

Quarterly Report, March 2021

Boss takes key steps towards production at Honeymoon uranium project in South Australia

Highlights

- Strong progress made towards completion of the Honeymoon Enhanced Feasibility Study, which is on track for release in the June quarter
- EFS is designed to reduce costs and increase nameplate capacity up to 2.45Mlb/annum U₃O₈
- As part of the EFS, process engineering studies were completed which incorporate Ion Exchange (IX) columns; The use of these columns is central to the cost-reduction strategy
- Project funding discussions underway with global lenders
- Successful acquisition of 1.25M pounds of strategic uranium inventory on the spot market, funded by a well-supported \$60m capital raising
- Strategic inventory acquisition strengthens Boss' position in offtake negotiations
- Multi-pronged 2021 exploration campaign underway, aimed at upgrading significant Exploration Target to JORC Resources
- Comprehensive review of Honeymoon historical database finalised, including extensive geological and geochemical data leading to an initial scout drill program
- Strong balance sheet, zero debt and significant carried-forward tax losses

Boss Energy Managing Director Duncan Craib said: *"It was a highly productive quarter which saw us move into the final stages of preparation for the re-start of production at Honeymoon.*

"The technical EFS is almost finished, project funding discussions are underway and interest from fuel buyers continues to increase.

"The successful acquisition of 1.25 million pounds of uranium further strengthens Boss' strategic and commercial advantages in respect to resuming production and capitalising on the forecast increase in uranium prices and our low costs, tier-1 location and extensive JORC Resource".

FOR FURTHER INFORMATION PLEASE CONTACT:

Boss Energy Limited
ABN 38 116 834 336

Suite 3, Churchill Court
234 Churchill Avenue
Subiaco WA 6008

Duncan Craib - Managing Director/ CEO
+61 (08) 6263 4494

Paul Armstrong – Public Relations
+61 (08) 9388 1474

ASX: BOE

www.bossenergy.com

 @Boss_Energy

Boss Energy Limited (ASX: BOE) (**Boss** or the **Company**) is pleased to provide its **Quarterly Activities Report** for the three months ending **31 March 2021**.

Enhanced Feasibility Study nearing completion

Boss is on track to complete and release the EFS in the June quarter 2021.

Strong progress on the EFS was made during the March quarter, which is aimed at reducing operating expenditure and improve the ramp up production schedule and nameplate capacity of the Honeymoon Uranium Project (Honeymoon) to 2.45Mlb/annum U_3O_8 , by removing the existing solvent extraction columns and replacing them with new NIMCIX Ion Exchange (IX) columns.

Importantly, the EFS provides a base case to fast-track uranium production from Honeymoon's restart area from only 35.9Mlb of the Project's global mineral resource (JORC 2012) of 71.6Mlb¹. No further permitting is required to resume production and Honeymoon has a valid Uranium Mineral Export Permission for 3.3Mlb/annum².

This means there is substantial scope to extend the mine life and increase the production profile from the remaining identified JORC resources. There are also genuine growth opportunities from Honeymoon's significant defined Exploration Target³.

The combination of this increased production rate and the lower costs stemming from the new NIMCIX columns has the potential to increase free cashflow generation substantially.

The Company expects any anticipated savings to cement Honeymoon's global status as one of the lowest-cost uranium producers. Such independently verified results will greatly assist Boss in its pursuit of financing and off-take discussions in order to make a decision to proceed to mine, assuming a specified global uranium price has been achieved to satisfy the targeted IRR and NPV return so as to maximise shareholder value.

Securing Project Financing

On 2 February 2021, Boss announced it had taken a key step in its strategy to be Australia's next uranium producer, starting discussions with global lenders in regards to funding the resumption of operations at its Honeymoon Project.

The estimated CAPEX funding requirement for Honeymoon is just US\$63.2 million⁴. This is one of the lowest funding requirements of any pre-production uranium project worldwide, reflecting Honeymoon's status as an established project with an existing full processing plant and infrastructure.

Boss has already signed confidentiality agreements with several global lenders and formal indicative financing proposals are now being sought with a view to ensuring debt funding is well advanced when the Company seeks to finalise offtake agreements.

¹ Refer ASX announcement dated 25 February 2019. Refer Appendix 1 for Honeymoon JORC 2012 Resource.

² Refer ASX announcement dated 8 April 2019.

³ Refer ASX announcement dated 25 March 2019.

⁴ Refer ASX announcement dated 21 January 2020. 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.

Successful Acquisition 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.

Upon delivery and payment by Boss, title to the uranium inventory will transfer to the Company with no other conditions required to be met. Under the binding agreements, the Company has now acquired 0.25 million pounds of uranium, and the remaining 1 million pounds will be acquired by the end of June 2021. The uranium will remain stored at the ConverDyn Facility in Metropolis, Illinois. Remaining funds from the Placement will be applied towards storage costs associated with the uranium inventory, costs of the Placement and general working capital.

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.

2021 Exploration Program Underway

Boss continues its successful exploration strategy that has significantly expanded the global JORC resource from 16.6Mlbs to 71.6Mlbs (~433% increase) since acquiring Honeymoon in December 2015.

The comprehensive review of the Honeymoon's historical geological database was finalised in the quarter, including extensive geological and geochemical data leading to an initial scout drill program, highlighting significant potential to grow the global resource. The wealth of historical information revealed multiple anomalies in coinciding datasets within areas that are still relatively under-explored, distal to known JORC resources.

The results of a limited scout exploration drill campaign of the prior quarter were also analysed to test the accuracy of data gathered and the geophysical passive seismic mapping technique, within areas with existing heritage clearances. The drilling returned highly promising uranium intercepts that support current conceptual models, showing significant potential for high-grade mineralisation outside the Honeymoon Restart Area.

Nineteen rotary mud holes were drilled for a total of 2,325 metres, from which the top results⁵ were as follows:

- BMR085 from 103.75m **GT 2,144** (1.75m @ 1225ppm pU₃O₈, incl. 0.75m @ 2487 ppm)
- BMR087 from 118.25m **GT 1,498** (3.50m @ 428ppm pU₃O₈, incl. 1m @ 873 ppm)
- BMR076 from 92.50m **GT 1,088** (1.25m @ 870ppm pU₃O₈, incl. 1m @ 1003 ppm)
- BMR082 from 110.25m **GT 680** (2.25m @ 302ppm pU₃O₈, incl. 0.50m @ 634 ppm)
- BMR089 from 121.75m **GT 643** (2.50m @ 257ppm pU₃O₈)

The objective of the forthcoming field season is to extend Honeymoon's mine life and increase its production profile by a) upgrading known JORC resources outside of the Honeymoon Re-start Area, and b) targeting greenfields exploration areas distal to the known resources. On completion of the forthcoming heritage clearances, exploration will resume with the initiation of ground-based, low-cost and non-invasive geophysical surveys in the Western Region tenements. Results from the historical data review will be used to constrain and refine the size, and location, of the survey areas as part of the overall move towards smarter targeting practices. Completion of the geophysical surveys will be followed by exploration drilling.

The \$275,000 South Australian Government exploration grant awarded to Boss via the Accelerated Discovery Initiative (ADI) will be used to support the planned 2021 exploration field season, with continued introduction of innovative exploration alternatives for palaeovalley definition, smarter drill target generation within the existing Exploration Target areas, and the potential growth of its existing uranium JORC mineral resources (currently totalling 71.6Mlbs U₃O₈). The ADI forms part of the Growth State Agenda that aims to accelerate mineral discoveries through innovative exploration and research projects in regional and frontier terrains throughout South Australia.

The Company looks forward to sharing the results as the 2021 exploration programs progress.

Uranium market analysis

On a macro level the uranium market continues to tighten. During the first quarter of 2021 the trends influencing the market have been:

1. The outlook for nuclear power has improved as more nations announce targets for achieving net zero carbon emissions.
 - a. China's 14th 5-year plan sees nuclear capacity reaching 70GWe by 2025
 - b. Life extensions of nuclear reactors in the USA could see nuclear capacity forecasts increasing in the mid-term as reactors continue to operate rather than closing down
 - c. US commitment to net zero carbon emissions by 2040 and support for advanced nuclear reactor development.
2. Primary supply continues to decline; the last quarter has seen the final closure, after four decades of operation, of the Ranger mine in Australia and the Cominak mine in Niger. Production at Cigar Lake has been suspended since December 2020 to protect the workforce as Covid-19 cases

⁵ Refer ASX announcement dated 10 February 2021.

increased. Production in Kazakhstan will be below planned levels due to low uranium prices and the impact of covid-19 related measures on development work in 2020.

3. Inventories are falling. Reduced primary supply, uranium purchases by producers to replace production as supply to existing customers characterised the market during 2020. In the first quarter of 2021 inventory drawdown was accelerated by junior miners and funds purchasing over 10 million pounds of U_3O_8 .

In September 2019, the World Nuclear Association forecast a need for the restart of idled mines and new production from 2024. In the interim period potential supply has declined bringing forward the need for new supply. Production has been progressively curtailed as spot and long-term prices have stagnated at levels that will not support economic production from these mines and Covid-19 curtailments have further reduced production. Inventories have been drawn down as producers have purchased to fulfil utility contracts and as utilities consumed inventory and deferred purchasing during 2019 and 2020 while trade related uncertainties prevailed.

Boss is ideally placed to respond to rapidly changing market conditions.



Boss Energy's Board of Directors visiting the Honeymoon Uranium Project in South Australia on 19 April 2021. An experienced executive team which has previously built, operated and exported U_3O_8 from global uranium mines.

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 31 March 2021, pertain to payments for executive salaries and superannuation and non-executive director fees.

During the quarter ended 31 March 2021, the Company spent approximately \$606,000 on project and exploration activities relating to its Honeymoon Project. These activities included technical work relating to the ongoing EFS and continued exploration activities including the review and interpretation of historical data. In addition to these studies 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.

For further information, contact:

Duncan Craib
 Chief Executive Officer
 P: +61 (8) 6263 4494
 E: boss@bossenergy.com

For media enquiries, contact:

Paul Armstrong
 Read Corporate
 P: +61 (8) 9388 1474
 E: info@readcorporate.com

Schedule of Mining Tenements

The following information is provided pursuant to Listing Rule 5.3.3 for the quarter ended 31 March 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.

Appendix One: Honeymoon Project Mineral Resource (lower cut-off of 250 ppm U₃O₈)

Classification	Tonnage (Million Tonnes)	Average Grade (ppm U ₃ O ₈)	Contained Metal (Mkg, U ₃ O ₈)	Contained Metal (Mlb, U ₃ O 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 Feasibility Study announced on 21 January 2020, 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. Nothing in this announcement pre-empts the findings of the EFS currently being undertaken.

The information in this announcement that relates to historical exploration results were initially reported by the Company on 10 February 2021. The information in this announcement that relates to the Mineral Resource was initially reported by the Company on 25 February 2019. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

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.