Deadline 4 response from Diane Abbott **Sept 2024**

After reading the both the Applicants' Responses to the Written Representations, and the Examiner's Second written questions, I wish to make the following points.

For clarity, I have grouped these based on the sub heading numbering in the ExA Second Written Questions (as the Applicant's response document did not have numbered heading).

In general, I found that the Applicant's responses failed to properly address the points I made and largely reiterated their initial position.

Reviewing their responses to me and other stakeholders has generated further questions and comments which I include below.

7.5 Habitat Constraints Plan

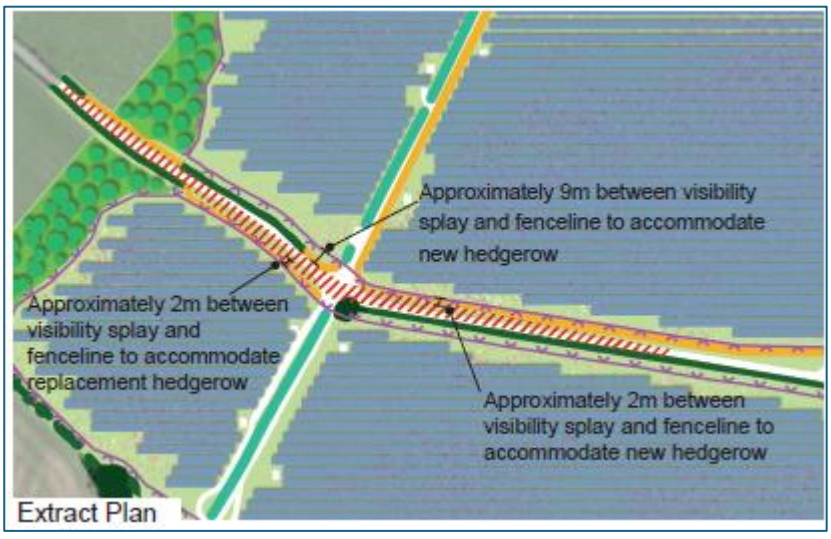
In my written representation, I identified the risk that the construction compound south of Coton Road would potentially impact the well-known landmark of the Twin Oak (T105).
The Applicant's response is that protection will be provided in accordance with relevant guidance. Based on BS5837 the tree protection zone will be 15 x stem diameter (approximately 15m diameter) and yet the proposed construction route to the compound will pass less than 5m from the tree.

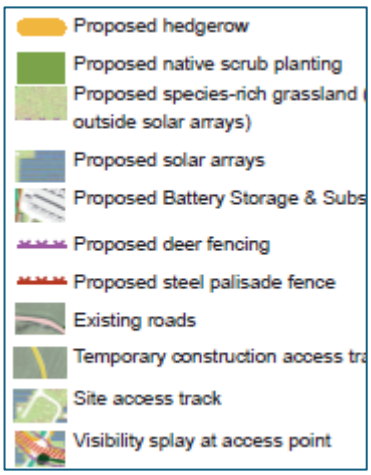
The Applicant plans a hedge protection zone of 5m for existing hedges. But for new hedges it specifies an offset from the security fencing by 2m. How does the Applicant propose to maintain these hedges if they are this close to the security fence as there is insufficient room for a tractor to drive in between the gap.

If wider margins are required for hedgerow maintenance, I once again request that the Applicant considers providing these as safe pedestrian routes to enhance active travel around the site.

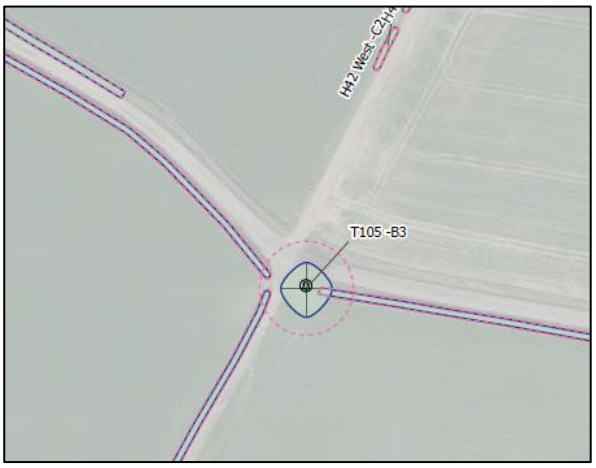
The Images below show how the Coton Road access development will impact the local landmark, Twin Oaks tree on this highly visible plot of land.

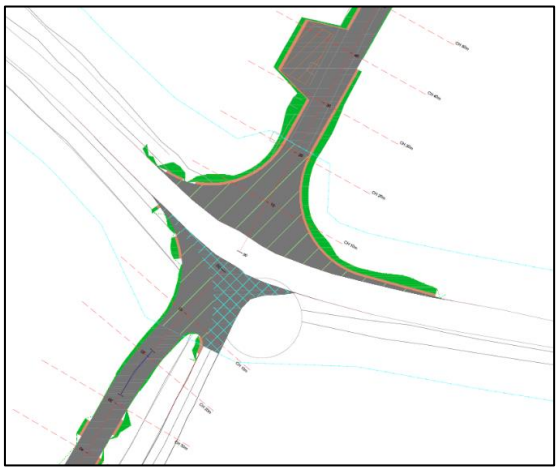
The image below is taken from Figure 1f: Illustrative Landscape Strategy Plan.
On-site access tracks are shown in white and the Twin Oaks Tree is the dark green circle in the centre. Reference is made to the 2m space for a new hedgerow.





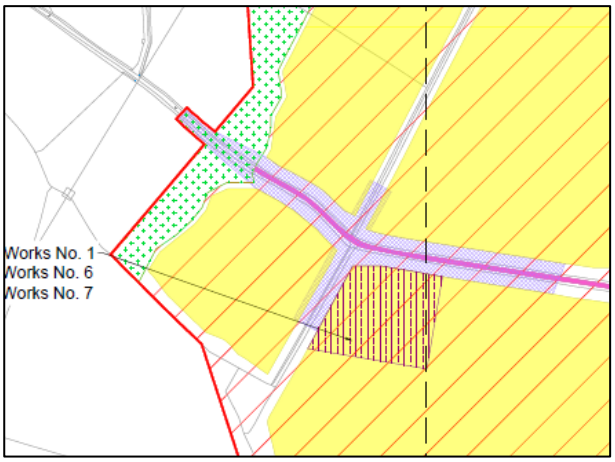
The following image is from page 17 of the 6.14 Arboricultural Survey Report showing the root protection zone for the Twin Oak tree that will be clearly impacted by the access routes. The other image (from Appendix 4.7) shows the road widening at Coton Road, with a tarmac entrance (blue cross hatching) on the root protection zone for the Twin Oak tree.





The following Works Plan (Appendix 1.3, Sheet 4) shows the proposed construction compound at the Twin Oak tree, once again in the root protection zone.

This is a highly visible area to all users of Coton Road, and will cause noise, light and air pollution to local residents. I see no reason why works in the fields south of Coton Road cannot be serviced by the primary construction compound in the centre of the site.



7.6 Skylark

Skylarks typically breed between April and August, but the Applicant only completed breeding bird surveys at Oakland's Farm between mid-April and early June thereby missing most of the breeding season. Is it therefore likely that skylark numbers have been underestimated?

For information, I have seen (or heard) the following Schedule 1 birds on or within 500m of the site in the last 3 years: Barn Owl, Brambling, Bullfinch, Cetti's Warbler, Fieldfare, Peregrine and Redwing.

I am also aware of the presence of the following, red-listed bird species, not all of which were mentioned in the bird surveys provided by the applicant: Spotted Flycatcher, Greenfinch, Redpoll, Starling, House Martin, Mistle Thrush, Yellowhammer, Linnet, Skylark and House Sparrow; and I have seen a pair of lapwing on the site.

7.7 Barn Owl

The Applicant's surveys did not find Barn Owl nesting on site. But I am aware of two breeding sites for Barn Owl within 600m and 700m of the site boundary. I have also seen barn owl on the site in recent weeks.

7.8 Great Crested Newt

GCNs are known to be able to travel distances of up to 1km when colonising new habitats, but when siting new ponds (to increase GCN habitat) the typical guidance is to ensure they are within 250m of each other for easy access. The Applicant's proposed limit of surveying only ponds within100m of the site therefore seems unduly restrictive.

9.1 Visualisations

Firstly I confirm the typos identified by the ExA in reference to the Applicant's visual representations. The two references should read 5.10c and 5.10g as noted (thanks for correcting these errors).

The majority of visualisations provided by the Applicant are recorded as being Type 4, ARV Level 3 (with some Level 2 for long distance shots).
ARV level 3 means that the proposed materials are modelled / rendered and that the images should be photorealistic. Type 4 specifically refers to visualisations that are correctly scaled.

The Landscape Institute Technical Guidance Note (06/19) includes this summary of visualisation types:

> 3.5.2 The four Visualisation Types proposed in this guidance comprise the following (from least to most sophisticated, in terms of equipment, processing and presentation):
>
> **Type 1** annotated viewpoint photographs;
> **Type 2** 3D wireline / model;
> **Type 3** photomontage / photowire;
> **Type 4** photomontage / photowire (survey / scale verifiable).

Section 4.11 of this document describes in more detail the requirements for Type 4 visualisations:

> **Type 4 Photomontage / Photowire (survey / scale verifiable):**
>
> Type 4 photomontages and / or photowires require the use of equipment and processes which provide quantifiable verification data, such that they may be checked for accuracy (as per industry-standard 'AVRs' or 'Verified Views'). Precise survey of features and viewpoint / camera locations may be included where warranted. Type 4 visualisations are generally reproduced with scale representation.
>
> Type 4 visualisations represent the highest level of accuracy and verifiability for use in the most demanding of situations. See also Appendix 11, Verified Photomontages.

None of the Type 4 visualisations provided by the Applicant have the scale recorded.

The Applicant claims that the errors in modelling are the result of perspective and the terrain model used. However, in many of the images they produced, the distant hedges (typically 1.5 to 2.5m tall) are not fully obscured by the 2.7m high solar panels that are immediately in front of them. See images 5.10o, 5.11g, 5.11k, 5.14c and 5.18c which exhibit this to varying degrees. This is not an effect caused by topography or perspective and careful attention to detail should have identified this error.

Nor do the images show the correct relationship between solar panel height, fence height and observer as I outlined in my original response (REP1-043). This is unlikely to be greatly affected by terrain or perspective in the comparisons I provided.

It should also be noted that visualisation 5.19c cannot be evaluated because the viewpoint is directly behind a hedge. Moving the camera a few metres to the left or right would have given a better view over the site.

If new representations are required to assist the landscape assessment; I would suggest some alternative viewpoints are modelled that better reflect the scenic vistas that are seen by residents and local road users, as outlined by SDDC at Deadline 1 (particularly points 3, 10 & 13). See EN010122-000448 - Suggested Site Inspection Locations.

It would also be useful if the material proposed for the opaque glint and glare screening along Coton Road could be confirmed, so that this can be effectively modelled / rendered in the visualisations.

9.3 The National Forest

One of the key goals of the National Forest is "for all residents in the National Forest to be within 15 minutes of accessible natural greenspace to improve their health and wellbeing." The mitigation planting that the Applicant proposes delivers a perfect opportunity to meet this goal, especially if the planting areas can be made accessible.

The Applicant claims that "Access to mitigation planting is not possible due to security reasons and public access can adversely affect the quality of the biodiversity that has been created." But this can be managed sensitively (as it has throughout the National Forest) to enhance both wildlife habitats and meet the wider goals of the National Forest in terms of public engagement and amenity.

9.7 Glint & Glare

Overall I am not satisfied with the responses from the Applicant regarding Glint and Glare, and continue to have doubts regarding the methodology and criteria that have been used throughout the assessment.

The Applicant has however provided more details with regards to possible reflections at my property and has confirmed that they will not be possible, despite my earlier concerns.

Assessment Thresholds

There is no British Standard defining the nuisance and or harm to residents and road users from Glint and Glare. British Standards are typically developed by technical committees comprising

representatives of industry bodies, research and testing organisations, local and central government, consumers and standards users.

In the absence of a British Standard, Pager Power have defined their own thresholds which are roughly based on a doubling of the German guidance and they have promoted this widely in the UK.

However, there is no evidence that the thresholds designed by Pager Power have ever come anywhere close to the level of scrutiny required by a British Standard. As a result, I feel that the German legislation offers a more balanced understanding of the impact of Glint and Glare on the local population and is therefore the best available alternative until a British Standard is defined.

The Applicant's response to Written Representations, on Pages 40 and 41 states that:

> "Pager Power is aware of the German guidance but is unaware of it being applied in the UK, with many glint and glare assessment providers typically using a variation on Pager Power's guidance.
> Pager Power does not consider the German guidance an industry standard in the UK and has not seen the German guidance being used by other consultants when providing reviews of work on behalf of stakeholders. The approach taken to assessing potential impacts of glint and glare within Chapter 14 (Glint and Glare) of the ES [APP-167] is therefore considered appropriate."

In my previous submission, I referenced the Longfield's Solar project Glint and Glare assessment that was completed by NEO environmental which uses same thresholds as the German guidance. Pager Power are aware of this, as they referenced this report in their response on Page 43.

In December 2022 Pager Power completed an independent assessment of this very same report which included this paragraph:

> "Pager Power has been commissioned to review an external glint and glare assessment, undertaken by Neo Environmental. The author considers Pager Power's own guidance document to contain the most appropriate assessment methodology for solar developments as it pertains to glint and glare. However, it is acknowledged that this guidance is not national policy and nor should it be considered the only acceptable approach to characterisation of the issue."
> [EN010118/EN010118-001059-DL6]

Longfield's Solar NSIP was approved in June 2023. The claim that Pager Power are not aware of the thresholds as defined by the German guidance being used in the UK is a fallacy.

Pager Power's reliance on reiterating that their criteria and methodology have been used on other projects does not necessarily give them credibility. This is a technical area, and it is possible that previous project stakeholders simply have not had the time, experience or expertise to be able to investigate and refute their findings.

When asked whether any completed projects exceed the 60 minute duration threshold requiring mitigation, they answered:

"In its work on other projects Pager Power has assessed dwellings where the 60-minute threshold is breached. In those other projects that has typically been the case when those dwellings are surrounded on all sides by solar panels and particularly for tracking panel systems."

If the Pager Power thresholds are so high that mitigation is not needed unless a dwelling is entirely surrounded by tracked solar panels, then surely completing a Glint and Glare analysis for dwellings becomes almost unnecessary. Or have Pager Power created criteria that is so fundamentally skewed towards their customers' requirements that it has become meaningless?

Model findings

Pager Power promote themselves widely in the UK as experts in Glint and Glare analysis, with multiple reports completed and approved. I asked whether Pager Power have ever checked their Glint and Glare forecast with the actual effects from existing solar developments, and it appears from their response that they have never proactively investigated this.

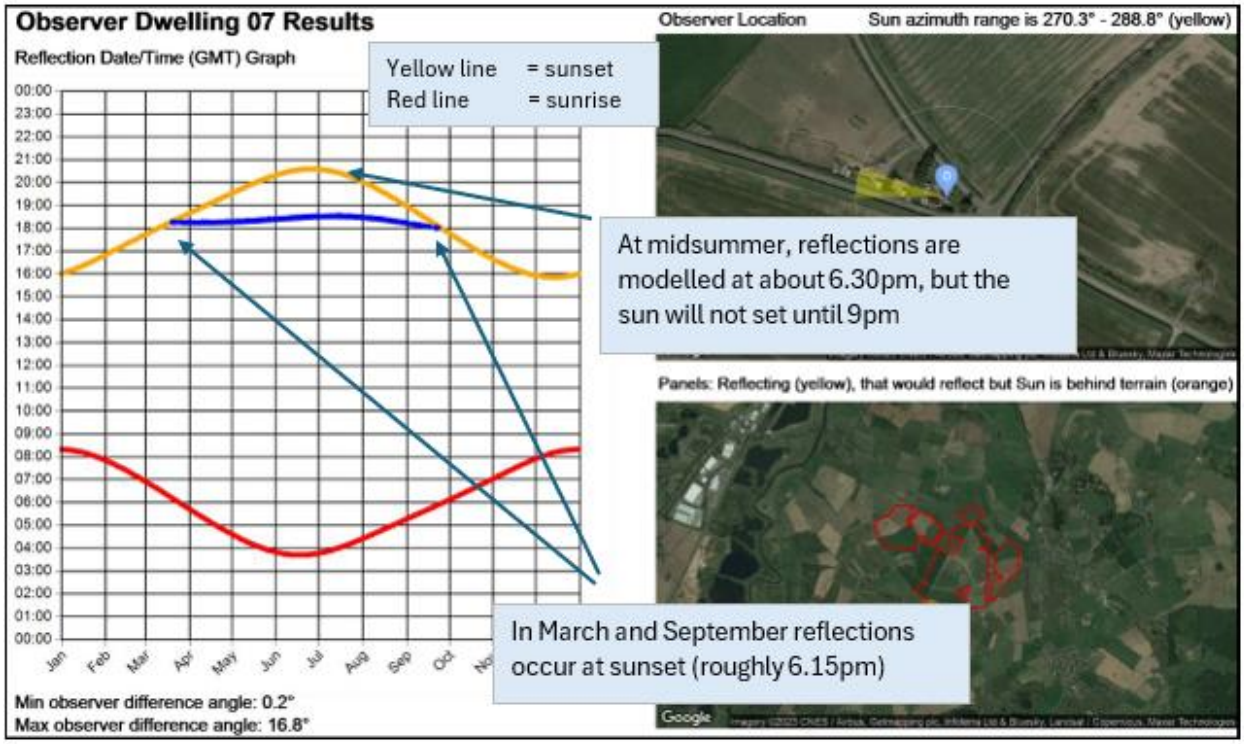
Without empirical evidence of the validity of their models in real world situations, it is hard to evaluate whether their predictions are accurate.

I do not fully understand the explanation from Pager Power as to why glint and glare effects do not occur at different times of the day for the solstice and equinoxes. They state:

> "Effects are mostly geometrically possible towards ground-based receptors when the sun is low in the sky beyond the reflecting panels. "

If the maximum chance of reflection occurs "when the sun is low in the sky", at sunrise and sunset, then presumably the timing should change throughout the year. I note that the Applicant states that 30° tilted panels show less seasonality however, I would like to understand how this works in practice.

See below for an extract of a typical graph provided in the Glint and Glare assessment (I have added the blue text boxes as commentary).



I would welcome further explanation as to why predicted reflections occur at roughly the same time of day, and for the same duration each day, even though sunrise and sunset varies throughout the year.

I would also appreciate an understanding of what safeguards are in place in the event that the site is subsequently found to produce unwanted reflections towards road users or residents that were not predicted.

10 Noise and Vibration

Definition of LOAEL & SOAEL

I remain convinced that the noise targets for the site should be based on the actual measured baselines from this tranquil area and should not be derived (either wholly or partially) from inappropriate standards such as BS8233.

The British Standard's website includes the following information:

> **BS8233:2014 "Guidance on sound insulation and noise reduction for buildings."**
> BS 8233 provides guidance for the control of noise in and around buildings.
> BS 8233 is applicable to the design of new buildings, or refurbished buildings undergoing a change of use, but does not provide guidance on assessing the effects of changes in the external noise levels to occupants of an existing building.

Similarly, the WHO guidelines are designed to minimise health risks from noise levels, and should therefore be considered to be the very highest threshold allowable from a new development. As such they are therefore not appropriate for use in quiet rural areas.

Although the Applicant's state that BS4142 indicates that absolute sound levels may be more appropriate as a measure, this is in the context of maintaining a tranquil soundscape, rather than referring to absolute maximum thresholds such as WHO guidance. This is clarified by the IEMA Guidelines for Environmental Noise Impact Assessment which notes:
"The Influence of Absolute Noise Level: Relying solely on the change in noise level is not appropriate because it risks ignoring the context of the noise change…For an area which is valued because of the soundscape, a relatively small impact could be considered as having a potentially substantive effect if the quality of the noise environment were to be eroded. This particularly relates to tranquil, quiet or calm areas."

I therefore suggest that the LOAEL and SOAEL are derived from the mean of the measured baseline noise levels provided by the Applicant – these are 35dB (day) and 28dB (night) which would create LOAEL max figures of 40dB (day) and 33dB (night) and SOAEL max figures of 45dB (day) and 38dB (night). The high magnitude threshold of 10dB over baseline will therefore be >45dB (day) and >38dB (night).

This is summarised in the following table (my proposed figures shown in green):

			Applicant's noise thresholds.		Defined by measured baseline		Response / Action
Magnitude of effect / Threshold			Day	Night	Day	Night	
High	SOAEL	>10dB above background	>50dB	>50dB	>45dB	>38dB	Unacceptable adverse effect / Prevent
Medium	SOAEL	> 5dB above background	45-50dB	45-50dB	40-45dB	33-38dB	Significant Adverse Effect / Avoid
Low	LOAEL	<5 dB above background	40-45dB	40-45dB	35-40dB	28-33dB	Present and Obtrusive / Mitigate and reduce to a minimum
Minimal		Less than or equal to background	<40db	<40dB	35dB	28dB	Present Not Intrusive / No action
		Measured baseline noise level (mean)			35dB	28dB	

It should be noted that a 10dB increase equates to a subjective doubling of perceived noise level. Therefore, the original suggested thresholds would have nighttime noise levels more than doubling before whilst remaining within the LOAEL threshold and there would be a subjective quadrupling of perceived noise within the SOAEL category.

Night-time noise predictions.

In Section A11.3.4 (Appendix 11.3 Operational Noise Source Data) it is stated that the string inverter fans will run when the ambient temperature is above 20°C and solar output is above 70kW. The Applicants claim (without presenting evidence) that this is unlikely to occur before 7am and therefore the night-time noise predictions "assume" that the inverters only emit 62dB (rather than 84dB with fans running).

Due to climate change, we are now seeing more tropical nighttime temperatures (exceeding 20°C) in the UK, and this trend will continue. As the sun rises as early as 5am in the summer, I believe it is quite likely that during warmer periods the cooling fans could be running well before 7am. This therefore needs to be factored into the night-time noise predictions. Could the Applicants provide more evidence regarding the likelihood of the inverter fans running in the early morning or late evening and / or resubmit noise predictions based on fan noise at nighttime.

NB: Mallard Pass section 10.5.7 assumed the worst case; that fans would run at maximum power during all daylight hours:

> "This plant will mainly operate during the daytime, in which background noise levels tended to be more elevated; however, during the summer months, daylight periods may extend to early morning periods (05:00 to 07:00) and evening periods (18:00 to 23:00). Therefore, as a worst case, the plant noise from the Proposed Development has been considered against these quieter periods. Also, the plant has been assumed to operate at full duty (with its maximum level of noise emission) during this period."

Operational Noise from String Inverters

With reference to the existing noise levels at Oakland's Farm, the Applicant states that they are controlled by the fans on the cow sheds.

"The background noise levels during both survey visits at this location were observed to be controlled by ventilation fans on Oaklands Farm."

Whilst the sound power levels of these fans are not known, the recorded noise levels from these four fans ranged between 63 and 71dB LA90 (at 5m) which elevated background noise at Twin Oaks House to 41dB (day) and 36dB (night).

The sound power levels of the string inverters with the fans running is shown in the documentation to be 84dBA. It might therefore be reasonable to assume that the inverter fans will become the dominant background noise surrounding the site (both day and night). This needs to be considered in line with the potentially revised LOAEL and SOAEL.

The Applicants state that it is necessary to have string inverters at both of the ends of long rows of panels, meaning that some inverters are sited near to some local receptors. "Where practicable, string inverters have been located on the ends of rows within the development or away from the nearest receptors. Where there are longer rows, it is likely to be necessary to have inverters located at both ends."

Would it not be just as effective to have a central access route between the panels, so that the inverters can be sited in the centre of these large fields?

Other comments.

I am not satisfied with the response regarding low frequency noises as these are known to travel for considerable distances (several km) with minimal attenuation. The Applicant fails to consider this fact when they state: "The most likely source of low frequency sound would be from the substation plant which has been located over 500m from residential properties and is not assessed to result in a significant noise impact."

Construction and delivery hours – in the latest documentation the Applicant is using two different references for working hours. Please could this be clarified.

11 Traffic and Transport

In relation to the NMU monitoring as requested by DCC. As a local resident, I can confirm that the area is heavily used by recreational cyclists and that a survey at any time of year (but especially during summer) would highlight this. It is not sufficient to assess only local facilities and attractions as the Applicant has done, as the majority of users are attracted by the scenic, rural road network itself, and are not travelling to any particular destination. This data is key in understanding how to provide mitigations to protect NMU during the construction and operational phases of this project.

The Applicant states in Chapter 10 (Transport and Access) in relation to Non-Motorised Amenity:

> 10.225 Given there are no existing pedestrian footway or cycle routes along Coalpit Lane and Coton Road, the magnitude of impact on these will be Negligible.

This seems counter intuitive, surely the increase of traffic on any roads around the site will cause a negative impact on amenity, even more-so if there are no specific footpaths or cycle routes.

Overall I believe the Applicant has paid little regard to pedestrians, cyclists and other non-motorised road users and has failed to provide adequate mitigation to protect them from the various risks and also amenity losses caused by this development.

In its response to SCC the Applicant proposes limiting HGV journeys between certain times to protect school children in Burton (8.30 – 9.30am and 3 – 4pm). However, these times do not match the school opening times in the area which start as early as 8am until between 2.50pm and 5pm. Restricting HGV movements further to keep school children safe will impact the frequency of vehicles needing to cross the narrow bridge on Rosliston Road and may lead to delays.

The cumulative impact of the increased HGV and other vehicle movements from the many proposed constructions projects (housing, energy storage, solar developments, bridge building etc) on the rural lanes and urban road network also needs to be considered. Several new developments have recently been proposed, which will all impact the local transport network. In combination, these cumulative effects are likely to have a negative safety impact on all road users, especially NMU using active travel.

EN-1 section 5.14.18 states: "A new energy NSIP may give rise to substantial impacts on the surrounding transport infrastructure and the Secretary of State should therefore ensure that the applicant has sought to mitigate these impacts, including during the construction phase of the development and by enhancing active, public and shared transport provision and accessibility."

It is not clear how the Applicant has met this requirement, especially in relation to enhancing active travel around the development.

11 Water quality, resources, drainage and flooding.

I am not satisfied with the Applicant's response with respect to surface water flooding of local roads and subsequent lack of mitigation. They have noted the flooding that occasionally occurs on Coton Road near the Twin Oaks House drive entrance, but have not considered the long term flooding that occurs on the same road near Coppershill Spinney for much of the year.

The statement in Chapter 8 that "Flood depths… are expected not to exceed 300 mm however, and they should remain passable with care" is completely contrary to road safety advice. The risk of increased run-off through climate change and possible lower infiltration rates due to the solar infrastructure and on-site access network requires planned mitigation such as SUDs strategically sited to protect the local road network from surface water flooding.

In Section 13.148 (ES Climate Change) the Applicant states that climate change may account for increases in rainfall of between 15% and 35%. Yet the BESS water storage facility is only sized to store "1% Annual Exceedance Probability + 25% storm event". There is no comment on the additional storage also required to contain fire suppression water, and how it might be managed if a fire occurs just after a storm event, when the storage tanks are still full. Nor is the total storage capacity of the tanks / bund referenced (as far as I can tell).

In contrast, the Caldwell Road BESS (recent SDDC planning application) includes a water storage facility based on the 1 in 100 year rainfall event, plus 40% for climate change, plus an additional 10% for fire-water allowance. Could the Applicant's justify why they are not taking a more conservative approach such as this? Can the proposed water storage volume be confirmed by the Applicant so this can be compared with the expected volume of fire suppression water that may be necessitated in case of emergency?

On a related note, there is often low water pressure at the properties near Oakland's farm (such that upstairs taps sometimes don't work). Is there any risk that this low pressure will have a bearing on the effectiveness of potential fire suppression systems and/or meeting water demand during emergency response?

EN-3 (2.10.87 and 2.10.88) state that culverting watercourses should be avoided, but where necessary should only be temporary for the construction period. Can the Applicant's confirm that any culverts will be removed once construction is complete?