



Memorandum

Floor 11, 452 Flinders Street
Melbourne VIC 3000
PO Box 312, Flinders Lane
Melbourne VIC 8009 Australia
T +61 3 8668 3000
F +61 3 8668 3001
www.jacobs.com

Subject	Landscape and Visual Impact Assessment – Response to Submissions	Project Name	Stringybark Solar Farm
Attention	Robert Cawley, Ecological Australia		
From	Hayden Burge		
Date	14 October 2019		

1. Introduction

Stringybark Solar Farm Pty. Ltd. lodged a development application with the Armidale Regional Council (Council) to develop a solar farm (the Project) approximately 14.0 km south east of Armidale NSW.

Council received a number of submissions in relation to the Project with concerns relating to landscape or visual impacts. A summary of the concerns is set out below:

- Nature and accuracy of images and photomontages used within the Landscape and Visual Impact Assessment (LVIA) report;
- Impact on views, character and visual amenity of the surrounding area;
- Siting of the Project;
- Impact on views, character and visual amenity from residential dwellings;
- Ability for landscape screening to be successful;
- Cumulative impacts; and
- Glare impacts

A summary response to the concerns is provided under the same headings.

1.1 Nature and accuracy of images and photomontages used within the LVIA report

Several submissions raised concerns regarding the technical and perceptual accuracy of photographs and photomontages used within the LVIA report. This included one concern regarding a violation of their rights.

With regards to rights, all residential dwellings assessed and included within the LVIA had been offered an assessment of the potential for visual impacts at their dwelling. The nature and use of the photographs taken was discussed with each property owner at the time of the site visit for this purpose.

With regards to the inclusion of images and photomontages in the report, a statement regarding the use of photomontages was provided at section 2.7.5 'Photomontages', which is repeated below. This statement was further emphasised in the final paragraph of Section 9 and was considered prior to undertaking an assessment of views (refer to the methodology provided in the report).



Memorandum

Landscape and Visual Impact Assessment
– Response to Submissions

It is recognised that the small photographs and the A3 photomontages included within this assessment are not indicative of the actual visual impact, however they are clearer than the smaller images in the text.

For a greater sense of perceptual accuracy, it is recommended that the 60° images be printed and viewed on A0 sized sheets and held at arms' length at the original location. When viewed at A0 the photomontages are representative of the level of visual alteration.

The photomontages were confirmed onsite by revisiting each location with an A0 print of the 60° images as described in the paragraph above. The assessment and conclusions made within the LVIA were based on observations made during the initial site visit and the verified photomontages.

1.2 Impact on views, character and visual amenity of the surrounding area

Several objectors' statements raised concerns regarding visibility of the project from publicly accessible locations including Castledoyle Road being, a primary access road for local residents and tourists accessing Blue Hole and the Oxley Wild Rivers National Parks.

The project would be visible from locations along the surrounding road network, however it must be recognised that a visual impact is not based solely on whether a project is visible or not, it must also consider the context of the view, visual dominance based on distance, viewer numbers, modification to the view and sensitivity.

Chapter 2 of the LVIA sets out the methodological steps, key criteria and their role in undertaking an assessment of views and visual impact.

Section 2.5 of the LVIA sets out key criteria that contribute to an overall assessment of views and visual impact of which there are four. These criteria include: determine whether the Project is visible or not and where from; the number of viewers that will have the occasion to see the Project; the distance at which a project is visible with regards to potential dominance; and the character or level of protections applied to the landscape of the Project and the surrounding area.

Visibility: If the project is not visible, there cannot be a visual impact. The visibility of the Project can be broadly indicated by a Seen Area Analysis (SAA) which is discussed at section 4 of the LVIA. The SAA defines the area of theoretical project visibility from the landscape and areas surrounding the Project. This study provides high level guidance to assist with understanding locations that have the potential to view the Project, which will guide a site visit to assess the setting, context and visibility of the Project.

Distance: Zones of Visual Influence (ZVI) within the defined visual study area assist to consider the visible scale or potential dominance of a project based solely on distance. Visibility or visual dominance decreases as viewer distance from the project increases.

The extent of the study area is defined as the distance at which the Project will no longer be a discernible element in views on a clear day with good visibility. Distance cannot be considered in isolation or disregard other criteria such as landscape character or visibility through screening.

Table 4.1 of the LVIA sets out the zones of visual influence (dominance) for the Project based on both the overall height of the panels as well as the site fall across the panel area. This approach therefore considers the potential solar array area as a visible 'face' and is therefore a conservative basis on which to establish visual dominance based on distance alone.



Memorandum

Landscape and Visual Impact Assessment
– Response to Submissions

From locations that are between a distance of 2.0 and 4.0 km, including residential locations, it was established that the panel area would be noticeable (if not screened by vegetation or topography), but would not be a visually dominant feature in views. The visual impact of the Project beyond a 4.0 km distance would be visually insignificant.

This was confirmed through the on-site verification of the two photomontages within which the panel area is un-questionably visible. The first photomontage was taken from Castledoye Road, approximately 2.7 km south east of the Array Area, the second from Milne Road at a distance of approximately 2.4 km directly south. Both photomontages (see photomontage methodology and image reproduction) supported the ZVI observations and calculations that the Project would be visible but would not be visually dominant in views from locations beyond 2.0 km.

Other key visual criteria include **Landscape Character and Sensitivity**, which considers the character and context of the surrounding landscape and **Viewer numbers**.

These four criteria (visibility, distance, viewer numbers and sensitivity) are discussed at the assessment of views from each location. The assessment of views and the overall visual impact is arrived at based on a scale of effects or a description of the observations and assessment which range from Negligible to High.

Viewpoints included within the report were selected based upon the results of the SAA. The SAA demonstrated that a considerable section of Castledoye, Milne, Andersons and Gara Road will have theoretical visibility of the Project. The SAA demonstrated no visibility of the Project from within Blue Hole and Oxley Wild Rivers National Parks.

When on site and travelling along these roads, it is evident that the site is screened or partially filtered in views from the majority of these publicly accessible locations. The greatest potential for visual impacts would be from Gara Road and confined to locations that are near to the site. Gara Road is a local road with relatively low user numbers and is not part of any formal access to tourist locations.

Gara Road will have the greatest visibility of the Project, being at the southern border of the Site. Although the project is visible from Gara road, viewpoints assessed along this road determined that the visual impact would be negligible-low. This is due in part to topography screening views to the Project from the majority of the road, the landscape being largely modified and located within a zone that is not a sensitive use, and that a relatively low number of people overall will view the project from Gara Road.

The assessment determined the Project will also be visible from some local roads further south including Castledoye Road, Milne Road and Blue Hole Road. Where visible, and not screened by local trees or topography, the Project would be at such a distance that it will not be a highly visible feature in the landscape nor would it reside in views that are sensitive or protected. For these reasons, the resulting visual impacts were not considered to be higher than negligible to low.

Again, these observations were supported by a re-examination of the site and the assessment of photomontages which demonstrated, even though there were some clear and open views towards the project, the visual impact overall would be a barely discernible change in overall day to day effects.

In addition to the site visit, the photomontages have been used to form a view from other locations at similar distances.



Memorandum

Landscape and Visual Impact Assessment
– Response to Submissions

The visual impact assessment was based upon a number of views from publicly accessible locations in the area surrounding the project. These views considered a range of viewing angles, distances and elevations in order to appropriately consider the project in the context of the character of the area.

There were no locations assessed as having an overall visual impact greater than low.

1.3 Siting of the Project on a hillside, resulting in increased visibility

Several objectors raise the site selection guidelines set out in the Large-Scale Solar Energy Guideline, 2018, NSW Government (the Guideline). Section 4.2 Key Site Constraints of the Guideline requires the consideration of *“sites with high visibility, such as those on prominent or high ground positions, or sites which are located in a valley with elevated nearby residences with views toward the site. This is particularly important in the context of significant scenic, historic or cultural landscapes”*.

Although the guidelines are specifically for State Significant Developments (a scale larger than the Project), they are considered here. The guidelines stipulate that this does not preclude large-scale solar development on certain land but is to be considered.

Further, The Armidale Dumaresq LEP (2012) recognises landscapes such as *“elevated land which is both visually exposed to various vantage points and form an integral part of the skyline backdrop”* as well as the approaching roads within Environment Protection Zones.

Environment Protection Zones do not apply to either the site or any of the area immediately surrounding the site. In addition, the Site is not designated as a *“significant scenic, historic or cultural landscape”*.

It is clear from the nature and range of views assessed in the LVIA, that the site is located on the low to mid slopes of the southern side of a local hill. In a regional context, the site does not form part of either a prominent elevated location nor is it set within a valley that is overlooked from locations that are *supremely* elevated above the site. Where there are occasional ‘elevated’ views of the Project (from higher elevations than the Proposal), these views are at such a distance that the project would not form a dominant visual element in the context of those views.

With regards to increased visibility due to being located on a hill side, the Project has been designed to sit low on the slope and is well below the elevated ridgeline with its existing vegetation. This design feature reduces visibility in the surrounding area and its significance within views, as it would not compete with the prominence of the vegetated ridgeline itself.

1.4 Impact on views, character and visual amenity from residential dwellings

Several residents in proximity to the project have expressed concerns regarding direct visibility of the project site and the loss of visual and landscape amenity currently enjoyed in a Rural Residential Setting. Several submissions were also made on behalf of the residents in the area.

The Site and the majority of the surrounding area is within the Rural Use 1 Zone – Primary Production (RU1). Areas to the west of Burying Ground Creek and the south and west of Commissioners Waters are zoned Rural Use Zone 4 – Primary Production Small Lots (RU4). This includes the residential properties on, or accessed by Castledoye Road, from which the majority of the local residential objections have been received.



Memorandum

Landscape and Visual Impact Assessment
– Response to Submissions

The objectives of rural zones recognise the potential for off-site amenity impacts arising from the use of land within these areas and seek to manage the potential for conflicts arising from sensitive uses, such as residential dwellings within these zones.

Greater amenity protections are afforded for residential dwellings located in designated rural residential areas such as Zone R5 Large Lot Residential.

It is understood that the *Armidale Dumaresq Rural Residential Study*, published in 2004 made a number of recommendations which included several areas near the Project to be considered for the provision of Rural Residential or the equivalent of R5 zoning. It is apparent that this has not been taken into effect nor has it resulted in a change in zone for the area immediately surrounding the Project. It is noted that the Armidale Dumaresq LEP did not include these zone changes when it was developed in 2012.

Stringy Bark Solar Farm invited residences within proximity of the Project who came to the first consultation session or who contacted them directly the opportunity to be assessed for potential visual impacts. Five residential dwellings accepted the offer, all of which were included in the assessment of visual impacts from residential dwellings. An observation of the impact from a sixth dwelling was made from the roadside. It is understood that residents at this dwelling have not objected to the Project.

In line with the key Tenacity Principles for assessing view impacts from Residential dwellings (pg 58, LVIA report), all assessments were based upon views and outlooks that would be directly affected by the Project, clear of vegetation and structures where appropriate, from locations that were either within or adjacent to primary living areas such as patios, living areas or kitchens.

The reasonableness of the Project was assessed using a defined scale of effects ranging from Negligible to High and which considered distance and potential visual dominance, the context of the view and screening afforded by topography, vegetation or structures.

The assessment determined that for the majority of the dwellings assessed that while the Project would be visible, due largely to distance, the Project would be in the background of views rather than the foreground, therefore would not dominate views. Furthermore, in many views the Project would either be partially filtered by vegetation or screened by topography and vegetation.

In summary, there were no locations assessed, where permission was granted to undertake an assessment of views and visual impacts, where the impact would be greater than low.

Lastly, the majority of residential dwellings in the wider area are located at such a distance that the project would either not be discernible or visible.

1.5 Ability for landscape screening to be successful;

Several objectors raised concern regarding the effectiveness of the landscape screening due in part to the elevation of solar panels and the establishment time to achieve effective screening and growth rates in the local area.

Landscape mitigation can be effective at managing visual and glare impacts of solar farm projects.

The Project has committed to establishing landscaping at strategic locations to minimise the visual impact to the neighbouring properties. The Proponent has also committed to early establishment of landscape plantings.



Memorandum

Landscape and Visual Impact Assessment
– Response to Submissions

This landscape screening has not been designed to screen views of the entire project, rather to filter views from key sensitive viewing locations, and particularly the more immediate project views along Gara Road, as well as the two closest residential properties on Milne Rd that have elevations lower than the project. The security fence will be located behind the proposed landscape screens.

Existing planted vegetation in the local area supports that vegetation can be established at the site and under local conditions. Several examples were including in the LVIA report (pg 71).

For commercial projects such as solar, the success of landscape screening vegetation can be linked to a permit condition that includes a requirement for performance standards requiring establishment rates as well care and maintenance provisions.

1.6 Cumulative impacts

Several objectors raised concerns regarding nearby, separate proposals to construct solar farms. In particular, the 300 MW Oxley Solar Farm that is proposed for the adjacent property, and the proposed Olive Grove Solar Farm, located to the north of the Project.

Cumulative visual impact can be defined as the combined effect of changes brought about by a proposed development in conjunction with other similar developments in an area.

At the time of preparing the LVIA, the Metz Solar Farm was the only approved solar farm in proximity to the Project. The Metz Solar Farm is in an area that was demonstrated as having no visibility of the Project in the Seen Area Analysis and will therefore not contribute to cumulative visual impacts.

Other potential projects include the Olive Grove Solar Farm and the Oxley Solar Farm, both of which have not been submitted into planning yet. Olive Grove Solar Farm is directly to the north of the Project and also in an area where the proposed Stringy Bark Solar Farm is not visible, and will therefore not contribute to cumulative effects.

The Oxley Solar Farm, which would share part of the eastern boundary of the proposed Stringybark Solar Farm, has received SEARs from NSW Department of Planning and Environment. The potential for cumulative visual impacts is not able to be accurately assessed at this stage as the project is at an early stage of development with limited information available in terms of its final layout.

1.7 Glare Impacts

Several objectors raised concerns regarding the potential for glare impacts to occur with some confusion about whether panels would be fixed or supported on a rotating tracking system.

The Project will employ a north south axis tracking system that will track the sun east to west during the day. The LVIA reviewed the potential for glare impacts at 32 sensitive locations including nearby residential properties and 'route receptors' along Gara and Castledoyle Road using the Forge Solar Glare Hazard Assessment Tool (SGHAT). SGHAT is proprietary software developed specifically for this analysis of glare impacts.

There were no glare impacts predicted for each of the 32 receptor locations which is consistent with conclusions from the Site inspection.