

ASX Release February 29, 2024

Honeymoon Uranium Project, South Australia

Key production tests pave way for first drum of uranium this quarter

Testing of the Ion-Exchange circuit, which is central to the processing plant, ensures Honeymoon remains on time and on budget.

Boss Energy Limited (ASX: BOE; OTCQX: BQSSF) is pleased to announce it has passed another key milestone in the development of its Honeymoon project, with the start of commissioning the first Ion-Exchange (IX) circuit within the processing plant.

The rapid progress being made on site has also resulted in successful modification and refurbishment of the re-agent systems.

These major achievements mean Honeymoon is now running 24 hours a day, seven days a week, further accelerating its push towards production and ramp-up.

Boss Managing Director Duncan Craib said: "The start of commissioning the IX circuit is highly significant because it shows Boss is on track to produce its first drum of yellow cake this quarter.

"This key milestone follows the continuous operation of the wellfields, water treatment plant, RO system and required reagents.

"We are now in the final stages of putting all the pieces of the project together and remain comfortably on budget and on schedule.

"Our success to date has been underpinned by having our own in-house design, construction, and commissioning team, which has given us greater efficiencies and agilities than would be the case had we used an EPCM or full contractor development model.

"This team will also deliver substantial ongoing advantages to Boss as we grow Honeymoon, utilising more of our significant resource and exploration upside and leveraging the infrastructure we have established.

"With the uranium price recently hitting US\$100 a pound, we are perfectly positioned to capitalise on this huge opportunity.

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The logo for Boss Energy, featuring a stylized 'X' symbol followed by the text "Boss_Energy".

IX Processing plant

Hydro testing the new IX circuit, which is central to the processing plant, will enable highly efficient capture, concentration, and purification of the uranium from the wellfields. This will result in increased throughput, more production and lower costs than was possible using the solvent extraction system previously employed at Honeymoon.

Once hydrotesting is completed, Honeymoon will finalise the control circuits and run the system with RO water followed by Pregnant Leach Solution (PLS). Uranium will then be concentrated suitable for precipitation and calcined to produce a high-quality saleable uranium oxide (U_3O_8) product.

The IX circuit will drive efficiencies at Honeymoon, increasing production throughput to nameplate capacity of 2.45Mlb/annum of U_3O_8 while reducing ramp up time and technical risks. It will also reduce operating costs to industry benchmarks. This was proven by the extensive tests conducted by Boss and leading independent industry experts, before and during the Honeymoon feasibility studies.

Pregnant Leach Solution

Honeymoon successfully achieved its commissioning target of filling the PLS pond with production tenors of uranium solution from the pre-flushed wellfields by 31 December 2023. This was achieved in preparation for commissioning the IX circuit, with the first drum of uranium remaining on track to be commercially produced as planned in Q1 2024.

Honeymoon will now start leaching the wellfields with optimal lixiviant to achieve higher tenors of uranium. This involves fortifying the pre-conditioned groundwater with reagents prior to injecting the lixiviant into and through the orebody to dissolve uranium. The uranium-rich solution is then pumped to the surface via extraction wells and discharged to the PLS process ponds.

Other pre-commissioning activities

Drying and packing area

The redundant vacuum dryers and supporting equipment have been removed and a new yellowcake dewatering centrifuge, electrical kiln (calciner) and improved off gas system has been installed within the existing building.

Precipitation Area

The precipitation area has been cleaned and flushed. The redundant batch precipitation tanks have been converted to support a continuous operation to meet the new residence time requirements.

The uranium precipitation thickener underflow pump discharge piping is being reconfigured to enable recycling of thickener underflow to the precipitation feed for seeding to promote crystal growth.

Regent systems

Boss has successfully completed and commissioned modifications to the Ferric sulphate and sodium carbonate systems.

Commissioned plant currently operating includes:

- Safety showers
- High-pressure air services
- Reverse Osmosis (RO) Plant
- Water Treatment Plant (WTP)
- Start-up wellfield injection/ extraction wells
- 25,000 ton Gypsum repository
- Potable water RO plant
- Borefields
- Acid injection system and storage

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

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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.