ASX Release 30 July 2021

HONEYMOON URANIUM PROJECT, SOUTH AUSTRALIA

Quarterly Report, June 2021

Boss takes key steps towards uranium production with completion of highly successful feasibility study

Plus, strategic acquisition of 1.25Mlb of U_3O_8 strengthens balance sheet, provides immediate exposure to uranium price and assists with offtake discussions

Highlights

- **Boss on track to be Australia's next uranium producer with Enhanced Feasibility Study[1] (EFS) showing Honeymoon will be financially and technically robust**
- **The EFS incorporates planned changes to Honeymoon's processing plant to lower costs and increase financial returns**
- **Honeymoon pre-tax NPV now estimated to be US$309m (up 35% from last year's Feasibility Study); Forecast pre-tax IRR is 47% and EBITDA margin is 62%**
- **Nameplate production capacity rises 22.5% to 2.45Mlb of U_3O_8**
- **All-In Costs fall 11% to US$31.86/lb; All-In-Sustaining Costs fall 16% to US$25.62/lb with Cash Costs falling 21% to US$18.46/lb**
- **Capital cost of expanding production estimated to be US$80m – utilising Ion Exchange as a replacement of the existing Solvent Extraction plant**
- **Boss retains the option of feeding its strategic 1.25Mlb U_3O_8 inventory[2] into its contract portfolio post commissioning of Honeymoon; This inventory has a value of US$75m based on EFS pricing[3] but was not included in the EFS results**
- **Honeymoon is fully permitted for production, storage and export of U_3O_8[4]**
- **EFS is based on only 36Mlbs of the total JORC Resource of 71.6Mlbs[5], highlighting scope for significant growth**

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[1] Refer ASX announcement dated 21 June 2021. All material assumptions underpinning the forecast financial information (and the production targets on which such forecast financial information is based) continue to apply and have not materially changed.
[2] Refer to ASX announcement dated 29 March 2021.
[3] The EFS is based on a U_3O_8 price of US$60/lb and an exchange rate of A$1:US$0.75. We note that the current spot price of U_3O_8 is approximately US$32.5/lb.
[4] Refer to ASX announcement dated 8 April 2019.
[5] Refer to ASX announcement dated 25 February 2019 and Appendix One for Honeymoon JORC 2012 Resource.

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Boss Energy Managing Director Duncan Craib said: ***"It was a transformational quarter with strong feasibility study results, strengthened by the acquisition of strategic uranium inventory, paving the way for Boss to progress offtake discussions and project funding, putting Honeymoon on track to be Australia's next uranium producer".***

Boss Energy Limited (**Boss** or the **Company**) is pleased to provide its **Quarterly Activities Report** for the three months ending **30 June 2021**.

Taking ownership of 1.25 Million Pounds of Uranium

On 29 March 2021, the Company announced it had received firm commitments for a $60 million share placement at a price of 14c per share, with net proceeds to be applied to the strategic purchase of 1.25 million pounds of uranium from the spot market.

The acquisition of the strategic uranium inventory will deliver several significant benefits for Boss, including:

- Enhanced financial position to support the planned re-start of Honeymoon;
- Increased flexibility in project funding and offtake negotiations with customers;
- De-risking Honeymoon re-start during commissioning phase;
- Remaining fully leveraged to any future appreciation of uranium price on the back of tight supply-demand fundamentals.

Under the binding agreements, the Company obtained title to 0.25 million pounds of uranium on 30 April 2021, and an additional 1 million pounds on 30 June 2021. The uranium is stored at the ConverDyn Facility in Metropolis, Illinois.

Boss was able to create this unique opportunity thanks to the Company's highly experienced and well-connected operatives in the global uranium market.

The strategic uranium stockpile is highly valuable to Boss on several levels as the Company seeks to secure offtake agreements, finalise project funding and move into production.

Enhanced Feasibility Study

The EFS was based on revised capital and operating estimates, revised wellfield design plan and revised economic assumptions reflecting continued improvement in the outlook for uranium supply-demand fundamentals. Specifically, the capital cost captures savings made in relation to the improved elution circuit and incorporates the upfront inclusion of the NIMCIX columns that drive operating cost efficiency.

The results have further reinforced the Project's exceptional financial and technical merits, delivering significantly enhanced financial returns, and was completed to an accuracy of -10/+15%. This is the second high confidence study completed on Honeymoon in the past 18 months.

Based on its JORC Resource at the Honeymoon Restart Area (**HRA**) of 36Mlbs of U_3O_8, Honeymoon has a Life of Mine (**LOM**) of plus-10 years at a forecast production rate of 2.45Mlb/annum. There is a further 35.6Mlbs in JORC Resources outside the HRA and significant exploration potential.

Importantly, the EFS found that the proposed changes to Honeymoon's processing method would cut all-in-sustaining costs (**AISC**) by 16% to US$25.62/lb and lead to a 35% increase in pre-tax project NPV, taking it to US$309 million. These figures compare with those in the Feasibility Study of January 2020 (**FS** or **Feasibility Study**) at a U_3O_8 price of US$60/lb and an exchange rate of A$1:US$0.75.

Table 1: *Key Financial Outcomes of the Enhanced Feasibility Study*

Key Financial Outcomes[6]	Unit	Enhanced Feasibility Study Jun-21	Feasibility Study* Jan-20	
$NPV_{8\%}$ (pre-tax)	US$M	**308.75**	228.27	35% increase
IRR (pre-tax)	%	**47.1%**	51.4%	-
Life of Mine (LOM)	Years	**11**	12	-
Uranium Produced (LOM)	Mlb U_3O_8	**21.81**	20.74	5% increase
Total Project Payback	Years	**3.5**	4.0	Reduction
OPERATING COST				
All-In Cost (LOM)[7]	US$/lb U_3O_8	**31.86**	35.92	11% reduction
All-In-Sustaining Cost (LOM)[8]	US$/lb U_3O_8	**25.62**	30.46	16% reduction
Cash Cost (LOM)[9]	US$/lb U_3O_8	**18.46**	23.25	21% reduction
CAPITAL COST				
Capital Cost (Re-start)	US$M	**60.19**	69.68	14% reduction
Capital Cost (Additional IX columns)	US$M	**19.82**	-	-
Total Capital Cost (including contingency)	US$M	**80.01**	69.68	15% increase

**For comparative purposes only, key financial outcomes for the Feasibility Study are presented using a U_3O_8 price of US$60/lb and an exchange rate of A$1:US$0.75. Nothing in the above table changes the results of the Feasibility Study released on the ASX on 21 January 2020.*

Boss considers a base case price of US$60/lb U_3O_8 over the LOM is reasonable given that current spot and term uranium prices are well below the price required to guarantee viability of a large proportion of the world's existing production. Uranium analysts predict that a long-term spot price in the mid US$40's will incentivise restart of idled production while a spot price closer to US$60/lb will be needed for most new mines.

The findings show Honeymoon is set to enjoy extremely robust margins given that contract prices for uranium are currently in the high US$30's/lb.

The EFS found that CAPEX of US$80 million is required to re-start Honeymoon. This cost increase, compared to the FS (approximately ~US$10M), is directly related to Boss' plan to remove the existing Solvent Extraction (**SX**) plant and replace it with an Ion Exchange (**IX**) plant much earlier in the mine life to shorten ramp up time and reduce technical risks associated with the existing solvent extraction plant. This results in an increased production capacity of 2.45Mlb/annum of U_3O_8.

[6] *All key financial outcomes based on a discount rate of 8%, U_3O_8 price of US$60/lb and an exchange rate of A$1:US$0.75.*
[7] *AIC = AISC + upfront and deferred capital expenditure.*
[8] *AISC = Cash Costs + royalties and sustaining capital expenditure.*
[9] *Cash Costs = all mining costs, onsite processing costs, onsite general and administration costs and logistical costs.*

Boss Managing Director Duncan Craib said the EFS showed Honeymoon was firmly on track to be Australia's next uranium producer:

"*The study shows conclusively that the changes we plan to make to the processing plant will increase annual production, cut costs significantly and increase overall financial returns,*" *Mr Craib said.*

"With forecast all-in costs of US$31.86/lb and contract uranium prices running in the high US$30's/lb, Honeymoon is already poised to be an extremely robust project.

"The outlook is even stronger when viewed against the widely-held belief in financial and energy markets that the uranium price is set to continue climbing on the back of a supply shortage, declining inventories and growing demand due to its carbon-free status.

"This study demonstrates that Boss is perfectly placed to capitalise on a strengthening uranium market with an existing plant and mine in a tier-one location with low costs and strong financial returns.

"In conjunction with these outstanding results, the recently acquired strategic inventory of 1.25 million pounds of uranium enables Boss to continue to de-risk the planned re-start of the Honeymoon and provide increased flexibility as we continue to progress project funding and offtake negotiations."

Mr Craib said that in light of the strong findings, and strengthening uranium market, Boss would also advance its exploration activities aimed at growing Honeymoon's mineral resource and mine life at numerous highly promising near-mine and regional targets.

Uranium market analysis

On a macro level, the uranium market continues to tighten. During the first quarter of 2021, the Uranium macro trends governing the supply and demand balance are tightening, and there are visible signs that the industry is on the cusp of a recovery.

Globally there are increasingly favourable conditions for nuclear power growth. The recognition that nuclear power is a key component in reducing carbon emissions and mitigating the effects of climate change is growing. There is support for efforts in the US and EU to see this recognition codified. These developments are still early-stage but signal growing support for nuclear power on a national level which has not been seen since pre-Fukushima days.

Non-traditional demand is also impacting the uranium market. This was characterised in the 1st Quarter by the purchasing of physical inventory by junior miners. In the 2nd Quarter Sprott Asset Management successfully completed its previously announced transaction with Uranium Participation Corporation, to create the Sprott Physical Uranium Trust. Purchasing activities by the Trust are expected to put pressure on spot prices in the second half of 2021. The upcoming U.S. listing, increased marketing efforts by Sprott, and future use of ATM offerings to purchase additional U_3O_8 are highly anticipated by the market for their potential to add new demand to spot.

The underlying fundamentals of growing demand, decreasing supply and inventory drawdown also continue to impact the market.

Demand outstrips primary production and inventory levels are being drawn down. Producers continue to show production discipline with Kazatomprom announcing that it plans to maintain 2023 production at a similar level to 2022, which is expected to be 20% lower than the planned volumes under its Subsoil Use Contracts. Reduced production levels and supplier purchasing to fill end-user contracts has also resulted in a reduced level of mobile inventories. Spot supply is increasingly dominated by intermediary offtakes or excess supply from primary producers rather than surplus inventory.

The need for higher commodity prices to incentivise new mine development and resource exploration are required. The current spot and term price indicator levels are not sufficient to restart idled mines or initiate development of advanced uranium projects. New mines are needed in the mid-2020s and the delay in bringing on idled and new mines increases the likelihood of supply deficits in this period.

Honeymoon has all its licences and permits in place and has a very low capital intensity. The mine is ready to come into production but the decision to start production will not be taken until prices rise to a level which will sustain long term profitable production.

Appendix 5B disclosures

In line with its obligations under ASX Listing Rule 5.3.5, Boss notes that the only payments to related parties of the Company, as disclosed in the Appendix 5B (quarterly Cashflow Report) for the period ended 30 June 2021, pertain to payments for executive salaries and superannuation and non-executive director fees.

During the quarter ended 30 June 2021, the Company spent approximately $738,000 on project and exploration activities relating to its Honeymoon Project. These activities included technical work relating to the EFS, which was released on 21 June 2021, and continued exploration activities including the initiation of ground-based, low-cost and non-invasive geophysical surveys in the Western Region tenements. In addition to these activities the Company continued to incur costs relating to the ongoing care and maintenance activities required at Honeymoon. The expenditure represents direct costs associated with these activities as well as capitalised wages which can be directly attributable to Honeymoon.

This ASX announcement was approved and authorised by the Board of Boss Energy Limited.

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Appendix One:

Schedule of Mining Tenements

The following information is provided pursuant to Listing Rule 5.3.3 for the quarter ended 30 June 2021.

Tenement Name	Location	Licence Number	Interest
Yarramba	South Australia	EL6510	100%
South Eagle	South Australia	EL6081	100%
Gould's Dam	South Australia	EL6512	100%
Katchiwilleroo	South Australia	EL6511	100%
Ethiudna	South Australia	EL6020	100%
Gould's Dam	South Australia	RL83-85	100%
Honeymoon Mine	South Australia	ML6109	100%

There were no mining tenement acquisitions or divestments during the quarter.

Honeymoon's Mineral Resource (lower cut-off of 250 ppm U_3O_8)

Classification	Tonnage (Million Tonnes)	Average Grade (ppm U_3O_8)	Contained Metal (Mkg, U_3O_8)	Contained Metal (Mlb, U_3O_8)
Measured	3.1	1,100	3.4	7.6
Indicated	18.4	630	12.0	25.5
Inferred	30.9	570	18.0	38.5
Total	**52.4**	**620**	**32.5**	**71.6**

Reference to previous ASX announcements

In relation to the results of the Enhanced Feasibility Study announced on 21 June 2021, the Company confirms that all material assumptions underpinning the production target and forecast financial information included in that announcement continue to apply and have not materially changed.

The mineral resource estimates in this announcement were reported by the Company in accordance with listing rule 5.8 on 25 February 2019. The Company confirms it is not aware of any new information or data that materially affects the information included in the previous announcement and that all material assumptions and technical parameters underpinning the estimates in the previous announcement continue to apply and have not materially changed.

Forward-Looking Statements

This announcement includes forward-looking statements. These forward-looking statements are based on the Company's expectations and beliefs concerning future events. Forward-looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Boss, which could cause actual results to differ materially from such statements. Boss makes no undertaking to subsequently update or revise the forward-looking statements made in this announcement, to reflect the circumstances or events after the date of this announcement.