

**Ref:** Lot 11 DP 1043022  
**Contact:** Kelly Tyson

15 May 2018

Resource and Energy Assessments  
Planning Services  
Department of Planning and Environment  
320 Pitt Street  
GPO Box 39  
SYDNEY NSW 2001

Attention Georgia King

**Re: PROPOSED GREGADOO SOLAR FARM ( SSD 8825) SUBMISSION  
Lot 11 DP 1043022 123 REDBANK ROAD GREGADOO**

Dear Georgia,

Thank you for providing Council with the opportunity to review the Environmental Impact Statement for the proposed Gregadoo solar farm. The development is proposed on RU1 primary production zoned land within the Lake Albert catchment.

The development involves the construction and operation of a 47 MW photovoltaic solar farm capable of generating 94000 MWh per year with the capacity to provide for 15000 homes. The estimated life of the solar farm is 30 years.

The proposal is state significant development because it constitutes private infrastructure being an electricity generating work with a capital investment of \$67 Million.

The solar farm is proposed to be subdivided to achieve a site area of 125 ha and a development footprint of about 96ha. The residue allotment will have an area of 23 ha and comprise the existing farm residence.

The development includes:

- 122000 solar panels on pile driven mounted fixed tracking system
- Eight containerised inverters
- Office and amenities
- Carparking, setdown and materials storage area
- Security cyclone fencing and CCTV
- Vegetation screening at key visual impact areas

- An additional access from Boiling Down Road to create two access points.
- 4-5m internal gravel access roads
- Electrical substation, overhead and underground electrical cabling
- Grid connection to the Gregadoo Transgrid substation via 132kV pole mounted overhead line crossing the Boiling Down Creek
- Dewatering three of the existing six farm dams.

The development requires the widening of part of Ashford Road and upgrading of its intersections with both Mitchells and Boiling Downs Roads. Mitchell road is not currently an approved vehicular route for 19m heavy vehicles

Council supports development that is sustainable and that contributes towards meeting global energy reduction targets and is generally supportive of the proposal.

### **Comments on Environmental Impact Statement**

While the EIS appears to be mostly adequate there is a concern that further site investigation and detailed analysis is required to fully understand and sustainably manage constraints and properly inform development design.

A detailed constraint map including one incorporating soil physical and chemical properties, topographic and hydrological information was required as part of the Secretary's Environmental Assessment Requirements but does not appear to have been included within the report or Appendix B.

(The EIS mentions on page 46 that a detailed constraints map is included in Appendix E - however Appendix E is the Biodiversity Assessment Report)

The siting and extent of the 'final project footprint' as identified in Preliminary Drawing No J1694-101 is a concern given the constraints of landscape context (Chen and McKane, 1997), site biophysical condition and potential impacts to soil and water resources and potential downstream flood impacts.

The land to be developed is located 1.7km south east of Lake Albert within the Lake Albert catchment.

Lake Albert is a significant recreational resource for the Wagga community. The lake has experienced water quality issues for many years associated with catchment land use and development and inadequate pollutant, erosion and sediment controls.

### **Land capability**

While not identified or mapped as vulnerable land, the land capability of the site comprises classes 2, 6 and 7 and the EIS soil report confirms variable soil conditions exist on site. The land includes soils which are saline, sodic and dispersible which present constraints for engineering foundations and sustainable land and water management.

The recommendations within the soil report are general in nature and do not provide a tailored solution to guide the sustainable design and management of the proposed development.

### **Drainage and soil and water quality impacts**

The land to be developed has been previously modified so that drainage is captured within farm dams, not only allowing the harvesting of water but allowing sediments to settle and pollutants to be adsorbed prior to overflow and runoff discharge further downstream through Crooked Creek to Lake Albert.

The site is also constrained by major overland flow paths.

The proposal includes dewatering of three farm dams, one at least which appears to be located within a drainage line. If any of these dams were permanent waterbodies there might exist the potential for the development of acid sulfate soils.

The EIS contains various references to the high erodibility of the land and the presence of saline, sodic and dispersible soils. The EIS concludes that erosion and sediment loss presents a low risk because of the likely limited extent of disturbance posed by the development.

A site disturbance of 0.2% has been estimated which appears low, given 22000 posts will be pile driven or screwed into the ground for panel mounting structures. Further, extensive underground cabling is proposed to a depth of at least 500mm. Other disturbance has the potential to be created because of the likelihood of increased shading which has been estimated at 70% of the site. This may impact the availability and mitigation of groundcover to promote infiltration and minimise erosion and soil loss. Rainfall will also be concentrated by the solar panels. This situation is likely to lead to a dynamic environment with an increase in the volume and velocity of runoff, increased potential for exposed areas, scouring and soil loss. Change in distribution of waters on site may also impact or exacerbate downstream flooding.

Council supports the need for detailed drainage and flood analysis and soil and water management plans and erosion and sediment control plans. Site grading, shaping and drainage will need to be adequately designed and managed and detailed hydraulic calculations should inform the required engineering and soft solutions to sustainably manage drainage within the site's sensitive landscape.

Because of the potential impacts it is recommended that sensitive landscapes such as drainage lines and overland flow paths be excluded from development and managed with appropriate buffering to provide protection well outside the development footprint.

It may be beneficial for overland flow paths to be managed with bioswales to mitigate against increased potential for erosion and water quality impacts through soil, chemical, nutrient loading and ground cover disturbance. It may also be beneficial for constructed wetlands to be utilised to manage water quality prior to discharge off site, particularly given the proposed dewatering of farm dams. The site specific and catchment benefits of these measures should be considered with further detailed investigation.

In accordance with ecological sustainable development principles, treatment of existing or potential degraded areas within the development site should be dealt with in any Environmental Management Plan prepared for the development and potential environmental contingencies considered. Waterways and drainage lines should be managed as riparian buffer areas.

Given the existing site conditions, Council agrees that geotextile fabrics may need to be incorporated for temporary and permanent drainage controls.

## **Flooding**

The EIS states that there is unlikely to be an impact on flood behaviour because:

- Solar arrays are 2.1m in height- above the estimated one metre maximum predicted height of overland flow;
- Compacted areas are minimal and the built footprint is small;
- Further, the EIS states that in the unlikely event of stormwater flooding the solar farm infrastructure *would likely* remain stable.

The EIS includes overland flow modelling that is predictive in nature and a detailed flood assessment should be informed by a topographical survey.

The Overland Flood Study identifies that there is the possibility of failure of the Crooked Creek diversion levee during a major storm event- hence management of upstream flows is important to manage the risk of flooding downstream.

## **Monitoring**

Any Environmental Management Plan prepared should include provision for the maintenance of and future monitoring of the effectiveness of erosion and sediment control measures. Baseline or reference conditions will need to be determined prior to the commencement of construction.

## **Access and transport**

A southern corridor route has been identified in the Wagga Wagga Integrated Transport Strategy that encompasses Boiling Down Road. The development may need to consider associated vehicle access and transport arrangements within any traffic management plan prepared for the site.

Other comments are:

- The intersection of Ashford's Rd and Boiling Down Rd would need upgrading to accommodate semi-trailer movements.
- Would require sealing of Boiling Down Road for approximately 30m from the intersection with Ashford's Rd to minimise mud and dust onto Ashford's Rd.
- Dilapidation report of Ashford's Rd and Boiling Down Rd prior to commencement of works to assist in monitoring of road condition throughout construction. These roads will need to be repaired to throughout and at the completion of construction activities to ensure the roads are safe and in a comparable condition to when construction activities commenced.

- The proposed access into the site is west of an existing culvert in Boiling Down Road. Council will need to do further investigation on the condition of this culvert in light of the increased traffic load it will experience. Traffic control measures may be needed at the culvert crossing to allow only one truck to pass at a time.

### **Sewage management**

Because of the sensitivities of the site any sewage management system will need to be carefully selected and its suitability assessed in accordance with the relevant Environment and Health Protection Guidelines.

### **Aboriginal cultural heritage**

A survey was conducted and seven Aboriginal objects including scar trees were found on the development site with two likely to be directly impacted by the development.

The landscape comprises Murrumbidgee Tarcutta Channels and floodplains and Boiling Down Creek was a historical travel path for Wiradjuri people accessing nearby wetlands.

Council supports the need for a Heritage Management Plan to detail unexpected finds protocols. Due to the potential for more objects to be present on the site and given the limited survey effort conducted, preclearance surveys may be required and any artefacts found managed in a manner satisfactory to the local aboriginal community requirements.

### **Waste**

The EIS identifies that waste has been landfilled on site near soil borehole 1 but no survey has identified the extent and type of waste present. There remains the potential for hazardous waste to pose public health risks to occupants or workers (for example friable or non-friable asbestos) or environmental risks if not appropriately covered, contained and managed.

### **Potential acid sulfate soils**

Although not really discussed in the report, it is assumed that the dams are not historical permanent water bodies where any dewatering could pose a risk by the development of potential acid sulfate soils.

### **Bushfire prone land**

Bushfire prone land is located to the south of the site and the development has the potential for increased fire risk. Council supports the requirement for a bushfire management plan and contingency hazard and risk management protocol to manage these risks.

### **Subdivision-minimum lot size**

The EIS has not addressed the justification for the subdivision of the dwelling as opposed to the benefit of retaining the dwelling as part of the management regime for

the solar farm as a buffer for the dwelling and for potential continued agricultural operation in conjunction with the solar farm land (referred to on page 97)

The proposed subdivision of the farm dwelling is below the 200ha minimum lot size for RU1 land stipulated in Wagga LEP 2010 cl 4.2 (4). Council does not support development resulting in unplanned rural residential development within a rural area that is inconsistent with the State Environmental Planning Policy (Rural Lands) 2008 and results in fragmentation and alienation of resource lands. This is a concern given that the proposed development has a limited lifespan.

Clause 9 of Rural SEPP provides that rural zoned land may be subdivided for the purpose of primary production to create a size less than the minimum lot size but not if an existing dwelling is situated on the allotment.

### **Weed control by stock**

The EIS mentions that grazing practices could continue on site during the life of the project. If this is proposed then it is recommended stock exclusion fencing to drainage lines and other sensitive landscapes be provided. If stock is proposed the development footprint will need to provide for managing stock including any supplementary feeding, loading areas, water supply and the like which has not been identified in the existing project plan.

This option should not be considered unless suitable protective measures such as stock proof fencing was utilised to protect drainage lines and waterways.

### **Section 94A**

City of Wagga s94A Levy Contributions Plan 2006 s94A applies to the whole local government area where development consent is required to be obtained. This warrants a contribution of 1% of the proposed cost of the development. It is submitted that the proposal is not exempt from the payment of the levy because the development is not specifically for the purpose of reducing a building's use of potable water (where supplied from water mains) or energy.

### **Biodiversity, landscaping and visual impact**

VA4 refers to the Kidman Way which appears to be an error.

5m wide landscaping strips are proposed to be established at key locations along the site boundaries to augment existing vegetation screening and mitigate visual impact. This width may need to be increased to optimise vegetation structural diversity and habitat values and to ensure effective screening to a height of at least the inverter units -3.5m. This is important given the proposed impact to nationally listed and derived endangered ecological communities including hollow trees with biodiversity values.

It is recommended that on-site landscaping proposed be increased and extended to ensure the screening of the perimeter of the development footprint including along the Redbank Road boundary. This is recommended given the scale and magnitude of the proposed development and the potential adverse impact on rural scenic quality within the locality. The potential for Boiling Down Road to become a major heavy vehicle

corridor should also be considered in terms of screening required to minimise driver distraction and promote public safety.

As recommended (section 6) in the VIA report plantings should be provided within the development site but outside the perimeter fencing to break up views of infrastructure and perimeter fencing.

The mitigation measures for visual impacts include landscape screening on the outside of the proposed lot perimeter fence which should be revised to be within the site and not in any public domain areas or reliant on property owned and managed by others. The extension and augmentation of existing PVP/woodlot plantings should also be considered.

The environmental management plan should include measures to minimise night time intrusion.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'Cameron Collins', with a stylized flourish at the end.

Cameron Collins

Development Assessment Coordinator