



Corporate Presentation

***RIU Resources Roundup
Sydney 10 – 11 May 2017***



Alkane Resources Ltd

Multi Commodity Developer Focussed in the Central West NSW

Board

- **John S F Dunlop (Chairman)** BE(Min), MEngSc(Min). Mining Engineer
- **D Ian Chalmers (Managing Director)** MSc. Geologist
- **Ian J Gandel (Director)** LLB, BEc. Businessman
- **Anthony D Lethlean (Director)** BAppSc. Geologist/Banker
- **Karen Brown (Company Secretary)** BEc

Senior Management

- **Nic Earner (Chief Operations Officer)** BEng
- **Michael Ball (Chief Financial Officer)** CA Bcom
- **Alister MacDonald (GM - Marketing)** BE, Ceramic Eng
- **Terry Ransted (Chief Geologist)** BSc
- **Michael Sutherland (General Manager NSW)** BSc
- **Brendan Ward (Commercial Manager)** LLB, BA
- **Sean Buxton (TGO Operations Manager)** BEng
- **Natalie Chapman (Corporate Communications)** BSc, MBA

Two major projects

Australian Strategic Materials Ltd

- **Dubbo Project**
- **Technology Metals**

Tomingley Gold Operations Pty Ltd

- **Tomingley gold production**
- **Cash flow generation**

Active exploration programs

Significant discoveries

Bodangora Porphyry Au-Cu System

McPhillamys 2.5Moz Gold

- **JV sold to Regis Resources Ltd 2012**

Megatrends – drivers for technology metals

Clean Energy

Transportation

Internet of Things

Sustainability

Ageing Population

Urbanisation

Technology drivers

- Faster
- Stronger
- Cleaner
- Smaller
- Lighter
- Safer

Clean
Energy

Neodymium

Praseodymium

Zirconium

Hafnium

Niobium

Zero or Low CO₂ Emissions

Power

- Wind
- Solar
- Nuclear
- Wave
- Thermoelectric

Storage

- Portable batteries
- Ferroelectric
- Solid oxide fuel cells
- Portable batteries
- Piezoelectrics

Global wind capacity to nearly double in next five years (2015-2020)

In 2015 – 433GW (84,868t REE)

In 2020 – 792GW (155,232t REE)


Dubbo Project can supply 1.4GW

- 196kg REE used per MW power in wind turbine NdFeB permanent magnets
- Niobium is used to strengthen and reduce the amount of steel in stand

Neodymium

Praseodymium

Niobium



449 Operating nuclear plants
60 Undergoing construction
170 Planned in China by 2050

Zirconium clads nuclear fuel rods
Hafnium is used in nuclear control rods
Zirconium niobium alloys

Zirconium

Hafnium

Niobium

More than 100 magnet motors in one car*

HYBRID NIMH BATTERY

- Lanthanum
- Neodymium
- Cerium

GLASS & MIRRORS

- Cerium

LCD SCREEN

- Europium
- Yttrium
- Cerium

HEADLIGHT GLASS

- Neodymium



Cerium

Europium

Lanthanum

Neodymium

Yttrium

25+ ELECTRIC MOTORS

- Neodymium magnets

ELECTRIC MOTORS

- Neodymium magnets

COMPONENT SENSORS

- Yttrium

* Source: Adamas Research

- Zirconium & hafnium in jet engines
- Niobium & hafnium in rocket nozzles
- Hafnium for thermoelectric applications
- Hafnium in special space batteries

Transportation

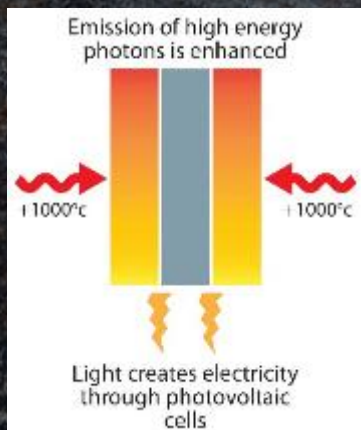
Zirconium

Hafnium

Niobium

Hafnium – the next opportunity?

- Thermoelectric power generation – converts heat to electricity
- Ferroelectric microprocessing – faster, smaller k-gate chips and films
- Thermal reflectors - Window Coating to reflect sunlight back into space to assist air condition buildings
- Special ceramic applications – heat shields in aircraft and space vehicles



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Resourcing tomorrow's technology



Hafnium Applications – next gen memory

Permanent Memory

Ferroelectric micro-processing using HfO_2

- Ultra-fast, low-power, non-volatile successor to flash memory
- HfO_2 already used in electronics and compatible with silicon fabrication techniques
- k-gate chips, films, ferroelectric tunnel junctions, optoelectronic modulators and RAM (embedded memory), piezoelectric transducers and tunnel junctions.



Lutetium

Hafnium

Zirconium

Neodymium

Praseodymium

Niobium

Ageing Population



Improving health Outcomes

- MRI's contain niobium & 700kg of rare earths
- Rare earths based PET imaging agents detect cancer
- Zirconium chemicals clean kidney dialysis
- Lutetium/hafnium oxide nanoparticles destroy cancer
- Robotics expected to change healthcare

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Resourcing tomorrow's technology



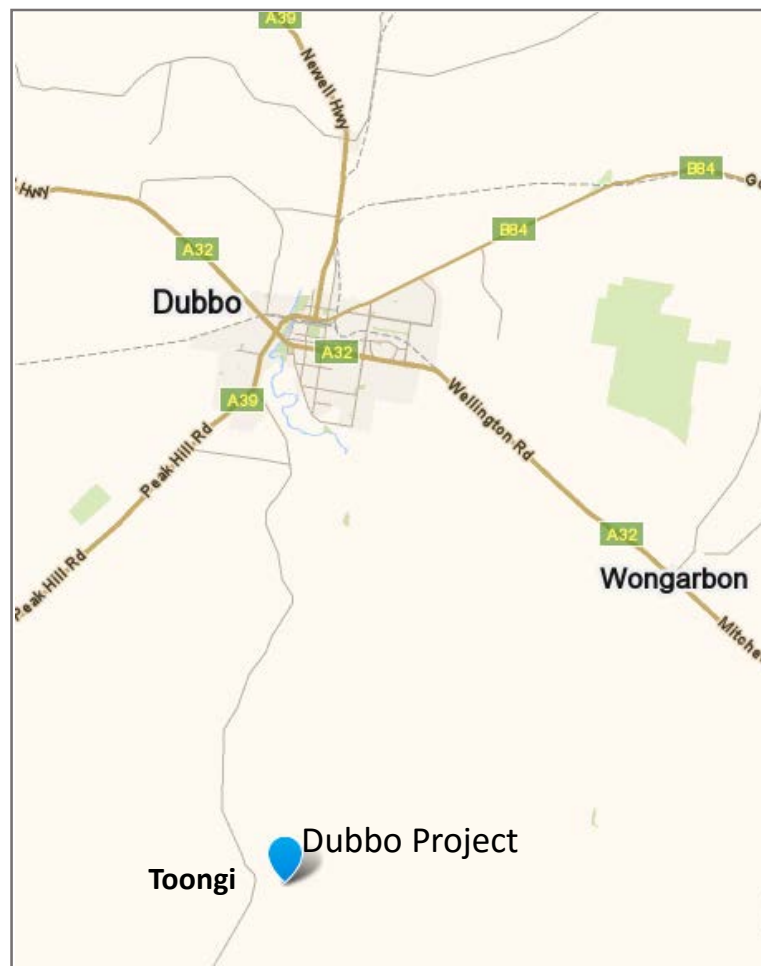
Dubbo Project

- 400km northwest of Sydney
- 25km from Dubbo city (pop~45,000)
- Dubbo infrastructure – roads, rail, power, gas, light engineering, people
- Large polymetallic resource - zirconium, hafnium, niobium (tantalum), yttrium and rare earths
- 35 year reserve mine life at 1 million tonne/year ore processing
- Defined resource supports 80+ year open pit operation



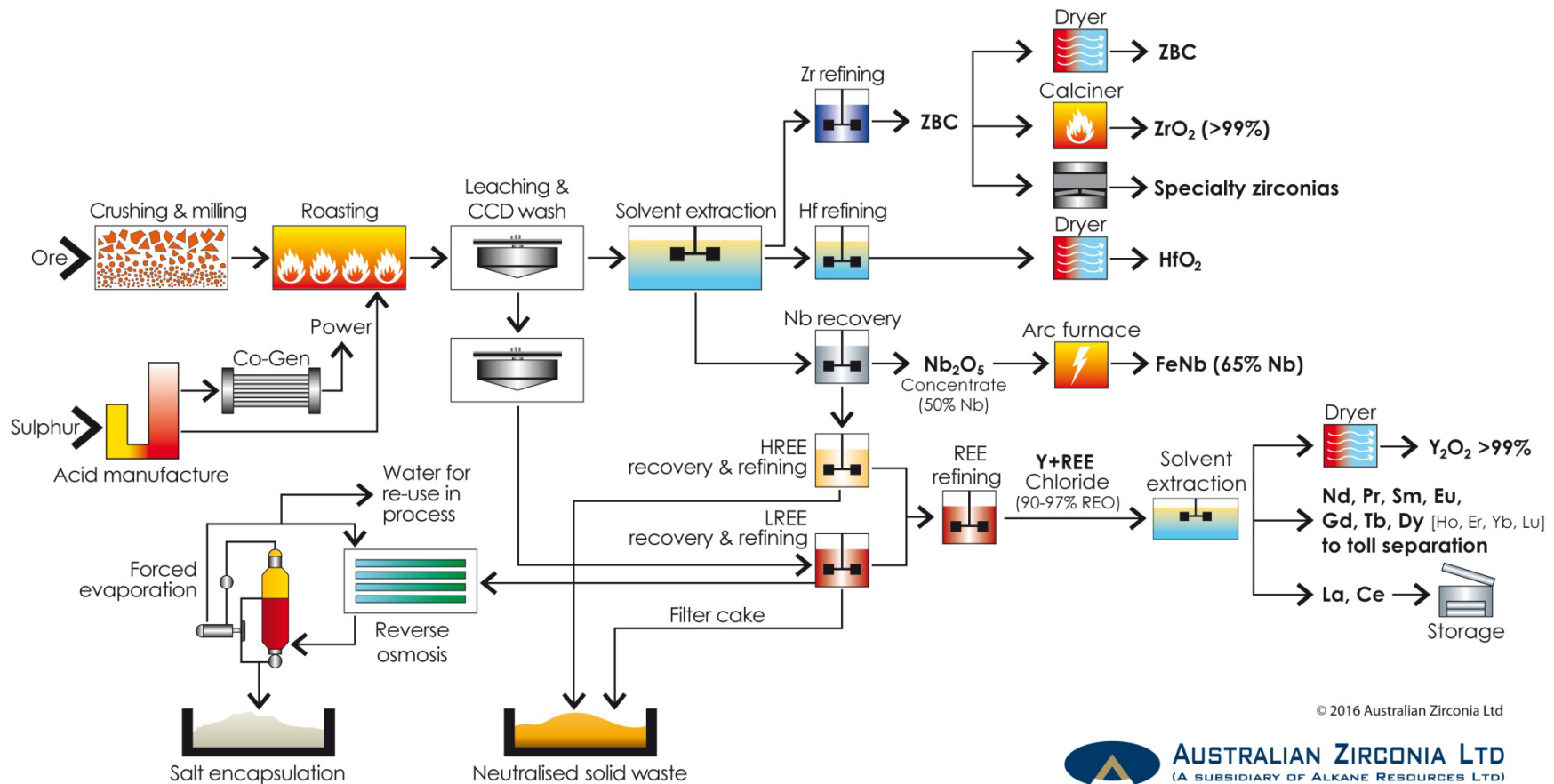
Dubbo Project – Current Status

- Pilot plant at ANSTO has demonstrated the flow sheet with products for market evaluation over 8 years
- All State & Federal environment approvals
- Front End Engineering Design (FEED) study confirmed robust technical & financial DFS
- Outotec Finnish technology & engineering solutions company to present a fixed price EPC
- Sumitomo Mitsui Banking Corporation financial advisors
- Modular design option (halves CAPEX costs and output) for lower risk



DUBBO PROJECT IS CONSTRUCTION READY

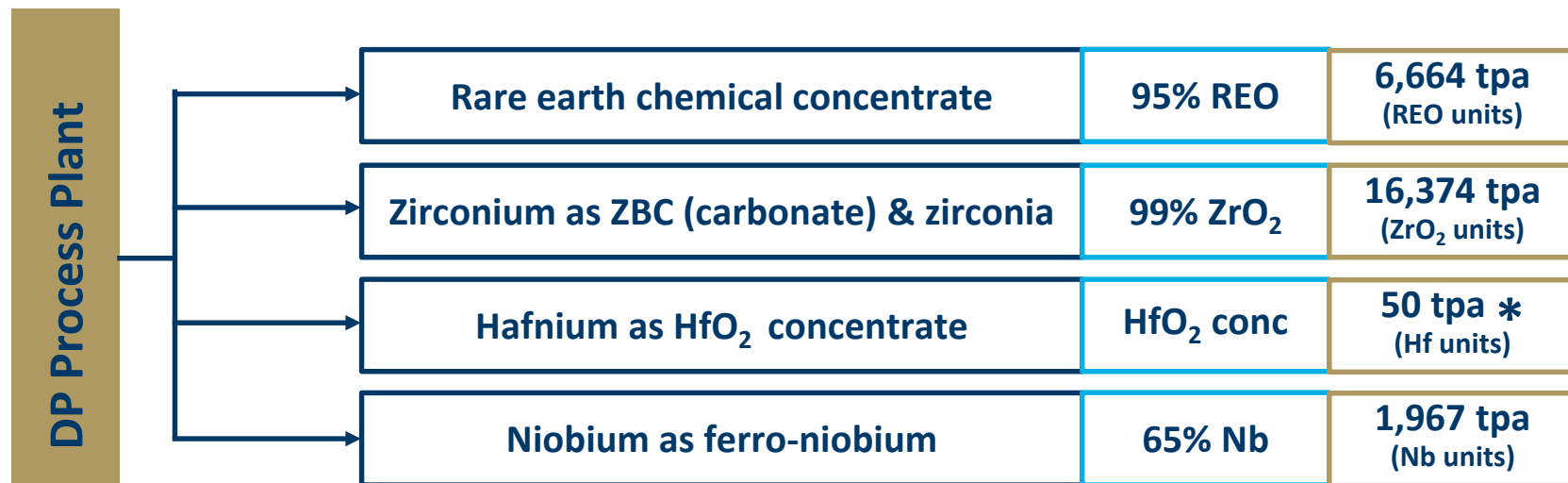
Separation Process



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AUSTRALIAN ZIRCONIA LTD
(A SUBSIDIARY OF ALKANE RESOURCES LTD)

Product Output

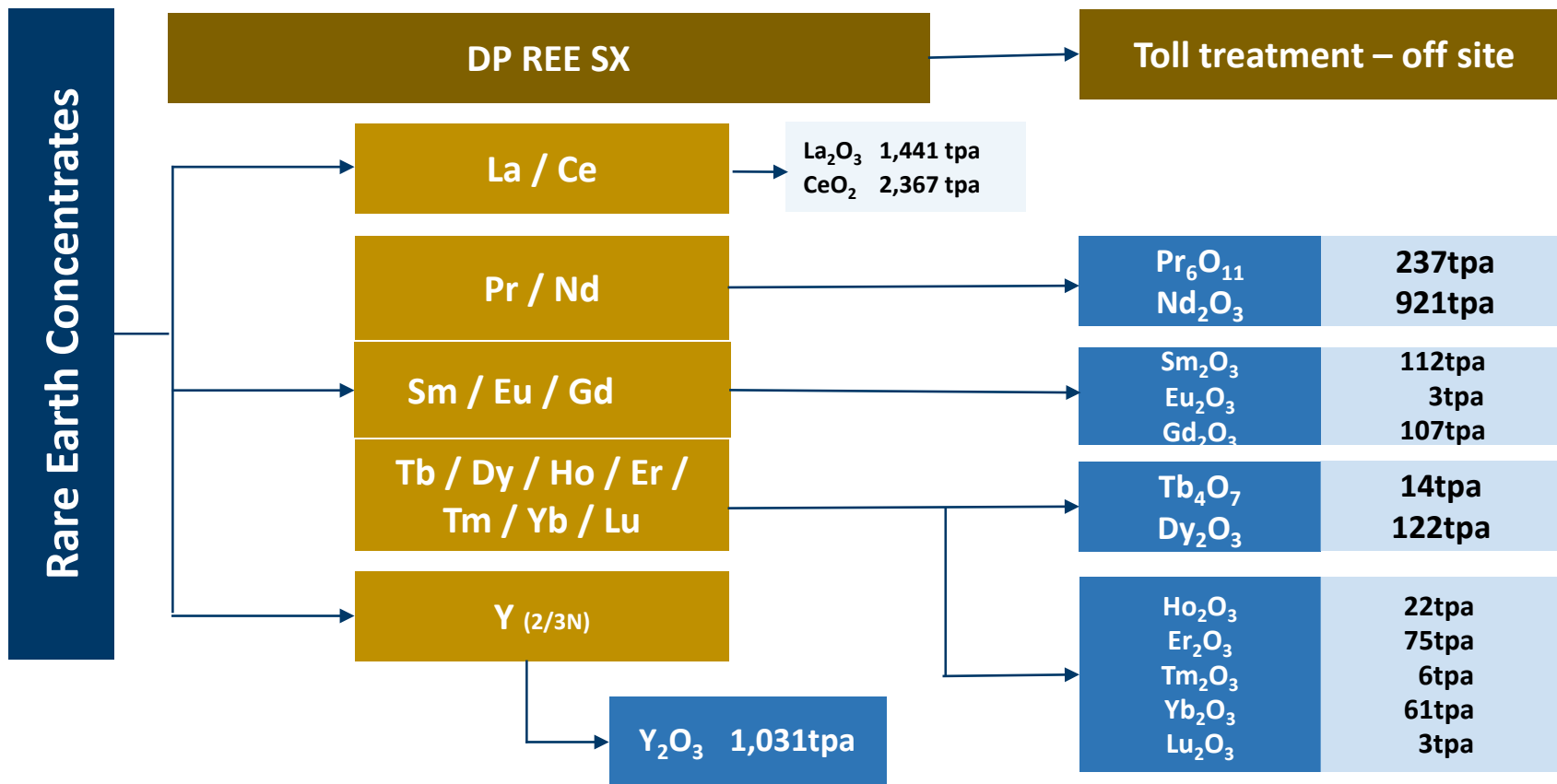


Total output approximately 25,200 tpa of all products

Tonnage based upon recoveries developed from mass balances of the demonstration pilot plant.

* Start up output. 200tpa potential depending upon market demand

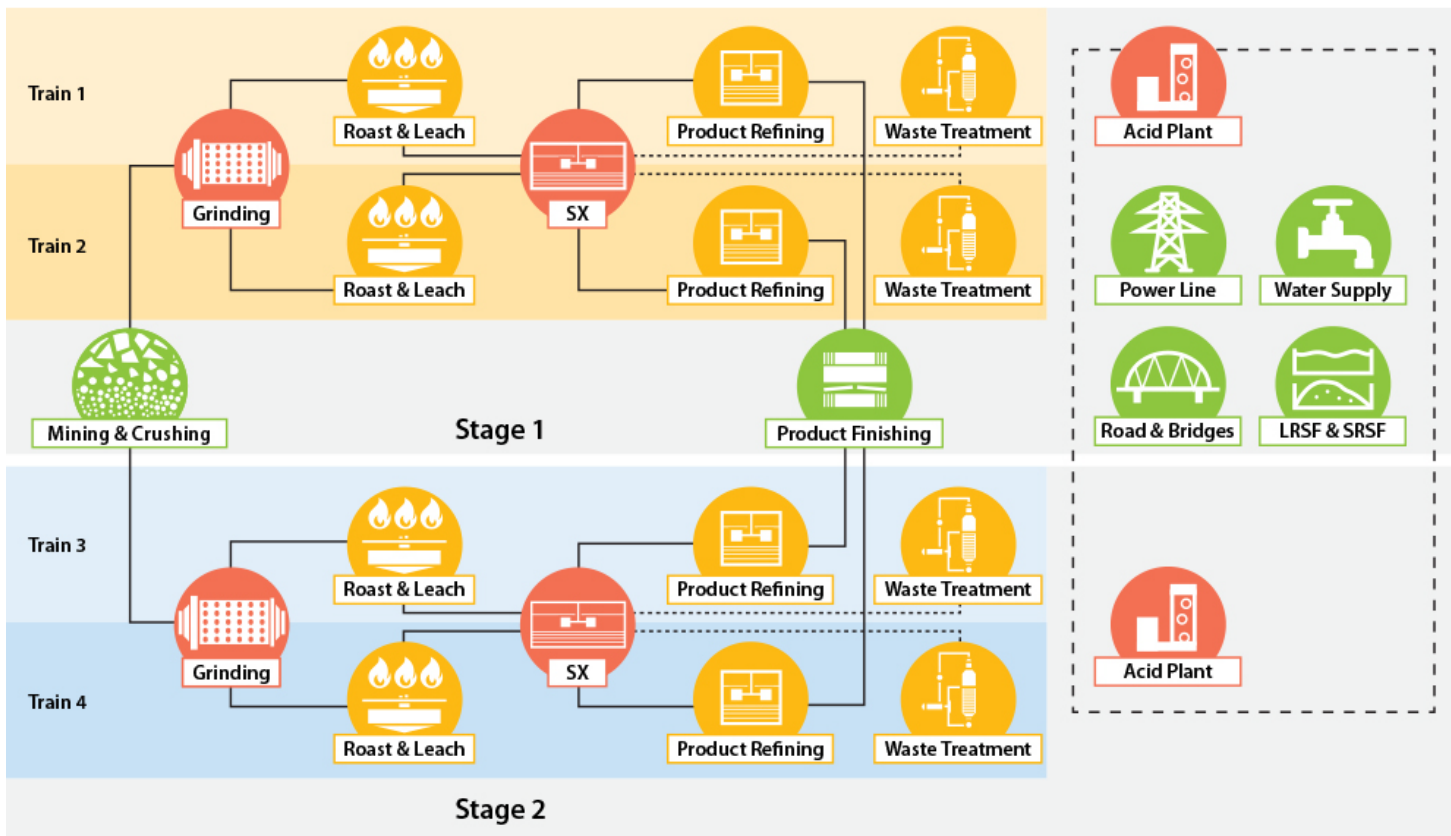
Rare Earth Output



Tonnage based upon recoveries developed from mass balances of the demonstration pilot plant & preliminary solvent extraction stages on site at the DP.

Total saleable RE products from site ~1,030 tpa and off site ~ 1,675 tpa.

Modular Design



Construction
2017 - 2019

Estimated cost
US\$480M

Construction
2022 - 2023

Estimated cost
US\$360M

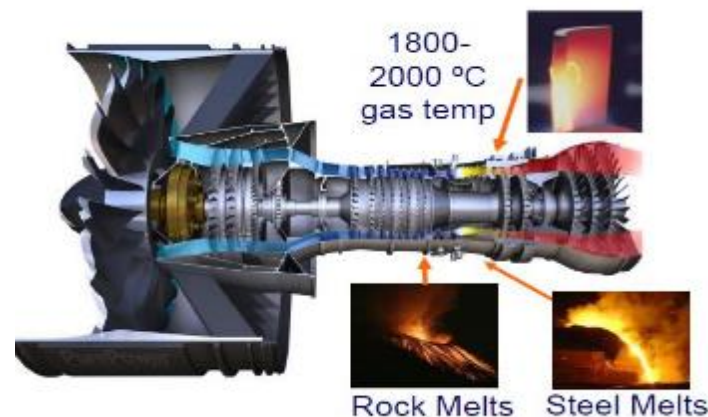
Estimated total
Cost US\$840M

Legend - Built to a production capacity of:
● 1 Mtpa ● 500 Ktpa ● 250 Ktpa

Detail in ASX release 28 October 2016

Marketing and Off-take

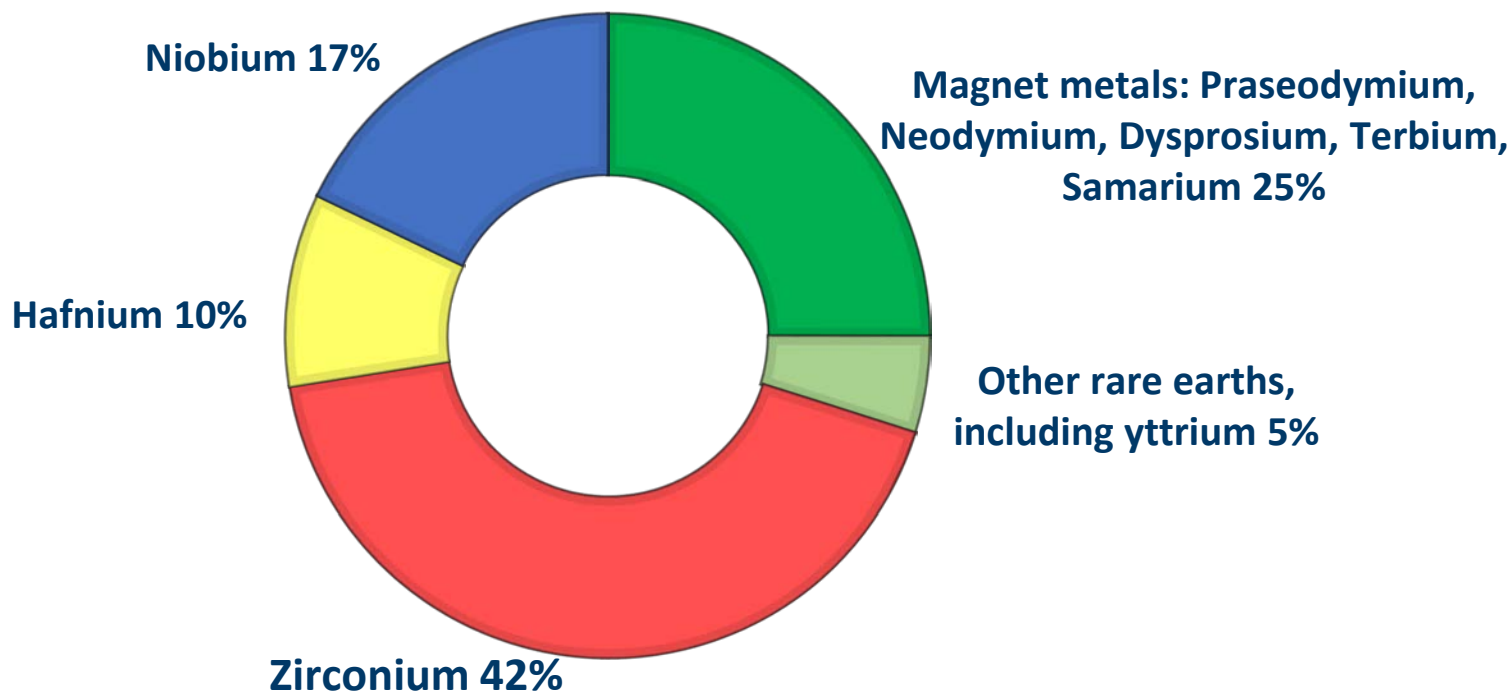
- **Minchem** – World wide zirconium product & marketing/sales agreement.
- **Treibacher Industrie AG** - JV to produce & market ferro-niobium
- **Vietnam Rare Earth (VRE)** – LOI for the production and marketing of separated rare earth products, and down stream value added metal alloy production
- **Siemens** – MOU signed for supply of rare earths and rare metals by DZP and supply of equipment and services by Siemens
- **Aerospace and permanent magnet companies** – Ongoing interest and discussions with multiple end users for separated rare earth products
- **Supply and JV discussions ongoing with organisations** - High purity zirconium feed for reactor grade metal and hafnium for metal production



Powering the world

Diversified products – lowers risks

Dubbo Project - product revenue split



*Stage 1 revenue US\$200 - 220M

Opex US\$120 – 130M

*Stage 1 + 2 revenue US\$400 - 440M

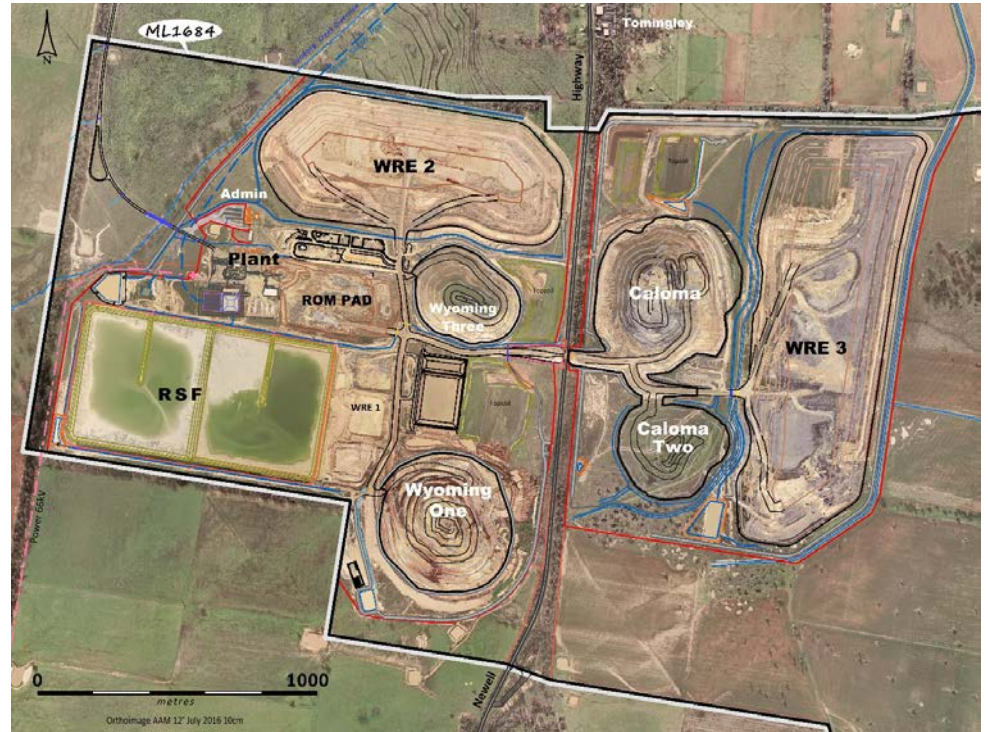
Opex US\$220 – 230M

* estimates subject to completion of Modular Construction study

Note: ASX announcements 16 November 2011, 11 April 2013, 30 October 2013, 27 August 2015, 7 April 2016 and 28 October 2017 - the Company confirms that all material assumptions and technical parameters underpinning the estimated Mineral Resources and Ore Reserves, and production targets and the forecast financial information as disclosed continue to apply and have not materially changed.

Tomingley Gold Operations – FY16

- Resource – 579,000oz of gold (22 Sept 2016)
- Reserve – 253,000oz (22 Sept 2016)
- Mine Method – open cut W1, W3, C1 & C2
- Underground feasibility in progress
- Mine Life – 4.5 years without addition
- Processing plant standard CIL 1.0Mtpa throughput
- 200,000oz produced to end April 2017
- FY16 – Revenue A\$109.6M, TGO EBITDA A\$24.6M Profit A\$6.7M
- Forward Gold Contracts at 31 Mar 2017 31,000oz @ A\$1,704/oz

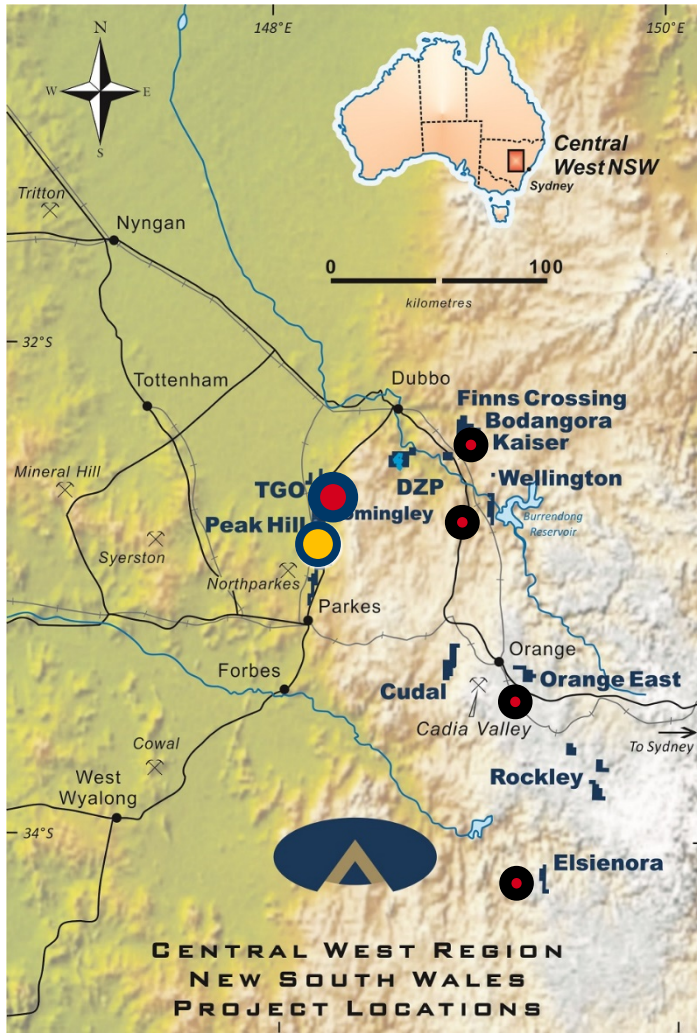


Resource Expansion and Exploration

- Regional aircore drilling to test multiple targets
- Re-evaluation of large gold-copper system at Peak Hill mine site
- Major subpit RC and core drilling programs in progress to expand resource/reserve base in mine environs

Note: ASX announcement 22 September 2016 - the Company confirms that all material assumptions and technical parameters underpinning the estimated Mineral Resources and Ore Reserves, and production targets and the forecast financial information as disclosed continue to apply and have not materially changed.

Exploration



- **Peak Hill Gold Mine 1996 – 2005 production**
 - Substantial gold-copper sulphide deposit
 - potential feed for TGO
- **TGO – Regional exploration**
 - Recent ore intercepts in air core drilling
- **Advanced exploration projects at**
 - **Bodangora – Kaiser (Au – Cu)**
 - large gold-copper porphyry system
 - KSRC001 60m grading 0.81g/t gold and 0.91% copper
 - KSRC018 311m grading 0.28g/t gold and 0.08% copper
 - **Wellington (Cu – Au)**
 - defined small VMS deposit (non JORC)
 - **Elsienora (Au – base metals, barite)**
 - McPhillamys style targets (2.5Moz)
 - **Orange East (Au)**
 - McPhillamys style targets

Disclaimer

This presentation contains certain forward looking statements and forecasts, including possible or assumed reserves and resources, production levels and rates, costs, prices, future performance or potential growth of Alkane Resources Ltd, industry growth or other trend projections. Such statements are not a guarantee of future performance and involve unknown risks and uncertainties, as well as other factors which are beyond the control of Alkane Resources Ltd. Actual results and developments may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors. Nothing in this **presentation should be construed as either an offer to sell or a solicitation of an offer to buy or sell securities.**

This document has been prepared in accordance with the requirements of Australian securities laws, which may differ from the requirements of United States and other country securities laws. Unless otherwise indicated, all ore reserve and mineral resource estimates included or incorporated by reference in this document have been, and will be, prepared in accordance with the JORC classification system of the Australasian Institute of Mining, and Metallurgy and Australian Institute of Geosciences.

Competent Person

Unless otherwise stated, the information in this presentation that relates to mineral exploration, mineral resources and ore reserves is based on information compiled by Mr D I Chalmers, FAusIMM, FAIG, (director of the Company) who has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Ian Chalmers consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.



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DP Resources and Reserves

Dubbo Project – Mineral Resources

Toongi Deposit	Tonnage (Mt)	ZrO ₂ (%)	HfO ₂ (%)	Nb ₂ O ₅ (%)	Ta ₂ O ₅ (%)	Y ₂ O ₃ (%)	REO (%)
Measured	35.70	1.96	0.04	0.46	0.03	0.14	0.75
Inferred	37.50	1.96	0.04	0.46	0.03	0.14	0.75
Total	73.20	1.96	0.04	0.46	0.03	0.14	0.75

These Mineral Resources are based upon information compiled by Mr Terry Ransted MAusIMM (Alkane Chief Geologist) who is a competent person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Terry Ransted consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. The full details of methodology were given in the 2004 Annual Report.

Dubbo Project – Ore Reserves

Toongi Deposit	Tonnage (Mt)	ZrO ₂ (%)	HfO ₂ (%)	Nb ₂ O ₅ (%)	Ta ₂ O ₅ (%)	Y ₂ O ₃ (%)	REO (%)
Proved	8.07	1.91	0.04	0.46	0.03	0.14	0.75
Probable	27.86	1.93	0.04	0.46	0.03	0.14	0.74
Total	35.93	1.93	0.04	0.46	0.03	0.14	0.74

These Ore Reserves are based upon information compiled by Mr Terry Ransted MAusIMM (Alkane Chief Geologist) who is a competent person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The reserves were calculated at a 1.5% combined ZrO₂+Nb₂O₅+Y₂O₃+REO cut off using costs and revenues defined in the notes in ASX Announcement of 16 November 2011. Terry Ransted consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Note: ASX announcements 16 November 2011, 11 April 2013, 30 October 2013 and 27 August 2015 - the Company confirms that all material assumptions and technical parameters underpinning the estimated Mineral Resources and Ore Reserves, and production targets and the forecast financial information as disclosed continue to apply and have not materially changed.

TGO Resources and Reserves

TOMINGLEY GOLD PROJECT MINERAL RESOURCES (as at 30 June 2016)									
DEPOSIT	MEASURED		INDICATED		INFERRED		TOTAL		Total Gold (Koz)
	Tonnage (Kt)	Grade (g/t Au)	Tonnage (Kt)	Grade (g/t Au)	Tonnage (Kt)	Grade (g/t Au)	Tonnage (Kt)	Grade (g/t Au)	
Open Pittable Resources (cut off 0.50g/t Au)									
Wyoming One	1,980	1.7	416	1.6	671	1.1	3,067	1.6	153
Wyoming Three	86	2.0	16	1.3	33	1.4	135	1.7	8
Caloma	604	1.3	1,892	1.4	1,204	1.4	3,700	1.4	163
Caloma Two			1,085	2.4	704	1.3	1,789	2.0	112
Stockpiles							701	0.8	18
Sub Total	2,670	1.6	3,409	1.7	2,612	1.3	9,392	1.5	454
Underground Resources (cut off 2.50g/t Au)									
Wyoming One	169	4.8	206	4.4	363	4.2	738	4.4	104
Wyoming Three	10	3.6	6	3.1	4	3.1	20	3.4	2
Caloma			1	2.9	18	2.9	19	2.9	2
Caloma Two			92	3.5	63	3.2	155	3.3	17
Sub Total	179	4.7	305	4.1	448	4.0	932	4.2	125
TOTAL	2,849	1.8	3,714	1.9	3,060	1.7	10,324	1.8	579

TOMINGLEY GOLD PROJECT ORE RESERVES(as at 30 June 2016)							
DEPOSIT	PROVED		PROBABLE		TOTAL		Total Gold (Koz)
	Tonnage (Kt)	Grade (g/t Au)	Tonnage (Kt)	Grade (g/t Au)	Tonnage (Kt)	Grade (g/t Au)	
Open Pittable Reserves (cut off 0.50g/t Au)							
Wyoming One	1,297	1.6	150	1.3	1,447	1.7	78
Wyoming Three	0	0	0	0	0	0	0
Caloma	116	1.7	722	1.6	838	1.6	43
Caloma Cut Back	233	1.4	251	1.1	484	1.2	19
Caloma Two	-	-	318	3.2	318	3.2	33
Stockpiles	700	0.8	-	-	700	0.8	18
Sub Total	2,347	1.4	1,441	1.9	3,788	1.5	191
Underground Reserves (cut off 2.50g/t Au)							
Wyoming One*	224	4.0	300.5	3.4	524.4	3.7	62
Sub Total	224	4.0	300.5	3.4	524.4	3.7	62
TOTAL	2,571	1.6	1,742	2.2	4,312	1.8	253

Note: ASX announcements 21 September 2015, 10 December 2015 and 22 September 2016 - the Company confirms that all material assumptions and technical parameters underpinning the estimated Mineral Resources and Ore Reserves, and production targets and the forecast financial information as disclosed continue to apply and have not materially changed