

Buglife would like to make the following additional representation concerning this application.

Buglife submitted relevant representations on 2nd October 2025 highlighting concerns that mitigation measures are not being implemented to safeguard populations of aquatic invertebrates from the effects of polarised light from solar panels. This was in the context of the site supporting watercourses and wet ditches and the proximity of tributaries of the River Trent.

Since submitting our relevant representation and reading the transcripts from Issue Specific Hearing 1 (on 27th November 2025) that discussed biodiversity and ecology we are not aware that any further consideration has been given to mitigating the impacts of polarised light on aquatic invertebrates and therefore our concerns on this issue remain unresolved.

Buglife welcome that the scheme is aiming to commit nearly a third of the order limits to provide mitigation and enhancement for biodiversity and that due to this commitment, the project aims to serve the function of a 'biodiversity park' alongside being a solar farm. However, efforts to gain the best biodiversity outcomes for the project would be undermined if mitigation is not implemented to protect aquatic invertebrates from the adverse impacts of polarised light.

Water bodies produce horizontal polarised light, which aquatic invertebrates rely upon to indicate the presence of suitable freshwater habitat for oviposition (egg-laying) and therefore this is a key environmental cue in the life cycle of many groups including aquatic beetles (Coleoptera), water bugs (Heteroptera), dragonflies (Odonata), mayflies (Ephemeroptera), caddisflies (Trichoptera), stoneflies (Plecoptera) and tabanid flies (Tabanidae). Solar panels are a source of strong horizontally polarised light when they reflect sunlight, polarising light to a much greater degree than natural water bodies. Studies have shown that a range of aquatic invertebrates are attracted away from natural habitats to oviposit on solar panels where the eggs ultimately fail, which has clear consequences for those species populations, but also has wider implications given the vital eco-system role of invertebrates.

As discussed in our relevant representations, the Environmental Statement for the scheme discounts impacts from polarised light stating that the evidence that supports impacts from polarised light is inconclusive or not be applicable in the UK. The evidence is not speculative or inconclusive with regard to invertebrates, with scientific research confirming over two decades ago that invertebrates are attracted to polarised light, and as explained above, it is clear that they have an evolutionary reason to do so. Buglife is also not aware of any reason this impact would not apply to the UK where a range of invertebrate groups are present that are known to be attracted to polarised light and where solar panels reflect polarised light.

Scientific research points to two main approaches to reducing the impact of polarised light from solar development; the addition of gridding patterns (Black TV & Robertson BA (2020)) and textured cover layers (Fritz et al, 2020). Though grid patterns are already part of most solar panel design, their function is associated with energy production and therefore there is no reason to believe they are effective in reducing polarised light impacts. Gridding patterns could be implemented at minimal cost to energy production or with the case of specific textured cover layers, could serve to increase photovoltaic efficiency.

Buglife would like to strongly recommend that to avoid adverse impacts to aquatic invertebrates, appropriate solar panel mitigation should and must be implemented if the scheme was to gain consent. For no mitigation to be offered at all, given the site's location, is extremely worrying and counter-productive to the measures put forward to enhance biodiversity.