

HydroGlen

Supporting Environmental
Information Report

Appendix B: Glint & Glare Briefing Note



HydroGlen (Glensaugh) Solar PV System

Scoping out of glint & glare study

1. Overview

Aberdeenshire Council's pre-application advice report for the HydroGlen proposed development (ENQ/2023/0387; 25th May 2023) stated:

"The impact on the amenity of those living in the surrounding area must be fully assessed. This includes assessment of the likely glint and glare from the solar panels and the impact of the development on the nearest properties in terms of its size. Any application should demonstrate the impact on the amenity of neighbouring properties through the submission of a glint and glare assessment to demonstrate compliance with Policy P1 of ALDP (2023) and Policy 14 of NPF4."

and

"A glint and glare assessment is required to demonstrate the impact of the solar array on the amenity of surrounding properties."

This briefing note justifies the scoping-out of a glint & glare (G&G) assessment for the proposed HydroGlen solar PV system(s).

2. UK G&G Guidance

There is little formal guidance on G&G in the UK although it is mentioned in a range of national planning guidance. Further, there is little formal guidance aimed at solar PV systems of the capacity proposed at Glensaugh (c. 150kWp), with planning guidance aimed at large-scale developments. Therefore, much of the guidance detailed below is not designed to be of primary relevance to small-scale solar projects such as the HydroGlen development.

Although superseded by National Planning Framework 4 (NPF4), former Scottish Planning Policy (SPP) still contains relevant and similar policy guidance to the most recent guidance. It notes that

glint and glare may be a ‘resultant impact’¹ of solar PV development, even when considering that PV modules are designed to absorb solar irradiation. SPP also notes there is potential for glint and glare to impact communities. This guidance refers to ‘large’ PV arrays, which are typically considered as commercial grid connected systems of 1MW capacity and above.

SPP previously advised that a 3km exclusion zone around aerodromes should be considered when planning a large-scale PV system. However, SPP was then updated to highlight that many solar PV developments have gone ahead within 3km of aerodromes with no significant adverse impacts for airport operators. As a result, there is no formal guidance on the proximity of receptors to a development that should be considered for the assessment within the superseded SPP guidance for all sizes of solar PV development. It should also be noted that this guidance is aimed at planning authorities but is useful nonetheless for developers.

There is no explicit guidance within NPF4² on the proximity of receptors to the development that should be considered for the G&G assessment. As a result, the commonly implemented 1km boundary threshold would satisfy current Scottish Government guidance for the G&G study.

Although National Planning Policy Guidance (NPPG)³ guidance refers to developments in England, it is useful guidance, nonetheless. NPPG notes that large scale solar farms ‘*could have a damaging effect on the landscape...particularly in undulating landscapes*’ and that the ‘*visual impact of a well-planned and well-screened solar farm can be properly addressed within the landscape if planned sensitively*’ (Paragraph 007: ID 5-007-20140306 & Paragraph 013: ID 5-013-20150327). There is no explicit guidance on the proximity of receptors to the development that should be considered for assessment for large-scale developments. As a result, this planning guidance should be considered irrelevant for the proposed HydroGlen development.

The Building Research Establishment (BRE) state that ‘*the sensitivities associated glint and glare, and the landscape/visual impact and the potential impact on aircraft safety, should be a consideration. In some instances, it may be necessary to seek a glint and glare assessment as part of a planning application*’⁴. They do not define a proximity to the development that receptors should be considered.

Regarding air-based receptors, the UK Civil Aviation Authority (CAA) states ‘*consideration of glint and glare should be made over a wider area*’ and indicate a range of up to 2km from an Aerodrome Reference Point (ARP)⁵ as an area of most concern (see Section 3 on how this applies to the proposed development). CAA also developed an interim guidance document published in 2010 and then retracted this in 2012. As a result, no formal copy exists. The guidance has been archived by PagerPower with the guidance noting that documentation of the ‘*full potential impacts of the SPV installation on aviation interests*’⁶ should be provided as part of the planning application.

¹ Scottish Government (2013) *Large photovoltaic arrays: planning advice*. Available at <https://www.gov.scot/publications/large-photovoltaic-arrays-planning-advice/>

² Scottish Government (2023) *National Planning Framework 4*. Available at <https://www.gov.scot/publications/national-planning-framework-4/documents/>

³ NPPG (2021) *National Planning Policy Framework: Renewable and low carbon energy*. Available at <https://www.gov.uk/government/collections/planning-practice-guidance>

⁴ BRE (2013) *Planning guidance for the development of large-scale ground-mounted solar PV systems*. Available at https://www.bre.co.uk/filelibrary/pdf/other_pdfs/KN5524_Planning_Guidance_reduced.pdf

⁵ UK CAA (2022) *CAST Guidance Note – Safeguarding Guidance to GA Aerodrome Managers and Operators*. Available at: <https://www.caa.co.uk/search?query=glint>

⁶ PagerPower (2021) *Solar Photovoltaic and Building Development – Glint and Glare Guidance*. Available at <https://www.pagerpower.com/wp-content/uploads/2021/05/Solar-Photovoltaic-Glint-and-Glare-Guidance-Third-EditionV3.1-2.pdf>

In practice, due to the lack of formal guidance surrounding G&G, most assessments will consider receptors within a 1km radius of a solar farm.

3. Scoping-Out Justification

Based on the above, there are very few receptors that would be required for consideration at the proposed HydroGlen solar array.

The site lies within the base of a valley, with two observation points (OPs) within a 1km radius of the site (excluding the main cluster of buildings onsite - see Figure 3-1). These lie to the south and southwest of the site. The OP to the southwest of site (OP 1 – Clattering Bridge Restaurant) lies behind steep undulating topography, with Glensaugh not visible from this OP. OP 2, south of the main site building cluster, also has tree rows along the road that leads to the main site. This is an occupied building and would therefore be considered part of the G&G assessment scope.

Figure 3-1: Proposed solar array area at Glensaugh with a 1km radius boundary from centre of project (red) and nearby observation points (yellow pins) highlighted (Google Earth 2023)



There are only two roads within the 1km boundary (Old Military Road & the B974). Similarly to the building receptors, these routes are largely screened either behind dense tree rows or heavily undulating topography, with the site out of view for most of these sections of the road.

Given that both OPs are behind densely wooded areas or undulating landscape, G&G is highly unlikely to impact any of these receptors. It is also likely that road users will experience minimal impacts due to:

1. Hedgerows, treelines, and undulating landscape lead to the site not being visible for much of these sections of road.

2. G&G on road users is not as persistent as on observation points due to the non-static nature of road users when compared with buildings. Due the heavily undulating landscape, it is likely any G&G experienced by road users would be brief in nature rather than persistent.
3. G&G from PV modules is similar, if not weaker, in magnitude to reflections from windows, metallic surfaces and waterbodies. Brief G&G on road users is therefore not envisaged as an issue of concern.

Further, there are no nearby airfields or airports (the closest commercial airport is Aberdeen 40km northeast, with Deeside Gliding Club 27km northwest of site). RAF Lossiemouth is the closest airbase to the proposed development and is approximately 100km north of site⁷. Due to the distance from airfields and airports, no impacts are envisioned from the proposed development on air-based receptors.

Due to the lack of nearby ground and air-based receptors, along with existing mitigation measures in the form of tree rows and undulating landscapes, it is suggested that a G&G study is not required for the proposed solar PV developments due to a lack of potential impacts.

Specifically, the proposed solar PV elements of the HydroGlen proposed development would not contravene Policy P1 of ALDP (2023) or Policy 14 of NPF4.

4. Conclusion

We seek agreement with Aberdeenshire Council that a glint and glare assessment is not required to support the forthcoming planning application for c.150kW of solar PV panels at the Glensaugh site.

⁷ RAF (2023) *UK RAF Stations Map*. Available at <https://www.raf.mod.uk/our-organisation/uk-raf-stations-map/>