ASX Announcement

23 May 2022

Big Lake Uranium Project – Expanded Footprint

Key Highlights

- **Big Lake Uranium (BLU) project tenure expanded by 92% from 818 km^2 to 10,802 km^2**
- **Seismic interpretation of "granite wash play" substantially increases the area fertile for ISR-amenable uranium deposits**
- **Alligator first-mover advantage for this style of ISR uranium play in Cooper Basin**
- **The expanded BLU tenure represents a significant opportunity for Alligator**

Alligator Energy (ASX: AGE, 'Alligator' or 'the **Company')** is pleased to announce that it has secured a substantially expanded tenement footprint at its 100%-owned Big Lake Uranium Project, via the application for 11 new tenements, now covering 10,802 km^2 (**Figure 1**). This decision is based upon both the recent success in reprocessing publicly available seismic data[1] and the recognition of emerging mineral exploration opportunities related to the deeper "granite wash" geology of the underlying Cooper Basin.

Petroleum companies have only recently recognised and mapped the coarse aprons of alluvial "granite wash" that surround the radiogenic granites and the interfingering relationship with the highly permeable Patchawarra Formation. This formation is now an important emerging producer of oil and gas and is being actively explored as a favourable petroleum play in the Cooper Basin. It is widely distributed across the Moomba/Big Lake area that Alligator currently holds tenure over its Big Lake Project and extends beyond to the south.

Alligator believes that this buried radiogenic granite wash provides a source for uranium to naturally leach into the groundwater which then propagates upwards into overlying near-surface sediments that Alligator will be exploring for ISR-type uranium deposits.

***Greg Hall, Alligator CEO, said**: "Based on the desktop analysis performed to date and our dedicated senior geologists' recognition of the importance of the granite wash play, Alligator has applied for additional exploration tenure to the south and west of the current licence. It has significantly expanded the uranium exploration search space in the Cooper Basin, reaffirming Alligator's first-mover advantage there. We have commenced background analysis of available data*

[1] *Refer AGE ASX release 29 April 2022, 02515789.pdf (weblink.com.au)*

and planning an expanded exploration effort in what is quickly becoming a significant opportunity for the Company. We are also continuing to liaise and negotiate an exploration agreement with the local indigenous groups."

New applications and expanded footprint at Big Lake

Alligator Energy has applied for 11 new mineral exploration licences in the Cooper Basin region of South Australia to augment its existing EL6367 title (**Figure 1**). These applications substantially expand the footprint of the Project to cover a large proportion of the newly recognised "granite wash play". Alligator's Big Lake Project area now encompasses 10,802 km^2 (increased from 818 km^2) and positions the Company well as a first mover into this frontier uranium province.

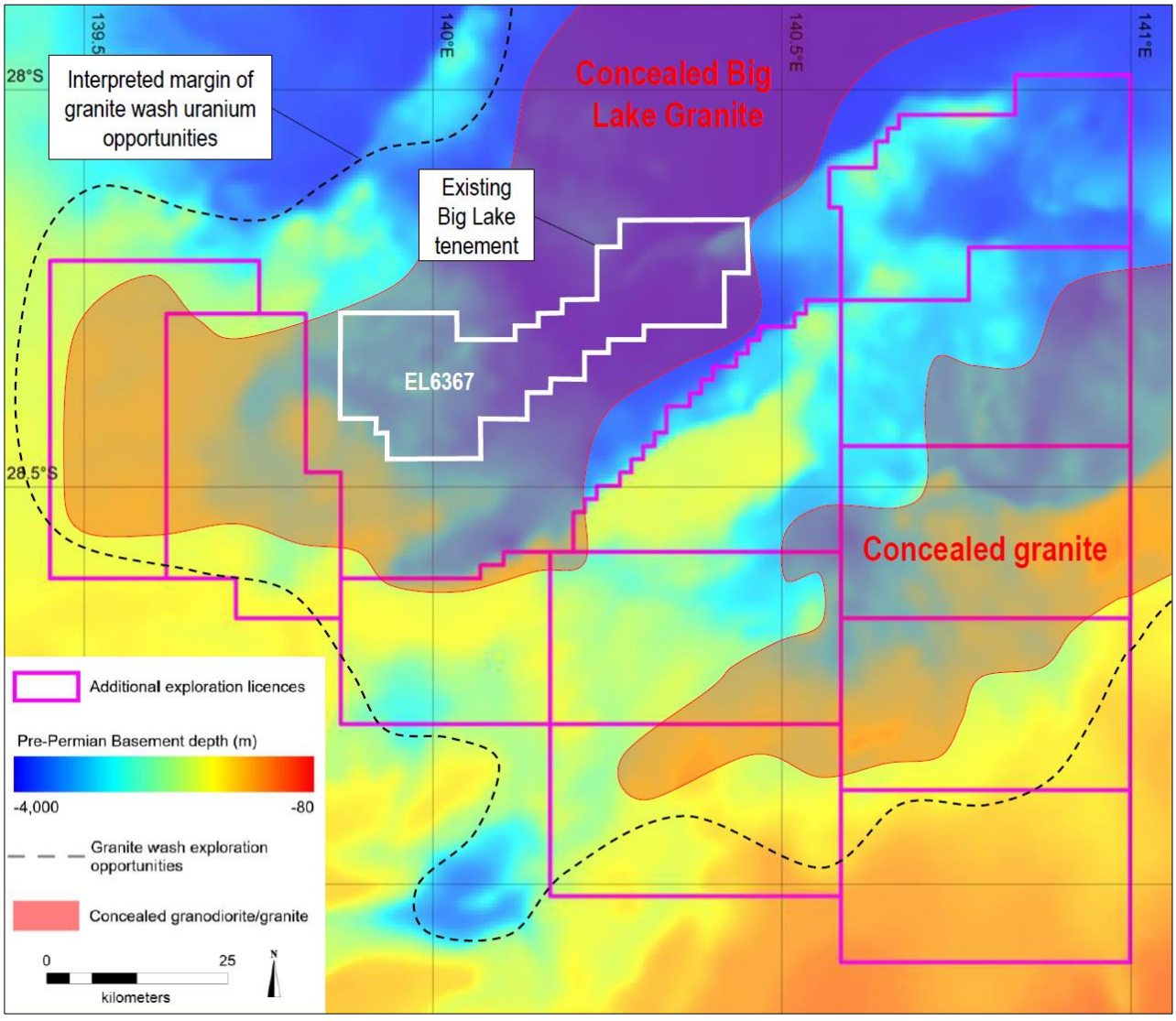

Figure 1. Alligator's Big Lake Project tenure showing the extent of the interpreted Big Lake Suite radiogenic granite and the associated "granite wash" apron.

Background and Rationale

The original BLU Project concept focussed on the margins of deep-seated dome structures associated with known oil and gas reservoirs within the Cooper Basin of South Australia (**Figure 5**). REDOX-controlled "roll front" uranium mineralisation is being targeted by Alligator within younger

(overlying) sedimentary sand units, primarily of the Eyre and Namba formations. These formations host the Beverley, Four Mile and Honeymoon uranium deposits further to the south.

The potential uranium source for the BLU Project is interpreted to be from weathering/leaching of the uranium enriched Big Lake Granite Suite. The Big Lake Granite Suite was recognised initially from regional heat flow maps of Australia and elevated geothermal gradients in the Cooper Basin petroleum wells (**Figure 2**). They were subsequently recognised in seismic data and later intersected in petroleum wells (**Figures 3 and 4**).

The uranium is transported by oxidised groundwater through palaeochannels and permeable stratigraphy within the basin. Hydrocarbons generated in the lower part of the basin have transgressed stratigraphy and leaked into the upper parts of the basin providing the reductant for uranium to precipitate from the groundwater. Numerous petroleum wells show traces of uranium throughout the sedimentary sequences of the basin, confirming the mechanism described above. Broad continuous palaeochannel systems have also been initially identified in recently acquired airborne electromagnetic data ("EM") and re-processed seismic data[1]. These elements are all considered primary prerequisites to a functional roll front uranium mineral system.

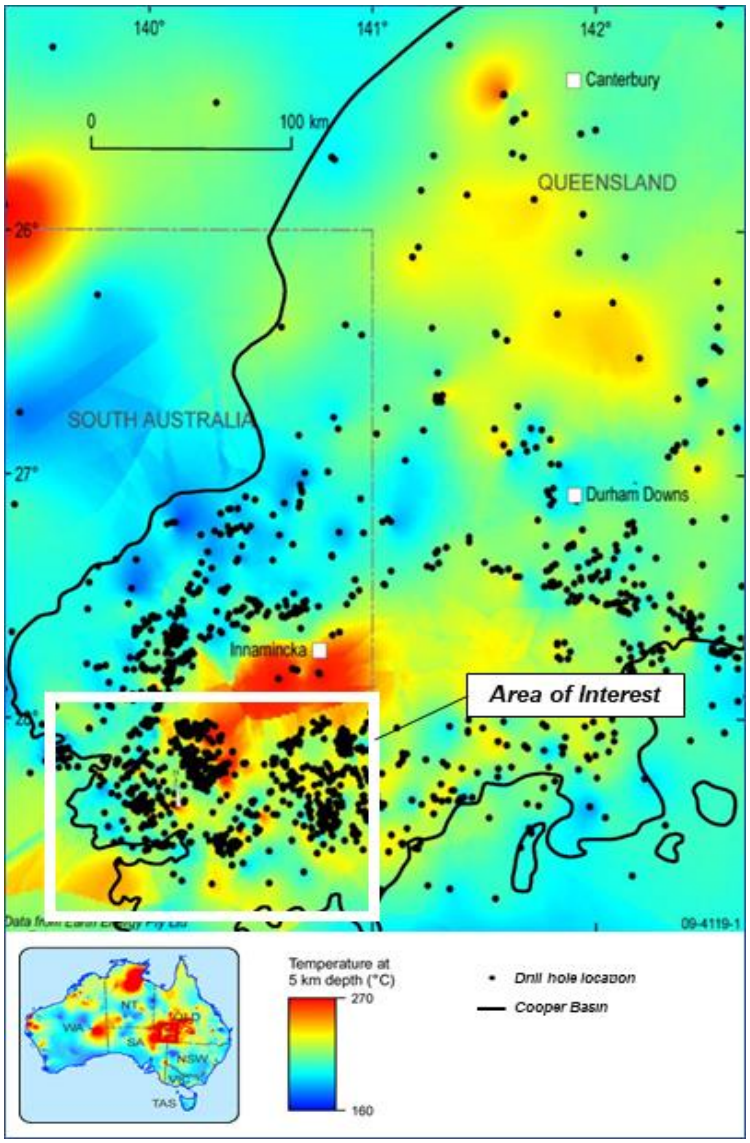

Figure 2. Heat flow map at 5km for Australia and the Cooper Basin, showing the location of Alligator's Big Lake Project (Meixner and Holgate 2009).

The geological setting and scale of the Cooper Basin are analogous in many respects with the giant Chu-Sarysu Basin / Uranium Province in Kazakhstan (Jaireth et al, 2008), as initially prognosed by the previous project owners and Alligator. Over 40% of the world's mined uranium comes from this province, exclusively via the In Situ Recovery ("ISR") method, which is currently the dominant means of uranium extraction globally. Importantly, uranium mineralisation at Chu-Sarysu is hosted in Upper Cretaceous and Palaeogene sands that are intercalated with impermeable shales. The same Palaeogene-aged sands are also principal hosts of uranium at most of Australia's well-known ISR uranium deposits, including Four Mile and Honeymoon Deposits, and Alligator's Samphire Project. The only Australian outlier is the Beverley Deposit, hosted in younger, Neoogene-aged Namba Formation sands. The Cooper Basin and Alligator's Big Lake Project contain all three of these fertile stratigraphic intervals and each of these are characterised by the requisite permeable sand-dominated lithologies to host REDOX roll-fronts.

What Alligator now recognises is the importance of what the petroleum industry refers to as the "granite wash play" and how it relates to uranium mineralisation. The presence of alluvial fans emanating from granite hinterlands during the Permian (Patchawarra Formation) provides a far more favourable and widespread source of uranium-bearing fluids from which a deposit might be formed in the overlying Cretaceous and Palaeogene sediments. The widespread footprint of this 'granite wash' (**Figure 1**) and the overlying sediments means that the potential for reduced and oxidised fluids to interact and form a roll-front is also more extensive. This has motivated Alligator to apply for a larger landholding to the south and west covering the footprint of the 'granite wash play'.

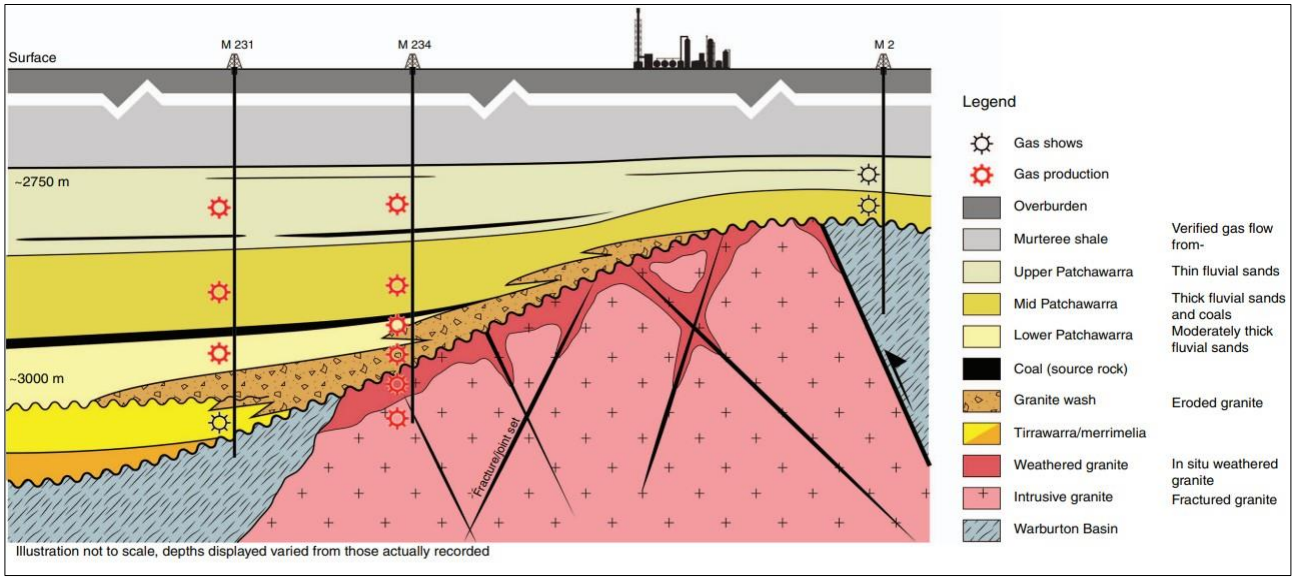

Figure 3. 'Granite wash play' from a petroleum perspective (Moriarty et al 2020).

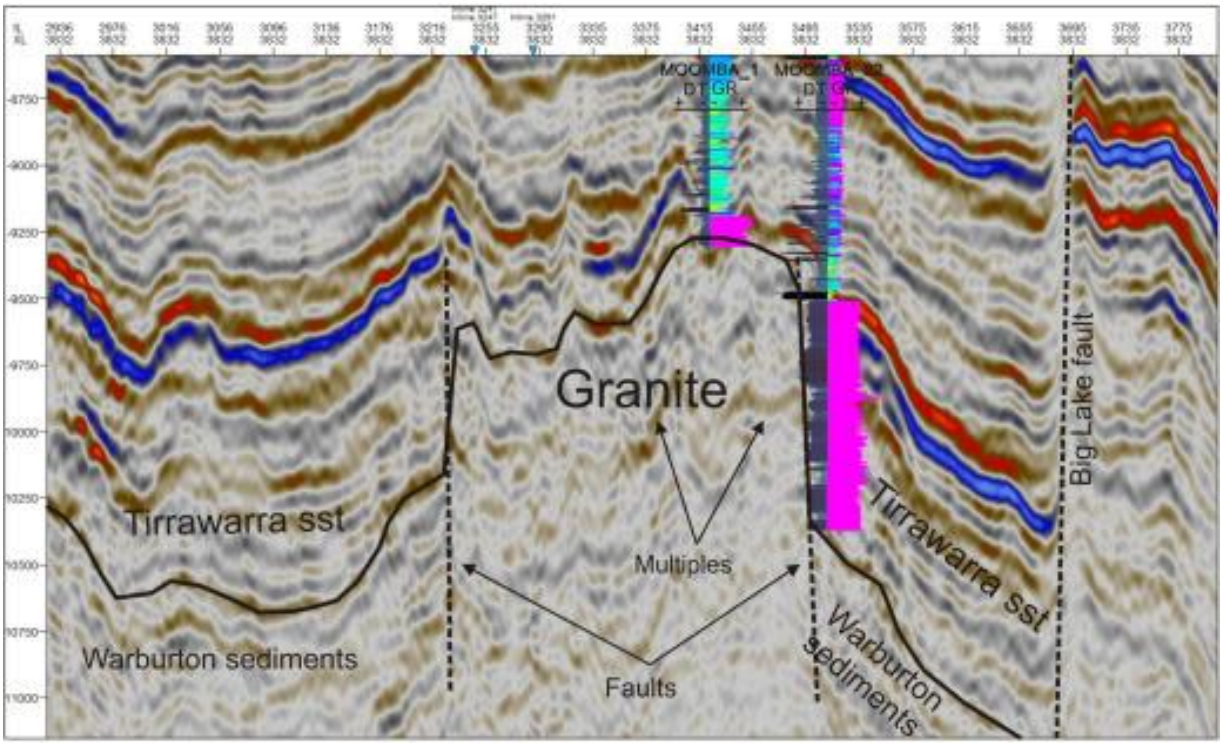

Figure 4. Example of seismic data across a granitic intrusion and the associated thickening sedimentary sequences (granite wash) flanking its margins (Abul Khair et.al, 2015).

Going forward

The seismic response of the contact between granites and wash-sediments is anticipated to be clearly imaged, identifiable and laterally interpretable in the reprocessed seismic data. It is likely that the process of mapping the distribution and thickness of the 'granite wash' will be a first order control on the focus of further exploration.

Alligator is currently reprocessing seismic data incrementally on its current tenure and this will be rolled out to the new tenement applications once granted. Alligator has also commenced capturing the relevant data from historic petroleum and mineral exploration wells. This exercise will expand in line with the additional data that pertains to the newly applied tenure. A combination of these data sources will inform drilling program design and implementation.

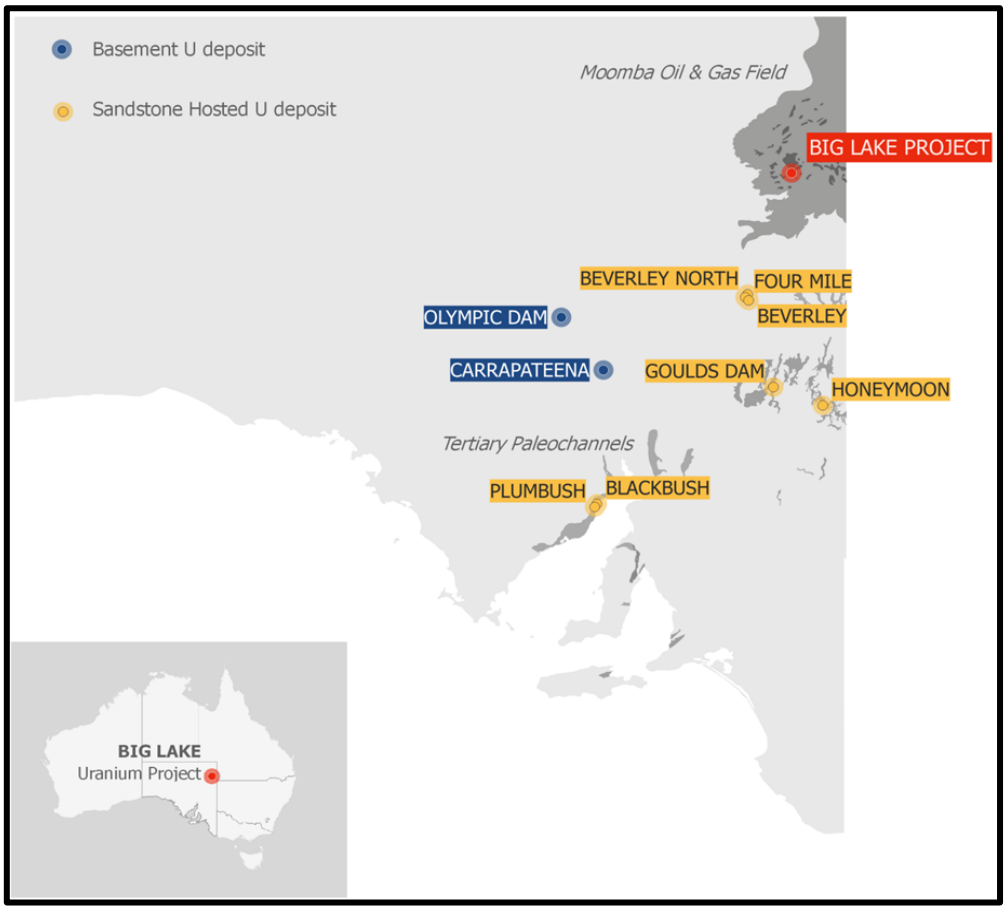

Figure 5. Location of BLU Project in South Australia and existing SA uranium deposits

This announcement has been authorised for release by Greg Hall, CEO and Managing Director.

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Competent Person's Statement

Further detailed information in this report is based on current and historic Exploration Results compiled by Dr David Rawlings who is a Member of the Australasian Institute of Mining and Metallurgy. Dr Rawlings is a senior geological consultant with Alligator Energy Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Rawlings consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.

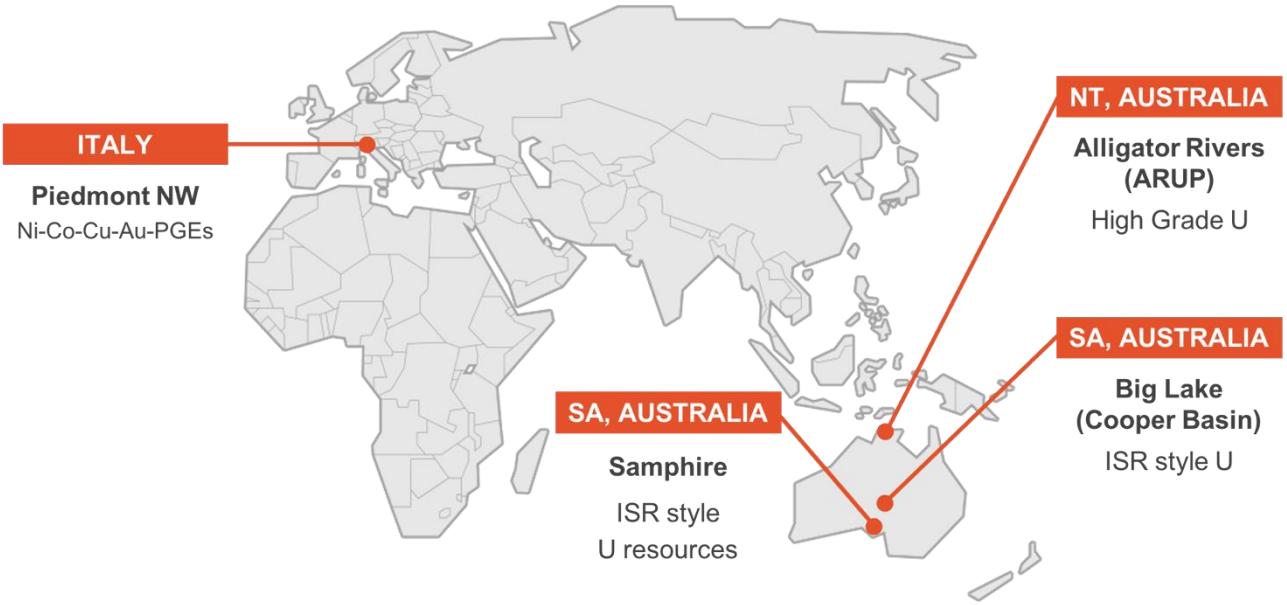
Forward Looking Statement

This announcement contains projections and forward-looking information that involve various risks and uncertainties regarding future events. Such forward-looking information can include without limitation statements based on current expectations involving a number of risks and uncertainties and are not guarantees of future performance of the Company. These risks and uncertainties could cause actual results and the Company's plans and objectives to differ materially from those expressed in the forward-looking information. Actual results and future events could differ materially from anticipated in such information. These and all subsequent written and oral forward-looking information are based on estimates and opinions of management on the dates they are made and expressly qualified in their entirety by this notice. The Company assumes no obligation to update forward-looking information should circumstances or management's estimates or opinions change

About Alligator Energy

Alligator Energy Ltd is an Australian, ASX-listed, exploration company focused on uranium and energy related minerals, principally cobalt-nickel. Alligator's Directors have significant experience in the exploration, development and operations of both uranium and nickel projects (both laterites and sulphides).

Projects



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