Appeal ref APP/P3040/W/23/3329235

LPA ref 22/00319/FUL

Land West of Wood Lane and Stocking Lane, Kingston Estate , Gotham

Statement

by Carly Tinkler CMLI FRSA MIALE regarding

Landscape and Visual Effects

1) My name is Carly Tinkler. I am here today to express my concerns about the landscape and visual effects that would arise from the proposed development.

2) I am a Chartered Member of the Landscape Institute (CMLI), a Fellow of the Royal Society of Arts (FRSA), and a Member of the International Association for Landscape Ecology (MIALE). I specialise in landscape and environmental assessment and planning, and have done so for over 40 years.

3) I was a contributor to the first edition of the Landscape Institute's *Guidelines for Landscape and Visual Impact Assessment*, and a reviewer of the current third edition, 'GLVIA3'. I advise Natural England and the LI on matters such as updating current landscape and visual assessment guidelines, and producing technical guidance and information notes, for example TGN 02/21 *Assessing landscape value outside national designations*, which is relevant to this inquiry.

4) For the last three years, I have been involved with many renewable energy proposals in the UK – wind and solar – some of which are Nationally Significant Infrastructure Projects (NSIPs) currently undergoing examination.

5) I have reviewed the Appellant's Landscape and Visual Appraisal (LVA), and found it to be flawed. As a result, levels of adverse landscape and visual effects have been underestimated.

6) Unfortunately, the errors in the LVA are typical of many that I review. I feel very strongly that because flawed information is likely to lead to flawed decisions, it is important for these errors to be more widely understood.

7) I am familiar with the Appeal scheme because in March this year, I was approached by both the parish councils and Rushcliffe Borough Council to represent them at this Inquiry. To establish whether I could support the parties' cases and assist / advise, I needed to gain a preliminary understanding of the key issues likely to be involved, so I carried out a high-level review of the background to the Application and the associated material. In the light of this, I concluded that I was prepared to undertake the commission.

8) In the end, I was not appointed by either party. However, when I decided to speak at the Inquiry as an independent interested person, I carried out a more in-depth review of the LVA, and a technical assessment of landscape and visual effects, which involved visiting the site and surrounding area, and speaking to people from the local communities.

9) Rushcliffe BC refused planning permission for this proposal due in part to adverse '*visual impact*', and adverse '*impact on amenity of users of the well-connected nearby public rights of way*'.

10) I **agree** that the proposed development would give rise to adverse effects on visual, recreational and social amenity, and in my opinion, the levels of the adverse effects on many of these receptors would be unacceptably high.

11) However, as GLVIA3 explains, effects on views are only half the story. Of course, changes to the visual baseline situation result from changes to the baseline landscape situation. Adverse effects on character are therefore highly likely to give rise to adverse effects on views, although that is not always the case – adverse effects on character will occur even if there is no one there to see or experience them.

12) In this case, my assessment concluded that levels of effects on the character of the Appeal site and its contextual landscapes would also be unacceptably high.

13) The matters I raise are broadly set out in the same order as the Appellant's LVA – which follows the GLVIA3 process – to make it easier to follow.

Proposed development: cause and nature of effects

14) The LVA did not factor in the cause and nature of many of the effects likely to arise during project construction, operation, and decommissioning. In particular, the LVA underestimated the scale, extent, and magnitude of most landscape and visual effects.

15) For example, the LVA says (para. 2.12) that '*the proposed footprint constitutes a relatively small percentage of the total area of the Application Site*', with the '*ground disturbance area*' estimated to be 5.33% of the 80ha site.

16) However, firstly, this figure only relates to areas taken up by infrastructure that sits on the ground, and / or which penetrates the ground, such as the legs of the solar panels structures.

17) Secondly, it implies that the '*ground disturbance*' would be restricted to this small area, whereas in fact, the construction of solar developments such as this involves the majority of the site being disturbed, even to create new wildlife habitats.

18) Thirdly, it implies that there would be large, open areas across the site, whereas the scheme drawings clearly show solar panels covering the majority of the site. From some angles, they would appear as an endless sea of glass; from others, they would obstruct and dominate views.

19) In fact, this matter was dealt with by Fordham J. in what has become known as 'the Galloway Judgement'[1]. He said, '*In one sense, if you add up the widths of all the rows of panels, half of this one-acre field is "occupied" by solar panels. In another sense, the whole one-acre field is "occupied" by solar panels. The whole field is what the solar farm "requires". If you looked at this field, in the countryside, it would look like a field full of solar panels. On a straightforward reading, it seems that Draft EN-3 §2.47.2 (§15 above) was speaking of this as an acre of solar panels, because it was describing the acreage which the solar farm "requires" for the solar panels*".

20) Finally, in terms of scale, it is not easy to fully comprehend the magnitude of size and scale of the proposal, especially relative to its wider context and how much land it would cover. This is best established on site visits, but by way of comparison, I calculated that the site could accommodate a settlement one-and-a-half times the size of nearby Gotham, which has a population of around 1,500.

Study area boundary

21) I **agree** with the LVA's 5km study area boundary (para. 3.3), in that significant adverse effects on character and views are unlikely to occur beyond that distance.

[1] The King (on the application of Ian Galloway) Claimant and Durham County Council Defendant and Lightsource SPV 215 Limited Interested Party [2024] EWHC 367 (Admin) Case Nos: AC-2023-LDS-000229 and AC-2023-LDS-000290.

Zone of Theoretical Visibility

22) I also **agree** with the use of the bare-earth scenario for the establishment of the Zone of Theoretical Visibility (ZTV) (para. 3.4).

23) However, I **do not agree** with the target heights used. I will explain this when covering visual effects.

Duration and Reversibility of Effects

24) The LVA was based on the assumption that the construction phase would last six months, and that the proposed development would be '*largely*' reversible (para. 3.16), and factored this in to judgements about levels of landscape and visual effects.

25) Firstly, this confirms that some of the scheme elements (for example the proposed DNO substation complex, associated cabling and access), and some of the effects arising from the scheme, would be truly permanent.

26) Secondly, in my experience, six months for the construction of a development of this scale is highly optimistic. In fact, not that many solar developments have been built in the UK, so the problems are not well understood. At a 30MW solar development in Worcestershire[2], the stated construction period was three months. Construction began in August 2022. Today (mid-May 2024), the works are still ongoing, 20 months later, almost **seven** times longer than assumed. Thus, levels of construction and decommissioning effects could be far higher than predicted.

LVA method and criteria

27) The LVA sets out the method and criteria applied when drawing conclusions about levels of landscape and visual sensitivity, and magnitudes of effect (paras. 3.28 to 3.40). However, the criteria are confused, and insufficient.

28) Firstly, in LVIA, levels of receptor sensitivity are arrived at by combining levels of landscape and visual value with levels of landscape and visual susceptibility to the type of change proposed. However, the LVA does not provide scales of levels of landscape value or susceptibility, so it is not possible to know on what basis judgements about levels of landscape sensitivity were made.

29) This is important, because there is a big difference between effects on a landscape of High value and Low susceptibility, and one of Moderate value and Moderate susceptibility.

[2] Wychavon DC 20/02071/FUL

30) Secondly, LVA Table 1-3 sets out a list of *Factors Affecting Landscape Value*. The list is woefully inadequate for this exercise, and is based on information in GLVIA3 Box 5.1 which has been greatly supplemented since, especially by the previously mentioned TGN 02/21 (*Assessing landscape value outside national designations*).

31) This includes recognising the value of 'landscape functions'. 'Function' was not mentioned in Box 5.1 (which itself is based on 2002 landscape character assessment guidance), nor was it considered in the Appellant's LVA, but today, 'landscape functions' are much better understood, and known to be critically important, hence the emphasis in the TGN.

32) For some reason, the LVA does provide a table (1-5) setting out levels of visual receptor susceptibility to change (on a three-point scale from High to Low), but as with character, there is not one for visual value, nor are overall levels of visual receptor sensitivity set out. Nor is it clear whether levels of landscape susceptibility, and landscape and visual value, are on a three- or five-point scale.

33) Whilst a five-point scale allows more granular analysis, I **agree** with the LVA's visual susceptibility criteria.

34) LVA Tables 1-4 and 1-6 set out the criteria applied for judgements about magnitudes of landscape and visual effects respectively. These tables use a five-point scale.

35) Note that combining different point scales can skew the results.

Landscape and visual baseline

36) Regarding the existing landscape and visual baseline situation, firstly, I **agree** with the LVA's summary description of the site and its contextual landscapes (para. 5.4), which says that '*In contrast to the relatively well-settled and busy landscapes in the wider study area, the Site and its immediate surroundings exhibit a largely rural and undeveloped character, with a sense of peace and seclusion*'.

37) However, insufficient baseline study and analysis in the LVA process has resulted in several important landscape, visual, and recreational receptors not having been identified.

38) This means that a) they were not factored in to judgements about levels of landscape and visual value and susceptibility to change, and b) effects upon them were not assessed.

39) For example, there is no reference to national character areas (NCAs) in the LVA. However, NCA profiles are important '*… guidance documents which can help communities to inform their*

decision-making about the places that they live in and care for', and '*help to inform choices about how land is managed and can change*'. LVIA should establish whether any of the NCA's key characteristics are present in the area, and factor this in to judgements about landscape and visual value.

40) Also, whilst the LVA refers to the published LCAs for the local areas, there is minimal description or analysis of the site and its contextual landscapes, suggesting that little fieldwork was undertaken beyond the site and its immediate environs. However, as GLVIA3 makes clear (see for example paras. 5.15 to 18), LVIA should not just rely on published LCAs, especially as most are high-level, and cover large geographical areas within which there may be distinctive, important localised variations. It is necessary to dig deeper, especially for the more in-depth assessments required to assess the effects of large-scale industrial developments like this.

41) In particular, and despite it being an integral part of the LVIA process (see for example GLVIA3 paras. 5.7 to 11, and 5.20 to 24), the LVA did not consider cultural heritage, in terms of the landscape history and historic landscape character of the site and surrounding area. For example, there is no mention of the semi-natural ancient woodland (ASNW), Gotham Wood, which lies adjacent to the site's western boundary: this is a high value landscape feature. The LVA mentions the Registered Park and Garden (RPG), Kingston Park Pleasure Grounds, which lies c. 1.6km to the west / south west, but despite there being intervisibility between the RPG and the site, effects upon the setting of this high-value feature were not assessed. Using LIDAR, my own assessment found areas of ridge-and-furrow in the vicinity of the site, and potential ridge-and-furrow on the site.

42) Nor did the LVA consider natural heritage, or biodiversity, to which the same applies (see for example GLVIA3 Box 5.1). The Appellant's Environmental (ie Ecological) Assessment confirms that within the site's contextual landscapes, there are several SSSIs and Local Nature Reserves, and numerous Local Wildlife Sites, many with connectivity to the site. In addition, many woodlands in the local area, including those adjacent to the site, are Deciduous Woodland Priority Habitat Inventory sites.

43) Some of the excluded landscape receptors are of high value, and make important contributions to landscape character, visual, and recreational amenity.

44) Also, the LVA did not recognise the very high value of the area's recreational resource, which is well-used not only by the local communities, but also visitors, partly due to the high levels of aesthetic and perceptual qualities described above.

45) Most importantly, the LVA did not consider the effects of the proposed development on the health, well-being, and quality of life of the people who use and value this resource. All are integral to 'landscape', as well as to assessments of landscape and visual effects.

46) GLVIA3 Figure 1 shows examples of LVIA 'discussion areas', which under the heading '*human beings*', includes '*social impacts*'. Furthermore, the importance of the above issues is made abundantly clear in the LI's policy on public health, and associated position statement *Public Health and Landscape: creating healthy places*[3]. Along with landscape-related national planning policy, the latter is derived from the European Landscape Convention (ELC), which states that *'the landscape is an important part of the quality of life for people everywhere*', and '*a key element of individual and social well-being*.'

Receptor sensitivity

Landscape receptor sensitivity

47) The LVA sets out its judgements about levels of landscape sensitivity in Table 1-7.

48) Firstly, as explained previously, it is not clear whether a three- or five-point scale has been used for this exercise, which of course makes a difference to the results.

49) Assuming a three-point scale was used, ranging from High to Low, I would **agree** with the levels of sensitivity set for the site and its contextual landscapes.

50) However, if a five-point scale was used, it is possible that I would not agree, due to the difference this would make to the results.

51) Importantly, if a three-point scale was used, it does not allow enough differentiation between landscapes. For example, if the High level is reserved for nationally- / regionally-designated landscapes, and Low for very poor-quality landscapes, then Medium must cover the majority of the landscapes in the country.

52) I note that the LVA excluded the Lowland Village Farmlands LCA from the assessment because it was '*outside of* [the] *ZTV*' (around 2km from the site); however, this is based on the assumption that adverse effects on character do not occur if the development is not visible, which as GLVIA3 makes abundantly clear, is simply not the case.

[3] https://www.landscapeinstitute.org/policy/health/

Recreational and visual receptor sensitivity

53) On the assumption that a three-point scale has been used, I **agree** with the levels of recreational and visual receptor sensitivity set out in LVA Tables 1-10 and 1-11 – all are **High**.

Mitigation and enhancement

54) In Section 6, the LVA concludes that without robust screen planting in place, recreational and visual receptors on, or in close proximity to, the site, would experience Major Negative effects for the duration of the operation. Although my assessment concluded that the levels of some effects would be higher than this, I **agree** that robust screen planting is necessary to try to help reduce levels of visual effects. However, I **do not agree** that the proposed screen planting would be as effective as assumed, as I will explain.

55) Also, some of the proposed mitigating measures would in themselves give rise to adverse landscape and visual effects. For example, new field boundaries would be created on arbitrary lines, a) along parts of the application site boundary, crossing through open fields; and b) where mitigation planting is proposed to reduce levels of effects on the various residential properties adjacent to / surrounded by the site. This would disrupt historic field patterns, and also sever properties from their rural, agricultural settings.

Landscape and Visual Effects

56) The LVA sets out its conclusions about levels of landscape and visual effects in a series of tables (after para. 7.8), and summarises the findings in Table 1-12.

Effects on landscape character

57) Table 1-12 states that in terms of the Gotham and West Leake LCU, within which the site lies, '*at Year 0, the magnitude of landscape effect from most viewpoints is predicted to be small-medium at year 0 although in talking* [sic] *into account the effects of landscape mitigation measures, this would reduce to small at year 10. Considering these factors, the overall magnitude of effect at year 10 is judged to be small to very small*'. The overall level of effect on landscape character at Year 10 is judged to be **Moderate – Minor Negative**.

58) There are several problems with this statement.

i) In LVIA, one does not assess effects on character on the basis of what can be seen, and certainly not from specific viewpoints. Effects on character occur regardless of who can see them and from where.

ii) Although not made clear, I assume this level is meant to apply to both the site, and its contextual landscapes. However, effects on the character of the site would be direct, and on the contextual landscapes, indirect. Generally, levels of landscape effects decrease with distance, subject to association and interinfluence.

iii) I **do not agree** that in terms of the character of the site, the level of magnitude of effect at Year 0 would be Small – Medium Adverse. Using the LVA's criteria in Table 1-4, my assessment concluded that the level would be Very Large (ie a '*Highly obvious change, affecting the majority of the key characteristics and defining the experience of the landscape*').

iv) The proposed development would directly adversely affect the character of the site, changing it from a quintessentially rural, tranquil landscape, with what the LVA describes as '*a sense of peace and seclusion*' – and which also displays considerable time-depth, and biodiversity – into an industrialised, modern 'techscape'. This would be entirely at odds with, and alien within, the receiving environment.

v) Furthermore, this change in character could not in any way be mitigated.

vi) The LVA erroneously assumes that levels of effects on character can be reduced by screening views. They cannot. Thus, whilst the LVA predicts that at Year 10, the magnitude of effect on the character of the site and its contextual landscapes would have reduced to Moderate – Minor, in fact, they would remain at the same level for the duration of the operation.

vii) My assessment concluded that the combination of the Medium to High sensitivity landscape receptor, and the Very Large magnitude of effect, would result in an overall level of effect on the character of the site of **between Substantial and Major Negative**.

<u>Effects on views, visual and recreational / social amenity</u>

59) The LVA assesses effects on people using the local network of lanes and public rights of way on the basis of what they would see from each of the assessed viewpoints. However, it does not factor in the experiences of people travelling along the routes in terms of the adverse effects of noise, activity, disturbance, odour, dust, glint and glare, and so on.

60) Nor does it factor in sequential effects. This is a significant omission, especially as it is recommended in GLVIA3 (for example the 4th bullet point of para. 6.27). People would not see and experience the development from one location only: they would see and experience it at multiple locations along the same journey, along view routes between the identified and other

viewpoints. This is exacerbated by the site being linear, divided into three separate areas, and being crossed by public rights of way.

61) The LVA predicts that the highest level of visual and recreational effect that would occur at Year 0 would be **Major Negative**. My assessment concluded that the highest level would be **between Substantial and Major Negative**.

62) I do not agree that by Year 10, for all receptors, the level would have reduced to **Moderate Negative**. My assessment concluded that effects on certain visual and recreational receptors would remain **between Substantial and Major Negative** for the duration of the operation.

63) The reasons include the following.

i) The LVA sets out the various assumptions which were made when judging levels of effects (para. 7.2).

ii) Firstly, it states that the assessment was based on 2.8m high solar panels. In fact, some of the scheme elements would be much taller than this, for example the inverter and other units, and the proposed DNO substation complex, which includes floodlighting columns, and a 15m tall tower.

iii) Therefore, a) adverse effects on views would extend much further, and would affect more visual receptors than assumed; and b) due to the prominence / dominance of the taller elements, levels of adverse visual effects on and around the site in particular would be higher than assumed.

iv) Secondly, the LVA assumed that within five years, '*the growth of hedgerow and woodland planting should be sufficient to provide effective screening for most parts of any nearby infrastructure*'. I **disagree** that the proposed screen planting would have become an effective screen within five years. From certain viewpoints, the panels might be screened at Year 10, but that does not account for hedgerow management and cutting back regularly to promote healthy growth. Also, it is unlikely that the 15m tall tower would be screened.

v) Also, it is assumed that the existing woodlands and other mature vegetation which currently screens or filters many views would remain *in situ*, and grow on, and that the proposed screen planting would establish successfully. However, a) some of the woodlands including those adjacent to the site appear to be mature commercial plantations, which may be due for felling soon; and b) these days, it is not considered safe to rely on vegetation to screen views, due to pests, diseases, pathogens, climate change, and other factors.

vi) Thirdly, the LVA assumes that if the proposed screen planting did become effective, levels of adverse effects would reduce accordingly. However, this does not take account of the fact that in many cases, the screen planting would result in the total loss of a fine, open view, which, as opposed to reducing levels, would increase them. According to the LVA's criteria (Table 1-6), the total loss of such a view would give rise to a Very Large Adverse magnitude of visual effect.

vii) Fourthly, the LVA does not factor in that due to the high number of bridleways in the area, including on the site, many of the visual receptors are equestrians, therefore their eye-level is considerably higher than that of other users, so they may see over hedges that were intended to screen.

64) Other factors which result in levels of magnitudes of operational visual and recreational effects being higher than predicted in the LVA include:

i) Not having factored in the cause and nature of many of the operational effects, including noise; and glint and glare, which I will briefly explain below.

ii) Erroneously double-counting screen planting, which is proposed to reduce levels of adverse visual effects, as landscape character enhancement (eg para. 8.5). As GLVIA3 explains (para. 3.39), in LVIA, enhancement is '*often referred to incorrectly as an outcome of proposed mitigation measures, for example where planting is proposed to mitigate landscape and / or visual effects*'.

iii) Some of the proposed landscape and visual mitigation measures would in themselves give rise to adverse landscape and visual effects; for example, some of the planting would be highly uncharacteristic in these landscapes, disrupting traditional landscape patterns.

iv) The visual and experiential effects, and potential dangers, of travelling along the 230m-long fenced corridor that would be created where bridleway 3 crosses the site, were not considered. During construction, horses may be reluctant to travel down the corridor due to the high levels of activity and loud noises (predominantly from piling, which is extremely loud – I have recordings which I can play if necessary). During operation, horses may be spooked by the noise of substations and inverters (I also have recordings of these); glint and glare; sheep and other animals such as deer and dogs; and people walking or cycling along the path. If the horse panics and / or bolts, there is very little room for other path users to move out of the way.

65) According to the LVA's criteria in Table 1-6, the magnitude of effect of the above would be Very Large. Thus, for High sensitivity receptors, in accordance with LVA Table 1-1, the overall level of visual / recreational effect should theoretically be Substantial Negative (the highest possible level). Applying professional judgement, I concluded that the level would be **at least between Substantial and Major Negative**.

Cumulative landscape, visual and recreational effects

66) The LVA considers cumulative effects arising from the combination of the proposed development with four other proposed solar developments within the study area.

67) It concludes (para. 7.4) that '*taking into account the screening effect of existing woodlands that surround the site and the additional hedge and woodland planting proposed as part of the Landscape Strategy, any combined intervisibility in practice is predicted to be very small and as such, significant cumulative effects are considered to be very unlikely at this stage*'.

68) However, this shows that the LVA has only considered cumulative visual effects, not cumulative effects on character, which will occur regardless of who can see the developments, and from where. Nor has it considered cumulative sequential visual effects, nor the cumulative landscape and visual effects of glint and glare.

69) I did not have time to carry out a cumulative effects assessment of my own, but on the basis of my findings, consider it likely that there would be significant cumulative landscape, visual, and other effects.

Other matters of relevance to landscape, visual and recreational effects

<u>Construction / decommissioning effects</u>

70) The LVA did not consider the cause and nature of many of the effects that would arise during construction and decommissioning, including along the proposed construction / decommissioning route, therefore they were not factored in to the assessment.

71) Firstly, according to the Appellant's Construction Traffic Management Plan (CTMP), the construction route is not yet determined, but is '*likely*' to be from the M1 to the west, via West Leake Lane, Kegworth Road, and Wood Lane, the latter being an unadopted road and bridleway. The access into the site would be off Wood Lane, about 715m south east of the Kegworth Road – Wood Lane junction.

72) However, the CTMP does not explain how use of this, or other selected route, by construction traffic would be enforced. It is highly unlikely that construction traffic arriving from the east would travel the many extra miles along A-roads to get to M1 junction 24 – it would not be time / cost effective, nor sustainable. The problem is that routes to the site from the east have similar constraints to the proposed route from the west, being mostly narrow, rural lanes used by large numbers of people for recreational pursuits, some being the route of the Midshires Way long-distance trail.

73) Secondly, the CTMP states (para. 5.5) that in order to accommodate construction vehicles, '*The junction of Kegworth Road and Wood Lane will require widening*', and '*11m of hedgerow will need to be realigned*'. Exactly what is meant by '*realigned*', and how that would be achieved, is not explained.

74) Hedgerow removal and trimming is also required to achieve the required visibility splays.

75) Thirdly, the CTMP explains (para. 5.6) that '*Wood Lane is single lane width* [a fairly consistent 2.5m, according to my measurements] *however there are passing bays along this. The Applicant will investigate extending the width of any passing bay along Wood Lane, where possible*'. However, such works would entail the removal of unknown quantities of verges and hedgerows – all healthy, highly characteristic, and high-value landscape features, and no doubt of ecological value too.

76) More alarmingly, the CTMP goes on to say (para. 5.6) that '*It is also proposed to extend the whole width of the road up the site entrance point to a maximum of 4.5m*', ie a distance of almost three-quarters of a kilometre. Whilst the CTMP concludes that this can be achieved by removing verge as opposed to hedgerow, a) there would be adverse effects within tree and hedgerow root protection areas, and b) many trees hang low over the lane, creating a holloway effect which is very charming; however, branches would have to be lopped to accommodate construction traffic.

77) The urbanisation of this ancient, highly rural, wooded track, along with the high levels of disturbance, and great potential for conflict between recreational users and construction traffic, would result in very high levels of adverse effects on character and visual / recreational amenity during construction (and decommissioning): **at least between Substantial and Major Negative**.

78) Note previous comments about the duration of these effects almost certainly lasting for longer than predicted.

79) Most importantly, following decommissioning works, even if vegetation along the track eventually recovered, Wood Lane (and perhaps the junction with Kegworth Road as well) would not be returned to its current state: it would be a truly **permanent** change, because this route would remain the access for the proposed DNO substation, which would be a truly permanent feature.

80) Fourthly, the proposed access point off Wood Lane into the site is not an existing one, so additional verge and hedgerow would be lost, and more industrialising elements would be introduced. No swept path analysis of the manoeuvre appears to have been carried out, but it would almost certainly entail the removal of locally-significant amounts of mature and characteristic vegetation, quite possibly along the north side of the track as well, although that is not part of the site.

81) Finally, the site is separated by areas of commercial plantation woodland, so the cabling between the eastern and western sectors would have to run through Leake New Wood, along an existing unsurfaced forestry track. This was considered in the Appellant's Arboricultural Impact Assessment (AIA), which concluded that the cabling works could be '*undertaken without detriment to the adjacent planting blocks*' (para. 10.40).

82) However, the AIA does not appear to have factored in that the cable route would also be the route for construction traffic running between the sectors. Presumably, this would need to be widened and surfaced to accommodate large construction vehicles including cranes, and could thus entail tree-felling, and require the protection of root-plates beyond. The length of the route would be almost half a kilometre.

<u>Photomontages / CGIs</u>

83) The photomontages in the LVA may be helpful in gaining an understanding of the likely visual effects of the solar panels, but they do not accurately reflect the reality of the future situation, a) because it appears they do not include the taller scheme elements; and b) they do not show the correct colour and texture of the panels as they would appear under 'normal' weather / light conditions – the image is too flat and 'dull', and does not account for the effects of glint and glare on panels, and the high levels of contrast between very dark and very bright.

Glint and glare

84) In fact, the LVA does not consider the effects of glint and glare on character or visual amenity at all – another serious omission, especially given that many visual receptors would be east or west of the panels, which is where levels of glint and glare effects would be highest.

85) The Appellant's Glint and Glare Assessment (GGA) concluded (para. 7.6) that '*once mitigation measures have been introduced there is predicted to be No significant effect on all residential and road receptors*'. The measures were included as part of the Appellant's Landscape and Ecology Management Plan (LEMP), and include new woodland and hedgerow planting.

86) However, firstly, my comments about over-reliance on vegetation to screen views and over-optimistic growth rates apply here.

87) Secondly, I **do not agree** that '*A 1km study area from the panels* [is] … *appropriate for the assessment of ground-based receptors*'. The 1km boundary limit does not factor in a) the size of the proposed development, nor b) the elevation of the viewpoint.

88) Depending on factors such as topography, and angle and elevation of the target and viewpoint, the adverse effects of glint and glare can be experienced over long distances (note pilots are potentially affected at distances of up to 30km from solar sites).

89) Last year, as part of my research into the matter, I spoke to several experts in glint and glare assessment. I was advised by one in Australia that "*the size of the solar farm has a direct effect on the glare impact. We use different study boundaries based on the size of the array (e.g., 500 m for small rooftop arrays, 2 km for small utility, 3-5 km for large utility), rather than a fixed limit for any size*": ie, size does matter.

90) Thirdly, for some reason, the GGA does not assess the effects of glint and glare on people using minor roads, or public rights of way. Another significant omission, especially given that so many lanes and rights of way, all of which are very well-used, either cross the site or run along its boundaries, forming an integral part of the wider network.

91) In my opinion, it is likely that for certain visual receptors on and in close proximity to the site, without effective screening in place, the effects of glint and glare would be **Substantial Negative**.

92) I note that *'Ocular damage from glare viewed at very short distances is possible'*[4].

[4] Understanding Emerging Impacts and Requirements Related to Utility-Scale Solar Development (September 2016) by Argonne National Laboratory https://publications.anl.gov/anlpubs/2016/10/130700.pdf

Security fencing

93) The Application includes security fencing.

94) High-security palisade fencing would be required to protect the proposed DNO substation complex.

95) Elsewhere – around the perimeter of the site, and the proposed buffer zones, and along bridleway corridors – 2.4m high timber post and wire netting deer-proof fencing is proposed (see Figure 13 Typical Deer Fence).

96) However, in my experience, it is highly likely that the fencing would have to be far more robust than post-and-wire in order to deter thieves and vandals, and satisfy insurance requirements.

97) I have carried out a great deal of independent research on the subject, speaking to Police crime commissioners and Designing Out Crime Officers (DOCOs), planning officers, developers, contractors, and the British Insurance Brokers Association. For brevity, I have not included detailed evidence, but can provide if required.

98) In summary, due to the recent significant increase in large-scale, ground-mounted solar crime throughout the UK, local DOCOs now usually respond to applications recommending various security measures including the use of high-security fencing such as minimum LPS 1175 Level 3.

99) Indeed, Nottinghamshire Police's DOCO's response to this Application said exactly that.

100) Furthermore, now, some solar insurance companies will no longer insure sites with deer-proof fencing, and ask for the same Level 3 high-security fence.

101) This is a very important matter, not least because certainly, in terms of levels of landscape and visual effects, there is a significant difference between deer-proof fencing, and high-security fencing of the type found around military bases and airports.

102) Also, there are adverse implications for ecology: it is not possible to create mammal passes in these high-security fences, not just due to the design, which includes concrete footings, but also as it would invalidate the security rating. Therefore the fenced-in areas become no-go zones for even the smallest mammals.

103) If an application is made to change approved deer-proof fencing to high-security fencing, it is critical that approval is not given without the applicant having carried out a full assessment of the landscape, visual and ecological effects that would arise from the change.

Significance

104) The LVA states (para 7.1) that '*although this application is not subject to an Environmental Impact Assessment (EIA), effects predicted to be moderate-major, major or substantial are considered to be significant, in the context of the material considerations*'.

105) This demonstrates a fundamental misunderstanding of GLVIA3, although unfortunately, it is a fairly common error amongst practitioners: so much so that several years ago, the LI published a statement of clarification on the subject[5], and last year, issued a consultation draft TGN[6], which is due to be published soon.

106) In summary, if a project is not EIA development, as is the case here, then the LVA should establish overall levels of effects by combining levels of sensitivity and magnitude, for example, High plus Low equals Moderate, but should not then go on to decide whether or not the effects are 'significant'.

107) It is important to note that here, the LVA *did* predict that there would be 'significant' adverse effects.

108) The LVA predicts (para. 7.2) that after five years of operation, '*most of the significant effects predicted during year 0, are likely to become not significant at around this time*'. But only 'likely' not 'certainly'; and evidently, not all.

109) As I have explained, the direct effects on landscape character, and effects on certain visual and recreational receptors, could not be mitigated. Therefore, the effects would remain 'significant' adverse for the 40-year duration of the operation.

Conclusions

110) To conclude, the Appellant's LVA states that the proposed development:

- *is sensitively sited with a design and layout that positively integrates with its local context;*
- *conserves and enhances local landscape character;*
- *protects and enhances Green Infrastructure;*

[5] GLVIA3 Statement of Clarification 1/13 10-06-13

[6] https://www.landscapeinstitute.org/technical-resource/notes-and-clarifications-on-aspects-of-the-3rd-edition-guidelines-on-landscape-and-visual-impact-assessment-glvia3-consultation/

- *protects the landscape setting of listed cultural features (e.g. Listed Buildings, Historic Parks & Gardens);*
- *protects the openness and characteristics of the Green Belt; and*
- *is not visually intrusive, whilst protecting the visual amenity of any residents and users of public rights of way.*

111) For the reasons I have explained, I completely disagree with the above assertions, which in my opinion are the result of omissions and errors in the LVA process, and flawed assumptions.

112) Regarding effects on the Green Belt and openness, the fundamental aim of national Green Belt policy is to prevent urban sprawl by keeping land permanently open.

113) There are two aspects to openness which are described as spatial and visual. The difference is the same as that between 'character' and 'views', in that the spatial aspect is nothing to do with what one can see, from where, or who sees it.

114) For example, within a Green Belt, there may be dense coniferous plantations which screen or enclose views – as is the case here – but the landscape is still 'open' in Green Belt terms.

115) Here, the industrial scale of the development would be visually prominent from several locations, and would be uncharacteristic and inappropriate in this landscape. Therefore, in my opinion, both visually and spatially, the proposed development would result in at least Moderate harm to the openness of the Green Belt. This adds to the harm caused by reason of inappropriateness[7].

116) The development would result in significant damage to, and loss of, many of the very important and highly-valued landscape and visual functions that the site and surrounding landscapes perform.

117) One of the most important is the highly-valued visual and recreational amenity resource they provide for visitors and local communities, and the contribution this makes to people's health and well-being, and the quality of their lives.

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[7] Development in the Green Belt is inappropriate unless it falls within one of the exceptions at NPPF paras. 154 and 155. Ground-mounted solar development does not fall into any of these exceptions. Inappropriate development is, by definition, harmful to the Green Belt [NPPF para. 152].