



# PALADIN ENERGY LTD

## Investor Presentation

*May 2018*





# Disclaimer and Notes for JORC and NI 43-101 Mineral Resources and Ore Reserves

This presentation includes certain statements that may be deemed “forward-looking statements”. All statements in this presentation, other than statements of historical facts, that address future production, reserve or resource potential, exploration drilling, exploitation activities and events or developments that Paladin Energy Ltd (the “Company”) expects to occur, are forward-looking statements.

Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in the forward-looking statements. Factors that could cause actual results to differ materially from those in forward looking statements include market prices, exploitation and exploration successes, and continued availability of capital and financing and general economic, market or business conditions.

Investors are cautioned that any such statements are not guarantees of future performance and actual results or developments may differ materially from those projected in the forward-looking statements. Readers should not place undue reliance on forward-looking information. The Company does not assume any obligation to update or revise its forward-looking statements, whether as a result of new information, future events or otherwise.

In the following presentation, for those deposits that are reported as conforming to the Joint Ore Reserves Committee (JORC) 2004 or 2012 code, the terms Inferred Mineral Resources, Indicated Mineral Resources, Measured Mineral Resources, Ore Reserves, Proved Ore Reserves, Probable Ore Reserves and Competent Person are equivalent to the terms Inferred Mineral Resources, Indicated Mineral Resources, Measured Mineral Resources, Mineral Reserves, Proven Mineral Reserves, Probable Mineral Reserves and Qualified Person, respectively, used in Canadian National Instrument 43-101 (NI 43-101).

The technical information in this is extracted from the report entitled *Paladin Energy Ltd (subject to deed of company arrangement) 2017 Annual Report* created on 31 January 2018 and is available to view on [www.paladinenergy.com.au](http://www.paladinenergy.com.au). The company confirms that it is not aware of any new information or data that materially affect the information included in the original announcement and, in the case 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 materially modified from the original market announcement.

Some of the information in this presentation, in relation to the mineral resources and ore reserves for all deposits except Langer Heinrich, Michelin, Jacques Lake and Manyingee was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with JORC Code 2012 on the basis that the information that the estimates are derived from has not materially changed since it was last reported.



Paladin

**PALADIN**

**A GLOBAL URANIUM LEADER**

**OWNS LANGER HEINRICH A STRATEGIC TIER ONE MINE**

**BALANCE SHEET STRENGTH AND FLEXIBILITY**

**BEST SENIOR LEVERAGE TO URANIUM UPSIDE**



# Capital Structure and Major Shareholders

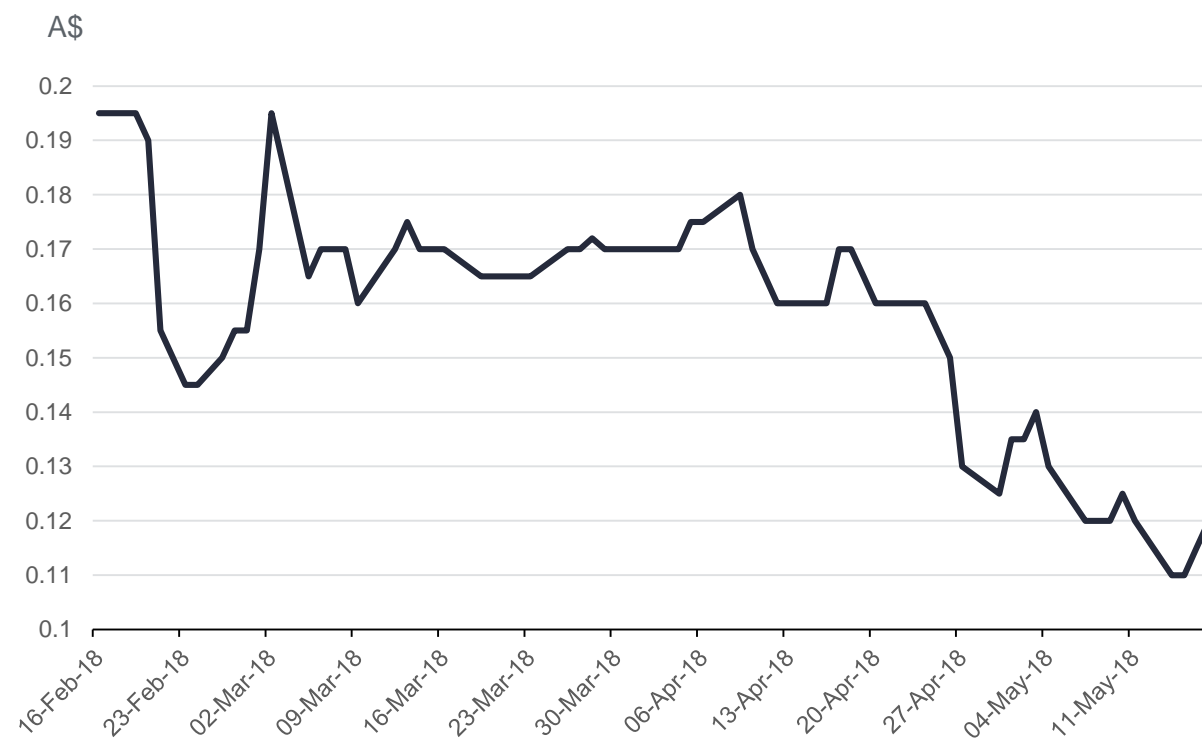
## Capital structure

Shares Outstanding	1.713Bn
Share price A\$	12.0c
Market capitalisation A\$	206M
Market capitalisation US\$ <sup>1</sup>	154M
Cash US\$ <sup>2</sup>	51M
Debt US\$ <sup>2</sup>	115M
Enterprise value US\$	218M

## Major shareholders<sup>3</sup>

Tembo	13.1%
Value Partners	11.4%
Davidson Kempner	11.4%
JPMorgan	10.2%
RBC	7.6%
HOPU	6.7%

## Recent share price (since re-listing on ASX)



Note:

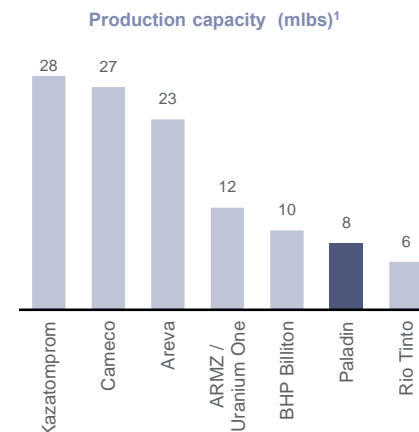
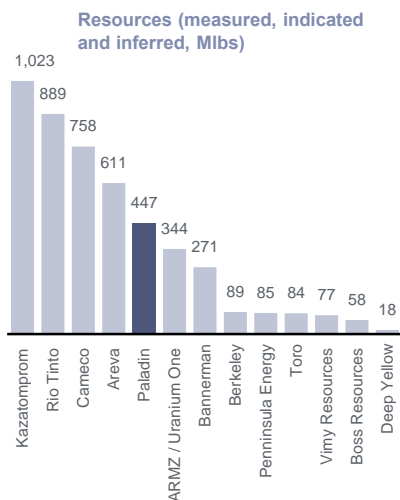
<sup>1</sup> AUD/USD 0.74935

<sup>2</sup> As at 31 March 2018

<sup>3</sup> As at 30 April 2018



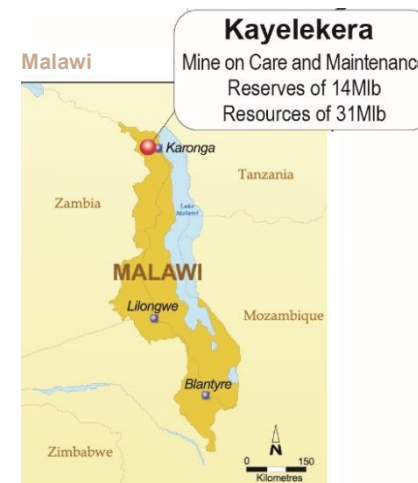
# Global Uranium Leader



- Undeveloped projects
- Langer Heinrich (75%)
- Kayelekera (85%)

Attributable Reserves and Resources	85.7mlb U <sub>3</sub> O <sub>8</sub>
Proved + Probable	248.7mlb U <sub>3</sub> O <sub>8</sub>
Measured + Indicated	112.1mlb U <sub>3</sub> O <sub>8</sub>
Inferred	

Resources and Reserves shown on the map represent 100% of the Resource of Reserve – not the participant's share, and are depleted for mining where appropriate



Source: Company filings

Note:

<sup>1</sup>: Paladin figure based on attributable total production capacity



# Langer Heinrich A Strategic Tier One Mine

## First Quartile

### All-in Cash Cost<sup>1</sup>

*Lowest cost open-pit mine globally<sup>1</sup>*

## Top 10 Uranium Mine by Production<sup>2</sup>

*4th largest open-pit*

## +20 Year Mine Life<sup>3</sup>

# 43.1mlb

*Cumulative production*



#### Mineral Resources depleted to 30<sup>th</sup> June 2017

Class	Tonnes Mt	Grade ppm	Metal Mlb
Measured	60.7	513	68.72
Indicated	21.5	459	21.72
Total M+I	82.2	499	90.44
Inferred	8.7	468	8.98
Stockpiles	33.9	381	28.47

#### Mineral Reserves depleted to 30<sup>th</sup> June 2017

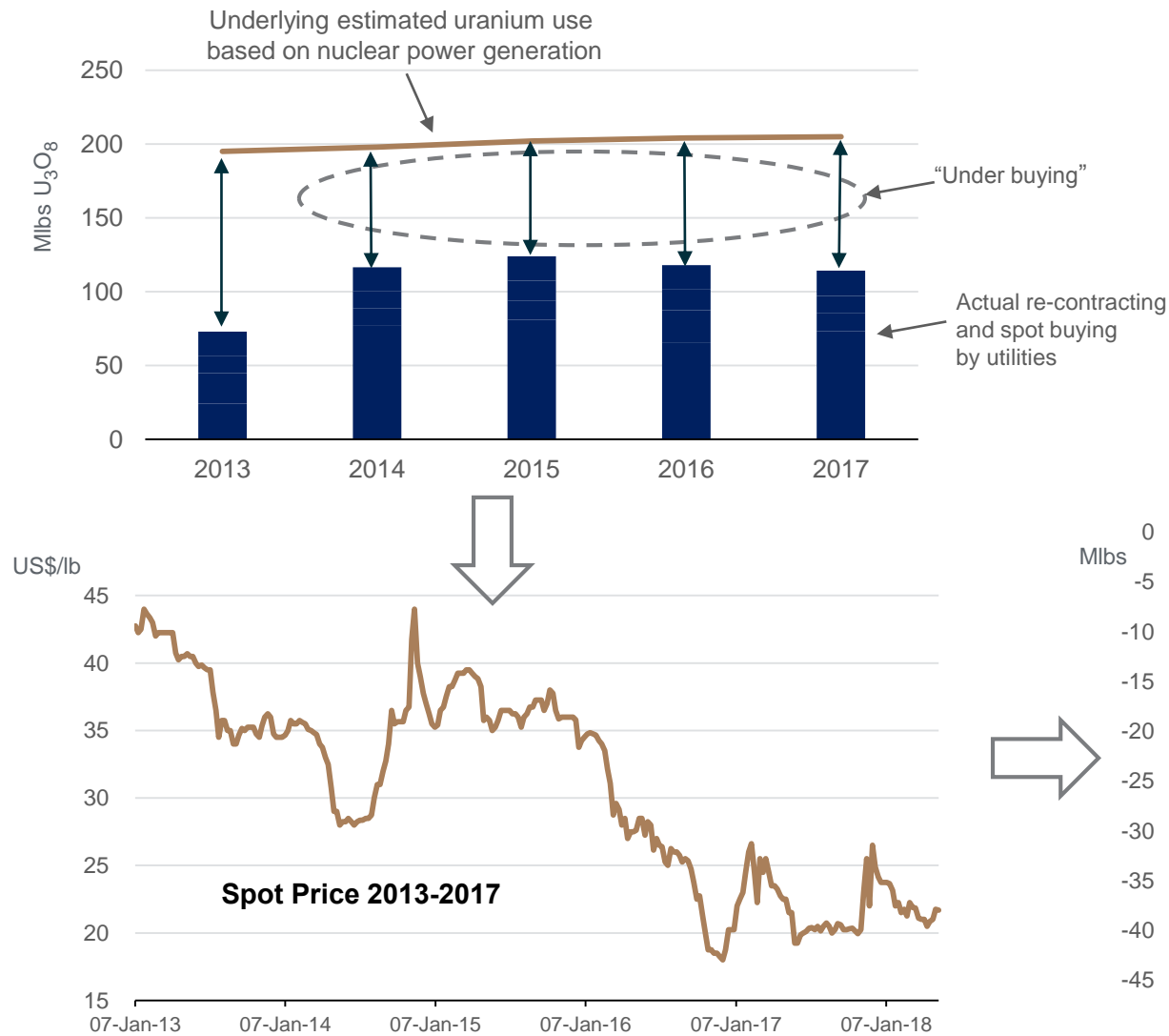
Class	Tonnes Mt	Grade ppm	Metal Mlb
Proved	42.0	524	48.49
Probable	13.1	485	14.03
Stockpiles	33.9	381	28.47
Total	89.0	464	91.00

Source:

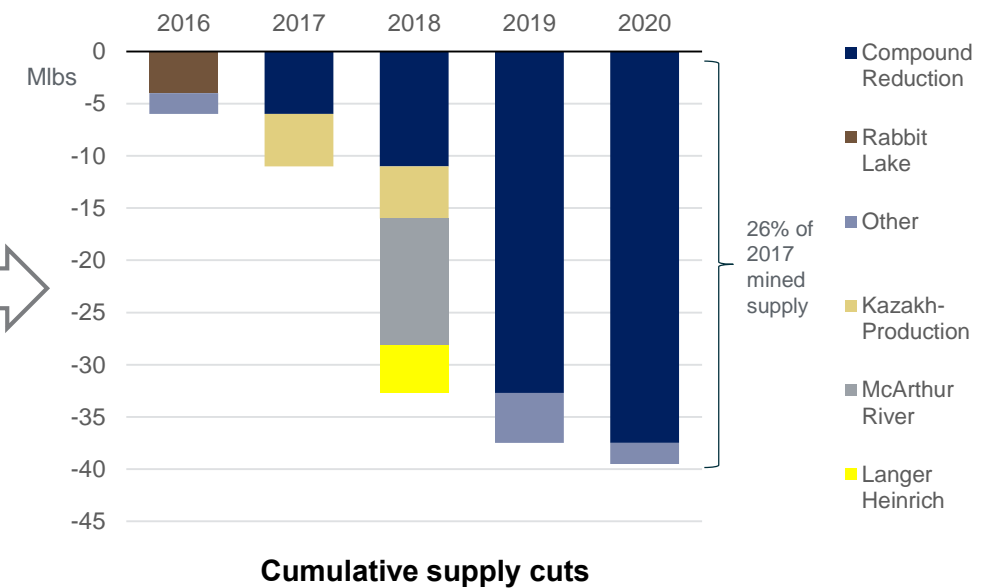
1. UxC Uranium Production Cost Study – August 2017
2. TradeTech Uranium Market Study – 2017: Issue 3 (based on 2016 production)
3. At current processing rates



# What has been happening in uranium?



- Growth in China, India and elsewhere means the nuclear power industry is stronger than pre-Fukushima and growing
- Utilities are “under buying” at a rate of 40-50Mlbs less per year than consumption – running down stock piles and contract positions put in place pre-Fukushima when European and U.S. utilities worried about market tightness due to rapid China growth
- Uranium prices are at a 15-year low
- Mined supply is being rapidly cut back

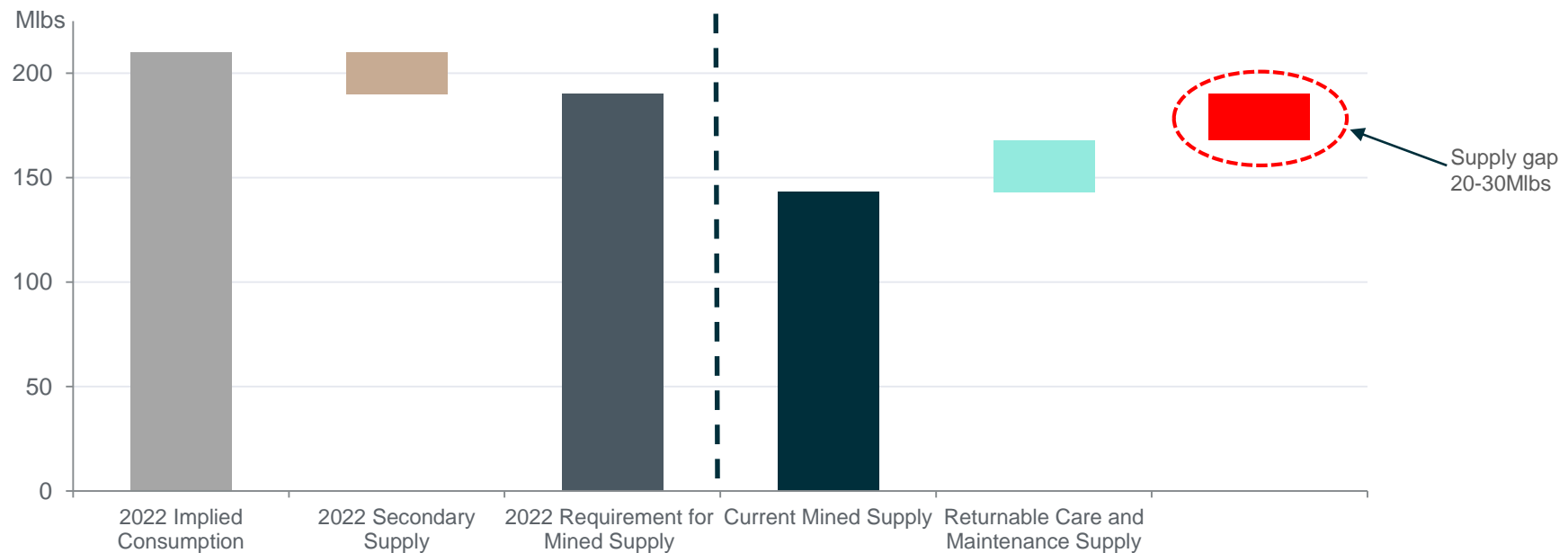




## What is about to happen?



- At the current rate of “under buying” utilities will be at “zero” discretionary inventories before 2022 – buying will need to = consumption before then
- Care and maintenance supply can generally come back online if prices lift to US\$40-60/lb range (i.e. 2-3x current price levels)
- BUT! The industry also needs additional new growth from mining before 2022 – this requires incentive prices of US\$60-80/lb (i.e. 3-4x current price levels)
- In reality, the downtrend has been so long and deep, it will be difficult for the industry to meet medium term demand and conditions are in place for an “overshoot”







## Langer Heinrich Mine – Moving to Care & Maintenance

Care & maintenance makes the most sense to preserve our strategic tier one resource for a higher uranium price

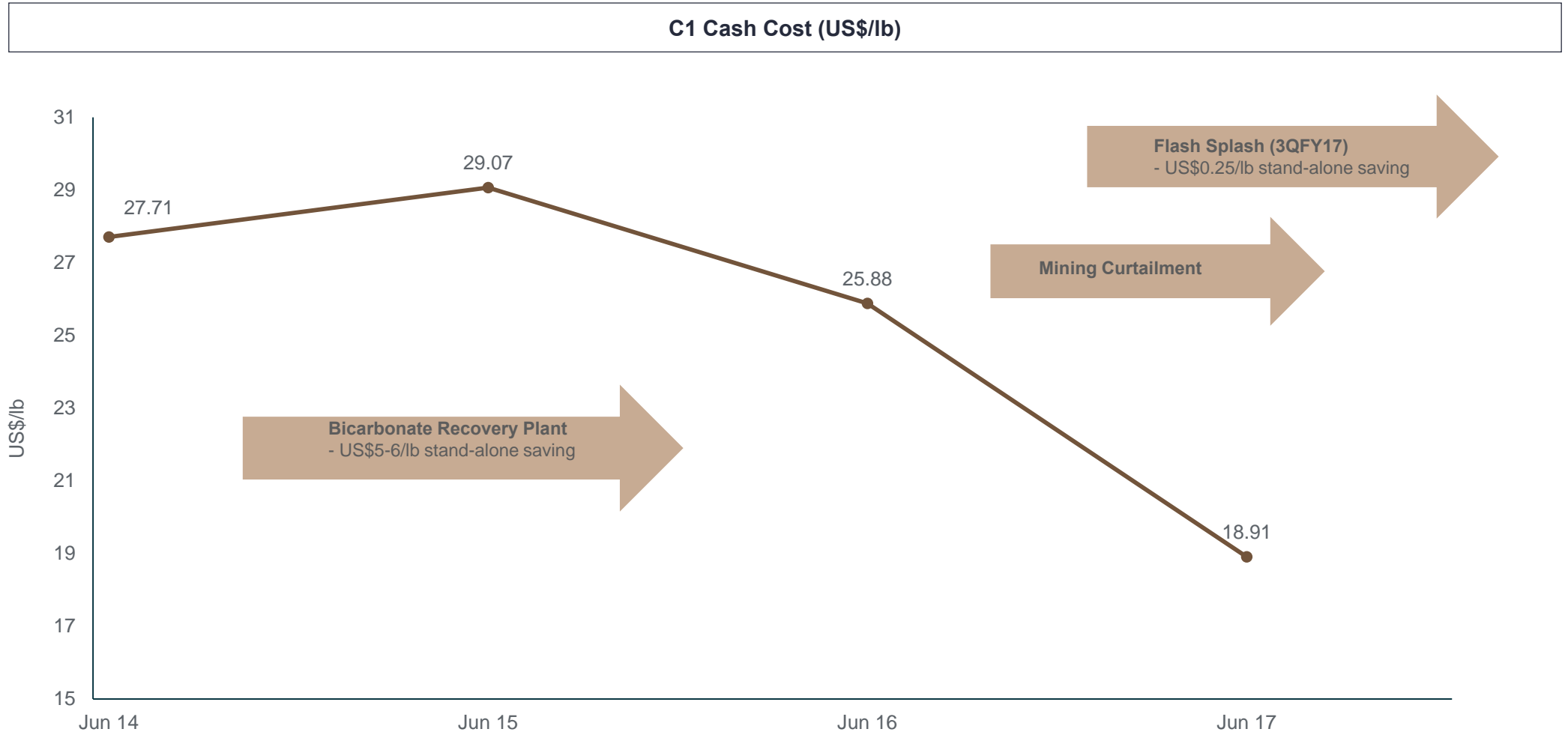
- To reduce cash operating costs, Langer Heinrich ceased physical mining in November 2016 maintaining processing feed from medium grade ore stockpiles
- In April 2018, commencement of preparatory steps towards care & maintenance was announced
- Care & maintenance can be implemented within three-months and then there will be an ongoing cost of US\$3-5M
- Unwinding care and maintenance would then require 6-12 months and US\$35-45M in working capital
- Given Langer Heinrich's low cash cost of production and the low working capital requirement to unwind care & maintenance, the mine will be one of the first global producers to return once the uranium price recovery commences





# Langer Heinrich Mine – Recent Optimisation Success

Optimisation has resulted in a significant reduction in C1 Cash Costs



Notes:  
\* Above numbers based on full year results



# Langer Heinrich Mine - Future Optimisation Potential

Innovation to be worked on during care and maintenance to re-envisage LHM as an even lower cost operator for its return to production

## Back-end Upgrade Project (BUP)

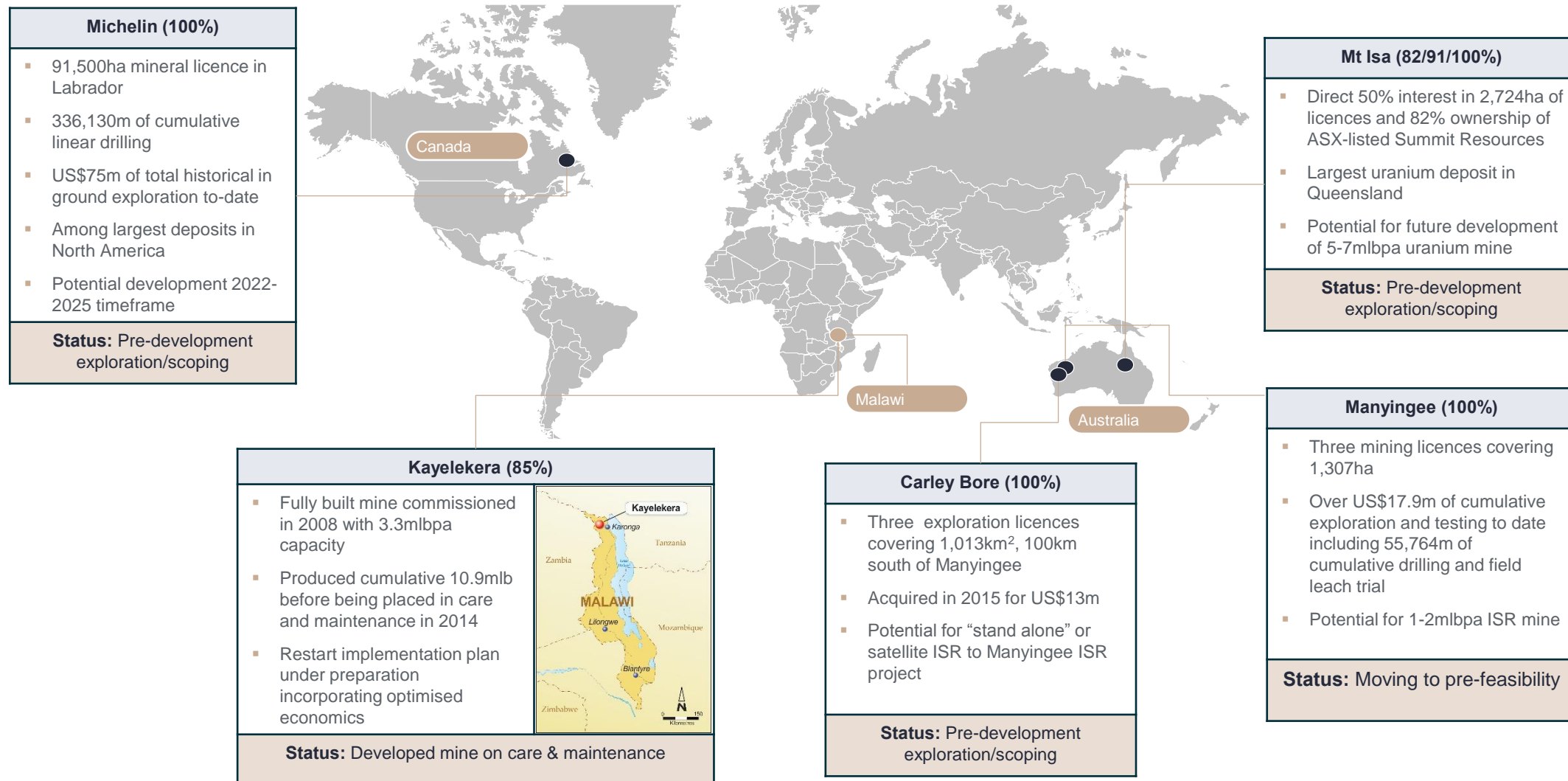
- The BUP will utilise the existing LHM process across the Beneficiation, Leach and CCD & TSF areas with relatively minor changes
- The PLS to be treated via a substantially new process that has been divided into the following process areas:
  - PLS concentration;
  - Vanadium precipitation;
  - Uranium precipitation;
  - Causticisation & carbonation;
  - Crystallisation;
  - Vanadium refinery; and
  - Uranium refinery
- BUP has completed the R&D phase with material benefits across the operations including;
  - Potential to reduce process cost by US\$4-5/lb
  - Vanadium produced for sale
  - Process more stable and operability improved
- Implementation period of 2 years and a Simple capex return period of 12-18 months

## U-pgrade

- Marenica Energy Ltd has performed initial test work and proceeded to calculate the possible benefit to LHU of feeding the currently uneconomical low grade ore into an upgrade plant. Preliminary results a positive
- The **U-pgrade**<sup>™</sup> process uses mineralogical data to determine a processing route to reject a low grade stream, leaving a high grade product for further processing
- Initial study and testwork for a 3Mt (avg grade of 325ppm) per annum **U-pgrade**<sup>™</sup>, plant to co-process low grade material
- Potential to increase production 1.5-1.8Mlb p.a. and reduce average costs by US\$1-2/lb



# Non-Langer Heinrich Portfolio – An Industry Leading Suite of Development Assets

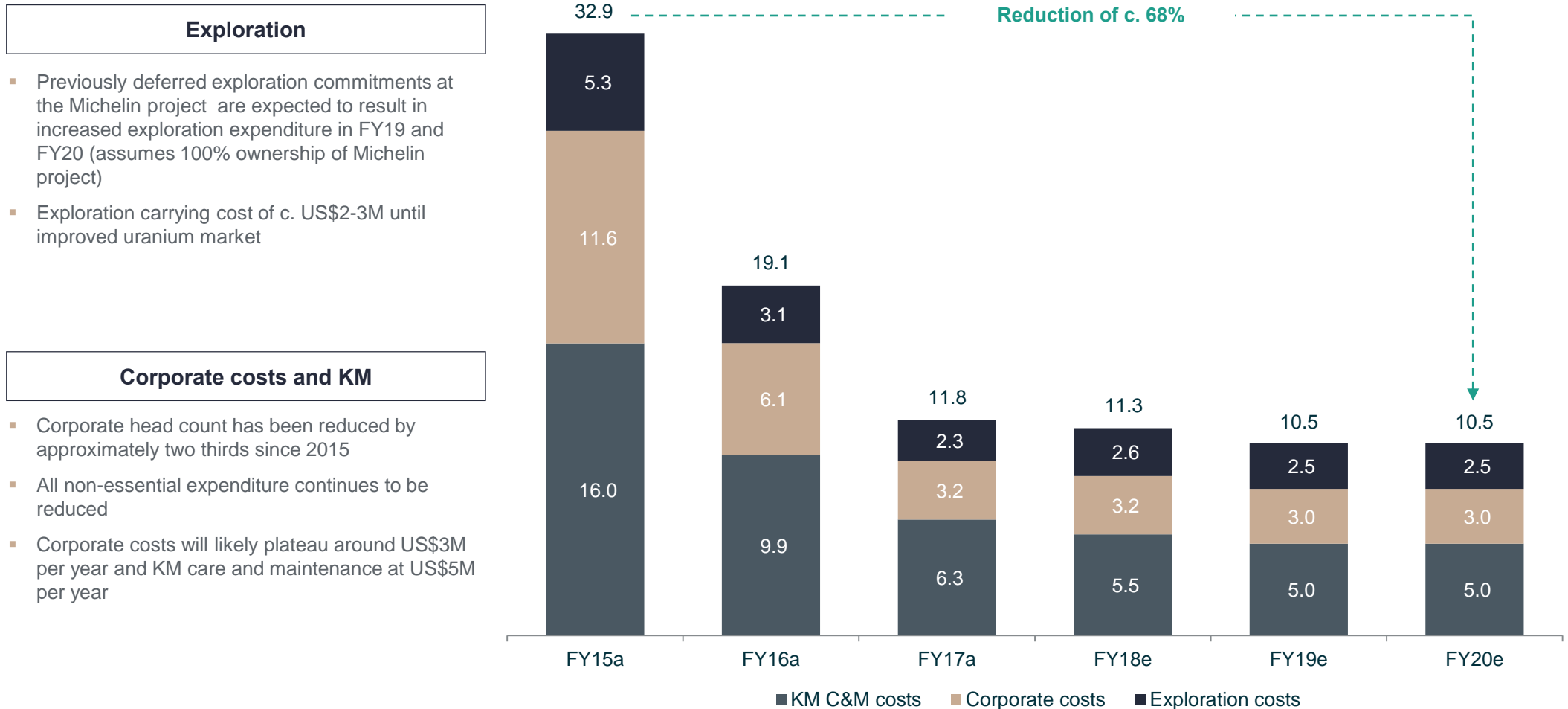






## Continued Reduction in Non-LHM Spending

Exploration and other controllable costs have been significantly reduced and are expected to hit a "run rate" of c. US\$10-11m per year from FY19E



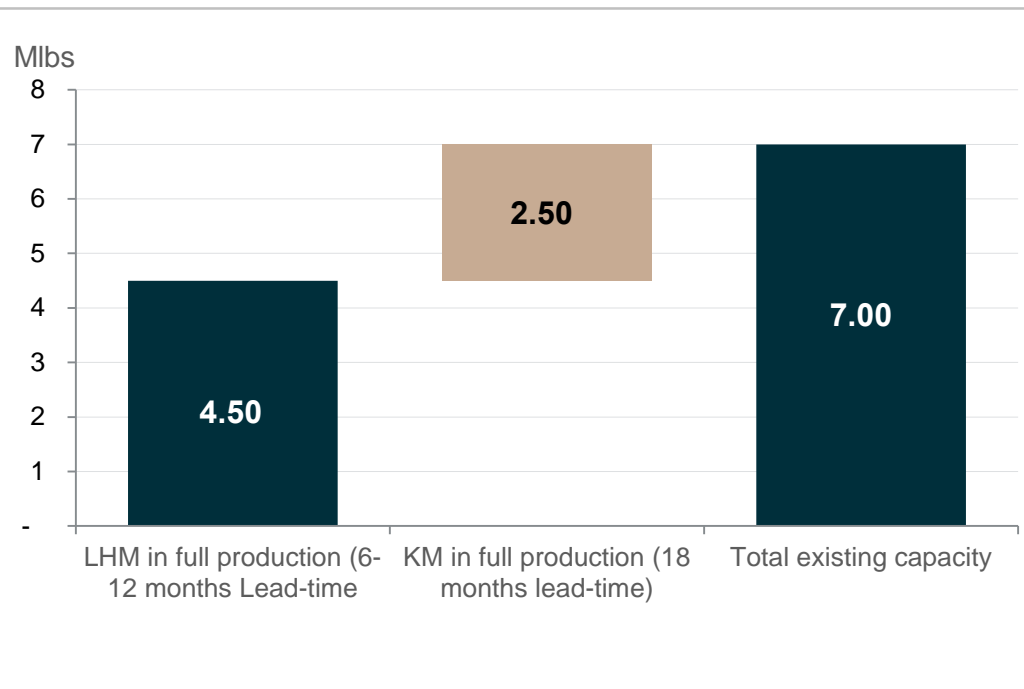
Notes:  
\* Excludes one-off items and working capital requirements.



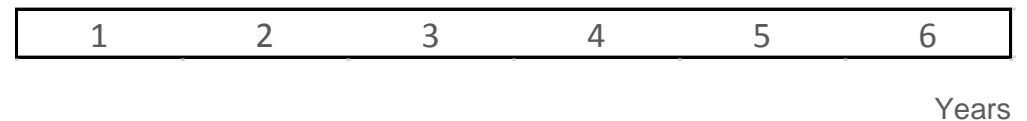
# Unique Leverage to Uranium

Our fully built capacity plus pipeline provides unique growth potential

## Potential volume growth within existing capacity (Mlbs)



## Future Pipeline





**PRESERVE THE VALUE OF STRATEGIC TIER ONE LHM THROUGH CARE AND MAINTENANCE PREPARATION AND CONTINUED DEVELOPMENT OF OPTIMISATION INITIATIVES**

**MAINTAIN KM AND EXPLORATION ON A “MINIMAL EXPENDITURE, CARE AND MAINTENANCE BASIS”**

**MINIMISE CORPORATE AND ADMINISTRATIVE COSTS**

**PREPARE FOR GROWTH**



## Paladin Energy Ltd – Contact Details

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Paladin Energy Ltd

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# Additional Information



## Board of Directors

### Mr Rick Wayne Crabb

B. Juris (Hons), LLB, MBA,  
FAICD

*Non-executive Chairman*

- Mr Crabb holds degrees of Bachelor of Jurisprudence (Honours), Bachelor of Laws and a Master of Business Administration from the University of Western Australia. He practised as a solicitor from 1980 to 2004 specialising in mining, corporate and commercial law and advised in relation to numerous project developments in Australia, Asia and Africa.
- Mr Crabb now focuses on his public company directorships and investments.
- He is also a non-executive director of Eagle Mountain Mining Limited (since September 2017), Thundelarra Limited (since November 2017) and was a non-executive director of Golden Rim Resources Ltd (from August 2001 to November 2017) and was nonexecutive chairman of Otto Energy Ltd (from November 2004 to November 2015) and Lepidico Ltd (formerly Platypus Minerals Ltd) (from September 1999 to October 2015).

### Mr David Noel Riekie

BEcon, Dip Acc, MAICD, CA

*Independent Non-executive  
Director*

- Mr Riekie is an experienced ASX director at both the Executive and Non-Executive levels.
- Mr Riekie has operated in a variety of countries globally and throughout Africa; notably Namibia and Tanzania. David is Managing Director of junior explorer iCobalt Limited. David has throughout his career provided corporate, strategic and compliance services.
- Additional experiences were been gained during his time as a corporate reconstruction specialist with Price Waterhouse. David has overseen, exploration and resource development, scoping and feasibility studies, production, optimisation and rehabilitation initiatives.
- Mr Riekie has special interest in the energy and energy storage sector, primarily through energy storage minerals and commodities with specific knowledge of uranium (Uranio Limited), oil and gas (Hawkley Oil and Gas), graphite (Battery Minerals Limited) and cobalt (iCobalt Limited).
- David has previously operated as either Chairman or member of Audit, Risk, Remuneration and Nomination Committees.

### Mr Daniel Harris

BSc

*Independent Non-executive  
Director*

- Mr Harris is a seasoned and highly experienced mining executive and director and has most recently held the role of interim CEO and Managing Director of ASX listed Atlas Iron. Daniel remains an Non-Executive Director to the Atlas Iron Board and is Chairman of the Audit and Risk Committee.
- Mr Harris has been involved in all aspects of the industry for over 37 years and held both COO and CEO positions in Atlantic Ltd. As COO, Daniel was tasked with the start-up of the newly constructed vanadium plant, before moving to the CEO role.
- Mr Harris is also the former Vice President of EVRAZ Plc, responsible for their global vanadium business. EVRAZ plc is a £4.2 billion publicly traded steel, mining and vanadium business with operations in the Russian Federation, Ukraine, Europe, USA, Canada and South Africa.
- Prior to EVRAZ, Mr Harris held numerous positions with Strategic Minerals Corporation. Throughout his 30 years with the company, he advanced his career from junior engineer, through to CFO and CEO roles within the group.
- Mr Harris is also a Non-Executive Director of Perth based Australian Vanadium, a consultant and member of the Advisory Board of Black Rock Metals. Mr Harris is the Chief Advisor to the Board of Directors of Queensland Energy Minerals, QEM, based in Brisbane.

### Mr John Hodder

BSc, Bcom, MBA

*Non-executive Director*

- Mr Hodder is a Geologist by background with a B.Sc. in Geological Sciences and a BCom in Finance and Commerce from the University of Queensland
- Mr Hodder spent ten years in the mining and oil and gas industries before completing a M.B.A. at London Business School. John established the Commonwealth Development Corporation (CDC) mining, oil and gas investment department in 1995 and was responsible for its investment activities for some eight years.
- Mr Hodder has served as a director of a number of junior mining companies and has significant experience of operating and investing in Africa. John also worked at Suncorp and Solaris as a Fund Manager focusing on the resources sector managing an index-linked natural resource portfolio of ~AUD\$1.25bn. In 2014 John was one of three principals who established Tembo Capital a mining focused private equity fund.



# Resource and Reserve Tables

		30 June 2017			
Mineral Resources		M tonnes	grade % U <sub>3</sub> O <sub>8</sub>	Metal t	Paladin Ownership %
<b>Canada</b>					
Measured	Jacques Lake	-	-	-	100
	Michelin	17.62	0.097	17,045	100
	Rainbow	0.21	0.092	193	100
Indicated	Gear	0.35	0.077	270	100
	Inda	1.2	0.069	826	100
	Jacques Lake	12.96	0.063	8,145	100
	Michelin	20.65	0.098	20,225	100
	Nash	0.68	0.083	564	100
	Rainbow	0.76	0.086	655	100
Inferred	Gear	0.3	0.093	279	100
	Inda	3.26	0.067	2,171	100
	Jacques Lake	3.61	0.055	1,988	100
	Michelin	4.54	0.099	4,470	100
	Nash	0.51	0.072	367	100
	Rainbow	0.91	0.082	739	100
<b>Malawi</b>					
Measured	Kayelekera	0.74	0.101	753	85
Indicated	Kayelekera	12.71	0.070	8,901	85
Inferred	Kayelekera	5.35	0.062	3,334	85
Stockpiles	Kayelekera	1.59	0.076	1,199	85
<b>Namibia</b>					
Measured	Langer Heinrich	60.71	0.051	31,169	75
Indicated	Langer Heinrich	21.48	0.046	9,854	75
Inferred	Langer Heinrich	8.70	0.047	4,073	75
Stockpiles	Langer Heinrich	33.90	0.038	12,915	75
<b>Australia</b>					
Measured	Valhalla	16.02	0.082	13,116	91
Indicated	Andersons	1.4	0.145	2,079	82
	Bikini	5.77	0.050	2,868	82
	Duke Batman	0.53	0.137	728	100
	Odin	8.2	0.055	4,534	91
	Skal	14.3	0.064	9,177	91
	Valhalla	18.64	0.084	15,662	91
	Carley Bore	5.4	0.042	2,268	100
	Manyingee	8.37	0.085	7,127	100
Inferred	Andersons	0.1	0.164	204	82
	Bikini	6.7	0.049	3,324	82
	Duke Batman	0.29	0.110	325	100
	Honey Pot	2.56	0.070	1,799	100
	Mirrioola	2	0.056	1,132	82
	Odin	5.8	0.059	3,430	91
	Skal	1.4	0.052	708	91
	Valhalla	9.1	0.064	5,824	91
	Watta	5.6	0.040	2,260	82
	Warwai	0.4	0.036	134	82
	Carley Bore	17.4	0.028	4,825	100
	Manyingee	5.41	0.085	4,613	100

		30 June 2017			
Ore Reserves		M tonnes	grade % U <sub>3</sub> O <sub>8</sub>	Metal t	Ownership %
<b>Malawi</b>					
Proven	Kayelekera	0.39	0.117	457	85
Probable	Kayelekera	5.34	0.088	4,709	85
Stockpiles	Kayelekera	1.59	0.076	1,199	85
<b>Namibia</b>					
Proven	Langer Heinrich	41.97	0.052	21,997	75
Probable	Langer Heinrich	13.14	0.048	6,366	75
Stockpiles	Langer Heinrich	33.90	0.038	12,915	75