

COMMERCIALISING A BREAKTHROUGH IN URANIUM PROCESSING



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A stylized world map in white with a soft glow effect, centered on the Atlantic Ocean, showing the outlines of all continents.

Unlocking and enhancing the potential of surficial uranium deposits globally

- Transforming the economics of uranium production
- **U-pgrade™** process can reduce operating costs by 50-70% and CAPEX by 30-50%
- Proprietary technology held in SPV – Uranium Beneficiation (UB)
- US\$6 million sought by UB to build and operate a pilot plant for three different resources
- Multiple strategic pathways to joint venture with uranium asset owners
- Current distressed uranium prices offer low entry prices and very attractive upsides
- Highly attractive revenue and capital upsides through shared ownership of uranium assets
- Use process IP to gain access to a portfolio of interests in Uranium Projects (target 3-4 in first 5 years) with a UB Enterprise Value in excess of US\$500 million

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COMPANY

Marenica Energy Ltd ("MEY") is quoted on the Australian Stock Exchange. It has two substantive assets: the Marenica Uranium Project in Namibia, a significant but relatively low-grade uranium deposit; and the **U-pgrade™** process, which is held in Uranium Beneficiation Pty Ltd (UB), a wholly-owned subsidiary of MEY. The focus of the company will be, for the immediate future, obtaining the maximum value from the **U-pgrade™** process through UB, with the Marenica uranium asset held for possible mining in subsequent years.

THE MARENICA URANIUM DEPOSIT - NAMIBIA

Marenica has a 75% interest in the Marenica Uranium Project, with a current JORC resource in excess of 57 million pounds of uranium. In spite of this significant size the project was determined to be uneconomic due to its low resource grade and the depressed prices for uranium.

In 2012 the company embarked on an R&D program to develop a uranium concentration process that was unique and ground breaking and lowered the extraction cost of uranium at the Marenica Uranium project.

A team of experts was assembled to direct the research. The experts included industry consultants and senior scientists from the CSIRO (Commonwealth Scientific and Industrial Research Organisation) an Australian Government owned and run organisation regarded as one of the preeminent research and scientific organisations globally.

Since that time Marenica has undertaken considerable testwork and analysis of its ore which has resulted in a breakthrough process. The results were tested under a range of assumptions and operating factors to confirm the applicability of this new process to the Marenica Uranium Project. This initial bench scale testwork cost over US\$3 million, and included successful tests on over 3 tonnes of ore from the Marenica Project.

The testwork resulted in a new uranium concentration process that is capable of concentrating uranium ore by a factor of up to 50 times. The results for the Marenica Project ore are summarised below;

	Before	After
Ore sample	1 Mt @ 100ppm	13,000t @ 5,000ppm
Process recovery	75%	72%
OPEX	US\$80/lb	US\$40/lb

The concentration of Uranium in the feed to the leaching circuit dramatically reduces the mass of material (ore) to be leached and therefore the size of the traditional leaching plant. Initial assessments and estimates indicate that by using this new process a reduction in operating costs of 50-70% and capital costs of 30-50% is achievable.

Given the breakthrough nature of this new process, Marenica has taken the step of applying for a patent to protect this valuable IP which will be known under the trademark of **U-pgrade™**.

It has become clear that this process has widespread and global applicability to many uranium mines. The emphasis of UB has therefore evolved from a focus on the Marenica Uranium project to other uranium assets, where **U-pgrade™** could revitalise their project economics.

THE PROCESS / U-PGRADE™

Following considerable testwork and analysis **U-pgrade™** was shown to concentrate the Marenica ore to achieve dramatically improved project economics.

This new process was also successfully applied in bench scale testwork to 7 other third party ore types. The results were predictable, explainable and consistent with the outcomes from the Marenica Ore testwork.

During this testwork **U-pgrade™** has been shown to be applicable to other calcrete-hosted, and a number of other surficial, uranium deposits. Below is an abbreviated list of resources that are likely suitable to be concentrated using the **U-pgrade™** process.

Resource	Owner	Country	Size (Mlbs)	Status
LHU	Paladin	Namibia	172	Operating
Trekopje	Areva	Namibia	70	C & M
Paleochannels	Reptile	Namibia	36	Exploration
Yeelirrie	Cameco	Australia	145	Exploration
Wiluna Area	Toro	Australia	74	Approvals
Napperby	Deep Yellow	Australia	14	Exploration
Reguibat	Aura	Mauritania	49	Exploration
Karoo	Peninsula	South Africa	57	Exploration
Thatchers Soak	Uranex	Australia	11	Exploration
Tubas Red Sands	Reptile	Namibia	28	Exploration

U-pgrade™ is an invaluable process at any time and particularly in the current economic downturn and the low uranium price environment in which we find ourselves. It provides the potential to dramatically increase the profitability of medium to higher grade surficial deposits, as well as transform the lower grade ones such as those found at Marenica's site in Namibia, from sub-economic into economic.

U-pgrade™ positions Marenica to offer attractive economic prospects to major surficial global uranium deposits, helping to provide fuel for a low-cost and low-carbon energy source for the future.

Uranium prices have been driven to current low levels, primarily as a result of the closure of nuclear plants in Japan, due to safety fears following the Fukushima disaster. Future

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uranium prices are expected to rise significantly over a 3-5 year term for two reasons. The first is that many existing and planned uranium mines are sub-economic at current market prices. The second is that demand for uranium is set to rise dramatically as fleets of nuclear plants are commissioned in China, India and elsewhere to cope with the need for large amounts of secure, dependable and low carbon power.

Marenica is prepared for the short and long term future with its **U-pgrade™** process. Marenica expects that its **U-pgrade™** process can benefit

1. Most surficial uranium mines in operation right now, by reducing operating costs and improving efficiencies, as well as allowing a lower cut-off grade to be applicable, thereby extending mine life and reducing mining costs.
2. New projects stalled in the wake of current depressed uranium prices by decreasing the hurdle or “trigger” uranium prices required to proceed with development.

Marenica is positioned to play a significant role in improving the future cost effectiveness of uranium production together with a reduction in the social and environmental impacts of such projects.

STRATEGY AND INVESTMENT

The \$6 million capital raising being sought for UB will be utilised to build a pilot plant in Australia, which will process ores from three resources, two of which are in Namibia, the other in Australia. This will, over the next 12 months, prove the applicability and suitability of **U-pgrade™** and position UB strongly for detailed commercialisation discussions around using **U-pgrade™** in these applications.

Specific details of what the pilot program is intended to achieve in the near term and the strategic aims of this phase are set out in the following points:

1. Increase credibility, grow confidence and demand for **U-pgrade™**
 - a. Engage with resource owners
 - b. Prove process (scale up plant)
 - c. Pave way for commercialisation
2. Use successful application to gain equity interests or royalties in new mine developments for which **U-pgrade™** is a critical component.
3. Increase exposure to the Uranium industry and enjoy growth in asset value as Uranium prices improve later in the decade.
4. Build portfolio or sell interests to strategic buyers post production.

Targeted Returns: Create portfolio of interests in operating mines (target 3-4 in first 5 years) with Enterprise Value in excess of US\$ 500 million

Primary funding is being sought to support scale up testwork on 3 different third party ore types and proceed to first commercialisation agreement. US\$6 million is required to fund UB through this phase which is expected to take approximately 12 months. Approximately \$2 million is budgeted to be returned as an R&D tax refund in September 2015.

Existing and incoming shareholders of UB will have first right to provide any development capital required in future years. However, it is envisaged that if a large investment is required to proceed with one of the commercialisation projects, then international private equity groups may be approached to provide some or all of the necessary finance.

DEVELOPMENT PATHWAY

- Fund 3 test programmes to de-risk future project development and increase commercial leverage with resource partners
- Negotiate commercialisation agreements with resource partners
- Earn interests in a portfolio of Uranium assets which require **U-pgrade™** process to be viable, generally minority stakes in low cost assets

EXIT STRATEGY

Significant and real exit opportunities will exist in due course

- Sale of individual interests to trade/strategic buyers
- Sale of JV interests to lead partners
- Capital return through dividends
- Float UB or merger of UB with any/all of the individual commercialisation companies

DISCLAIMER

This document has been prepared by Marenica for general information purposes only. This document may contain certain forward-looking statements which have not been based solely on historical facts but rather on Marenica’s current expectations about future events and a number of assumptions which are subject to significant uncertainties and contingencies, many of which are outside the control of Marenica and its directors, officers and advisers. The information provided includes information in relation to the strategy for the Company in the future but there is no guarantee that the Company will be able to secure sufficient investment to implement that strategy or that the implementation of the strategy will be successful.

Accordingly, an investment in Marenica should be considered as a speculative investment. Before making an investment decision you should consider information in relation to the Company released to ASX. It is also recommended that you consult your financial adviser.