Global Uranium and Enrichment

ASX:GUE
OTCQB:GUELF
ASX Announcement

11 June 2024

Ubaryon Update – Key Milestone Achieved

HIGHLIGHTS

- **Key milestone has been achieved in developing a commercial enrichment process with Ubaryon confirming a separation factor approximately three times higher than the enrichment factor. This is an important measure for commercialisation.**
- **GUE is the largest shareholder in Ubaryon (21.9%), a private Australian Company.**
- **Ubaryon owns 100% of an innovative Uranium Enrichment Technology.**
- **Global Uranium's investment in Ubaryon provides shareholders with unique access across the uranium value chain.**
- **Enriched uranium prices continue to rise as restrictions on Russian supply drive a global enrichment shortfall.**

Global Uranium and Enrichment Limited (**ASX:GUE, OTCQB: GUELF**) is pleased to advise that Ubaryon has provided a shareholder update which conveys that Ubaryon Pty Ltd has achieved a significant advancement on its Uranium Enrichment Technology ("**Ubaryon Enrichment Technology**"). In particularly, a major achievement regarding a separation factor, which is an important milestone in developing a commercial process. Global Uranium is encouraged by the progress of Ubaryon and look forward to continuing to support Ubaryon as its largest shareholder.

Global Uranium's Managing Director, Mr. Andrew Ferrier said: *"We are impressed by the progress being made by Ubaryon, particularly as we see markets increasingly focused on uranium enrichment. The U.S. Government's policy decision to cut imports of uranium from Russia has accelerated efforts to re-shape and secure the uranium supply chain to Western countries. Currently, the U.S. imports over 90% of the uranium needed to fuel its nuclear energy needs, which is a significant opportunity for U.S.-based uranium companies.*

We are seeing significant funding and investment in the development of enrichment technologies globally, which places both Ubaryon and Global Uranium in strong position to participate in what is emerging as a transformation of the energy mix. Our involvement from exploration projects to the uranium enrichment process through our shareholding of Ubaryon, places us at the forefront of this rapidly developing market opportunity."

Ubaryon Background

Ubaryon is a private Australian company which is developing and commercialising a unique uranium enrichment technology ("**Ubaryon Enrichment Technology**") based on the chemical separation of naturally occurring uranium isotopes.

Ubaryon was established in 2015 after environmental testing identified a process anomaly, after which Ubaryon lodged a patent application over its Ubaryon Enrichment Technology in 2018. Australian Safeguards and Non-Proliferation Office ("**ASNO**") classified the intellectual property in September 2018. ASNO and Defence Export Controls ("**DEC**") now regulate all Ubaryon's technical disclosure.

The Ubaryon Enrichment Technology has been tested and validated over a significant number of experimental runs since inception. The magnitude of the observed enrichment factor is between 10 and 30 times higher than that of previous chemical enrichment technologies developed in France and Japan in the 1970's.

A significant feature of the Ubaryon Enrichment Technology is that it eliminates the need for conversion from uranium oxide or yellowcake (UO_4 or U_3O_8) to gaseous uranium (UF_6) and the need for deconversion from UF_6 to uranium oxide. Removing conversion and deconversion simplifies the enrichment process and allows for additional flexibility in the nuclear fuel cell supply chain.

Enrichment Market Update

The global enrichment market has continued to move very rapidly over the past few months. In May 2024, President Biden signed into law the Prohibiting Russian Uranium Imports Act ("**Prohibition Act**") which prohibits the import of Russian uranium products into the U.S. as of August 2024. This prohibition supports the United States' ongoing effort to reduce and ultimately eliminate its dependence on Russian uranium for its energy needs. The Prohibition Act also triggers US$2.7 billion in funding to support new nuclear fuel production capacity – programs to be administered by the US Department of Energy (**"DOE"**).

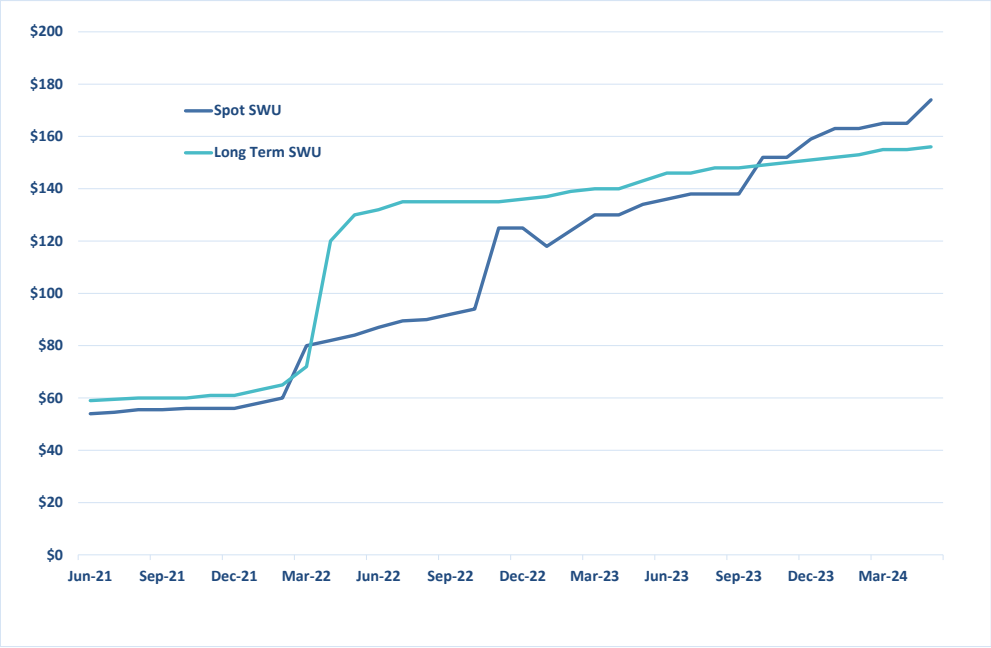

Figure 1: Enrichment (SWU) Price since June 2021 – Source UxC

Technical Development – Uranium Isotopes

Ubaryon's core technology is a chemical separation process for uranium isotopes. Over the last 12 months, through numerous reactor tests and extensive isotope analysis, Ubaryon has confirmed and demonstrated a separation factor ("**SF**") ~ three times higher than the enrichment factor (**"EF"**) that triggered the Company's technology to be classified. The progression from enrichment factor to separation factor is a key milestone in developing a commercial process.

Separation factor is a key measure for demonstrating a technically practical separation, as it incorporates the mass balance and the depletion of the separated initial solution. Enrichment factor is simply the increase in isotope ratio between the initial and final uranium solution, but it does not prove that a process is practical. In addition, as part of the progression to a SF, Ubaryon has also confirmed that its chemical process is suitable for multistage operations, another important element for a practical enrichment technique.

Ongoing test work is targeting refinement of control parameters to enable optimisation and consistency to extend the technology's enrichment and separation factors, and subsequently demonstrate an operating multistage process to produce higher-enrichment material within Ubaryon's permit limitations.

Technical Development – Stable Isotopes

Ubaryon has also commenced test work on developing separation of stable isotopes of Ytterbium (**"Yb"**), which is a rare earth element with medical diagnostic and therapeutic applications. Ytterbium's chemistry is sufficiently different from uranium and Ubaryon is viewing this as a separate project and process to its core technology, with both having clear but different commercial applications.

Initial testing confirmed chemical differences between Ytterbium and Uranium and subsequent testing is encouraging in terms of the separation of separate fractions of the Ytterbium. Ubaryon will continue test work to confirm its initial conclusions, with the aim of demonstrating the potential for chemical isotope separation of Yb isotopes.

Industry Growth Program

Ubaryon has applied for assistance under the Federal Government's Industry Growth Program. This program is focused the development of strategic industries and technology, and Ubaryon's application has been accepted based on specific eligibility requirements where the technology development is categorised as value adding to resources and critical minerals.

Regulatory Environment

Ubaryon has now had several site inspections by the International Atomic Energy Association (**"IAEA"**) in Lucas Heights, Sydney, and its previous laboratory facilities. These inspections do not require the disclosure of the technical details of Ubaryon's technology but allow the IAEA to ensure that the materials Ubaryon is using and producing do not contravene its permit allowances, or Ubaryon's or Australia's non-proliferation obligations.

This announcement has been authorised for release by the board of Global Uranium and Enrichment Limited.

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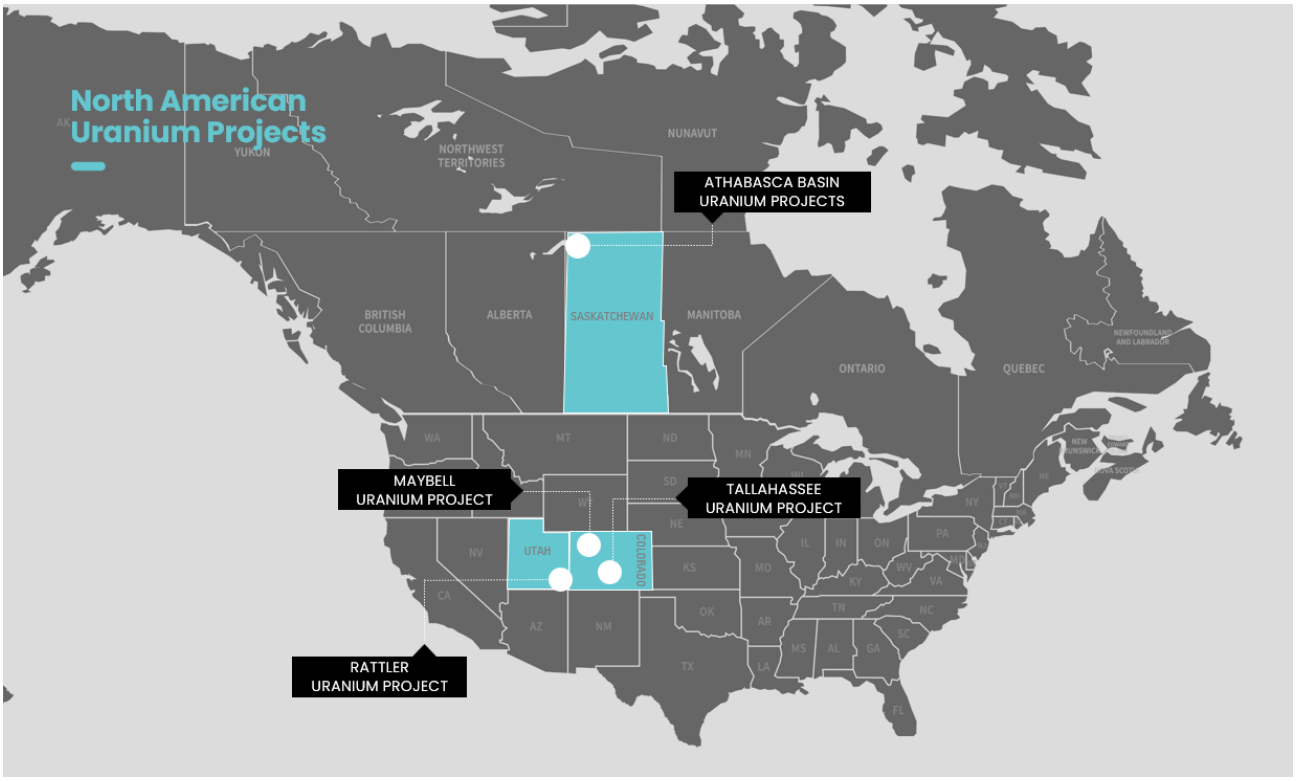
An Emerging Uranium Powerhouse

Global Uranium and Enrichment Limited in an Australian public listed company providing unique exposure to not only uranium exploration and development but the uranium enrichment space. Amid a nuclear energy renaissance, Global Uranium is developing a portfolio of advanced, high grade uranium assets in prolific uranium districts in the U.S. and Canada, and has established a cornerstone position in Ubaryon, an Australian uranium enrichment technology.

Asset Portfolio:

- **Tallahassee Uranium Project (Colorado, USA)**: JORC 2012 Mineral Resource estimate of 49.8 Mlbs U_3O_8 at a grade of 540ppm U_3O_8[1] with significant exploration upside. Located in Colorado's Tallahassee Creek Uranium District, host to more than 100 Mlbs U_3O_8.
- **Athabasca Basin Projects (Saskatchewan, Canada)**: Portfolio of six high-grade exploration assets in the Athabasca Basin, home to the world's largest and highest-grade uranium mines. Portfolio includes the Newnham Lake Project with grades of up to 1,953ppm U_3O_8 in historic drilling and the Middle Lake Project with boulder-trains with grades of up to 16.9% U_3O_8.[2]
- **Ubaryon Investment (Australia):** Cornerstone position in Ubaryon, an Australian uranium enrichment technology.
- **Maybell Uranium Project (Colorado, USA)**: High grade Exploration Target of 4.3-13.3 Mlbs U_3O_8 at a grade of 587 to 1,137ppm U_3O_8 established at the project.[3] Historical production of 5.3 million pounds of U_3O_8 (average grade 1,300ppm).
- **Rattler Uranium Project (Utah, USA)**: Located within La Sal Uranium District, Utah, 85km north of White Mesa Uranium/Vanadium mill, the only operating conventional uranium mill in the USA.



[1] Competent Persons Statement - Information on the Mineral Resources presented, together with JORC Table 1 information, is contained in the ASX announcement dated 7 April 2022 and titled "Okapi to acquire Hansen Deposit – Resource increased by 81%". Measured 2.96MLbs of 550 ppm U_3O_8, Indicated 19.095MLbs of 580 ppm U_3O_8, Inferred 27.78MLbs of 510 ppm U_3O_8 calculated applying a cut-off grade of 250ppm U_3O_8. Numbers may not sum due to rounding. Grade rounded to nearest 10ppm.
The Company confirms that it is not aware of any new information or data that materially affects the information in the relevant market announcements, and that the form and context in which the Competent Persons findings are presented have not been materially modified from the original announcements. Where the Company refers to Mineral Resources in this announcement (referencing previous releases made to the ASX), it confirms that it is not aware of any new information or data that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the Mineral Resource estimate with that announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons findings are presented have not materially changed from the original announcement.

[2] Refer to the Company's ASX announcement dated 9 November 2021 for the JORC details of the Athabasca Projects and other historical information. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement of 9 November 2021.

[3] Refer to the Company's ASX announcement dated 14 December 2023 for the Exploration Target and JORC details. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement of 14 December 2023. Historical production data has been sourced of an article in Rocky Mountain Association of Geologists (1986) titled "Geology and Production History of the Uranium Deposits in the Maybell, Colorado Area" from W. L. Chenoweth.