Australian Institute of Landscape Architects

3 March 2022

Matthew Riley
Director – Energy and Resources Policy
c/ Kaitlyn Lieschke
Department of Planning and Environment

Dear Mr Riley,

AILA NSW Submission to Revised Large-Scale Solar Energy Guidelines

Thank you for the opportunity to provide a submission on the Revised Large-Scale Solar Energy Guidelines (the Guidelines) and for recent opportunities to be briefed and provide direct input on this work.

Our review has been undertaken by a working group of AILA registered Landscape Architects with extensive experience in the preparation of Landscape and Visual Impact Assessment (LVIA), particularly in the context of large-scale energy infrastructure works throughout Australia. The AILA working group has comprehensive knowledge and understanding of current global best practice for undertaking LVIA and of the technologies available and applied.

AILA NSW welcomes the preparation of this guideline as an important step in ensuring higher quality LVIAs are prepared. We support DPE's objective to provide a clear and concise methodology for assessment that results in clearly defined outcomes that assist with the assessment of proposals. We also understand the importance of consistency and clarity in assessment to enhance community confidence in the assessment and approval process.

Generally, the key concern of the working group centred around the specific tools for assessment for all viewpoints that appear to have been developed for the purpose of providing an approach that quantified impact on surrounding residences. AILA supports this methodology for residences however it was consensus of the working group that these tools were not applicable when assessing impacts to landscape character and broader views from the public domain (roads, lookouts, open space etc). AILA is concerned that accepted methodologies for Landscape Character Assessment have been excluded from the guidelines. It is AILA's position that understanding and defining the unique landscape character and values of a proposed site and its surrounds is a critical step to ensure that the design of any proposal is considerate and sensitive to any specific character elements or values that may be sensitive to change.

It is the AILA's concern that the focus on impact on residences and the absence of the broader character analysis has the potential to lead to poor design outcomes for broader landscape character and public domain.

Our working group determined that there are four key recommendations regarding the structure of the Draft Guidelines that AILA suggest that DPE adopt to assist with consistency of assessment, provide clarity in decision making and to ensure improved design outcomes for solar farms and their surrounding communities.

Recommendation One:

It is the AILA's recommendation that a standard methodology for LVIA is adopted across all large-scale renewable energy infrastructure types for the assessment of landscape character and views as experienced from the public domain. AILA recommends that the DPE consider adapting the methodologies and terminology provided in the Transport for NSW Guidelines for Landscape Character and Visual Impact Assessment (2020) and the AILA Guidance Note for Landscape and Visual Impact Assessment (that is currently being reviewed for adoption by AILA nationally). This methodology could be adapted with minimal modification and would align more closely with international and industry guidance.

The application of a methodology that begins with the identification of landscape character, would inform a design process for the proposal based on established design principles, be a basis for the development of appropriate mitigation measures and provide a means to acknowledge the landscape (and environmental) benefits that can be achieved on renewable energy project sites beyond what is simply seen. An understanding of existing and future landscape character will also inform the assessment of cumulative landscape and visual impacts and allow these to be assessed in a more holistic manner.

Recommendation Two:

It is AILA's recommendation that if a standard LVIA methodology is adopted then a supporting technical guideline should be prepared for each development type (solar, wind, transmission etc) that addresses the specific issues of each renewable energy technology/development type (e.g.: glint/glare, mitigation measures, screen planting and setbacks etc.) and provides design principles that lead to better design outcomes and reduced negative impact on existing landscape character.

Recommendation Three:

It is AILA's recommendation that an approach to the assessment of private dwellings be adopted, which aligns more closely with the principles that would be applied if a project was to go to appeal in the NSW Land and Environment Court. This approach would not assign a sensitivity level to private dwellings, but identify the magnitude of change, which part of the dwelling the view is from, and consider the reasonableness of the change (how it aligns with planning intentions) to determine if there is a visual impact.

The tools provided in the draft guidelines for assessing magnitude could be used together with design principles that seek to improve design outcomes. This would both assist in providing some consistency across assessments, as well as ensuring the assessment of visual impact is not solely based on visibility, but also upon the compatibility of development with the view and landscape character of the area. This approach would clearly communicate to developers the expectations for assessment and, to the surrounding community, what the Department considers to be unacceptable or acceptable impacts upon a private dwelling.

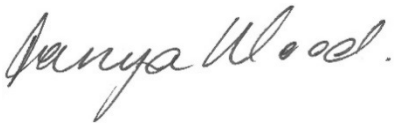
Recommendation Four:

AILA recommend that the visual amenity impacts of glare be approached with a similar methodology to a private dwelling visual impact assessment. With the initial glare minute thresholds being used as a screening tool for further visual analysis. Those properties with a moderate or high potential glare risk impact should be further investigated, with detailed visual analysis used to refine the predicted glare risk (based on visibility) and then combined with other view characteristics to identify the magnitude of change and impact based on this combined with factors relating to the viewer. This would reflect the highly conservative and simplistic nature of the glare risk analysis tools available and avoid unnecessarily restricting the efficient operation of solar farms unnecessarily without a proportionate benefit to the community.

As part of the AILA review process a table of comments was prepared referring directly to the content of the guidelines. This is attached for your reference.

AILA appreciates the opportunity to engage with the Department on the preparation of the draft guidelines and the working group would be more than happy to contribute and provide comment in the future as the guidelines are progressed.

Yours sincerely



Tanya Wood
AILA NSW State Chapter President

David Moir
NSW Vice President

Comments from AILA Working Group

Visual impact assessment

Topic	#	Comment	Page
Professional Assessment Skills	**1.**	Landscape Architects are well placed to interpret the landscape and visual conditions, having both landscape analysis and design skills. These skills are necessary to both identify and mitigate landscape and visual impact. Professions such geographers and environmental planners may not have the appropriate skills and training to understand and defining landscape character and values. A qualification process may be required to ensure that professionals are suitably qualified.	**p.2 (appendix)**
Consultation	**2.**	AILA recommends that a topic specific community consultation task be excluded from the visual assessment guidelines and that surrounding residences and broader community be engaged on landscape and visual issues as a part of the broader community engagement activities that are supported by specific community engagement guidelines.	**p.5 (appendix)**
Preliminary Assessment	**3.**	AILA recommends that the preliminary assessment include the identification of existing landscape character and the preparation of Zone of Visual Influence (ZVI) mapping to identify areas where there is the potential for impact. The preliminary assessment should also identify individual receptor locations and settlement areas surrounding the site with the potential for views to the proposal.	**p.4 (appendix)**
Detailed Assessment	**4.**	The visual magnitude and sector tools are appropriate for assessing impacts of private residences but not in assessing impacts on the broader landscape character and views from the public domain. It is recommended that these tools are applied to private dwellings only and a separate and more generally accepted methodology of LVIA is applied when assessing the impact of the proposal on the area's landscape character.	**P.9 (appendix)**
Viewer sensitivity	**5.**	Table 2 Viewer sensitivity – nominates a low sensitivity for state highways and tourist roads. Such viewpoints have a high number of users and should be rated as having at least a moderate sensitivity. For example, the United Kingdom's *Guidelines for Landscape and Visual Impact Assessment* (Landscape Institute, 2013 (3rd Ed)) (referred to hereafter as UK Guidelines) states 'Where travel involves recognised scenic routes awareness of views is likely to be particularly high' (p. 114). Similarly, the identification of Highways as Low sensitivity does not align with most local DCPs where these are associated with the entries to town and are important to the character of smaller towns not covered by the *Infrastructure SEPP amendment (Renewable energy and regional cities)* which protects the setting of regional cities.	**P.9 (appendix)**

Topic	#	Comment	Page
Scenic quality class	6.	The consideration of scenic quality is an important part of the assessment of visual impact. However, Table 3 Scenic quality ratings, should be expanded or presented as an example so that further, location specific, detail can be added. The scenic quality ratings should reflect established scenic preferences and also incorporate the specific characteristics of the region. Ideally, these would be based on landscape character / scenic quality mapping prepared for the Renewable Energy Zones and that could be uniformly applied to projects.	**p.10/11 (appendix)**
	7.	The scenic quality rankings do not appear to consider representativeness and rarity. These factors can influence the values associated with the landscape and assist with prioritising areas for protection.	**p.10/11 (appendix)**
	8.	The scenic quality ranking of the rural/pastoral landscape is identified as being of 'low' scenic quality, for example, which unlikely to be unsupported by a predominantly rural community. It is recommended that photographs be included for a range of landscapes that fit into each category, based on Australian examples, to assist with consistency.	**p.10/11 (appendix)**
	9.	It is not clear how the 'scenic quality classification' are to be used in the methodology. Further detail would be required on how to apply the scenic quality class in the assessment to ensure consistency.	**p.10/11 (appendix)**
Landscape character effects	10.	Consideration of direct impacts on landscape character would add value to this methodology. The consideration of landscape character is part of most widely accepted methodologies (including the *Transport for NSW Landscape and Visual Assessment guidelines* and the UK *Landscape Institute Guidelines*).	**p.10 (appendix)**
Magnitude	11.	The method for identifying magnitude (for both public domain and private dwelling impacts) appears to relate only to the visibility of the proposal. AILA recommend that the assessment of magnitude be expanded to also consider the characteristics of the visible elements (shape, line, colour etc.) and their compatibility with the character of the view. This will encourage design changes to reduce visual impact by means other than visual screening. Such improvements (often at the expense of operational efficiency and project value) should be rewarded with a reduction in visual impact where that is the case. It is not clear in the current methodology how changes to the design and layout of a solar farm would lead to the reduction of an impact level.	**p.7 (appendix)**
Design principles	12.	The guideline would preferably include a suite of design principles that seek to improve visual outcomes through siting and design considerations. This would support landscape and visual assessment experts in advocating for design and layout improvements and give greater guidance for proponents.	

Topic	#	Comment	Page
Mitigation measures	**13.**	In Table 6. Performance Objectives for Moderate visual impact, a mitigation target of >75% screening of the PV array is set as a requirement. It is not clear how this is to be assessed i.e.: over what timeframe, is this >75% of the overall solar farm, or of the portion of the solar farm that has resulted in the moderate visual impact. AILA do not support prescriptive visibility measures such as this and would encourage DPE to consider alternative measures to reduce impact that might be included alongside more prescriptive measures such as this.	**p.14 (appendix)**
Screening vegetation	**14.**	Consistent timescales for the consideration of screening vegetation and the assessment of residual impacts would increase consistency across assessments.	**p.15 (appendix)**
Visualisations	**15.**	The guidelines indicate that … 'visualisations must be provided in the EIS to demonstrate the visual impact at each viewpoint that has a visual impact rating of low or higher'. AILA suggest that photomontages are a tool to communicate impact levels and are not the assessment tool in themselves. It is considered reasonable that visualisations be provided to illustrate locations of higher visual impact, or to confirm where there is not a high visual impact on a higher sensitivity viewing location. It is suggested that not all locations would require a visualisation and that this requirement be reconsidered to focus on the most useful locations for visualisations only.	**p.12 (appendix)**
	16.	From experience, access to private dwellings is often not granted. It would be useful if this guideline could clearly outline the expectations for visiting private dwellings, and confirm the approach when access is not possible.	**p.12 (appendix)**
	17.	The guideline identifies the need for surveyor verified photomontages in accordance with the NSW Land and Environment Court policy. It is often not practical to have a surveyor on site when taking photographs for all visualisations, particularly in remote or rural areas.	**p.13 (appendix)**
Grid connection infrastructure and Battery Storage	**18.**	Further guidance as to how to incorporate the assessment of transmission lines, batteries and other grid connection infrastructure into the assessment method would be useful.	

5.2 Glint and glare management

Topic	#	Page	Topic
General	**19.**	AILA recommends that the potential impacts of glare are differentiated between glare affecting the amenity of residential dwellings and glare as a hazard affecting the safe use of transport routes (roads and rail) and aviation infrastructure. We note that the expertise of Landscape Architects is primarily focused on the visual amenity effects of glare. Consultation with relevant transport and aviation safety authorities should be sought to determine acceptable levels relevant to each type of infrastructure.	**p.33**
	20.	AILA suggest that the terminology 'Glare Risk' be adopted when referring to the predicted glare minutes and hours. The minutes identified by the Solar Glare Hazard Analysis Tools (SGHAT) are a risk of glare only. The glare effect for any receiving location would be lower than the minutes identified by the SGHAT as the model does not account for cloud cover and rain, atmospheric conditions and dust that may scatter and reduce the glare effect, as well as screening by landform or filtering by trees.	**p.33**
	21.	AILA recommend that the amenity effects of glare be set within a similar framework to a visual impact assessment, so that if the private dwelling exceeds the daily thresholds of glare minutes suggested in this guideline, further analysis as to the baseline visual conditions, the magnitude of change (e.g. where there is a partial screening of a view to the development for example), be considered. Noting that the glare modelling does not take this into account and cannot be adjusted to reduce the predicted glare risk minutes to reflect commonly encountered situations such as screening by minor variations in landform or filtering of the view by vegetation for example.	**p.33**
	22.	To improve consistency in the methodology of glare assessment, guidance on the values used as the basis of glare modelling would be helpful, for example the standard height to be used at a dwelling.	**p.33**
5.2.1 Introduction, paragraph 3	**23.**	It would be useful if the main types of solar farm technology are introduced in the introduction to the guidance for glint and glare management i.e.: fixed, tracking and reflecting. Paragraph 3 appears to be based on single axis tracking systems, whereas a fixed system may cause a glare risk at different times of day.	**p.33**
5.2.3 Assessment	**24.**	AILA suggest that the distance of 4 kilometres should be reduced to either align with the visual impact boundaries (up to 3.25km) or less. This is because the reflecting area of the solar array is a reflection of the sun, and this area reduces in size with distance.	**p.33**
Mitigation measures	**25.**	The guideline says that glare analysis is not required for those dwellings that would be 'subject to visual mitigation measures'. Further information on how to assess the effectiveness of visual mitigation measures would be useful in this guideline.	**p.33**

Topic	#	Page	Topic
Backtracking	**26.**	Further details on what DPE expect with regards to the consideration of backtracking would improve consistency. Recent updates to one of the SGHAT software include options for backtracking. The options that are 'slope aware' would be suitable for most sites and would provide DPE with consistency across assessments.	**p.34**
Performance objectives for glare at dwellings	**27.**	Considering the conservative nature of the SGHAT outputs AILA recommend that the thresholds for glare minutes per day be increased. It is not currently possible, with the analysis software tools available, to refine the glare minutes to account for variations in landform or filtering of the view by vegetation, making a quantitative measure difficult to apply. Furthermore, considering that that a glare effect usually occurs across a season as the sun moves through the sky progressively, and the reflecting area of the solar farm also moves with it. In the experience of our members, the per year limits would be exceeded in most cases where the per day limit would otherwise be met.	**Table 3 p.34**
Performance objectives for glare at dwellings	**28.**	AILA recommend that the glare thresholds be one factor considered when determining an impact level for glare risk. The baseline conditions (e.g.: what reflecting surfaces are currently seen in the view) as well as the magnitude of change (incorporating partial screening of a view to the development for example) should also be considered.	**p.34**
Performance objectives for glare at dwellings, Glare types	**29.**	The SGHAT identifies up to three different types of glare, two of which can occur on solar farms. These are yellow glare, which has the potential to cause an after image, and green glare, which does not. The green glare is generally less impactful as it can be more easily tolerated by the eye whereas yellow glare may cause the receiver discomfort. While green glare does not damage the eye, it may be necessary to avoid viewing this effect (similar to how looking directly towards the sun is avoided). AILA recommend that DPE consider differentiating between green and yellow glare with the former being an alteration to the character of the view, and the latter being more likely to cause annoyance.	**p.34**
Other mitigating factors	**30.**	There are other mitigating effects of a glare impact that are useful to note when considering a glare impact. These include seasonal factors, the time of day, and if the glare effect is seen in a view directed also to the sun (when lower in the sky). The scale of the reflecting area should be considered in the determination of the magnitude of change, and the resulting impact level.	**p.34**