

# **Toro Energy Limited:**

Ready for the next upward uranium price cycle

Vanessa Guthrie Managing Director Uranium: critical to a clean energy future

SAREIC Conference 13 April 2015

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# **World Energy Outlook**



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### Primary energy demand, 2035 (Mtoe)<sup>(1)</sup>

Share of global growth 2012-2035



**China** is the main driver of growing energy demand in the current decade, with **India** taking over in the 2020's as the continuing source of growth

# **Nuclear: increasing international demand**





Australian Trade Agreements include: Japan, China, Russia, Middle East, India

Global Reactor Growth through 2030 Source: WNA website, August 2014 1000 900 800 700 74 600 500 70 920 400 300 200 100 Current Under Ordered Proposed Potential Retired (?) Operable operable construction 2025 operable 2030

- 437 operable reactors today require ~78kt of U3O8
- 70 reactors under construction
- Reactor demand for raw materials is set to double in the next 15 years

# Australian uranium... under-developed for 30 years



- A strong production history but with only three mines currently in operation: Ranger – ERA, Four Mile and Olympic Dam
- 30 years of government policy restricted exploration and project development
- Current policy changes between States is confusing
- SA Government position highly welcomed consistent with broad policy agenda across Australia
- Toro positioned in WA during 2007 as government policy shifted... continued development of project to compliment SA production focus



# ... which has limited Australia's potential

Source: Bureau of Resources and Energy Economics

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\$6.5B in export earnings over last decade In 2013/14:

- 6701t U3O8 export for A\$622M
- 11% of global supply
- 4200 employees
- Current supply to 10 countries



BREE forecasts in 2018/19:

- 8900t U3O8 export for A\$1.1B
- Potential supply to India, UAE



#### Australian uranium exports: volume and value

### **Uranium in Australia**



Company	Main Exc	Market cap (AUD)	Australian assets under development	State	Status	Earliest production
ERA	ASX	\$678M	<ul><li>Ranger Uranium Mine</li><li>Ranger Deeps</li></ul>	NT	<ul><li>In production</li><li>Permitting ongoing</li></ul>	• N/A • 2015+
<b>bhp</b> billiton	LSE	\$94.5B	<ul><li>Olympic Dam</li><li>Expansion</li></ul>	SA	<ul><li>In production</li><li>On hold</li></ul>	• N/A • 2020
💠 НЕАТНБАТЕ	-	-	<ul><li>Beverley Mine</li><li>Four Mile Mine (75-85%)</li></ul>	SA	<ul><li>Closed</li><li>In production</li></ul>	• N/A • 2014
Cameco	TSX	C\$7.68B	<ul><li>Kintyre</li><li>Yeelirrie</li></ul>	WA	<ul><li>Permitted, on hold</li><li>Permitting commenced</li></ul>	<ul><li> 2018+</li><li> 2020</li></ul>
ENERGY LIMITED	ASX	\$140M	Wiluna Project	WA	Two mines permitted	• 2017
VIMY	ASX	\$84M	Mulga Rocks Project	WA	Permitting ongoing	• 2018+
Laramide Recourtes Led.	TSX	C\$30M	Westmoreland Project	QLD	Permitting	• 2018+
PALADIN	ASX TSX	\$550M	Manyingee	WA	On hold	• 2020
energia	ASX	\$22M	Carley Bore	WA	Non-core	• 2019+

Source: Company website

ite: The Honevmoon mine (Uranium One) is on care and mo

# **Toro Energy: snapshot**



Capital Structure								
ASX Code		TOE						
Ordinary Shares on Issue	m	1,903.8						
Share Price <sup>(9 April 2015)</sup>	cps	7.6						
Undiluted Market Capitalisation	A\$m	145						
Cash (31 December 2014)	A\$m	25.3						

#### Shareholders



Refer to slides 18 – 21 for Resource Table and Competent Persons statemer



# **The Wiluna Uranium Project**



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Location

 $\geq$ 

520km north of Kalgoorlie and 30km south of Wiluna

- First class jurisdiction
- Strong Government support
- > 1.5 hour commercial flight from Perth
- Historic mining region (gold)
- Established mining services
- Water available locally
- Gas supply pipeline nearby
- Established local community
- Well established transport corridors



### **Key Attributes**



#### Resource

- 76.5Mlb @ 479 ppm including 42.2Mlb @ 898ppm<sup>(1)</sup>
- 6 calcrete associated deposits
- Over 80% of global resource in Measured or Indicated category
- 98% of current mine plan sourced from Measured or Indicated Resources

#### Mining

- Shallow free dig mining
- No drill and blast required
- Tailings returned to mined void & progressive rehabilitation

#### Approvals

- Environmental approvals in place for mining and milling at
  Centipede and Lake Way including a processing facility
- PER underway for Millipede and Lake Maitland

#### Plant

- Alkaline leach with direct precipitation
- 1.3M tpa capacity
- 15MW gas fired power
- \$315M capital cost estimate
- Production<sup>(2)</sup>
  - 2Mlb/a for ~15 years
  - Higher grade mill feed for over 10 years 880ppm+
  - Resource base to extend mine life through 20 years
  - Transport via existing port facilities
- Workforce
  - 350 in construction
  - 170 in operations

) Refer to slides 18 – 21 for Resource Table and Competent Persons stateme

ditional and qualifying information on the resource that underpins the production target and ASX release 30 January 2014 which the production target is based.

# **Product Transport**



- Wiluna-Adelaide via national highway system
- 5 conventional ship containers per month (2 double trailers, 1 single)
- > Up to 36 truck movements per year
- 2 drivers per truck, 2 trucks in convoy, limited stops, re-fuelling points only
- Shipment from Port Adelaide and/or Darwin – both ports with long experience of uranium handling and certified handling facilities



### Wiluna Project – Development Status



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- ✓ Resource acquisition and definition
- Centipede and Lake Way government environmental approvals
- Mine Integration Scoping Studies
- ✓ Trial mining
- Metallurgical test work and Pilot Plant
- Processing Plant definitive feasibility study design and costs

#### Key outstanding tasks

- Traditional owner agreements 2015
- Millipede and Lake Maitland government environmental approvals - 2016
- Final feasibility study and Mining Proposal 2016
- Project Financing & Offtake



# Why Wiluna...pathway to production









# the "go to" Australian uranium company



### **Thank You**

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# **Appendices**



### **The Wiluna Uranium Project - Resources**



			The Wi	luna Urani	um Projec	t - JORC 20	)12				
		Mea	sured	Indi	cated	Total Measured or Indicated		Inferred		Total	
Deposit	Measure	200 ppm	500 ppm	200 ppm	500 ppm	200 ppm	500 ppm	200 ppm	500 ppm	200 ppm	500 ppm
	Mt's	2.9	1.2	7.5	3.1	10.4	4.3	-	-	10.4	4.3
Centipede	Grade ppm	551	872	572	943	566	923	-	-	566	923
	Mlb's U₃O <sub>8</sub>	3.5	2.3	9.5	6.5	13.0	8.8	-	-	13.0	8.8
	Mt's	-	-	10.3	4.2	10.3	4.2	-	-	10.3	4.2
Lake Way	Grade ppm	-	-	545	883	545	883	-	-	545	883
- - -	Mlb's U₃O <sub>8</sub>	-	-	12.3	8.2	12.3	8.2	-	-	12.3	8.2
	Mt's	-	-	4.5	1.6	4.5	1.6	1.9	0.4	6.4	1.9
Millipede	Grade ppm	-	-	530	956	530	956	382	887	486	943
	Mlb's U <sub>3</sub> O <sub>8</sub>	-	-	5.3	3.3	5.3	3.3	1.6	0.7	6.9	4.0
	Mt's	-	-	19.9	7.5	19.9	7.5	-	-	To 200 ppm 10.4 566 13.0 10.3 545 12.3 6.4 486 6.9 19.9 555 24.3 47.0 546 56.6 13.6 315 9.4 11.9 399 10.5 72.5 479 76.5	7.5
Lake Maitland	Grade ppm	-	-	555	956	555	956	-	-	555	956
- - - - -	Mlb's U₃O <sub>8</sub>	-	-	24.3	15.7	24.3	15.7	-	-	24.3	15.7
	Mt's	2.9	1.2	42.2	16.3	45.1	17.6	1.9	0.4	47.0	17.9
Sub-total	Grade ppm	551	872	553	935	553	930	382	887	546	930
	Mlb's U₃O <sub>8</sub>	3.5	2.3	51.4	33.7	55.0	36.0	1.6	0.7	56.6	36.7
	Mt's	-	-	8.4	0.9	8.4	0.9	5.2	0.3	13.6	1.1
Dawson Hinkler	Grade ppm	-	-	336	596	336	596	282	628	315	603
	Mlb's U <sub>3</sub> O <sub>8</sub>	-	-	6.2	1.1	6.2	1.1	3.2	0.4	9.4	1.5
	Mt's	-	-	-	-	-	-	11.9	2.3	11.9	2.3
Nowthanna	Grade ppm	-	-	-	-	-	-	399	794	399	794
•	Mlb's U <sub>3</sub> O <sub>8</sub>	-	-	-	-	-	-	10.5	4.0	10.5	4.0
	Mt's	2.9	1.2	50.6	17.2	53.5	18.4	19.0	2.9	72.5	21.3
Total Regional Resource	Grade ppm	551	872	517	918	519	915	365	791	479	898
-	Mlb's U <sub>3</sub> O <sub>8</sub>	3.5	2.3	57.7	34.8	61.2	37.1	15.3	5.1	76.5	42.2

Tonnes and pounds are quoted to one decimal place which may cause rounding errors when tabulatin

All resources are reported in accordance with the 2012 edition of the JORC code. Refer competent persons statements at slide 21 of this presentation and ASX releases date

### **Theseus Project - Resources**



Inferred Mineral Resource	ppm ppm.m	Tonnes (M)	Grade ppm	Mlbs
Grade cut-off	200	6.3	493	6.9
GT cut-off	1,000	6.1	491	6.6

This information 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 reported.

GT is a calculation of the average grade of the mineralised interval multiplied by the width (thickness) of the interval

rces are reported in accordance with the 2004 edition of the JORC code. Refer competent persons statements at slide 21 of this preser

(2) Tannas and nounds are quoted to one decimal place which may cause rounding errors when tabulating

### **Competent Persons Statements**



#### Wiluna Uranium Project 2012 JORC code compliant resource estimates

The information presented here that relates to Mineral Resources of the Centipede, Millipede, Lake Way, Lake Maitland, Dawson Hinkler and Nowthanna deposits is based on information compiled by Dr Greg Shirtliff of Toro Energy Limited (with the aid of Mega Uranium Limited geologists Mr Stewart Parker and Mr Robin Cox in the case of Lake Maitland) and Mr Robin Simpson and Mr Daniel Guibal of SRK Consulting (Australasia) Pty Ltd. Mr Guibal takes overall responsibility for the Resource Estimate, and Dr Shirtliff takes responsibility for the integrity of the data supplied for the estimation. Dr Shirtliff is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM), Mr Guibal is a Fellow of the AusIMM and Mr Simpson is a Member of the Australian Institute of Geoscientists (AIG) and they have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012)'. The Competent Persons consent to the inclusion in this release of the matters based on the information in the form and context in which it appears.

#### Theseus Prospect 2004 JORC code compliant resource estimate

The information presented here that relates to the Mineral Resources of the Theseus Prospect is based on information compiled by Dr David Rawlings, formerly of Toro Energy Limited and Mr Michael Andrew of Optiro. Mr Andrew takes overall responsibility for the Resource Estimate and Dr Rawlings takes responsibility for the integrity of the data supplied for the estimation. Dr Rawlings and Mr Andrews are Members of the Australasian Institute of Mining and Metallurgy (AusIMM) and they have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. The Competent Person consents to the information presented here relating to Mineral Resources as well as to the form and context in which it appears.

### **Strateco Resources Ltd**



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Strateco Resources Ltd ("Strateco") is a TSX-listed uranium exploration company with assets in Quebec, Canada. Its main property is the Matoush Project. Strateco's NI43-101 compliant resource estimate published on 15 February 2012 states a total Resource of 2.5Mt at 0.49% for 27Mlbs  $U_3O_8$ , comprising Indicated Resource of 0.4Mt at 0.78% for 7.8Mlbs  $U_3O_8$  and Inferred Resource of 2.0Mt @ 0.43% for 19.2Mlbs  $U_3O_8$  all calculated at a cut-off of 0.1%  $U_3O_8$ . Further information can be found at www.stratecoinc.com