DA20/0016 – Electricity Generating Works (PV solar farm) – 157 Windmill Lane, Bomen

Request for clarification following Regional Planning Panel site visit

We write with reference to the above matter. We understand that following the site visit by the Regional Planning Panel members to the subject site on the 21 July 2020 that a number of matters have been raised on which clarification is sought (refer attached Council email of 22 July 2020 – **Appendix A**). These issues have been addressed in the same order as the Councils email for ease of reference. A further request for clarification of 24 July 2020 has also been received, which is addressed as item 6.

1. **Glare**

The Visual Impact Assessment provided as Appendix A to the SEE provided a detailed visual and glare assessment. The potential for glare associated with the proposed solar farm was assessed using the ForgeSolar GlareGauge software. Receptors were identified by Iris Visual based on a review of site and surrounding topography to ensure those locations with the capacity to view the site were included.

It is also important to understand the difference between glare and glint. Ho et al[1] defines glint as a momentary flash of light and glare as a more continuous source of excessive brightness relative to ambient lighting.

The percentage of sunlight reflected by PV solar panels is similar to that of water and less than most other surrounding materials, as illustrated in **Figure 1** below. The low reflectivity design of the PV modules maximises the absorption of solar energy and therefore minimises the extent of solar energy reflected.

Glare is broadly classified into three categories[2], shown in **Figure 2**. The assessment by Iris Visual confirms that, during normal daily operation, the proposed Wagga Wagga South Solar Farm would have nil glare in the three identified glare categories.

The report does however acknowledge the limitations of the software to analyse the potential from glare during backtracking. This is addressed at Section 10.3 and Attachment C (Section 11.5). The report notes:

> *While a glare effect during backtracking is possible, this risk is slight and unlikely to have an effect of any significance due to intervening elements, distance and the short duration of this phase of operation.*

Further commentary on the notion of glare in relation to solar farms is provided in Section 11.4. of Appendix A of the SEE.

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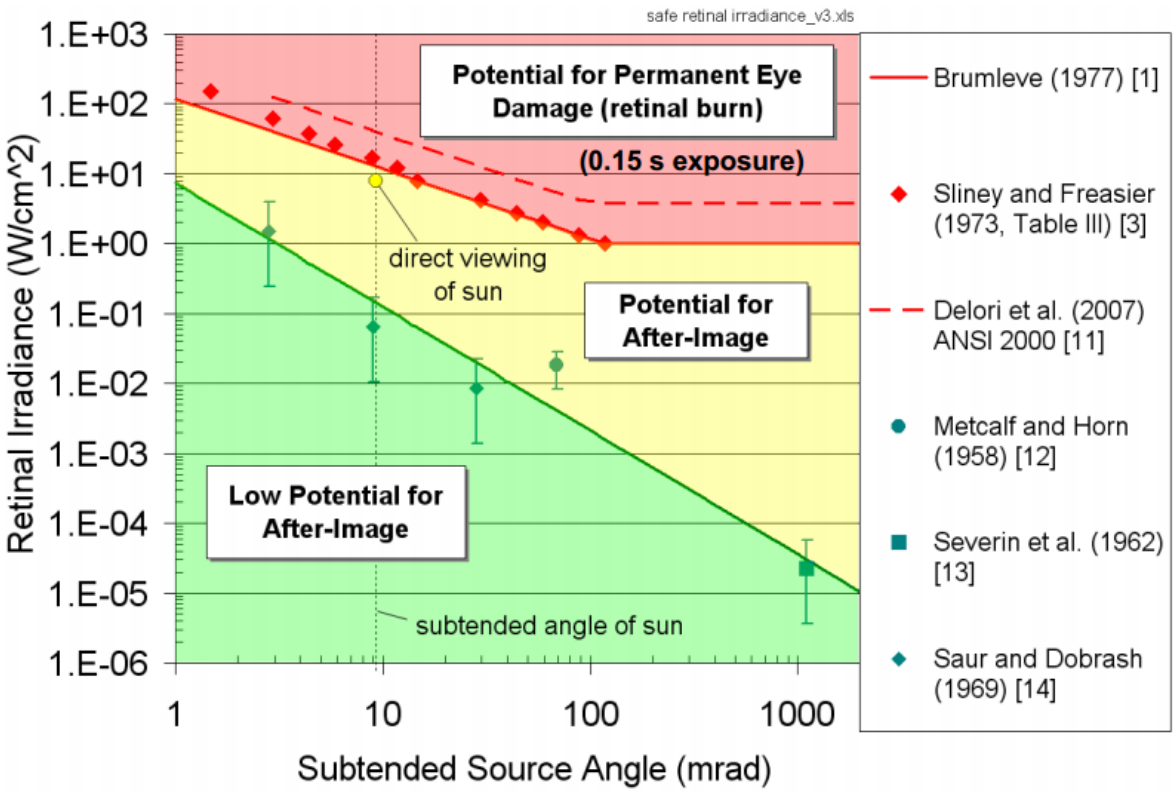
[1] Ho, C.K, Ghanbari, C.M., Diver, R.B., 2009, Hazard Analysis of Glint and Glare from Concentrating Solar Power Plants.

[2] Ho, C. K., Sims, C. A. and Yellowhair, J.E., 2016, Solar Glare Hazard Analysis Tool (SGHAT) User's Manual v. 3.0, Sandia National Laboratories, Albuquerque, NM.

Figure 1 – Comparative reflection of PV solar panels and other materials

Figure 2 – Potential Ocular Impacts and Hazard Ranges (Source: SGHAT, 2016)



The visual expert responsible for preparation of the visual and glare assessment will be available at the panel meeting to respond to specific questions that may be raised by panel members should this be required.

2. Water management

In preparing the development application, Premise prepare a concept bulk earthworks arrangement of the site based on the maximum grade on which proposed solar panels can be installed, given the proposed panel string length of 90 metres and for specific panel modules.

This concept bulk earthworks design was then used as the basis for a hydraulic assessment to determine the extent of potential impact with respect to site stormwater behaviour, including run off. The hydraulic assessment (prepared by Premise and supplied as Appendix D to the SEE) concluded:

> *Hydraulic assessment was undertaken to demonstrate that the proposed solar farm does not cause adverse flood impacts to neighbouring properties. Increased roughness due to the installation of the solar poles over the site and proposed earthworks results in a reduction of peak flow rates from the site for all Average Exceedance Probability (AEP) events. No flood level increase was predicted on the neighbouring properties. Therefore, stormwater quantity/flood mitigation measures are not required.*

The SEE also noted that the resting of the land from cropping activities would encourage improved groundcover retention, which would also assist within infiltration of the water on site and would have the potential to slow down water movement.

The applicant has also committed to re-establishing an on-site waterway including riparian improvement corridor, which will assist with the management of water on site.

The hydraulic expert responsible for preparation of the hydraulic assessment will be available at the panel meeting to respond to specific questions that may be raised by panel members should this be required.

3. Visual Impact Assessment

The potential for visual impacts associated with the construction of the proposed solar farm to the two properties fronting Windmill Road (159 and 181 Windmill Road) were assessed via the visual impact assessment. It was determined by Iris Visual Planning and Design that the topography of the land between these properties and the solar farm footprint provides visual shielding, which ensures the proposed solar farm would not be visible from these properties. It was determined that taking and including photographs from the shared boundaries of these properties and the subject site served little purpose, as no visibility of the solar farm site is possible. This can be seen via the cross sections provided in the VIA at Appendix A of the SEE, by reference to Figures 6-2 and 6-3.

It was also offered at the public drop in meeting (convened by the applicant in the preparation of the statement of environmental effects) that the project visual expert could

visit individual properties to take photos and use these in preparing the visual expert. This offer was not taken up by the land owners of either 159 or 181 Windmill Road.

The visual expert responsible for preparation of the visual and glare assessment will be available at the panel meeting to respond to specific questions that may be raised by panel members should this be required.

4. Operational Site Management

The SEE states (at Section 6.18 with respect to bushfire risk) that either mechanical ground cover management (ie, slashing) or management via crash sheep grazing would be adopted in managing groundcover at the solar farm site. The applicant has not yet determined the final preferred approach and it is conceivable that either or both method may be used.

The applicant notes the content of draft condition C.30 as recommended by Council officers, requiring preparation of an operational management plan addressing, among other things, maintenance and inspection of groundcover (C.30(f)) and preparation of a groundcover management plan (C.30(i)) and has no objection to the provision of this information.

5. SAP Precinct

We note that the Wagga Wagga Activation Precinct Draft Masterplan and supporting documentation was released for public consultation on Tuesday 21 July 2020, with the opportunity for comments to be submitted until 15 September 2020.

The *State Environmental Planning Policy (Activation Precincts) 2020* (AP-SEPP) states at Clause 5 that:

> *This Policy applies to land within an Activation Precinct.*

Clause 4 of the AP-SEPP defines an Activation Precinct as:

> *Activation Precinct means land declared to be an Activation Precinct by this Policy.*

On review of the AP-SEPP, the Parkes Activation Precinct is declared at Schedule 1, clause 1 as the Parkes Activation Precinct. No other declarations are contained within the AP-SEPP. As such, the Wagga Wagga Activation Precinct is not a declared Activation Precinct and, by virtue of clause 5, the AP-SEPP has no application. As the AP-SEPP has no application, the draft Masterplan is also not a relevant consideration in determining this application.

We also note for clarity that Schedule 1, clause 12 of the AP-SEPP states:

> *A development application for development on land within the Parkes Activation Precinct that was lodged before the land was part of that Precinct and that has not been finally determined is to be determined as if this Schedule had not commenced.*

It is a reasonable assumption that, upon creation of a schedule of the AP-SEPP that would apply to the Wagga Wagga Activation Precinct, a similar clause would apply to undetermined development applications within the Wagga Wagga Activation Precinct.

Finally, we note that this application was prepared and lodged in the context of the planning framework that applied at the time of application lodgement. The potential for the implementation of the Wagga Wagga Activation Precinct during assessment of this application was considered and attempts were made to reach out to the Department Planning, Industry and Environment Wagga Wagga Activation Precinct team and Wagga Wagga City Council strategic planning team to determine the likely timing of the AP. No feedback was provided.

6. Private water line

The applicant is aware of the private water line that traverses the property and has discussed this directly with the land owner and the water line users. Based on investigations, there does not appear to be any legal agreement in place with respect to this line (easement or similar) and it is understood that the agreement is between the users and the land owner.

From initial discussions, it is understood that the pipeline is not completely reliable and occasional repairs are required.

The applicant has committed to relocating this line outside of the solar farm footprint, upgrading the quality to improve durability/reliability, to maintain the supply of water at all times and to undertake these works at no cost to the adjacent land owners.

As the line is a private line with no legal protection, we submit that this is a private matter between landowners and not a matter to be addressed via the DA.

APPENDIX A

COUNCIL CORRESPONDENCE

David Walker

From: Gray, Amanda <Gray.Amanda@wagga.nsw.gov.au>
Sent: Wednesday, 22 July 2020 1:28 PM
To: David Walker
Subject: Wagga Solar Farm - Panel site visit

Follow Up Flag: Follow up
Flag Status: Flagged

Hi David

The state appointed members of the SRPP were in Wagga yesterday. We visited the subject site and also viewed the area from a number of different locations.
There were a few issues identified for which I have to prepare an addendum report which are noted below. Please can you provide any possible commentary for inclusion in my addendum as soon as possible.

Glare
The issue of glare is of concern and I would recommend that someone be available to answer questions about the likelihood of glare and the glare analysis on the day of the meeting.
There is concern that the impacts are presented as nil when the recently constructed Bomen solar farm is causing glare impacts to nearby properties.
Is there any opportunity to provide comments (prior to the meeting) in response to the 'nil' impacts presented in the IRIS report and how the site is comparable or not comparable to the Bomen solar farm. As discussed this might be that glare impacts are experienced from (x,y,z) but no sensitive receptors will experience glare.
I would like to be certain we are presenting the worst case scenario and then justify any impacts if necessary rather than suggest no impacts.

Water Management
Having seen the topography of the site and the slope of the land there is concern about water run-off during site works and operation. There were questions about gully erosion from run-off and how this would be managed.
As you will have seen there is a pre-cc condition about stormwater management to ensure that everything is covered off but again having the expert available for questions on the day is recommended.

Visual Impact Assessment
Is there any possibility to analyse the views from the rear boundaries of the two dwellings fronting Windmill Road. It is noted that the analysis in the IRIS report is from the road and the dwellings are set back a considerable distance from the road. It is also assumed that access to these dwellings may not have been given hence the way the report has been presented but could photos/views from the rear boundary be established from within the subject site to clarify these impacts.

Operational Site Management
The Panel were keen to understand how the ground will be managed – for example grazing, weed management, slashing of ground cover using machinery. Bush fire risk was noted as a concern in this regard.

SAP Precinct
The master plan was placed on public exhibition yesterday and I will include reference to this in my addendum to the panel. The master plan is informed by the structure plan and other technical documents and whilst not applicable to this assessment I think that you should be aware of the content. It is the master plan that will be the reference document when the SEPP is subsequently prepared.

Thank you for your assistance
Regards

Amanda

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