

# ASX Release

ASX: TOE



16 January 2024

## SIGNIFICANT PROGRESS MADE ON LAKE MAITLAND URANIUM PROJECT EXTENSION STUDY

### Highlights

- The Lake Maitland Extension Study has significantly advanced.
- Extension Study is evaluating the incorporation of material from Toro's 100% owned Lake Way and Centipede-Millipede uranium deposits into a proposed processing operation at Lake Maitland.
- The uranium resources at Lake Way and Centipede-Millipede are significant and need to be evaluated for viability as additional material at any Lake Maitland uranium-vanadium processing operation.
- Pilot plant design continues resulting from the excellent estimated financial outcomes of the completed Lake Maitland Scoping Study, which excluded any upside from the inclusion of resources from the Lake Way and Centipede-Millipede deposits.
- Strong potential exists to increase production at Lake Maitland with additional uranium resources from Lake Way and Centipede-Millipede. The study will evaluate whether this extends the potential processing of high-grade uranium resource well beyond the 7th year - a standalone Lake Maitland operation is expected to process 7 years of high grade material.
- The Extension Study includes a pit optimisation of Lake Way and Centipede-Millipede to determine economic cut-off grades based on latest long-term prices, exchange rates, operating costs & processing recoveries. Lake Maitland pit optimisation successfully **increased potential production by 8Mlbs U<sub>3</sub>O<sub>8</sub> and 11.9Mlbs V<sub>2</sub>O<sub>5</sub>** based on the below price assumptions.
- Potential upside from the incorporation of Lake Way and Centipede-Millipede in the financial metrics of the Lake Maitland Scoping Study which currently are:
  - NPV<sub>8</sub>- pre-tax of **A\$610M approx.**
  - IRR 41% - Mine Life 17.5 years – **Short Payback 2.5 years**
  - **Total EBITDA \$1,768.6M**
  - **Average EBITDA \$1.95M per week** (\$101M pa)
  - Modest capex of **US\$140M plus 20% contingency and 15% EPCM allowance**
  - Low operating cost estimates for Life of Mine:
    - **C1 cash operating cost US\$23.10/lb U<sub>3</sub>O<sub>8</sub>**
    - **AISC of US\$28.02/lb U<sub>3</sub>O<sub>8</sub>**
    - **C1 US\$15.84/lb U<sub>3</sub>O<sub>8</sub> & AISC US\$20.32/lb U<sub>3</sub>O<sub>8</sub> first 7 years provide very strong margins**
  - Low average strip ratio of 1.17
  - Annual average production **1.3Mlbs U<sub>3</sub>O<sub>8</sub> and 0.7Mlbs V<sub>2</sub>O<sub>5</sub>**
  - Total production **22.8Mlbs of U<sub>3</sub>O<sub>8</sub> and 11.9Mlbs of V<sub>2</sub>O<sub>5</sub>**

**ASX Listing Rule 5.19.2**

The Company confirms that all material assumptions underpinning the production target and the derived forecast financial information disclosed in the Lake Maitland Scoping Study announced by the Company on 24 October 2022 continue to apply and have not materially changed.

Toro Energy Limited (ASX: TOE) ('the **Company**' or '**Toro**') is pleased to advise that its Extension Study to the proposed Lake Maitland Uranium-Vanadium operation, located approximately 105 km southeast of the Wiluna township in Western Australia and 730 km NE of Perth has significantly advanced. The Study is being undertaken by mining engineers at SRK Consulting Australasia (**SRK**). SRK and metallurgical and processing engineers at Strategic Metallurgy prepared the Scoping Study for Lake Maitland which highlighted the project's potential to deliver robust financial returns.

**Commenting on the encouraging progress of the Extension Study Toro's Executive Chairman, Richard Homsany, said:**

*"We are pleased that strengthening uranium market conditions continue as we develop and seek to maximise the value of the Wiluna Uranium Project, especially our evaluation of extending our Lake Maitland uranium vanadium processing operation to include materials from our nearby 100% owned uranium deposits, Centipede-Millipede and Lake Way.*

*The uranium resources at Lake Way and Centipede-Millipede are strategically located and considerable, and need to be thoroughly evaluated for viability. The inclusion of additional material into the Lake Maitland uranium vanadium processing operation has the strong potential to add significant value to the Wiluna Uranium Project.*

*One of our key aims is to strengthen the production schedule at Lake Maitland and to assess the potential to extend the potential processing of high-grade uranium resource well beyond the 7th year of production, as is presently the case for a Lake Maitland only operation.*

*Global uranium markets continue to strengthen and fundamentals remain strong. Toro's current and planned development activities at Wiluna will significantly build upon the excellent Lake Maitland Scoping Study outcomes.*

*Toro remains committed to developing the Wiluna Uranium Project to maximise its value when both government policy and uranium markets align."*

### **Lake Maitland Extension Study**

One of the stand-out growth opportunities identified from the Lake Maitland Scoping Study is that the proposed production schedule does not include any Mineral Resources from Toro's other wholly owned uranium deposits comprising the broader Wiluna Uranium Project namely, **Centipede-Millipede** and **Lake Way**. This could lead to increased mine life, total production and revenue therefore adding considerable value to the entire Project. The Extension Study will aim to provide updated pit inventories at Centipede-Millipede and Lake Way from pit optimisation outcomes. These would be used as inputs into a future updated scoping study for the entire Wiluna Uranium Project which incorporates all of Centipede-Millipede and Lake Way in addition to Lake Maitland.

The Lake Maitland pit optimisation was successful to increase potential production by 8mlbs U<sub>3</sub>O<sub>8</sub> and 11.9Mlbs V<sub>2</sub>O<sub>5</sub> of additional product value based on the above price assumptions.



**Figure 1: Wiluna Uranium Project**

The first 7 years of the proposed Lake Maitland Uranium Vanadium operation is expected to process high grade uranium material. The Extension Study is assessing whether this high grade operation can extend for well beyond the first 7 years and have a further transformational effect on the value of the broader Wiluna Uranium Project.

After concluding the pit optimisation of the Lake Way and Centipede-Millipede this will in-turn define the potentially economic mining inventories of these deposits, for inclusion in an updated life of mine production schedule and updated financial model for the broader Wiluna Uranium Project.

The items being progressed currently in the Study are:

- Reviewing the Lake Way and Centipede-Millipede Mineral Resources to identify and quantify the in-situ materials amenable to the new processing flow sheet (i.e. similar to that at Lake Maitland);
- Confirming the latest long-term metal prices, exchange rates, operating costs and processing recoveries to estimate the economic cut-off grades for each deposit;
- Defining the potentially economic open pit mining inventories through Whittle open pit optimisation; and
- Testing the potential economics of various operating scenarios, particularly regarding the optimal potential processing plant locations and/ or relocations over time.

Pilot plant design continues resulting from the excellent estimated financial outcomes of the completed Lake Maitland Scoping Study (excludes Lake Way and Centipede-Millipede):

- *NPV<sub>8</sub>- pre-tax of A\$610M approx..*
- *IRR 41% - Mine Life 17.5 years – Short Payback 2.5 years*
- *Total EBITDA \$1,768.6M*
- *Average EBITDA \$1.95M per week (\$101M pa)*
- *Modest capex of US\$140M plus 20% contingency and 15% EPCM allowance*
- *Low operating cost estimates for Life of Mine:*
  - *C1 cash operating cost US\$23.10/lb U<sub>3</sub>O<sub>8</sub>*
  - *AISC of US\$28.02/lb U<sub>3</sub>O<sub>8</sub>*
- *C1 US\$15.84/lb U<sub>3</sub>O<sub>8</sub> & AISC US\$20.32/lb U<sub>3</sub>O first 7 years provide very strong margins*
- *Low average strip ratio of 1.17*
- *Annual average production 1.3Mlbs U<sub>3</sub>O<sub>8</sub> and 0.7Mlbs V<sub>2</sub>O<sub>5</sub>*
- *Total production 22.8Mlbs of U<sub>3</sub>O<sub>8</sub> and 11.9Mlbs of V<sub>2</sub>O<sub>5</sub>*
- *Estimates assume US\$70/lb U<sub>3</sub>O<sub>8</sub> and US\$5.67/lb V<sub>2</sub>O<sub>5</sub> price, and US\$:A\$0.70 exchange rate*

### Scoping Study Background

The potential stand-alone Lake Maitland operation contemplates the possible viability of only mining potential uranium ore from the Lake Maitland Uranium Deposit and processing it in a facility directly on site, next to the mining pit. None of the other uranium deposits owned by Toro in the region would be utilised. The potential stand-alone Lake Maitland operation would contemplate a different processing flow sheet with less capital intensive items and lower reagent volumes, and a simpler more conventional mining method. For further information concerning the results of the Scoping Study please see the Company's announcement of 24 October 2022.

The Lake Maitland Scoping Study also contemplates producing a uranium peroxide product (yellow cake) for sale. This would involve stripping vanadium from the uranium processing flow stream, which is liberated from the uranium ore mineral, a potassium uranium vanadate, along with the uranium during leaching, to produce a low value sodium hexavanadate, as a by-product.

A potential stand-alone Lake Maitland Uranium (with vanadium by-product) operation was scoped for contemplation as a potential viable alternative to the already proposed greater Wiluna Uranium Project that had previously received state and federal environmental approval (refer to ASX announcements of 9 January 2017, 21 June 2017 and 10 July 2017). In that project the Lake Maitland Uranium Deposit is one of three (3) uranium deposits whereby potential uranium ore is planned to be mined from the Lake Maitland Uranium Deposit and trucked some distance north to a processing plant at the Centipede-Millipede Deposit. The potential stand-alone Lake Maitland operation would also differ from the greater Wiluna Uranium Project in that it contemplates a different processing flow sheet with major changes to the processing plant and reagent volumes (see below), and a simpler more conventional mining method.

The Lake Maitland Uranium Deposit and proposed operation is located approximately 730km NE of Perth or 50km directly east of 50km Mt Keith nickel operations. Access to the deposit is via the Goldfields Highway, turning east at Leinster along the access road to the Bronzewing Gold Mine and then north along the Barwidgee Road. An alternative route is along the Barwidgee Road from the north, via the township of Wiluna.



The Scoping Study focusses solely on the Lake Maitland uranium resource which has been estimated to contain 22Mt at 545ppm  $U_3O_8$  for 26.4Mlbs of  $U_3O_8$  at a 200ppm  $U_3O_8$  cut-off. All of the Lake Maitland uranium resource (as  $U_3O_8$ ) is in Indicated status according to JORC 2012. More information on this resource and the JORC Table 1 for this resource can be found in the ASX announcement of 1 February 2016. Also see Table 1 below. Inherent within this resource as part of the uranium 'ore' mineral, is vanadium, which, as would be expected, is extracted along with the uranium in the leaching process and found to be still present in pregnant leach solution downstream in the ion exchange (IX) process. Toro has decided to strip this from the IX resin for a low value, but worthwhile, by-product. Given this, Toro has also estimated the amount of  $V_2O_5$  within the Lake Maitland Uranium Deposit and integrated it into the uranium resource being contemplated in this Scoping Study.

The mining technique proposed to be used at the stand-alone Lake Maitland operation is conventional open cut using truck and shovel but with pre-mine dewatering where necessary. Although not targeted specifically in any detail, the higher grade central parts of the deposit are proposed to be mined first so that the average grade of the potential ore decreases over time.

The new proposed processing plant, developed over the recent years of research, will include a beneficiation plant using conventional coarse screens and desliming, pre and post-leach pressure filtration, alkaline leach, IX, sodium diuranate (**SDU**) precipitation, redissolution and uranium peroxide precipitation (yellow cake). To take advantage of the vanadium inherent in the pregnant leach solution due it being a fundamental part of the uranium ore mineral targeted in the leach, vanadium is proposed to be separated in the IX plant and stripped from the IX resin prior to stripping uranium, before being precipitated as a red cake (sodium hexavanadate -NaVO) prior to final product preparation as a by-product of the operation.

The date for the substantial commencement condition contained in the State environmental approval for the Wiluna Uranium Project, granted pursuant to Ministerial Statement 1051 (**MS 1051**), has passed. Toro considers, and has sought advice to confirm, that the environmental approval granted by MS 1051 will remain valid notwithstanding that substantial commencement did not occur by the date specified in MS 1051, and that it will be open to the Company to apply under the Environmental Protection Act 1986 (WA) for an extension of time for that condition at a later time during the life of the approval. It is also envisaged that favourable results from the studies detailed in this announcement may also necessitate an amendment to the proposal the subject of each environmental approval received.

All key aspects of the Lake Maitland uranium-vanadium project pertaining to environmental considerations and external relations are captured in the Environmental Protection Authority (EPA) report 1580, which is publicly available on the EPA's website at [www.epa.wa.gov.au/proposals/extension-wiluna-uranium-project](http://www.epa.wa.gov.au/proposals/extension-wiluna-uranium-project).

### Lake Maitland Open Pit Optimisation

Details on the open pit optimisation for the stand-alone Lake Maitland operation being considered in this scoping level study were presented in the ASX announcement of 4 May 2022, and this should be referred to for further information. GEOVIA'S Whittle™ software (Whittle) was used to undertake

open pit optimisation for the project. Whittle™ generates nested pit shells with different revenue factors, based on the highest project cashflow.

- Ends -

**This announcement was authorised for release to the ASX by the Board of Toro Energy Limited.**

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**About Toro**

Toro Energy Limited (ASX:TOE) is an ASX listed uranium development and exploration company with projects in Western Australia. Toro's tenure in Western Australia is also prospective for gold and base metals. Toro is committed to building an energy metals business with the flagship Wiluna Uranium Project as the centrepiece. The Wiluna Uranium Project consists of the Centipede, Millipede, Lake Maitland, Lake Way uranium deposits 30km to the south of the town of Wiluna in Western Australia's northern goldfields.

Please visit [www.toroenergy.com.au](http://www.toroenergy.com.au) for further information.

**Table 1 – Wiluna Uranium Project Resources**

**Wiluna Uranium Project Resources Table (JORC 2012)**  
**at 200 ppm cutoffs inside U<sub>3</sub>O<sub>8</sub> resource envelopes for each deposit – Proposed Mine Only**

		Measured		Indicated		Inferred		Total	
		U <sub>3</sub> O <sub>8</sub>	V <sub>2</sub> O <sub>5</sub>	U <sub>3</sub> O <sub>8</sub>	V <sub>2</sub> O <sub>5</sub>	U <sub>3</sub> O <sub>8</sub>	V <sub>2</sub> O <sub>5</sub>	U <sub>3</sub> O <sub>8</sub>	V <sub>2</sub> O <sub>5</sub>
Centipede/ Millipede	Ore Mt	4.9	-	12.1	-	2.7	53.6	19.7	53.6
	Grade ppm	579	-	582	-	382	327	553	327
	Oxide Mlb	6.2	-	15.5	-	2.3	38.6	24	38.6
Lake Maitland	Ore Mt	-	-	22	-	-	27	22	27
	Grade ppm	-	-	545	-	-	303	545	303
	Oxide Mlb	-	-	26.4	-	-	18	26.4	18
Lake Way	Ore Mt	-	-	10.3	-	-	15.7	10.3	15.7
	Grade ppm	-	-	545	-	-	335	545	335
	Oxide Mlb	-	-	12.3	-	-	11.6	12.3	11.6
Total	Ore Mt	4.9	-	44.3	-	2.7	96.3	52	96.3
	Grade ppm	579	-	555	-	382	322	548	322
	Oxide Mlb	6.2	-	54.2	-	2.3	68.3	62.7	68.3

### Competent Persons' Statement

#### Wiluna Project Mineral Resources – 2012 JORC Code Compliant Resource Estimates – U<sub>3</sub>O<sub>8</sub> and V<sub>2</sub>O<sub>5</sub> for Centipede-Millipede, Lake Way and Lake Maitland.

The information presented here that relates to U<sub>3</sub>O<sub>8</sub> and V<sub>2</sub>O<sub>5</sub> Mineral Resources of the Centipede-Millipede, Lake Way and Lake Maitland deposits is based on information compiled by Dr Greg Shirliff of Toro Energy Limited and Mr Daniel Guibal of Condor Geostats Services Pty Ltd. Mr Guibal takes overall responsibility for the Resource Estimate, and Dr Shirliff takes responsibility for the integrity of the data supplied for the estimation. Dr Shirliff is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM) and Mr Guibal is a Fellow of the 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 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.