# Heron Resources Limited



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**REGISTERED OFFICE** 

To the Executive Director – Resource Assessments & Business Systems *c/o Diana Charteris – Senior Planning Officer, Resource Assessments, Planning Services* The Department of Planning & Infrastructure 320 Pitt Street / GPO Box 39 SYDNEY NSW 2001

2<sup>nd</sup> February 2017

Dear Executive Director,

#### **RE: Bango Wind Farm**

Heron Resources Ltd (Heron or the Company) is a mineral exploration and development company listed on the ASX (HRR) with offices in Sydney and Perth, which is progressing the Woodlawn Zinc/Copper Project through to mine development and operation over the next 18 months. The Woodlawn Zinc/Copper Project is located 40 km southwest of Goulburn with a published projected cashflow (post tax) of A\$402M with potential to significantly expand this as new mineral resources are found, post start-up. In addition to the Woodlawn Project, Heron owns a number of mineral exploration properties in eastern NSW, including the Kangiara Project described below.

It has recently come to our attention of the submission by CWP Renewables for the development approval of the Bango Wind Farm between the towns of Boorowra and Yass in the Southern Highlands of New South Wales. Heron Resources Limited (Heron) is a significant stakeholder in the Bango Wind Farm project area through its title Exploration Licence (EL) 8400. Heron had not been informed of the Bango Wind Farm project and hence did not get the opportunity to make a submission in response to the Environmental Impact Statement (EIS) during the exhibition period. Hence, this letter constitutes Heron's submission in response to the EIS for the Bango Wind Farm project, which is located at *url: <u>http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view\_job&job\_id=6686</u>* 

## Kangiara Project (100% Heron) Background and Prospectivity

The Kangiara Project is held under the Exploration Licence (EL) 8400 and Exploration Licence Application (ELA) 5433. The Kangiara Project is located 90km NW of Woodlawn and 26km NNW of the town of Yass (Figure 1). It covers felsic volcanic and related sedimentary rocks of the Silurian Douro Group. Kangiara itself is a historical copper mine and previous explorers (to 2014) have delineated a small, low-grade gold (Au), silver (Ag), copper (Cu), lead (Pb) and zinc (Zn) deposit, which is not JORC 2012 compliant. Potential exists to build on this position.

At the Crosby Prospect (named after the nearby trig station) 5km to the NE of Kangiara, previous explorers (in particular Oakland Resources Ltd around 2011) outlined a strong gold anomaly (2.3g/t Au in rock chips and 0.17g/t Au in soils) within a 2.5km NW-trending zone of anomalous geochemistry (Au, As, Zn, Pb, Cu; Figure 2). These results are from public open-file sources and the Company has not yet had access to the ground to verify these results, however earlier (1970s) soils results showed Pb and Cu anomalism in the same area (not assayed for Au at the time) providing some confirmation for the more recent results.

The anomaly has reported zones of pyrite at surface and lies within rhyolitic to dacitic volcanics and volcanoclastic units of the Hawkins Volcanics. The setting is similar to the McPhillamys gold deposit (approximately 2.2Moz of contained gold as reported by Regis Resources Ltd http://www.regisresources.com.au) located 130km to the NNE.

The Crosby Prospect (Figure 2) provides the opportunity for a significant greenfields gold/base-metals discovery. Oakland Resources Ltd were proposing to drill the prospect before their very limited funding was redirected. The Company is planning to conduct a program of verification sampling and mapping prior to designing a drill program to test for mineralisation at depth.

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Figure 1 Location Plan of the Kangiara Project and Crosby Prospect



Figure 2: Crosby Prospect showing surface geochemistry anomaly



### Kangiara Project in relation to the Proposed Windfarm

The Company has recently become aware of the proposed Bango Wind Farm in the Crosby Prospect area. As shown in Figure 3 there are a number of proposed wind turbines that will significantly impact on the proposed exploration by obstructing access to these prospects and any potential mine development in the area of interest.



Figure 3 Proposed wind turbines at Crosby Prospect showing prospective area of interest.

#### Exploration Impacted by Proposed Windfarm

The area will be explored for gold and base metal deposits that often are found using a variety of electrical geophysical techniques. Significantly, Heron has built the case for mine development at Woodlawn based on mineral discoveries made through Electro-Magnetic (EM) geophysical techniques, see many of the Company's ASX announcements.<sup>1</sup> With the go ahead of the Bango Wind Farm, these important techniques will not be able to be used as they are significantly impacted by the electrical sources in the turbines plus the metal content of the turbines themselves (see Annexure 1 for further information on the potential effects).

In addition, the physical presence of the wind turbines and any construction works will impact on exploration activities by obstructing access to the prospects. It is unclear to Heron of the actual exclusion zone around the wind turbines but a quantitative figure of 200 m is commonly observed at other wind farms and this will significantly block access to much of the prospective area.

Exploration involves a staged approach over the medium term. The general progression of the exploration activities at the Crosby prospect would be:

- 1. Ground mapping and surface sampling : 3-4 months
- 2. First pass shallow drilling: 3-4 months

<sup>1</sup> http://www.heronresources.com.au/announcements.php?year=2016 and also refer to years' 2014 - 2016

- 3. Deeper diamond core drilling to prove deposit potential: 6 months
- 4. Resource definition drilling and metallurgical testing: 6-12 months
- 5. Reserve definition drilling and mine planning/feasibility studies: 6-12 months

Any one of these stages can potentially produce negative results to a level where the next stage does not proceed. If all stage are successful then the Company would be seeking to develop a mine in the area.

#### **Conclusions**

- The Crosby Prospect has the potential to deliver a McPhillamys Deposit style that is a large, low grade gold resource, which
  would lead to a large long mine-life deposit and significant local economic benefits and flow-on effects.
- A number of the proposed wind turbines of the Bango Wind farm have the potential to significantly impact on the exploration activities of Heron at the Crosby Prospect.
- Exploration activities at Crosby are at an early stage and providing each stage of exploration is successful it could take years before a mine would actually be opened.
- The staged approach to exploration also means that Heron can conduct the early stages in the next 12 -24 months to know whether or not an economic deposit is likely.
- It would therefore assist Heron if there was no construction of the wind turbines in the Crosby area of interest in the next 12 24 months so this scientific assessment can be effectively undertaken.
- If the exploration at Crosby is successful there are likely to be 3-6 proposed wind turbines that would impinge on the mine development.

Whilst the issues raised above are significant – the urgency for this submission may have precluded the citing of other important issues that may also be impacted by the wind farm that the Company has not addressed in this letter.

Please feel free to contact me directly and I would be happy to discuss any of the above in person.

Yours sincerely,

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## Annexure 1

#### Example of electromagnetic interference around wind turbines impeding mineral exploration.

The following diagram demonstrate some of the issue of wind turbines close to highly prospective mineral occurrences. The potential loss to the State of NSW, through revenues and royalties through not finding and developing such mineral deposits runs into the billions of dollars<sup>2</sup>.

*Figure A1:* Aeromagnetic image (Flown 2015) from Woodlawn mine showing electromagnetic (EM) interference associated with the wind turbines. A highly significant drill result cannot be followed-up because of both exclusion zones and also the inability to apply electrical geophysical techniques (eg EM and IP). This sterilises a potential mineral deposit of significant value.

The prospective horizon extends south of Woodlawn for some 4km along the trend of the Capital Wind Farm, again sterilising potentially highly significant mineral deposits.



<sup>&</sup>lt;sup>2</sup> Example is a 10 million tonne deposit grading 14% zinc equivalent (ie same as Woodlawn) produces revenues of approximately A\$3.9 billion over the space of 10-15 years. While some of this is company profits, the majority is spent building and operating the mine.

*Figure A2:* Same area as shown above in Figure 3, but with surface image overlayed showing Woodlawn open-pit and Wind Farm turbines and access roads.

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