanian legal practitioner who specialises in taxation and corporate law. Managing partner of the legal firm, Ako Law.



- The Current Market** – The global market is currently approximately 35kt to 45kt of NdPr Oxide per annum across all applications incl. non-NdFeB applications and is currently valued at US \$1.75bn to US \$2.25b assuming a price of US \$50kg/NdPr.
- The Market Outlook** – The market is projected to double in volume by 2025 with approximately 50% price increase over the same period. Permanent magnets market including NdFeB magnets represents 70%-80% of the total rare earth oxide market in value.
- EV Adoption Driving NdPr Demand** – approx. annual sales of 25-30m new energy vehicles (BEV/PHEV/HEV) represent approximately ~100% incremental NdPr demand from NdFeB permanent magnets.
- Tesla Adopts PPM Technology** – With Tesla’s move to adopt the permanent magnet motor (PMM) technology for it’s Tesla Model 3 , PMM has reached close to +90% market share confirming PMM technology as the leading engine technology and industry standard.
- Change of the Chinese Policies will Impact Today's Rare Earth Supply Chain** – China currently accounts for circa 80-90% of the global NdPr supply and is undergoing structural changes due to environmental and supply side reforms, which will reduce the overall availability of material in the market (e.g. [Made IN CHINA 2025](#)) and raise cost ([Beautiful China Policy](#) e.g. [Environmental Protection tax law](#)). This trend is also supported by the published [goals of the 5 Year Rare Earth Industry Plan](#) by China’s Ministry of Industry and Information Technology in October 2016. This offers the opportunity for new supply sources supported by an increasing NdPr price over the coming years.



Source : EV-Volumes.com; Mc Kinsey analysis



*Source : Adamas Intelligence

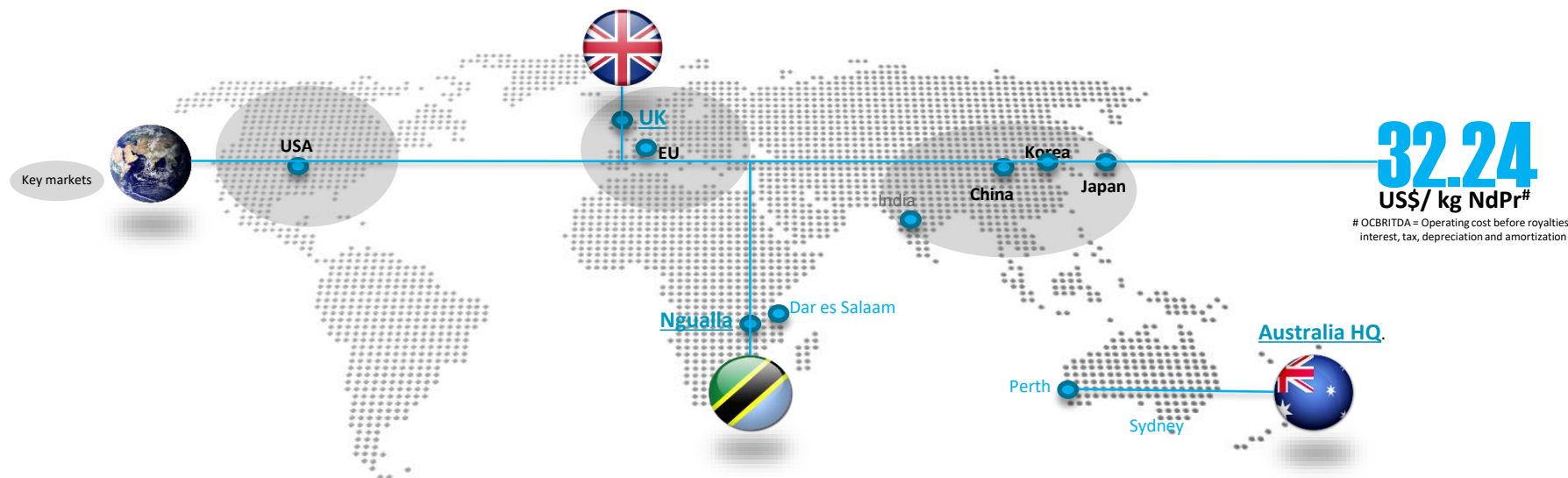


Peak to become one of the world's lowest cost rare earth producers. With a CAPEX of only US\$ 365 million incl. 15% contingency, OPEX of US\$ 91 million p.a. and a 26 year Life of Mine.



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

- **Capex:** US\$ 165 million incl. 15% contingency plus 5% owners costs **Opex:** US\$ 40million p.a.
- **Location:** Top logistics infrastructure + skilled labour + sustainable waste management facilities
- **Annual Production:** 9,290 tpa of oxide equivalent = **Oxide 2,810 tpa NdPr 2N; Carbonate = 12,095tpa** = 7,995 tpa La; 3,475 tpa Ce & 625 tpa SEG/HRE
- **32.24 US\$/kg NdPr** - The breakeven point for **positive cash flow** considering total OPEX divided with only the 2,810 tpa NdPr oxide production



Tanzania Ngualla Project, one of the largest and highest grade undeveloped NdPr deposits worldwide

- **Ore Resource:** 214.4 mt at 2.15% REO; **Ore Reserve:** 18.5 mt at 4.8% REO; 22% of the total Mineral Resource, approx. 887,000 t REO
- **Capex:** US\$ 200 million incl. 15% contingency plus 5% owners costs; **Opex:** US\$ 51 million; **Life of mine:** 26 year ; **Mill feed rate** 711,000 tpa; **Strip ratio** 1.77; **Rare earth concentrate:** 32,700 tpa of 45%

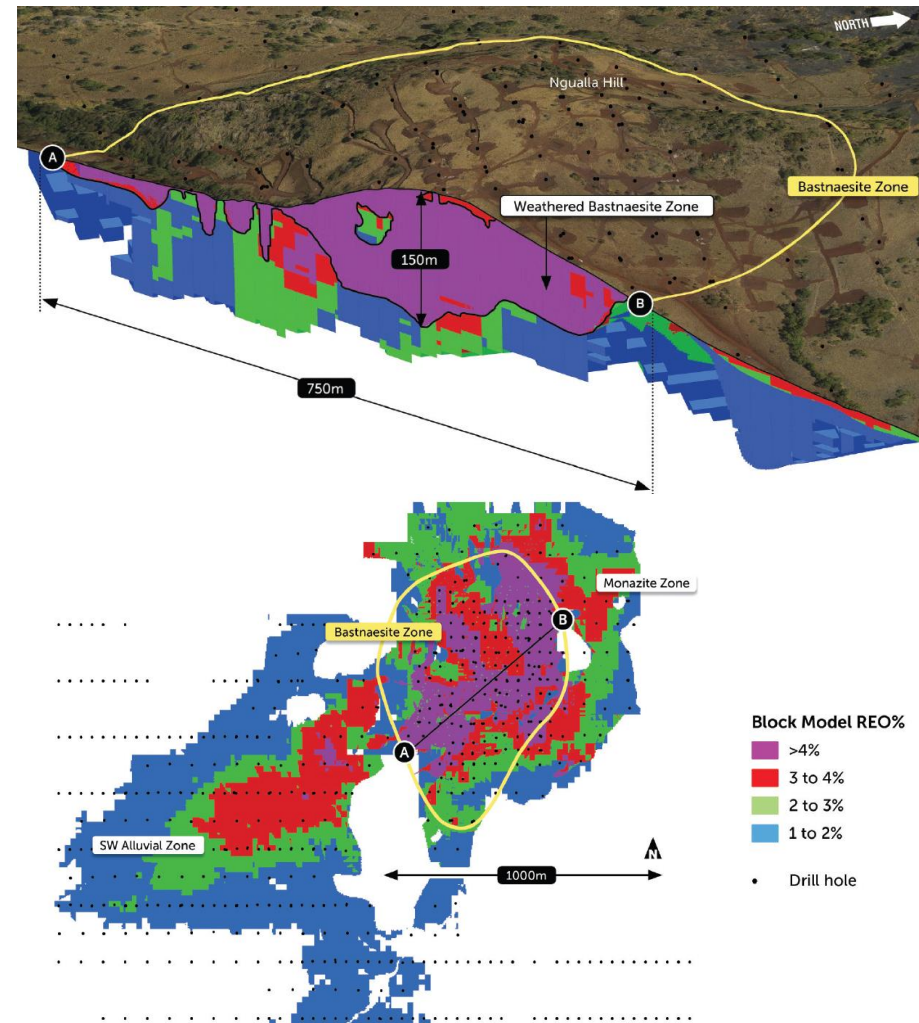


*See ASX Announcement "Higher grade Resource for Ngualla nearly 1 million" and ASX Announcement "Ngualla Rare Earth Project – Updated Ore Reserve" as of 12 April 2017 and : "BFS positions Ngualla one of worlds lowest cost RE Projects" as of 12 April 2017 and: "BFS Update - Lower price deck delivers similar BFS results for Ngualla" as of October 2017



The Ngualla Project, Tanzania

Location:	Tanzania
Geology:	Weathered carbonatite with a high grade bastnaesite- rich zone, low in phosphate and carbonate
Ore Resource:	214.4 mt at 2.15% REO, initially developing only 22% of the total resource
Ore Reserve:	18.5 mt at 4.80% REO [#] = 887,000 t REO; 21.3% NdPr, 38,800m of drilling (649 holes), 40 x 50 meter spacing, depth of 120 meter
Mining:	Low strip ratio 1.77:1 & open-pit
Mill feed rate:	711,000 tpa dry ore
RE Concentrate:	32,700 tpa at 45% REO Bastnaesite
Environmental Certificate:	Received March 2017
Mining licence:	Expected in 2018, SML application
Estimated Capex:	US \$200m incl. 15% contingency and 5% owners costs
Estimated Opex:	US \$51m p.a.
Life of Mine:	26 years (considering only the official Reserve)
Location:	~1000 KM west of Dar es Salaam close to Mbeya

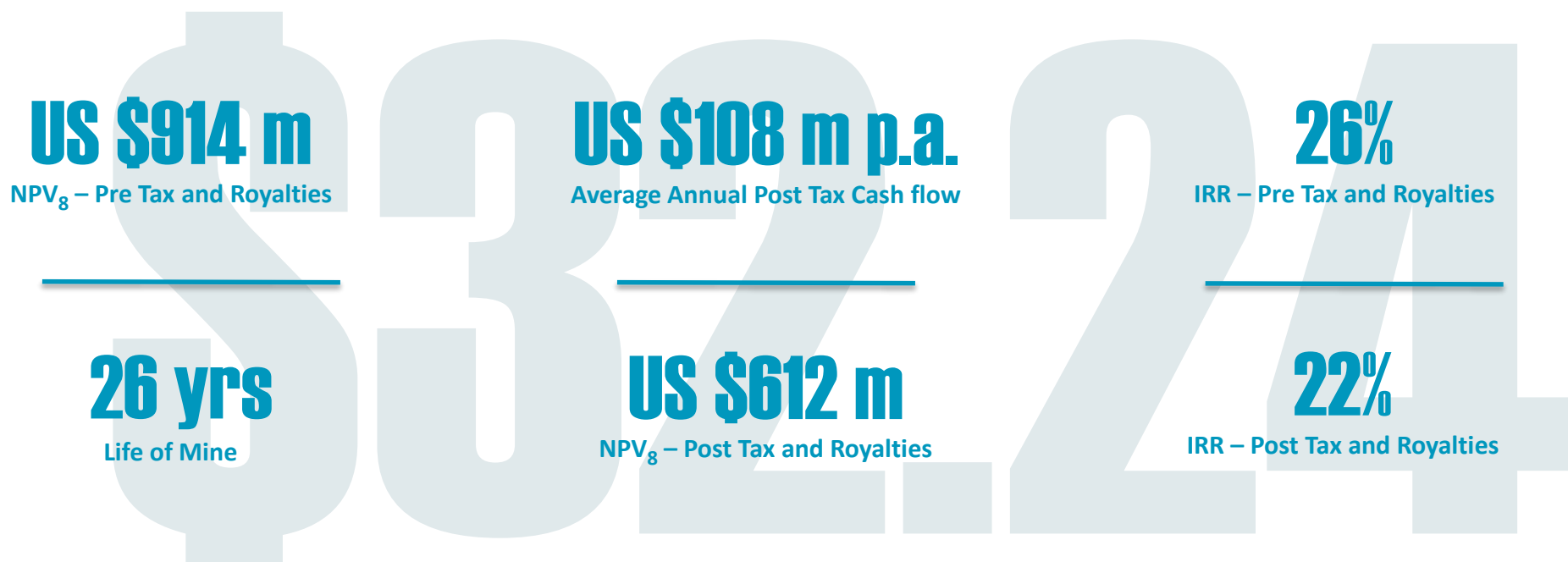


#The material assumptions underpinning Ore Reserve, production target, capital and operating costs are disclosed in the ASX Announcement dated 12 April 2017 “BFS positions Ngualla as one of the world’s lowest cost rare earth projects” continue to apply and have not materially changed.
See ASX Announcement “Higher grade Resource for Ngualla nearly 1 million.” and ASX Announcement “Ngualla Rare Earth Project – Updated Ore Reserve” as of 12 April 2017

The Tees Valley Refinery, UK

- Peak's refinery will be located at Wilton International's Teeside Industrial Zone located in Tees Valley, North East England.
- Teeside benefits from existing fully integrated site infrastructure located within a major UK exporting region which is home to existing heavy industries including mineral processing, automotive and advanced manufacturing.
- Existing infrastructure includes road, rail, air and sea connections providing access to European and Asian markets.
- Tees Valley is located alongside the UK's 3rd largest port by volume within close proximity to competitively priced chemicals, water disposal and treatment facilities required for the refining process.
- Power is generated on-site and is also connected to the UK National Grid providing power security whilst avoiding the need for significant capital outlay.
- Teeside benefits from an available skilled workforce and local government and community support.
- CAPEX: US \$165m incl. 15% contingency plus %5 owners costs
- Opex: US \$40m p.a.





US \$32.24 is the breakeven point for positive cash flow only from the projected 2,810t p.a. NdPr sales; OCBRTDA = Operating cost before royalties, interest, tax, depreciation and amortisation.

*See ASX Announcement: "[Lower price deck delivers similar BFS results for Ngualla](#)" dated 12 October 2017

See ASX Announcement: "[Process optimisation study boosts Ngualla's operating margin](#)" dated 28 August 2017

BFS Price deck: NdPr Mixed Oxide 2N Min 75% Nd2O3 US \$77.50/kg; Cerium* US\$ 02.20/kg; Lanthanum* US \$03.70/kg; SEG & Mixed Heavy* US \$08.00/kg



32.24 # OPEX INTENSITY
US\$/kg NdPr*²



Peak has one of **the lowest OPEX** as a fully integrated producer per kg of NdPr among 58 development projects worldwide*³

5.00 CAPEX INTENSITY
US\$/kg NdPr Oxide LoM



Peak has one of **the lowest CAPEX** as a fully integrated producer per kg of NdPr among 58 development projects **worldwide***³

*²NdPr = Nd₂O₃ /Pr₆O₁₁ Mixed Oxide 2N – min 75% Nd₂O₃. *³ Benchmarking data provided by: [Adamant Intelligence](#)

US \$32.24 is the breakeven point for positive cash flow only from the projected 2,810t p.a. NdPr sales; OCBRTDA = Operating cost before royalties, interest, tax, depreciation and amortisation.

See ASX Announcement: "[BFS positions Ngualla one of worlds lowest cost RE Projects](#)" dated 12 April 2017 and ASX Announcement: "[Process optimisation study boosts Ngualla's operating margin](#)" dated 28 August 2017

Peer Comparison 12 June 2018

Project Name / Current Development Stage	Peak Resources/ BFS	Alkane/ BFS	Arafura/ WIP Update BFS	Greenland/ WIP Update BFS	Hastings/ BFS
Market Cap \$AUD (million) (as at 12/6/2018)	27.37	134.12	55.85	86.22	174.23
Enterprise Value \$AUD (million)*	28.572	73.542	45.159	76.763	149.735
Project Location	Tanzania	Australia	Australia	Greenland	Australia
Oxide Refinery Location	United Kingdom	Australia	Not applicable (external)	Not applicable (external)	Not applicable (external)
By-products	Only rare earth	Yes –Hafnium metal 50 tpa, niobium metal 1,966 tpa, zirconium 16,358 tpa	Yes - Phosphoric Acid 110k tpa	Yes – Zinc 6ktpa, Fluorspar16k tpa, U3O8 1m lbs pa	Only rare earth
Produced products	NdPr oxide, La+Ce Carbonate, SEG carbonate	RE oxide: NdPr; Dy; Tb and Y + Re mixed carbonate	Mixed chloride and cerium hydroxide	Intermediate RE product as chloride solution under investigation	Mixed RE Carbonate
Economic Mineralogy	Bastnaesite	Complex Na–Ca–Zr–Hf–HREE silicate phases (eudialyte like)	Apatite, monazite, allanite	Steenstrupine	Monazite
Strip Ratio	1.77:1	low strip ratio	6:1	1:1	11.7:1
Resource	214.4mt at 2.15% REO	75.18mt at 0.88% REO	56m at 2.6% REO	1,010m at 1.1% REO	21m at 1.17% REO
Reserve	18.5mt at 4.8% REO	18.9mt at 0.87% REO	Not published	108m at 1.43% REO	5.16m at 1.12% REO
Concentrate Grade	45%	Not published	Not published	Not published	+25%
Annual Produced NdPr p.a.	2,810t	1,158t	3,600t	5,084t	3,036t
Total REO Output p.a.	9,290t	6,522t	14,000t	24,391t	7,820t
Total Life of Mine (reserve as a basis)	26 years	20 years	34 years	37 years	8 years
USD CAPEX million	US \$365m	US \$979m	US \$680m	US \$832m	US \$253
USD OPEX million p.a.	US \$91m	US \$257m	US \$125m	US \$334.2 (incl. 80.2 separation cost)	US \$107
total USD OPEX p.a./kg NdPr production p.a.	US \$32.24	US \$222.18	US \$34.72	US \$65.74	US \$35.30
Total USD OPEX p.a./ kg REO production p.a.	US \$9.76	US \$39.45	US \$8.93	US \$13.70	US \$13.70
AUD/ USD Exchange rate: 0.7545					

Sourced: from publicly available ASX publications and company website information

* Debt and cash sourced from quarterly report ending 31/3/2018



Track Record of Delivery and Upcoming Catalysts

2015

- ✓ Appointment of AMEC FW as BFS lead Engineering firm
- ✓ Beneficiation pilot plant
- ✓ Advancement of ESIA
- ✓ BFS Drilling Program
- ✓ AUD \$23.4m investment from Appian and IFC
- ✓ Optimisation studies:
 - ✓ Location of downstream plant
 - ✓ Stockpiling of Cerium
 - ✓ Beneficiation improvement

2016

- ✓ Results from pilot plant test work complete
- ✓ New mineral resource estimate
- ✓ Project economics updated
- ✓ Advance engineering
- ✓ Advance Environmental Permitting

2017

- ✓ Bankable Feasibility Study completed delivering a US \$35m p.a or 30% saving in operating costs compared to Pre Feasibility Study
- ✓ Tanzanian Environmental Certificate received
- ✓ Project Optimisation delivered similar financial results with a lower price deck. NdPr price has been reduced from US \$85kg to US \$77.50kg
- ✓ Special Mining Licence Application submitted

2018+

- ✓ Planning Permission for Teesside Refinery Granted
- ✓ Environmental Certificate for the UK Refinery Granted
 - Ramp up discussions with potential offtake partners with special focus on magnet manufacturers
 - Seek Grant of Special Mining Licence in Tanzania –application lodged
 - Seek strategic partner to fund development of Ngualla

NGUALLA ORE BODY

- High grade 4.80% REO
- Large deposit
- Bastnaesite mineralogy
- Mineralisation from surface
- Very low U and Th (15 and 53 ppm)
- Thick blanket morphology
- Low in reagent consuming minerals



NGUALLA MINE AND PROCESS PLANT

- Soft, free dig Ore
- Simple, small open pit mine
- Low waste: Ore strip ratio (1.77)
- Zero offsite discharge + water recycle
- High Grade (45% REO), low mass concentrate
- Proven piloted process



TEES VALLEY REFINERY

- Selective leach process
- Low strength acids- no acid roast
- Modular plastic tanks
- Small SX separation plant
- Bulk, low-cost reagents available
- Pre-existing utilities
- Existing waste management facilities



Right sized project
Low production cost
Long life -26 years
Ethically sustainable
High value, separated products
NdPr drives 90% of revenue
Aligned to permanent magnet and EV markets

See ASX Announcement: "[BFS positions Ngualla one of worlds lowest cost RE Projects](#)" dated 12 April 2017 and ASX Announcement: "[Process optimisation study boosts Ngualla's operating margin](#)" dated 28 August 2017



- **The Right Team** – Experienced Board and Management with a track record of delivery
- **The Right Asset** – World class asset with low CAPEX (\$365m) and OPEX (\$91m p.a.) requirements relative to other rare earth projects
- **The Right Market** – considerable leverage to forecast increase NdPr prices resulting from EV revolution and transition to sustainable energy
- **The Right Investment Proposition** – Significant relative value compared to ASX listed peers with clear strategy to become a near term fully integrated NdPr producer



NGUALLA RARE EARTH PROJECT: **UNDERSTOOD** – DE-RISKED – **COMPETITIVE** – MANAGABLE – **READY TO BE DELIVERED**



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Rocky Smith

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Graeme Scott

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Peter Meurer

Non-Executive Directors:

Darren Townsend, John Jetter, Jonathan Murray, Tony Pearson

