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Your ref: SSI-12590060

Mr Jack Turner

Senior Environmental Assessment Officer  
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Department of Planning, Industry and Environment  
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Dear Mr Turner

**Hunter Power Project (Kurri Kurri Power Station) (SSI-12590060) – Review of Environmental Impact Statement**

I refer to the e-mail dated 5 May 2021 in which the Planning and Assessment (PA) of the Department of Planning, Industry and Environment (the Department) invited Biodiversity and Conservation Division (BCD) of the Department for advice in relation to the 'Hunter Power Project (Kurri Kurri Power Station) (SSI-12590060), located at Hart Road, Loxford, about one kilometre (km) east of the M15 Hunter Expressway and about three km's north of the town of Kurri Kurri; in the Port Stephens local government area.

BCD has reviewed the Environmental Impact Statement (EIS) including its appendices for this project in relation to site constraints including biodiversity and flooding.

BCD's recommendations are provided in **Attachment A** and detailed comments are provided in **Attachment B**. If you require any further information regarding this matter, please contact Steve Lewer, Acting Senior Team Leader Planning, on 4904 2730 or via email at [rog.hcc@environment.nsw.gov.au](mailto:rog.hcc@environment.nsw.gov.au)

Yours sincerely

A handwritten signature in blue ink, appearing to read 's. crick'.

**STEVEN CRICK**  
**Acting Director Hunter Central Coast Branch**  
**Biodiversity and Conservation Division**

Date: 9 June 2021

Enclosure:      Attachments A and B

## BCD's recommendations

### Hunter Power Project (Kurri Kurri Power Station) (SSI-12590060) – Review of EIS

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#### Biodiversity

1. BCD recommends the accredited assessor update Section 5.2.6 of the Biodiversity Development Assessment Report (BDAR) to include the results of all the targeted threatened fauna surveys.
2. BCD recommends the accredited assessor justify why the proposal cannot avoid areas of mapped important habitat for the regent honeyeater, and thus not trigger serious and irreversible impacts.
3. BCD recommends the accredited assessor submits the credit calculator via the NSW Biodiversity Accredited Assessor System prior to the submission of response to submissions report.
4. BCD recommends the accredited assessor includes the plot field data sheets in the BDAR.

#### Flooding

5. The determination of nil flood impact made in the hydrology report should be justified. If the development encroaches into the flood plain, a flood impact assessment should be prepared. The impact of flooding on the proposed OSD basin should also be assessed.
6. The impact of water table on infrastructure during construction and post construction has not been adequately assessed. In particular, how groundwater affects the construction and operation of the on-site detention pond requires greater consideration.
7. The impact of proposed changes in hydrology on ground water dependent ecosystems should be considered.
8. The impact of concentration and diversion of discharge to Black Waterholes Creek together with requirements for bed and bank protection at point of discharge should be considered. Removal of riparian vegetation for construction and maintenance of an asset protection zone should also be considered.
9. Stormwater pollution controls should be made offline and provided separately to the on-site detention pond. A higher standard of pollution control should be provided and the existing poor quality of water downstream of a site undergoing rehabilitation should not be used to justify a low level of stormwater treatment.
10. The proponent should consult with Hunter Water Corporation regarding its proposed connections to existing water and wastewater services.

## BCD's detailed comments

### Hunter Power Project (Kurri Kurri Power Station) (SSI-12590060) – Review of EIS

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#### Biodiversity

##### 1. Further clarification of fauna survey results in the BDAR.

Section 5.2.6 of the Biodiversity Development Assessment Report (BDAR) provides the results of the surveys undertaken for threatened fauna and flora. For threatened fauna, targeted surveys were undertaken in December 2020 for green and golden bell frog, wallum froglet, Mahony's toadlet, southern myotis, bush stone curlew, eastern pygmy-possum, squirrel glider, koala, common planigale and pale headed snake. Commentary and results are provided for all species except bush stone curlew, eastern pygmy possum, koala and pale headed snake. BCD assumes that these were not recorded given that there is no 'species' credit obligations for these species, but other sections of the BDAR (e.g. Section 7.3 Threatened Species) refer to Section 5.2.6 for the results and it is not complete. Therefore, to ensure continuity of the results section, the results of the other species should be specified.

##### Recommendation 1

BCD recommends the accredited assessor update Section 5.2.6 of the Biodiversity Development Assessment Report to include the results of all the targeted threatened fauna surveys.

##### 2. Avoidance of SAIL impacts on regent honeyeater

The swift parrot and regent honeyeater are identified as candidate species for serious and irreversible impacts (SAIL) as per Section 9.1 of the BAM. The proposal will impact upon 0.4 hectares of potential regent honeyeater and swift parrot habitat. The important habitat mapped for the swift parrot does not overlay the Proposal Site. However, the intact area of PCT 1633 (Parramatta Red Gum – Narrow-leaved Apple – Prickly-leaved Paperbark shrubby woodland in the Cessnock / Kurri Kurri area) (0.40 ha) within the Proposal Site does intersect the important habitat mapped for the regent honeyeater across the broader Kurri Kurri and Cessnock area (i.e. the far northern portion of the subject site). As such this triggers SAIL.

Under SAIL, the proponent must avoid and mitigate impacts to all SAIL areas, unless they can demonstrate that the proposal is unlikely to contribute significantly to the extinction risk of a threatened species (or ecological community). BCD believes that the proponent has adequately addressed SAIL and shown that it is unlikely that the removal 0.4 hectares of mapped important habitat for regent honeyeater will lead to a greater risk of extinction, given that it is part of a much broader patch of 415 hectares. The removal of this small area represents a 0.09% loss in regent honeyeater habitat. Furthermore, the dominating canopy species at the Proposal Site include *Angophora bakeri* (narrow-leaved apple) and *Eucalyptus parramattensis* subsp. *decadens* (Earp's gum), with a low density of *Eucalyptus agglomerata* (stringybark); to which none of these species are identified as one of the key nine foraging species listed in the Recovery Plan for the regent honeyeater.

Nevertheless, BCD does not clearly understand why the proposal could not be move 100 – 150 metres south to avoid most impacts associated with the mapped important habitat areas and biodiversity in general, unless the land to the south is too far from the connection to gas lateral pipeline, is not appropriately remediated or is required as part of another development.

This area does not appear to contain significant biodiversity values and would easily avoid areas of mapped important habitat, and thus not trigger SAI.

### Recommendation 2

BCD recommends the accredited assessor justify why the proposal cannot avoid areas of mapped important habitat for the regent honeyeater, and thus not trigger serious and irreversible impacts.

#### 3. The Accredited Assessor should submit the credit calculator via the NSW BAAS.

The credit calculator used in the BDAR to determine the credit requirements (both ecosystem and species) has not been submitted via the NSW Biodiversity Accredited Assessor System (BAAS). This is required to finalise Biodiversity Conservation Division's (BCD) assessment of the BDAR.

BCD reviews an accredited assessors credit calculator files to determine if the Biodiversity Assessment Method (BBAM) has been applied correctly, that the BDAR and calculator use the same data and selected parameters (i.e. 'drop down menus'), and that the biodiversity credit requirements (both ecosystem and species) are consistent between the BDAR and the credit calculator.

### Recommendation 3

BCD recommends the accredited assessor submits the credit calculator via the NSW Biodiversity Accredited Assessor System prior to the submission of response to submissions report.

#### 4. Copies of plot field data sheets should be provided

The plot field data sheets have not been included in the BDAR. Providing field data sheets is a requirement under the BAM (2020, see Appendix K). BCD reviews the plot field data sheets to ensure consistency between the data sheets, the BDAR and the credit calculator.

### Recommendation 4

BCD recommends the accredited assessor includes the plot field data sheets in the BDAR.

## **Flooding**

#### 5. Insufficient information is provided to assess flooding

The flood information provided for the proposal is a compilation of data collected from publicly available council studies. A site-specific flood analysis has not been undertaken. It is agreed that critical flood levels are dominated by Hunter River flooding in this location therefore site-specific studies are not required to set flood planning levels.

The hydrology assessment indicates that the site is flood fringe and will have no impact on flooding offsite. The source of the flood categorisation information quoted in the EIS is not provided and it is not clear how it has been determined that there will be nil flooding impacts. The site plan indicates that the development site includes a tributary of Black Waterholes Creek and the edge of an existing on-site dam. The impacts of the proposed works to these features is not addressed and insufficient information has been provided regarding the existing and proposed levels of the development for issues associated with the development to be determined. Figure 1.2 and 1.3 in the hydrology assessment indicates that the development footprint will encroach into the adjacent tributary of Black Waterholes Creek. The on-site detention (OSD) pond appears to encroach on the 1% Annual Exceedance Probability (AEP)

flood extent and appears to be partially inundated in the Probable Maximum Flood (PMF) (Figure 4.6). The impact of flooding on the proposed OSD basin has not been assessed.

Table 3.1 in the Hydrology report also shows incorrect calculations for fraction impervious on site (the total is greater than 100%), however; it appears to indicate that the proposal will result in an increase in impervious coverage from 10% current to 95% proposed. This is considered to be a significant change and will result in not only increases in the rate of runoff, but also the volume and frequency of runoff from the site.

#### Recommendation

The determination of nil flood impact made in the hydrology report should be justified. If the development encroaches into the flood plain, a flood impact assessment should be prepared. The impact of flooding on the proposed OSD basin should also be assessed.

### **6. Ground water assessment indicates unresolved issues**

The groundwater assessment indicates that ground water was found between 1.2m and 4.0m below ground in various parts of the site. The proposed on-site detention system requires excavation between 3 and 3.5m, and the groundwater assessment outlines that issues with groundwater ingress into excavations will be dealt with as a part of detailed design.

The stormwater detention basin is shown with battered slopes which will not be able to be constructed below the water table. In addition, the system is proposed to be a permanent part of the water management on site and it may not be able to achieve this function if it is located below the water table level. There has been no groundwater assessment carried out where the on-site detention system is proposed to be located.

Figure 5.1 shows the likely interaction between the footings of the development and the water table during construction. This figure does not show the foundations for the turbine which are noted to be 18m deep. This has not been addressed in the report.

#### Recommendation

The impact of water table on infrastructure during construction and post construction has not been adequately assessed. In particular, how groundwater affects the construction and operation of the on-site detention pond requires greater consideration.

### **7. Impact on ground water dependent ecosystems has not been given due consideration**

Mapping provided in the groundwater report indicates ground water dependent ecosystems within the northern boundary of the site and downstream of the existing stormwater ponds. These ponds have historically been used for irrigation of the downstream lands. Removal of these ponds may have adverse impact on the hydrology of the downstream environment which over time has adapted to increased water supply. The site is also proposed to be significantly increased in impervious coverage which will reduce transfer of water to groundwater. The impacts of this to groundwater and groundwater dependent ecosystems have not been given due consideration.

#### Recommendation

The impact of proposed changes in hydrology on ground water dependent ecosystems should be considered.

### **8. The impact of the proposal on Black Waterholes Creek has not been considered**

The proposal includes collection of all stormwater from the development in an on-site detention pond in the north western corner of the site. This will discharge by a single pipe connected to

Black Waterholes Creek. The existing development discharges partially to Black Waterholes Creek and partially via the irrigation system connected to the two on site ponds. Several points of discharge are present. Although the proposed on-site detention has been modelled to match the post- development flow rate to the pre-development flow rate, the concentration and diversion of flow as a consequence of the stormwater management on-site has not been considered. A single discharge point to an ephemeral creek could have significant impact on hydrology and erosion at the point of connection.

Removal of riparian vegetation will also be required for the piped connection and for creation of an asset protection zone. The potential impacts of this have not been considered.

#### Recommendation

The impact of concentration and diversion of discharge to Black Waterholes Creek together with requirements for bed and bank protection at point of discharge should be considered. Removal of riparian vegetation for construction and maintenance of an asset protection zone should also be considered.

### 9. Pollution control is not in accordance with current best practice

The proposed stormwater pollution control for the site is via a permanent pond located within the base of the on-site detention pond. All flows from the development are proposed to be routed through the basin (high and low). Best practice is currently to locate pollution controls off line so that they treat low flows well and pollutants are not remobilised by high flows. It is unclear how the proposed pond will treat stormwater flows apart from allowing for some settling of suspended solids. Music water quality modelling provided with the EIS indicates a small reduction in pollutant load will be achieved through this approach, although this result is much lower than would generally be required for a development in areas where water quality targets are established through the planning system.

The modelled reduction in pollutant loads are stated as 36% reduction in Total Suspended Solids (TSS), 29.8% Total Phosphorus (TP), 5.1% Total Nitrogen (TN). Cessnock City Council has not established pollutant reduction targets in its Development Control Plan (DCP), however; commonly adopted targets for other local government areas are 85% TSS, 65% TP and 45% TN. The level of pollutant reduction proposed does is not sufficient for discharge to a waterway. BCD also considers that the predicted reductions in pollution loads are unlikely be achieved when the pond is located on-line and receives all flows.

The low level of treatment proposed for the development has been justified by comparison to the existing land use (as an aluminium smelter) rather than the stormwater quality objectives which would have been required for a rehabilitated site.

#### Recommendation

Stormwater pollution controls should be made offline and provided separately to the on-site detention pond. A higher standard of pollution control should be provided and the existing poor quality of water downstream of a site undergoing rehabilitation should not be used to justify a low level of stormwater treatment.

### 10. It is not clear if the proposed water supply is secure

The EIS indicates that the development's water supply and wastewater services will be achieved through connections to Hunter Water Corporation's services. It is not clear if Hunter Water Corporation has been consulted about this and if there is adequate capacity in either system to accommodate the project.

### Recommendation

The proponent should consult with Hunter Water Corporation regarding its proposed connections to existing water and wastewater services.