### **ASX Announcement**

15 June 2023





# WORK TO COMMENCE SOON AT KOONENBERRY FOLLOWING DECISION TO GRANT EXPLORATION LICENCES

## Major new magmatic nickel-copper-PGE exploration project in NSW

#### **Key Points**

- S2 has received notice of decision to grant three large exploration licences (EL's) from the NSW Department of Mining, Exploration and Geoscience (DMEG)
- These EL's cover 2,712 square kilometres of Ni-Cu-PGE prospective stratigraphy at Koonenberry in northwestern NSW
- This belt-scale Ni-Cu-PGE play resembles the Pechenga (Russia) and Fraser Range (Western Australia) nickel districts in terms of its cratonic margin setting, its scale and prospective intrusive rocks with known Ni-Cu sulphide occurrences
- The Koonenberry Belt is largely unexplored, with last sustained Ni-Cu exploration undertaken by Vale-Inco from 2005 to 2010
- Regional geophysics (ground gravity, aeromagnetics and some airborne electromagnetics) already completed over a substantial area

S2 Resources Ltd ("S2" or the "Company") has received notice from the New South Wales (NSW) Department of Mining, Exploration and Geoscience (DMEG) of its decision to grant three large exploration Licences (EL's) covering 2,712 square kilometres of ground containing Ni-Cu-PGE prospective stratigraphy at Koonenberry, in northwestern New South Wales (NSW). The ground covers the most prospective and accessible part of the Koonenberry Belt, where a series of mafic-ultramafic sills intrude the late Proterozoic to Cambrian Mt Arrowsmith volcanics. The project is located 130km northeast of Broken Hill astride the Silver City Highway and covers 140 kilometres of strike of prospective stratigraphy.

Commenting on the new project, S2's Executive Chairman Mark Bennett said, "This greenfields, belt scale nickel-copper-PGE opportunity is very reminiscent of the situation in the Fraser Range prior to the discovery of Nova. Like the Fraser Range and the Raglan and Thompson nickel belts in Canada, it is a craton margin mobile belt. Like the Fraser Range, Raglan and Pechenga (Russia) belts, it contains extensive mafic-



ultramafic intrusions that are known to be the key hosts to nickel-copper sulphide mineralisation. And importantly, like the Fraser Range, it has only been sporadically explored since the early 1960's, but generally not focused on magmatic Ni-Cu-PGE mineralisation, and with very little ground-based follow up or drilling."

#### **Geology and opportunity**

The project area covers a coincident gravity and magnetic ridge, interpreted to represent a slice of crust comprising numerous mafic and ultramafic intrusions, of a similar scale to the Fraser Complex within the Albany-Fraser belt that contains the intrusion hosting Nova (Figure 1).

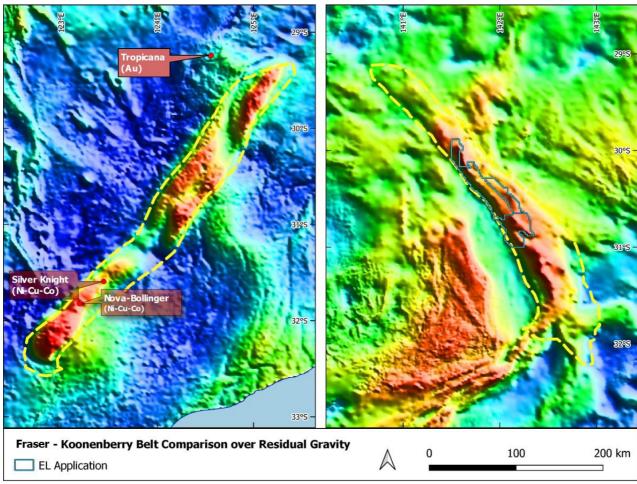


Figure 1. Same-scale comparison of the Fraser Zone of the Albany-Fraser Orogen (left) and the Koonenberry Belt (right) showing tenure over a prominent gravity ridge.

Whereas the Albany-Fraser belt is Proterozoic in age and wraps around the southeastern margin of the Yilgarn Craton, the Koonenberry Belt is late Proterozoic to Cambrian in age and wraps around the northeastern margin of the Curnamona Craton (Figure 2). Both are accretionary mobile belts containing nickel prospective stratigraphy.



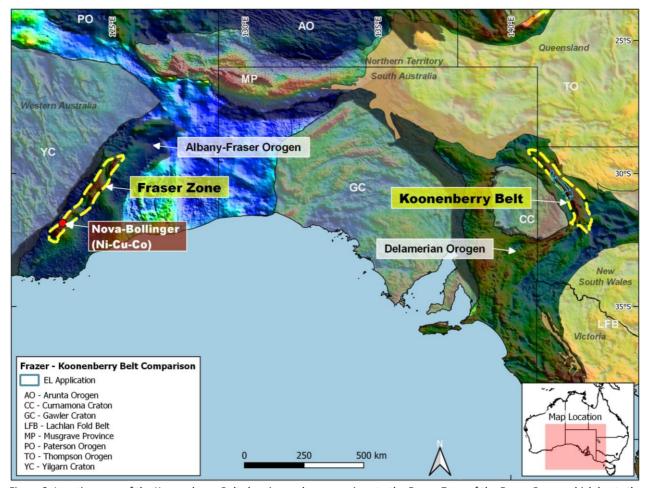


Figure 2. Location map of the Koonenberry Belt showing and a comparison to the Fraser Zone of the Fraser Range which hosts the Nova-Bollinger deposit. The Koonenberry Belt is located on the north-eastern margin of the Curnamona Craton.

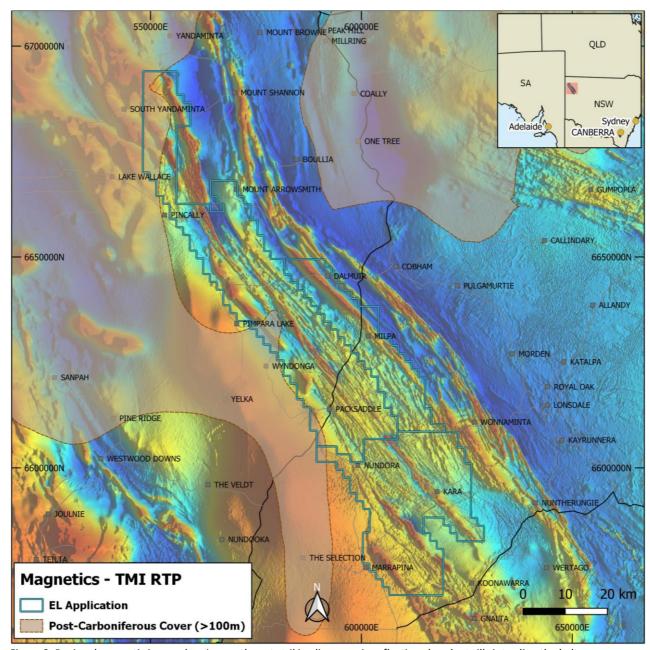
The prospective stratigraphy at Koonenberry comprises 140 strike kilometres of the Mt Arrowsmith Volcanics which contain extensive sills and intrusions described as gabbros with comagmatic orthocumulate ultramafic picrites. These rocks are readily identifiable in the regional airborne magnetics (Figure 3) and are petrographically similar to those that host mineralisation in the Russian Pechenga Ni-Cu-PGE camp, comprising distinctive olivine-rich orthocumulates with abundant intercumulus red hydrous hornblende (Kaersutite). The Pechenga camp contains roughly 25 Ni-Cu-PGE mines containing approximately 4.7 million tonnes of nickel and 2.4 million tonnes of copper, mainly hosted in the basal sections of the thicker ferropicrite sills and intrusions, and is close to the giant Sakatti Ni-Cu-PGE deposit just across the border in northern Finland.

Koonenberry also resembles other magmatic Ni-Cu-PGE sulphide endowed belts such as the Circum-Superior Belt of Canada, (which is also an accretionary mobile zone wrapped around the northern margin of the Superior Craton) which hosts the giant Raglan and Thompson Ni-Cu camps. In fact, this was the model that the S2 team (then as Sirius Resources) used to identify the prospectivity of the Fraser Range, leading to the discovery of Nova.

In terms of the above, plus the presence of extensive primitive orthoculmulate ferropicrite sills intruding sulphidic and carbonaceous sedimentary rocks, Koonenberry closely resembles the Pechenga Belt, and



minor occurrences of magmatic pentlandite and chalcopyrite have been identified in outcrop in some orthocumulate picrites from the Mt Arrowsmith area.



 $Figure\ 3.\ Regional\ magnetic\ image\ showing\ northwest\ striking\ linear\ grain\ reflecting\ abundant\ sills\ intruding\ the\ belt.$ 

The project area covers that part of the belt that is deemed amenable to exploration in technical and financial terms by virtue of being either exposed at surface or being only buried by relatively shallow (less than 100 metres) of later (post-Carboniferous) cover (Figure 4).



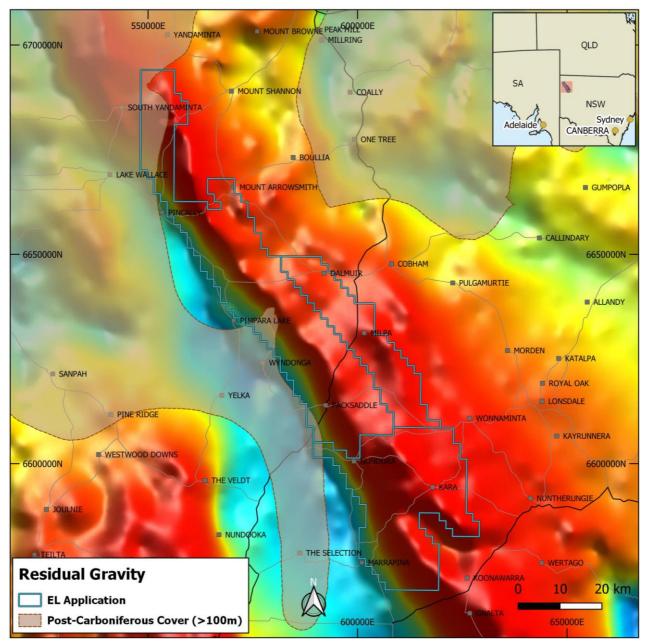


Figure 4. Regional gravity image showing areas of deep post-Carboniferous cover, with the project area straddling the key gravity ridge.

#### **Next steps**

The Company is arranging the payment of rent and bonds for each of the three EL's and once these have been processed by DMEG the tenements will be formally granted. This process is expected to be complete within a month.

With regional gravity, aeromagnetic and airborne electromagnetic (AEM) data already completed, the next stage of work at Koonenberry will comprise the negotiation of land access on pastoral leases where required, followed by reconnaissance mapping and sampling to further delineate the prospective



intrusions, together with systematic soil sampling in areas considered amenable to geochemistry, and progressive moving loop electromagnetic (MLEM) surveys to define drill targets.

This announcement has been provided to the ASX under the authorisation of the S2 Board.

#### For further information, please contact:

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Past Exploration results reported in this announcement have been previously prepared and disclosed by S2 Resources Ltd in accordance with JORC 2012. The Company confirms that it is not aware of any new information or data that materially affects the information included in these market announcements. The Company confirms that the form and content in which the Competent Person's findings are presented here have not been materially modified from the original market announcement. Refer to www.s2resources.com.au for details on past exploration results.

#### **Competent Persons statement**

The information in this report that relates to Exploration Results from Australia is based on information compiled by John Bartlett, who is an employee and shareholder of the Company. Mr Bartlett is a member of the Australian Institute of Mining and Metallurgy (MAusIMM) and has sufficient experience of relevance to the style of mineralization and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Bartlett consents to the inclusion in this report of the matters based on information in the form and context in which it appears.