



# PALADIN ENERGY LTD

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**BMO 29<sup>th</sup> GLOBAL METALS & MINING CONFERENCE**

24<sup>th</sup>-26<sup>th</sup> February 2020

ASX: PDN

# DISCLAIMER AND NOTES

## JORC MINERAL RESOURCES AND ORE RESERVES

This presentation contains summary information about the Company's activities current as at the date of this presentation. The information in this presentation is of a general background nature and does not purport to be complete or contain all the information investors would require to evaluate their investment in the Company, nor does it contain all the information which would be required in a prospectus or product disclosure statement prepared in accordance with the Corporations Act 2001 (Cth). The Company is not responsible for updating, nor undertakes to update, this presentation. This presentation should be read in conjunction with the Company's other periodic and continuous disclosure announcements, available at <http://www.paladinenergy.com.au>.

This presentation includes 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 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 the expectations expressed in the forward-looking statements. Factors that could cause actual results to differ materially from the expectations expressed those in forward looking statements include market prices, exploitation and exploration successes, continued availability of capital and financing and general economic, market or business conditions and risk factors associated with the uranium industry generally.

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. No representation is made or will be made that any forward-looking statements will be achieved or will prove to be correct.

The information in this presentation relating to the Mineral Resources and Ore Reserves for all of the Company's deposits other than 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 the JORC Code 2012 on the basis that this information has not materially changed since it was last reported. Refer to the Resource and Reserve Tables slide in the Appendix of this presentation.

### Competent Persons Statement

Figures for Mineral Resources and Ore Reserves detailed in this presentation were compiled by David Princep of Gill Lane Consulting from Paladin Annual Reports and ASX announcements as noted in the Appendix. Mr. Princep is a Fellow of the Australasian Institute of Mining and Metallurgy and a Chartered Professional Geologist. Mr. Princep has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration 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 (JORC 2012). Mr Princep approves of and consents to the inclusion of the information in this announcement in the form and context in which it appears.



# CORPORATE PROFILE

## WHO IS PALADIN?



ASX listed independent uranium company with a focus in Africa, Australia and Canada



14 years of production history across two mines in Africa, Langer Heinrich (Namibia) and Kayelekera (Malawi)



Both mines are on care and maintenance (C&M), preserving our resource and shareholder value in the current low uranium price environment



Non-core assets reviewed to preserve cash leading to the proposed sale of the Kayelekera mine



Large and globally diversified uranium exploration portfolio - ~320Mlb<sup>1</sup>

## MARKET SNAPSHOT ASX: PDN

Shares on issue	2.027B
Share price (as at 17 February 2020) A\$	0.09c
Market capitalisation A\$	178.5M
Market capitalisation US\$ <sup>2</sup>	121.3M
Unrestricted Cash US\$ <sup>3</sup>	37.7M
Debt US\$ <sup>4</sup>	138.8M

## SUBSTANTIAL SHAREHOLDERS<sup>4</sup>

Paradice, Maso (Form 604 dated 20/10/19)	13.55%
Tembo Capital Management	13.05%
Value Partners	8.03%
Hopu Clean Energy	7.03%

<sup>1</sup> Measured, indicated and inferred resources for the Michelin, Mount Isa and Manyingee Projects (including Carley Bore) on a 100% Project basis

<sup>2</sup> A\$/US\$ exchange rate 0.68

<sup>3</sup> As at 31 December 2019 and excluding restricted cash of US\$11M

<sup>4</sup> As at 31 December 2019





# MEET THE NEW BOARD AND CEO



**Cliff Lawrenson – Non-Executive Chairman**

Mining executive with deep expertise in the minerals and energy sectors derived from global experience having worked extensively in project development and investment banking. A successful track record of leading strategic direction in companies and executing corporate transactions.



**Peter Main – Non-Executive Director**

Mining and finance professional with extensive experience of the financial markets with a wealth of industry experience, having spent almost 15 years in a variety of roles in the mining industry from operations through to CEO of a TSX-V listed mining company



**Peter Watson – Non-Executive Director**

Chemical engineer with extensive experience in the global resources sector across senior technical, project, and management roles as well as running ASX-listed companies. His experience includes project development, project delivery, asset optimization and mining facilities operations across multiple commodities and global jurisdictions.



**Ian Purdy – Chief Executive Officer**

Highly-respected executive with over three decades' experience within Australian and international resources companies.

Ian has delivered significant shareholder value through managing and optimizing operations, delivering large projects and executing on business improvements and asset sales. Ian also has extensive capital markets experience and a proven track record of delivering company funding requirements.



A photograph of two Black men, likely miners, wearing hard hats and safety glasses. The man in the foreground is smiling and looking slightly to the right. He is wearing a white hard hat and clear safety glasses. The man behind him is also smiling and looking towards the camera. He is wearing a white hard hat with a yellow stripe and a circular tag with the number '76' on it. He is also wearing clear safety glasses. Both men are wearing light-colored, possibly khaki, work shirts. The background is slightly blurred, showing what appears to be an underground mine setting with some equipment and structural elements. The overall tone of the image is professional and positive.

A FIRST PRODUCER IN A RECOVERED URANIUM MARKET

# LANGER HEINRICH

A low cost, long life uranium mine



# LANGER HEINRICH MINE

- A strategic, tier one mine, historical production capacity 5.2Mlb pa
- Langer Heinrich is fully permitted and licensed
- 17-year mine life remaining
- Our relationships and products are market proven
- Proven top 10 uranium mine by production when operated<sup>1</sup>
- Replacement cost >US\$600M today and approximately five years to plan, design, construct and commission
- Langer Heinrich has produced and marketed approximately **43Mlb<sup>2</sup>** of  $U_3O_8$  over 10 years of production history



<sup>1</sup> UxC Uranium Production Cost Study – August 2017

<sup>2</sup> Approximately 43Mlb of  $U_3O_8$  produced from 2007 to 2018



# NAMIBIA – PREMIER GLOBAL URANIUM JURISDICTION

- Namibia is a premier uranium jurisdiction
- Supplies 5% of the world's uranium (>15Mlb pa)
- 40+ years production history
- Stable government with history of supporting investment
- Politically/socially supportive
- Excellent infrastructure:
  - Port
  - Road
  - Rail
  - Water
  - Power





# PREFEASIBILITY STUDY HIGHLIGHTS

- Prefeasibility Study confirms 12-month execution lead time to low risk restart Langer Heinrich
- Aspirational average life of mine AISC target **US\$30/lb** achievable
- Capital and Operations start up costs (including asset debottlenecking and efficiency improvements) of US\$80M
- Opportunity to increase production at restart to **6.5Mlb pa** with additional, high return discretionary capital of US\$30M
- Potential for further AISC improvements as identified in the Concept Study of approximately US\$4.50/lb through significant process changes





# PFS1 HAS CONFIRMED RAPID RESTART PLAN

- PFS1 confirms Concept Study results of comparatively low initial restart expenditure requirements of ~US\$80M for ~5.2Mlb pa production capacity



Plant Repair & De-  
Preservation Costs  
**US\$38M**

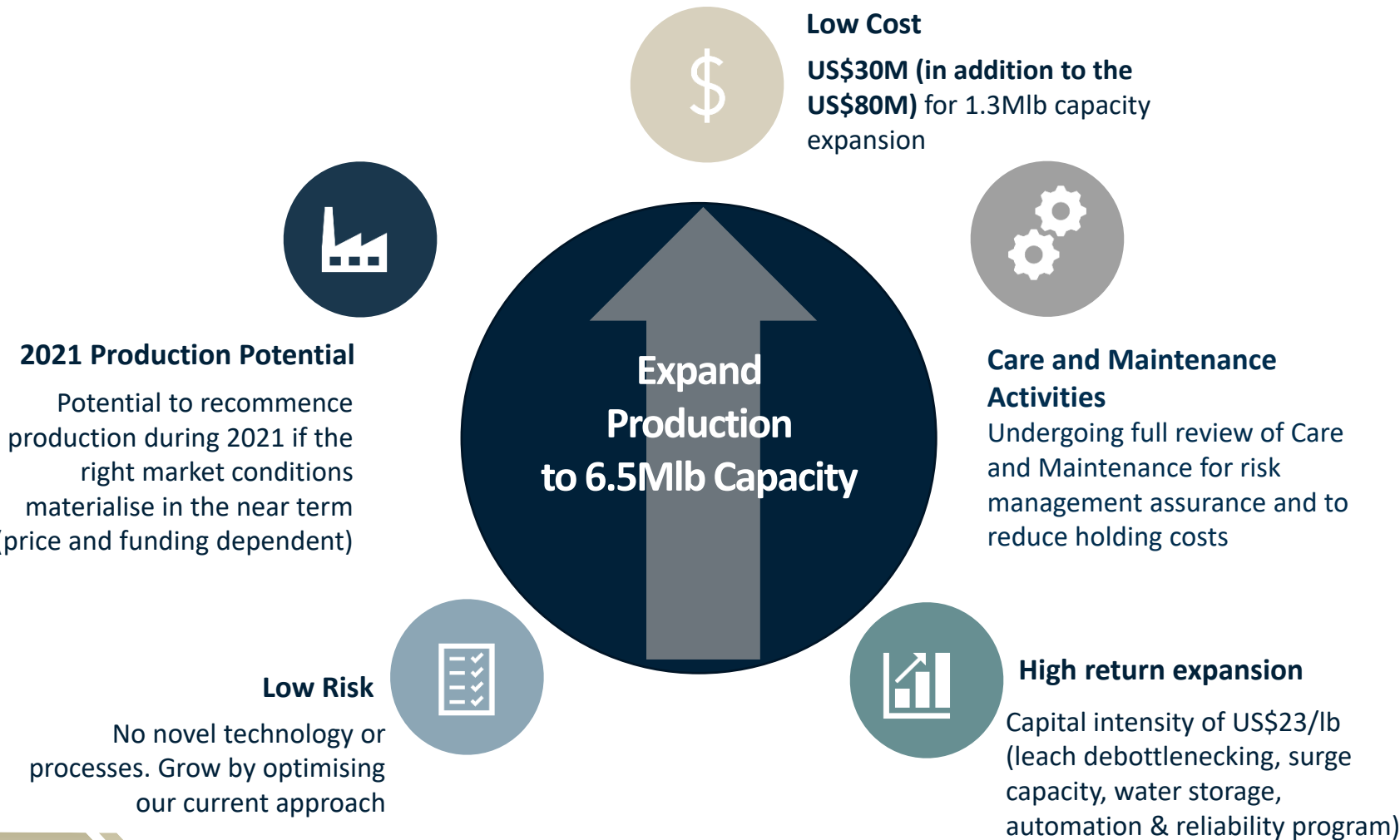


Operations Restart Costs  
**US\$42M**  
(includes: first fill of reagents,  
recommissioning, mobilisation of  
equipment and tailings dam  
costs)

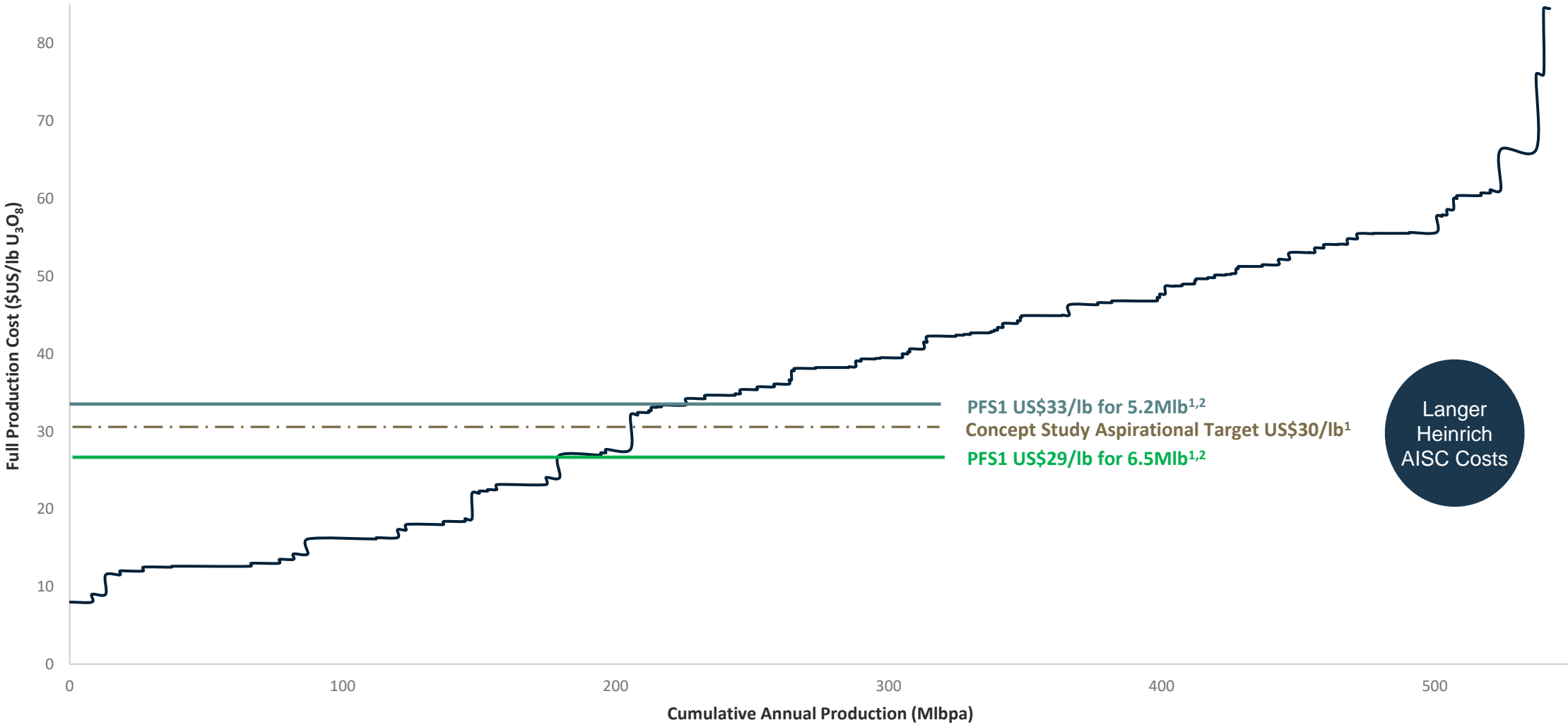




# PALADIN IDENTIFIES LOW COST EXPANSION OPPORTUNITY BEYOND 5.2MLB PA



# WORLD-WIDE PRODUCT COST CURVE – ALL PROJECTS



Source: UxC Production Cost Report 2019 – August 2019  
Note <sup>1</sup> AISC: All in Sustaining Cost based on the results of Paladin's Langer Heinrich Concept Study completed in February 2019; <sup>2</sup> ASX Prefeasibility Study Announcement 14 October 2019





# OTHER ASSETS



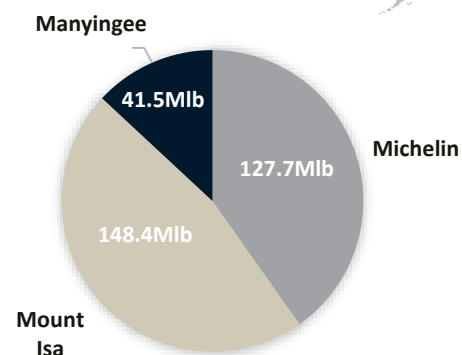
Exploration across two continents

# KAYELEKERA MINE SALE IN PROGRESS

- Paladin (Africa) Ltd, which holds an 85% interest in Kayelekera Mine to be sold to Lotus Resources Ltd
- Consideration for the sale:
  - A\$5M
    - A\$200,000 cash
    - A\$4.8M in shares (A\$1.8M on completion subject to 12 month escrow, A\$3M on third anniversary)
  - Deferred Royalty of 3.5% from production capped at A\$5M
- US\$10M Environmental performance bond to be refunded
  - US\$4M on completion; US\$1M first anniversary; US\$2M second anniversary; US\$3M third anniversary
- Awaiting final Malawi Government consents



# A QUALITY GLOBAL SUITE OF EXPLORATION ASSETS



**Michelin (55%)**

- 69,825ha mineral licence in Labrador
- 256,771m of cumulative linear drilling
- US\$75M of total historical in ground exploration to-date
- Among largest deposits in North America

**Status:** Pre-development exploration

**Carley Bore (100%)**

Two exploration licences with retention status 100km south of Manyingee

- Acquired in 2015 for US\$13M
- Potential for “stand alone” or satellite ISR to Manyingee ISR project

**Status:** Advanced exploration

**Mount Isa (100%)**

- Six Mineral Development Licences
- Largest uranium deposit in Queensland
- Potential for future development of uranium mine

**Status:** Pre-development exploration

**Manyingee (100%)**

- Three mining licences covering 1,307ha
- Over US\$17.9M of exploration and testing to date including 55,764m of cumulative drilling and field leach trial
- Potential for 1-2Mlb pa ISR mine


**Status:** Advanced exploration

Source: Paladin Research

<sup>1</sup> Measured, indicated and inferred resources for the Michelin, Mount Isa and Manyingee Projects (including Carley Bore) on a 100% Project basis as at June 2018.







PROVEN PRODUCER

# WHY PALADIN

Paladin Energy Ltd (PDN.ASX)



# INVESTMENT DRIVERS



Owner of the globally significant Langer Heinrich deposit in mining friendly Namibia



Existing infrastructure and historic mine development at Langer Heinrich results in a lower incentive price to restart operations than peers require to develop new mines



Langer Heinrich has all the required permits to restart



Production anticipated within 12 months of the commencement of restart works for US\$80M of capital



Langer Heinrich is well positioned on the cost curve with an expected All In Sustaining Cost of between US\$29/lb and US\$33/lb



Nuclear energy remains a global source of low cost and low carbon energy. The nuclear power industry is consuming more uranium now than pre-Fukushima



Appointment of new CEO and a restructured board to provide the technical and commercial skill sets necessary to restart mining activities

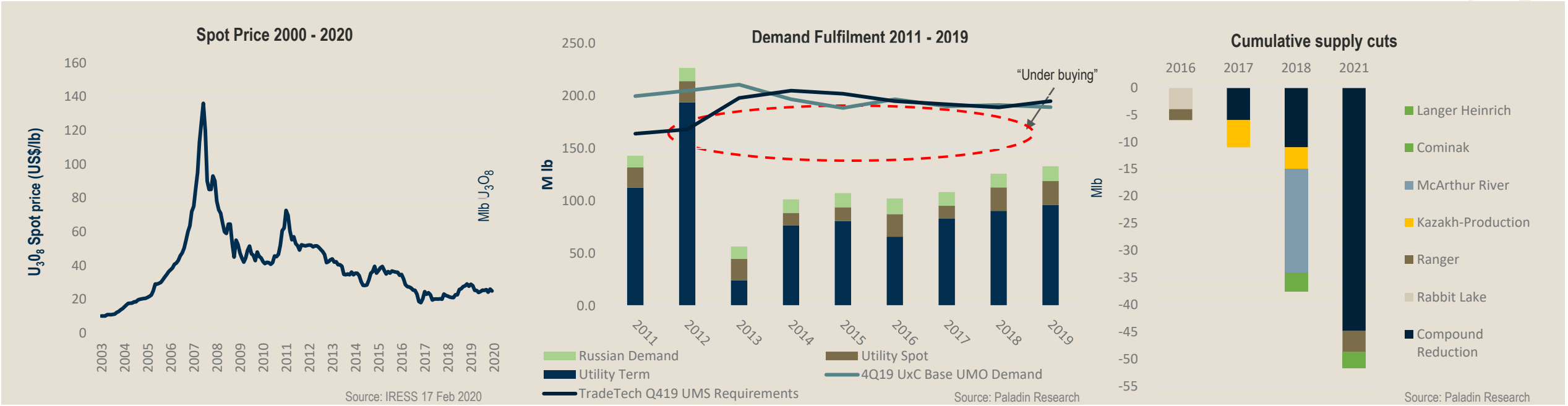
# WHY URANIUM?

A photograph of an industrial facility, likely a uranium processing plant. In the foreground and middle ground, there are many large, black, cylindrical drums. Each drum has a white diamond-shaped label with a yellow radiation warning symbol (a black trefoil) and some text. A worker wearing a dark blue hazmat suit with yellow reflective stripes and a white helmet is standing among the drums, looking down at something in their hands. In the background, there are yellow protective suits hanging on a rack, a chain-link fence, and various industrial structures and pipes. The scene is outdoors or in a large open hall. The overall tone is serious and industrial.

A solid long-term outlook



# THE URANIUM STORY IS COMPELLING



Spot uranium prices  
are near historic  
lows

The nuclear power  
industry is consuming  
more uranium than pre-  
Fukushima with growth  
in China, India and  
elsewhere

Since 2013, utilities have  
been “under buying” at  
an average rate of 90Mlb  
per year relative to  
consumption” (635Mlb  
divided by 7 years)

European and US utilities are  
running down stockpiles and  
contract positions put in  
place pre-Fukushima

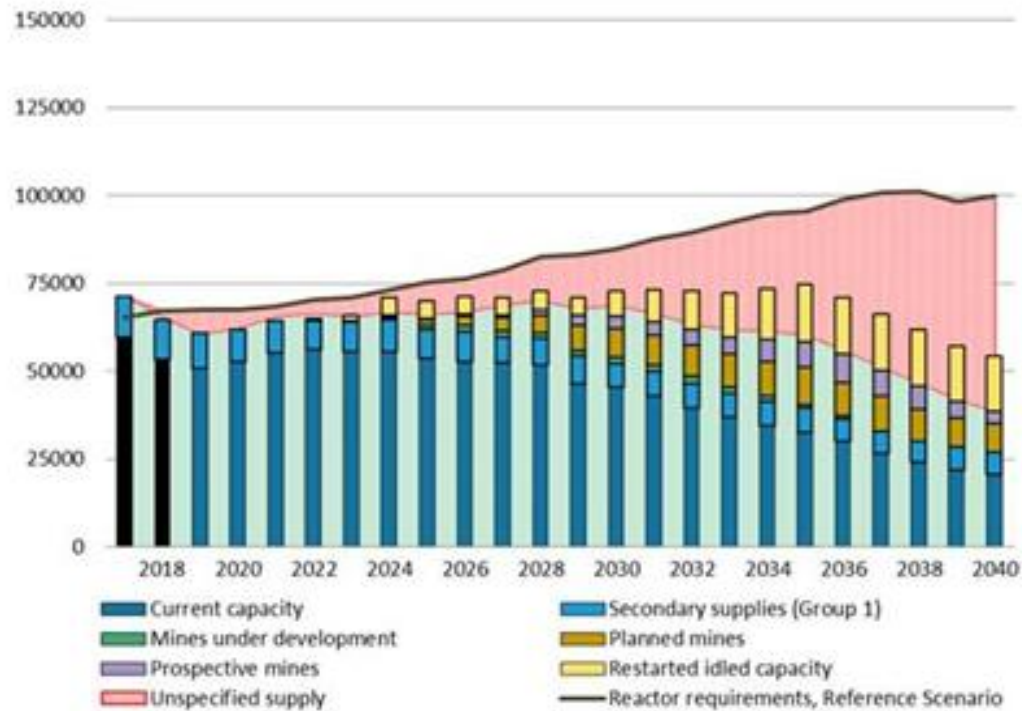
Mined supply has  
been rapidly cut  
back



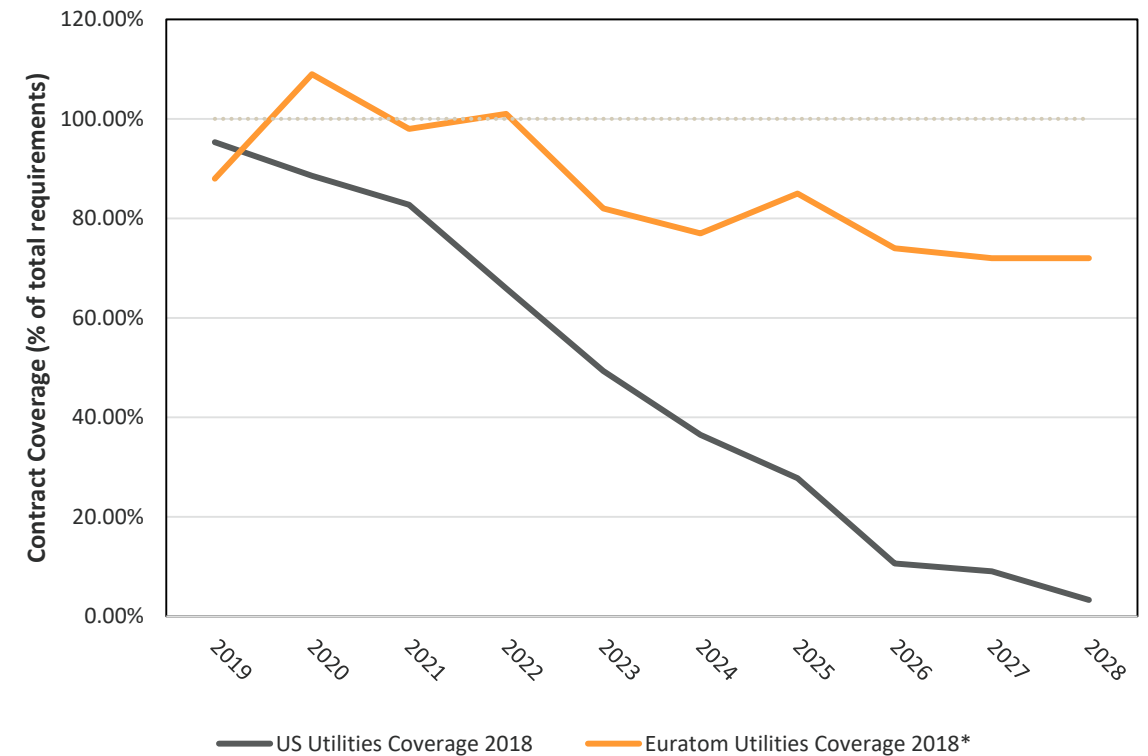
# DEMAND GROWTH FAR EXCEEDS SUPPLY CAPABILITY



Demand and Supply Scenarios



Future Contracted Coverage Rates of US & European Utilities



- Current supply unable to meet even base case demand

- US contract coverage reaching critical lows

Source: Paladin Research and UxC Uranium Production Cost Study – September 2019

Note\*: Euratom - European Atomic Energy Community



# SUPPLY SIDE FACTORS

## KEY MARKET OBSERVATIONS



Stocks drawn down >400Mlb and +40Mlb taken out of the supply side in recent years (including Ranger 2019)



Significant decrease in exploration spend since Fukushima, supply side projects reduced by 90% (670 projects to 90 now)



New project development timelines stretched:

- Permitting uncertainty remains in many jurisdictions
- May require significantly higher incentive prices +US\$60-\$80/lb
- Production from new mines likely many years after incentive prices reached



When long-term contracting returns, enrichment tails will increase, reducing the contribution of secondary production to the market



Kazakhstan production flat @ <60Mlb to 2021. 15% IPO + (ve) for transparency. Changed from volume-based to value-based marketing

## MARKET OPPORTUNITIES



The rate of development of new mines is unlikely to match the demand growth case



Potential for recovery in uranium prices



Mines currently on C&M have a significant restart timeline advantage

Source: UxC Uranium Production Cost Study – September 2019





# APPENDIX



# RESOURCE & RESERVE TABLES

30 June 2019

Ore Reserves	Mt	Grade ppm U <sub>3</sub> O <sub>8</sub>	Mlb U <sub>3</sub> O <sub>8</sub>	Paladin Ownership (%)	Paladin Attributable (Mlb)
<b>Namibia</b>	<b>Langer Heinrich</b>				
Proven <sup>16</sup>	42	525	48.5	75	36.4
Probable <sup>16</sup>	13.1	485	14.0	75	10.5
Stockpiles <sup>16</sup>	30.8	355	24.0	75	18
<b>Total Namibia</b>	<b>85.9</b>	<b>455</b>	<b>86.5</b>	<b>75</b>	<b>64.9</b>
<b>Malawi</b>	<b>Kayelekera</b>				
Proven <sup>16</sup>	0.4	1,170	1.0	85	0.85
Probable <sup>16</sup>	5.3	880	10.4	85	8.84
Stockpiles <sup>16</sup>	1.6	755	2.6	85	2.21
<b>Total Malawi</b>	<b>7.3</b>	<b>870</b>	<b>14.0</b>	<b>85</b>	<b>11.9</b>
<b>Total Ore Reserves</b>	<b>93.2</b>	<b>490</b>	<b>100.5</b>		<b>76.8</b>

Vanadium Mineral Resources	Mt	Grade ppm V <sub>2</sub> O <sub>5</sub>	Mlb V <sub>2</sub> O <sub>5</sub> (100% basis)	Paladin Ownership (%)	Paladin Attributable (Mlb)
<b>Namibia</b>	<b>Langer Heinrich</b>				
Measured <sup>1</sup>	66.2	160	23.3	75	17.5
Indicated <sup>1</sup>	18.8	140	5.8	75	4.4
Inferred <sup>1</sup>	6.3	135	1.9	75	1.4
Stockpiles <sup>1</sup>	30.8	115	7.8	75	5.9
<b>Total Namibia</b>	<b>122.1</b>	<b>145</b>	<b>38.8</b>	<b>75</b>	<b>29.1</b>

<sup>1</sup>Refer ASX Announcement dated 14.10.2019 "Feasibility Study Delivers Improved Financials and Production Capacity For Langer Heinrich" p6; <sup>2</sup>Refer ASX Announcement dated 21.11.08 "Significant Resource Upgrade for Kayelekera"; <sup>3</sup>Refer ASX Announcement dated 31.01.2018 "Correction to 30 June 2017 Annual Report" pp13-15; <sup>4</sup>Refer SEDAR lodgment (TSX:FRG) dated 8.9.2009 "Frontier Reports Positive Preliminary Economic Assessment for Michelin Uranium Project"; <sup>5</sup>Refer Announcement (ASX:SMM) dated 19.10.2010 "Resource Upgrade for the Valhalla Uranium Deposit"; <sup>6</sup>Refer ASX Announcement dated 16.04.2012 "Quarterly Activities Report for period ending 31 March 2012"; <sup>7</sup>Refer ASX Announcement dated 15.04.2011 "Quarterly Activities Report for period ending 31 March 2011"; <sup>8</sup>Refer ASX Announcement dated 31.08.2011 "30 June 2011 Annual Report" p29; <sup>9</sup>Refer ASX Announcement dated 17.01.2012 "Quarterly Activities Report for period ending 31 December 2011"; <sup>10</sup>Refer ASX Announcement dated 13.07.2012 "Quarterly Activities Report for period ending 30 June 2012"; <sup>11</sup>Refer ASX Announcement (ASX:EMX) dated 12.02.2014 "Energia Delivers Significant Uranium Resource Upgrade"; <sup>12</sup>Refer ASX Announcement dated 14.01.2014 "Manyingee Minerals Resources - Amendment"; <sup>13</sup>Refer ASX Announcement dated 10.12.2008 "Maiden Uranium Resource at Valhalla North Project"; <sup>14</sup>Refer ASX Announcement dated 30.08.12 "30 June 2012 Annual Report" p27 and 129; <sup>15</sup>Refer ASX Announcement dated 29.08.2013 "30 June 2013 Annual Report" p24; <sup>16</sup>Refer ASX Announcement dated 27.08.2019 "30 June 2019 Annual Report" p14.

The Group is not aware of any new information or data that materially affects the information in the relevant market announcements all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed.

Mineral Resources		Mt	Grade ppm U <sub>3</sub> O <sub>8</sub>	Mlb U <sub>3</sub> O <sub>8</sub> (100% basis)	Paladin Ownership (%)	Paladin Attributable (Mlb)
<b>Namibia</b>	<b>Langer Heinrich</b>					
Measured <sup>1</sup>		66.2	490	71.9	75	53.9
Indicated <sup>1</sup>		18.8	435	18.0	75	13.5
Inferred <sup>1</sup>		6.3	420	5.8	75	4.4
Stockpiles <sup>1</sup>		30.8	355	24.0	75	18.0
<b>Total Namibia</b>		<b>122.1</b>	<b>445</b>	<b>119.6</b>	<b>75</b>	<b>89.7</b>
<b>Malawi</b>	<b>Kayelekera</b>					
Measured <sup>2</sup>		0.7	1,010	1.7	85	1.4
Indicated <sup>2</sup>		12.7	700	19.6	85	16.7
Inferred <sup>2</sup>		5.4	620	7.4	85	6.3
Stockpiles <sup>2</sup>		1.6	755	2.6	85	2.2
<b>Total Malawi</b>		<b>20.4</b>	<b>695</b>	<b>31.3</b>	<b>85</b>	<b>26.6</b>
<b>Canada</b>						
Measured	Michelin <sup>3</sup>	17.6	965	37.6	55	20.7
	Rainbow <sup>4</sup>	0.2	920	0.4	55	0.2
Indicated	Gear <sup>4</sup>	0.4	770	0.6	55	0.3
	Inda <sup>4</sup>	1.2	690	1.8	55	1.0
	Jacques Lake <sup>3</sup>	13.0	630	18.0	55	9.9
	Michelin <sup>3</sup>	20.6	980	44.6	55	24.5
	Nash <sup>4</sup>	0.7	830	1.2	55	0.7
	Rainbow <sup>4</sup>	0.8	860	1.4	55	0.8
Inferred	Gear <sup>4</sup>	0.3	920	0.6	55	0.3
	Inda <sup>4</sup>	3.3	670	4.8	55	2.6
	Jacques Lake <sup>3</sup>	3.6	550	4.4	55	2.4
	Michelin <sup>3</sup>	4.5	985	9.9	55	5.4
	Nash <sup>4</sup>	0.5	720	0.8	55	0.4
	Rainbow <sup>4</sup>	0.9	810	1.6	55	0.9
<b>Total Canada</b>		<b>67.6</b>	<b>860</b>	<b>127.7</b>	<b>55</b>	<b>70.2</b>
<b>Australia</b>						
Measured	Valhalla <sup>5</sup>	16.0	820	28.9	100	28.9
Indicated	Andersons <sup>6</sup>	1.4	1,450	4.6	100	4.6
	Bikini <sup>7</sup>	5.8	495	6.3	100	6.3
	Duke Batman <sup>8</sup>	0.5	1,370	1.6	100	1.6
	Odin <sup>9</sup>	8.2	555	10.0	100	10.0
	Skal <sup>10</sup>	14.3	640	20.2	100	20.2
	Valhalla <sup>5</sup>	18.6	840	34.5	100	34.5
	Carley Bore <sup>11</sup>	5.4	420	5.0	100	5.0
	Manyingee <sup>12</sup>	8.4	850	15.7	100	15.7
Inferred	Andersons <sup>6</sup>	0.1	1,640	0.4	100	0.4
	Bikini <sup>7</sup>	6.7	490	7.3	100	7.3
	Duke Batman <sup>8</sup>	0.3	1,100	0.7	100	0.7
	Honey Pot <sup>13</sup>	2.6	700	4.0	100	4.0
	Mirrioola <sup>14</sup>	2.0	560	2.5	100	2.5
	Odin <sup>9</sup>	5.8	590	7.6	100	7.6
	Skal <sup>10</sup>	1.4	520	1.6	100	1.6
	Valhalla <sup>5</sup>	9.1	640	12.8	100	12.8
	Watta <sup>15</sup>	5.6	400	5.0	100	5.0
	Warwai <sup>15</sup>	0.4	360	0.3	100	0.3
	Carley Bore <sup>11</sup>	17.4	280	10.6	100	10.6
	Manyingee <sup>12</sup>	5.4	850	10.2	100	10.2
<b>Total Australia</b>		<b>135.4</b>	<b>635</b>	<b>189.9</b>	<b>100</b>	<b>189.9</b>
<b>Total Mineral Resources</b>		<b>345.4</b>	<b>615</b>	<b>468.6</b>		<b>376.4</b>







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