SUNNICA ENERGY FARM
DCO EXAMINATION

POST-HEARING SUBMISSIONS FOR DEADLINE 4

SAY NO TO SUNNICA ACTION GROUP LTD

16 December 2022

CONTENTS

1. Introduction

1.1. The Say No to Sunnica Action Group Limited (**SNTS**) is an interested party (ID No 20031080) in the DCO examination.

1.2. In this document SNTS provides post-hearing submissions following the hearings that took place in the week commencing 5 December 2022. Each of the sections of this submission is broken down into the various hearings that took place, addressed in order.

1.3. SNTS makes submissions in respect of all the hearings that took place in that week, those hearings being:

a. Compulsory Acquisition Hearing 1 (**CAH1**) on Tuesday 6 December

b. Open Floor Hearing 1 (**OFH1**) on Tuesday 6 December

c. Issue Specific Hearing 2 (**ISH2**) on Wednesday 7 December

d. Issue Specific Hearing 3 (**ISH3**) on Thursday 8 December

e. Open Floor Hearing 2 (**OFH2**). on Friday 9 December

2. Compulsory Acquisition Hearing 1

2.1. The detailed agenda for CAH1 is available at **[EV-032]**. The hearing completed the first seven issues listed to be addressed, ending at funding. We look forward to addressing the remainder of the matters listed in 2023 and note that our funding reports attached to our WRs are items we will make reference to **[REP2-240j]**.

2.2. SNTS is limited in its submissions on the matters addressed at CAH1. In respect of point 4 of the agenda ('alternatives and design flexibility') the matter of site selection was not specifically addressed, with the ExA's focus at the hearing on flexibility of scheme design and connection route to Burwell substation. However, SNTS maintains the position advanced in its WRs that the site assessment undertaken for the scheme was inappropriate (see **[REP2-240]** at section 16). The failures in that assessment mean that the Applicant cannot show the ExA that there are no reasonable alternatives.

2.3. At the hearing the scope of the compulsory power was addressed, and particularly the scope of the power of temporary possession. Article 28 of the draft DCO **[REP2-013]** provides for the power to take temporary possession to '*maintain*' the scheme within the '*maintenance period*'. Considering the definition of '*maintain*' is very broad (and was the subject of submissions at the ISH1) and includes '*refurbish, reconstruct, replace and improve*' this power is a broad one. It is no response to say this is limited to the maintenance period, being 5 years from the date of final commissioning. The terms of the power for temporary possession put the landowners in a state of limbo for 5 years. Many are farmers or use their land for business, which means any investment in crops and livestock will have the risk of temporary possession being exercised causing disruption and loss. Indeed, merely the risk of the power being exercised again with no control or constraint is likely to have a chilling effect on how people use their land. SNTS is of the view that this power is extensive and goes further than is necessary; other reasonable alternative approaches are available.

3. Open Floor Hearing 1

3.1. The detailed agenda for this hearing is at **[EV-033]**. Here we pull out some important themes from the evidence heard by the ExA at OFH1. First we consider the submissions made by Mr Kozelko for SNTS, before commenting more generally.

Say No To Sunnica

3.2. The focus of Mr Kozelko's submissions was on the harm to the enmeshed communities around the scheme and the internal cumulative impact. These issues are raised throughout SNTS's submissions in this case, although section 2 of our WRs **[REP2-240]** addresses internal cumulative impact in detail.

3.3. There is extensive evidence from the communities that surround the scheme that their villages and settlements are enmeshed. Community life should not be thought of as distinct to the individual villages, but instead across the area as a whole. Friends and families travel between the villages for relationships, for their amenities, and indeed to enjoy the open countryside between the settlements. The land between the villages is valuable to them because much of community life is involved in enjoying that countryside.

3.4. In submissions, the poor design of the scheme was stressed. It is not one single unit but a number of sites spread across the landscape. Much as when a cake is cut into slices, by splitting the scheme up there is far more perimeter that people are exposed to. This increases the harm. Were the scheme one single unit, harm would not be spread among and between communities, and villages would not feel surrounded. In addition, the Applicant has said that a design process has been adopted concerning the placement of the scheme between villages: see the Applicant's site design iteration (Appendix A of **[REP2-038]**). However, this rather misses the point. The failure of this scheme is to place itself between communities and carve them apart in the first place. That the scheme has been designed in an attempt to mitigate this harm does not remedy the fact that the scheme is simply poorly placed. This issue should have been avoided rather than addressed through a poor attempt at mitigation.

3.5. This poor design is unique in the schemes currently consented by DCO or currently proceeding through NSIP examinations. In our WRs at appendix B we provided details of all schemes currently in this position, and now in **Appendix A** to this document provide maps which show these schemes visually. This includes the Longfield scheme which is another 500MW scheme. The distinction compared to Sunnica is stark; all of them are singular units which minimise perimeter, do not carve between significant numbers of villages, and thus minimise harm. Sunnica in comparison is spread out over

multiple sites which maximises perimeter and the number of people exposed to the scheme. It is placed between villages cutting connections.

3.6. In reply Mr Griffiths pointed to the Cottam Solar Project; however this scheme is not at examination stage. It is also advanced as part of a group of schemes, of which one was recently removed as a result of the consultation process. In **Appendix B** to this document we provide a map of Cottam along with the other schemes (Tillbridge, West Burton, Gate Burton). Part of West Burton (the piece between Clayworth and Gringley on the Hill) has recently been removed from the scheme as it was found to be on 100% BMV land. It is fair to say this shares some similarities with the Applicant's scheme because of the way it is spread across the landscape and nearby to towns. However, importantly, this is still being consulted on. It is not at examination stage, and certainly has not been given consent. Thus, it offers no positive support to the Applicant.

3.7. As to why the current uniqueness of this scheme matters, it is important to remember that NPS EN-1 makes past permitted developments a relevant consideration, at least in the context of visual impact. NPS EN-1 para 5.9.19 provides:

> *It may be helpful for applicants to draw attention, in the supporting evidence to their applications, to any examples of existing permitted infrastructure they are aware of with a similar magnitude of impact on sensitive receptors. This may assist the IPC in judging the weight it should give to the assessed visual impacts of the proposed development.*

3.8. SNTS's position is that the Applicant's scheme is unique in consented (and examined) schemes in how it cuts of enmeshed communities and visually intrudes between them. It is currently a unique case with uniquely extensive harm because of bad design and site selection. Thus, there is no scheme that lends its support to the Applicant's approach; the harm caused by the design is too severe. Put another way, if a DCO were to be granted in this case, this would mark a turning point in the type of solar schemes being consented in the UK. In SNTS's view this would be inappropriate as it would give insufficient weight to harm, and lead to harm being given insufficient weight in other cases in the future

3.9. This goes back to the original position that SNTS takes; SNTS does not object to solar in principle and recognises the policy imperatives for renewable energy. However, this scheme is almost unique in how harmful it is, due to all of the features of bad design that are present. The cursory comparison to the maps in **Appendix A** indicates this. Thus, SNTS resists specifically this application as a poor example of a solar project.

Other Speakers

3.10. SNTS does not propose to go through all of the evidence from other speakers that the ExA heard. However, it is sufficient to recognise three points for the moment.

3.11. First, local democratically elected representatives attending the hearing were universally against the scheme. Councillor Rout (deputy leader of Suffolk County Council and Cabinet member for Finance and the Environment) described this NSIP as *'the poorest application'* he has dealt with. Councillor Dupre (Cambridgeshire County Council) recognised the need and Government policy in favour of green generation but identified this scheme as poorly designed and inappropriately harmful. Many others (e.g. Councillor Harvey and Councillor Julia Huffer) came forward to maintain that their residents had expressed significant objections to the scheme, and that the scheme itself was excessively harmful to local communities. This all accords with SNTS's position (set out above) that it is the nature of this specific scheme which makes it one which should not be consented.

3.12. Secondly, members of the local community spoke passionately and convincingly about the importance of the land around their villages to both their personal life, and the community ties that they have. To take three examples: Kelli Pettitt, Sam Lee-McCloud, and Justin Fuga all made submissions powerfully on this issue. They spoke of meeting family and friends on the walking routes between the villages; they spoke of how important a connection to nature and agriculture was to them; and they spoke of the visual links and sense of place they got from the long views out to different villages. This all accords with SNTS's position that the villages around Newmarket represent an enmeshed community where family, friends, and amenities are spread between villages. To build the scheme between them is to cut them off from each other.

3.13. Third, members of the local community noted the importance of the countryside for human health. This was both in the physical sense of access to a pleasant outdoors area for recreation, and in the sense of the benefits that the open countryside offers for mental health. Sam Lee-McCloud spoke of her business which involves taking children with autism into the countryside to walk dogs and to help them out of seclusion; Isabel Cross spoke to the community benefits of walking between villages and meeting friends on walks. For many, they had moved to the countryside specifically for the benefits that a rural and natural setting bring; the scheme represents a departure from this as the landscape is industrialised.

3.14. Many other issues arose in the evidence. SNTS does not seek to summarise the powerful submissions that many members of the local community, and local representatives, made to the ExA. We simply note that the consistency and extent of these views are weighty matters which are important in understanding the harm of the scheme to the community and its overall poor design. Further, it is

important to recognise that the submissions of locals are important in planning terms, because of the value that the NPSs and NPPF puts in community, human health, recreation and a host of other matters.

3.15. Finally, as a side note, Councillor Lorna Dupre noted that SNTS's agricultural experts were credible as those experts were also used by Cambridgeshire CC in its work in other cases.

4. Issue Specific Hearing 2

4.1. The detailed agenda for ISH2 is available at [**EV-034**]. The hearing completed the first three issues listed to be addressed, ending part of the way through issue 4 on landscape and visual impact. We look forward to addressing the remainder of the matters listed in 2023, not least as significant issues remain to be discussed under landscape and visual impact, and (crucially) the issue of in-combination impacts.

4.2. Each of our experts has provided a note to accompany this post-submission hearing, which constitutes the main submission at this stage. These are:

a. Mr Dominic Woodfield (Ecology and Biodiversity): **Appendix C**.

b. Dr Richard Hoggett (Heritage): **Appendix D**.

c. Mr John Jeffcock (Landscape): **Appendix E**.

4.3. SNTS remains of the view that the harm caused by the scheme cannot be justified. To take a specific example that arose at the hearing, it was suggested by the Applicant in respect of landscape that the impact of the scheme is acceptable because local landscape designations should not be used '*in themselves*' to refuse consent (NPS EN-1 para 5.9.14).

4.4. First, it is worth noting that the provision in NPS EN-1 that '*[v]irtually all nationally significant energy infrastructure projects will have effects on the landscape*' is not to excuse that effect (para 5.9.8). Indeed, very much because of the effect of the landscape especially caused by these schemes, design is crucial. Para 5.9.8 continues:

> *Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constrains the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.*

4.5. Secondly, considering para 5.9.14, it is not being suggested that landscape designations '*in themselves*' mean the scheme should not get consent. The point is that harm to landscape and visual amenity is one of the many in-combination harms that (for example) will impact on the Limekilns. It is incorrect to hive off all of the harms in this case separately; the ExA must guard against deciding what weight to give a harm until the *totality* of the harms has been assessed. In any event, in our view the landscape of the Limekilns is *'valued landscape*' as defined and protected in NPPF para 174(a).

4.6. Thirdly, the suggestion that a harm which cannot in itself lead to refusal should be set aside or offered little weight is problematic in the context of the requirement for good design in NPS EN-1. Para 5.9.17 provides:

> *The IPC should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to minimise harm to the landscape, including by reasonable mitigation.*

4.7. For the reasons advanced by SNTS and Mr Jeffcock, SNTS is of the view that the scheme was poorly designed from the perspective of its placement and appearance in the landscape. Indeed, the location does not appear to have been selected in accordance with a proper sites assessment, and primarily seems to have been built around land ownership. The Applicant cannot ignore these policy considerations by merely averting that this is all harm to assets valued at a local level and thus be given little weight individually; such failures of scheme design are clearly crucial in understanding the collective totality of the harms. Put another way, this is not a case where it was ever being suggested that local landscape designations (or less) were '*in themselves*' sufficient to refuse the scheme; this is one of a number of matters which way against the scheme in the planning balance.

4.8. These comments are to merely take one example arising from the hearing for ISH2. The crucial point, however, is that the ExA must not pigeon hole harms and consider them independently. The particular problem with this scheme is the in-combination effects which are spread across a wide area. The ExA must be careful to properly assess the weight to be given to harms even if a singular harm on its own would not be sufficient to cause the scheme proposal to be rejected.

4.9. Finally, it is also worth noting why landscape and heritage are important in planning terms. One reason is the value that receptors benefit from in their way of life and enjoyment of the setting. Thus, when we talk about harm to locals or harm to the horse racing industry, it is important to recognise the some of that harm is derived from the landscape and heritage impacts that they experience. For example, a harm consequential on the degrading of the heritage and landscape value of the Limekilns might be the fall in interest of investors to choose Newmarket as their location for horseracing. It is important to recognise these links; again, the ExA must have regard to the totality of the case here.

5. Issue Specific Hearing 3

5.1. The detailed agenda for ISH3 is available at [EV-035]. The hearing completed the agenda save for sections 4(b) and 5. Time was limited at the hearing and matters unfortunately had to be taken at some pace. SNTS hopes that the ExA will give full regard to the written reports of its experts.

5.2. Each of our experts has provided a note to accompany this post-submission hearing, which constitutes the main submission at this stage. These are:

a. Mr Richard Sykes-Popham (horse racing industry): **Appendix F**

b. Mr Peter Danks (agriculture): **Appendix G**

c. Professor Paul Christensen (fire): **Appendix H** (this is a resubmission of the document, which was originally submitted on the day before ISH3).

Hatchfield Farm

5.3. SNTS heard from the applicant on Tuesday 13 December regarding the joint statement, allowing only three days for its preparation. While the statement is likely to be brief there are nearly 350 pages of Hatchfield Farm material to review before agreement can be reached as to which paragraphs are relevant. SNTS will need to consult its relevant advisors as part of this process. Preparation and submission of a statement on this matter by Deadline 4 is not therefore possible but will be submitted for **Deadline 5.**

Batteries and Battery Safety

5.4. SNTS has provided an update report from Professor Christensen in response to the new version of the Outline Battery Fire Safety Management Plan [**REP2-032**]. Unfortunately, due to timetabling commitments, Professor Christensen could not attend the hearing. However, his report is commended to the ExA and is attached at **Appendix H**. In addition, SNTS associates itself with the submissions of Dr Fordham (and notes that battery safety was a significant factor that arose at both of the OFHs).

Public Rights of Way

5.5. SNTS agrees with the submissions made by the Councils in respect of the PROWs and permissive paths involved in this scheme. The scheme entails a significant loss of connectivity in the community which must be managed, and the permissive paths currently provided for are poor and provide little amenity.

SNTS welcomes the discussions proposed between the Councils and the Applicant on the issue of planning obligations to secure new PROWs outside of the scheme boundaries.

5.6. However, while these changes are positive, they cannot remedy the harm to the existing PROWs in respect of their landscape, visual amenity, heritage, and more general setting. The scheme will have the effect of rendering vast swathes of the countryside industrialised, with a number of PROWs flanked by solar panels (or foliage/fencing to hide the solar panels). This represents a significant downgrading of the quality of the available PROWs. As much of the evidence of locals has suggested, many value these walking routes because they are countryside routes with long views and a connection to local communities. Surrounding them with solar panels is fundamentally and unavoidably harmful. Indeed, for horses the danger of spooking also arises, which further minimises the options for use of these PROWs.

6. Open Floor Hearing 2

6.1. The detailed agenda for this hearing is at **[EV-033]**. Here we pull out some important themes from the evidence heard by the ExA at OFH2. First we consider the submissions made by Mr Steel KC for the Newmarket Horseman's Group, before commenting more generally.

The Newmarket Horseman's Group

6.2. John Steel KC on behalf of the Newmarket Horseman's Group reiterated damage to the Newmarket area where people who work in the racing industry live and how these are affected. A post hearing submission by John Steel KC is enclosed in **Appendix I**.

6.3. Mr Christian Wall has made a separate submission on behalf of the Newmarket Horseman's Group which SNTS agrees with, and the Newmarket Horseman's Group agrees with the submissions of SNTS and with the work of Mr Richard Sykes-Popham.

Other Speakers

6.4. SNTS does not propose to go through all of the evidence from other speakers that the ExA heard. However, it is sufficient to recognise three points for the moment.

6.5. The ExA heard from both MPs in whose constituencies the scheme resides. Again, this accords with the general tenor of community engagement which is significant resistance to the scheme because of the harm that it does to local communities. Matt Hancock MP spoke of the fundamental change of the character of the area; again, commenting on the move from a rural setting for the communities and villages to one of industrialization. Indeed, Matt Hancock MP's view that the scheme is a 'hotch potch', and that examining the layout indicates the poor design of the scheme, accords strongly with SNTS's view on the internal cumulative impact of the scheme.

6.6. Significant members of the horseracing community attended to speak about the scheme. This included Sir Mark Prescott who commented on the prestigious nature of Newmarket and, crucially, the value that those involved in the industry place in the rural setting. Shortly put, he was of the view that the heath had to be maintained in this setting, otherwise there would be significant risk to the prestige of the location and the ability to attract investors. Sir Mark's comments align with the position advanced by John Steel KC in his submissions that the scheme risks dissuading 'discretionary spend' in the local area.

6.7. Various people spoke to the value of agricultural land in this area. Some spoke to their own land and the high quality and quality of crops that they derived from the land (Richard Tuke and Gary Warren). The

failures of the agricultural assessment were also explored. Notably, Lucy Frazer MP also discussed the loss of BMV land and expressed her view that the soil grading was inappropriate considering the discrepancies involved. She suggested additional analysis be undertaken or the expert evidence submitted by SNTS be preferred. SNTS maintains its view that the assessment undertaken by Mr Baird is flawed in a number of respects, and that the scheme constitutes a huge and unjustifiable take of BMV agricultural land.

6.8. As with OFH1, the value of the area and local communities was highlighted by many of the individuals who spoke at OFH2. This included many representatives of local communities (Councillors MacKenzie and Radcliffe) along with Richard Liddington from the Ark Church. They reinforced the point that the characteristic landscape in the area was important to the identity of the villages and the communities that live within them. That industrialisation caused by Sunnica will lose the connection to nature and agriculture. That the very things that locals live in the area for; a sense of local and rural community, would be lost. It was noted that setting of the Ark Church would be particularly challenged, which would make it a less attractive place to come. Also, it was noted that a 40-year scheme spans half a lifetime, and there is no realistic sense in which that can be described as temporary.

6.9. Many other issues arose in the evidence. SNTS does not seek to summarise the powerful submissions that many members of the local community, and local representatives, made to the ExA. We simply note that the consistency and extent of these views are weighty matters which are important in understanding the harm of the scheme to the community and its overall poor design. Further, it is important to recognise that the submissions of locals are important in planning terms, because of the value that the NPSs and NPPF put on community, agriculture, the horse racing industry and a host of other matters.

6.10. Finally, SNTS notes that the ExA were apparently not sighted on the existence of the Cranfield Report addressing the lack of carbon neutrality of the scheme considering when assessed on a whole carbon lifecycle basis. This was a comment made by Mr Kean in OFH2 after Dr Fordham had spoken. This report was submitted by SNTS at Deadline 2 under reference **[REP2-240g]**.

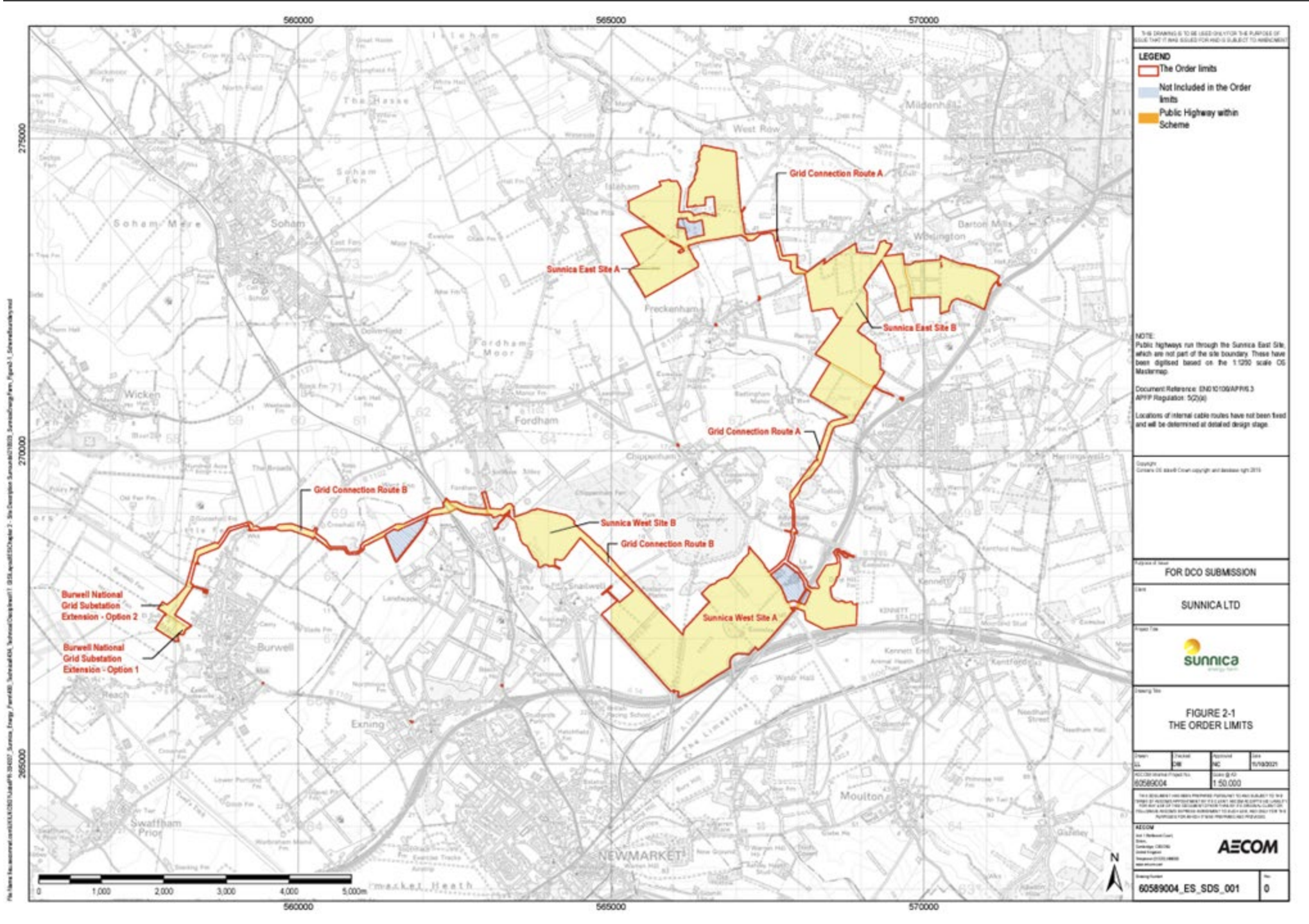
7. Appendices

Appendix A – Plans of Major Solar Farms

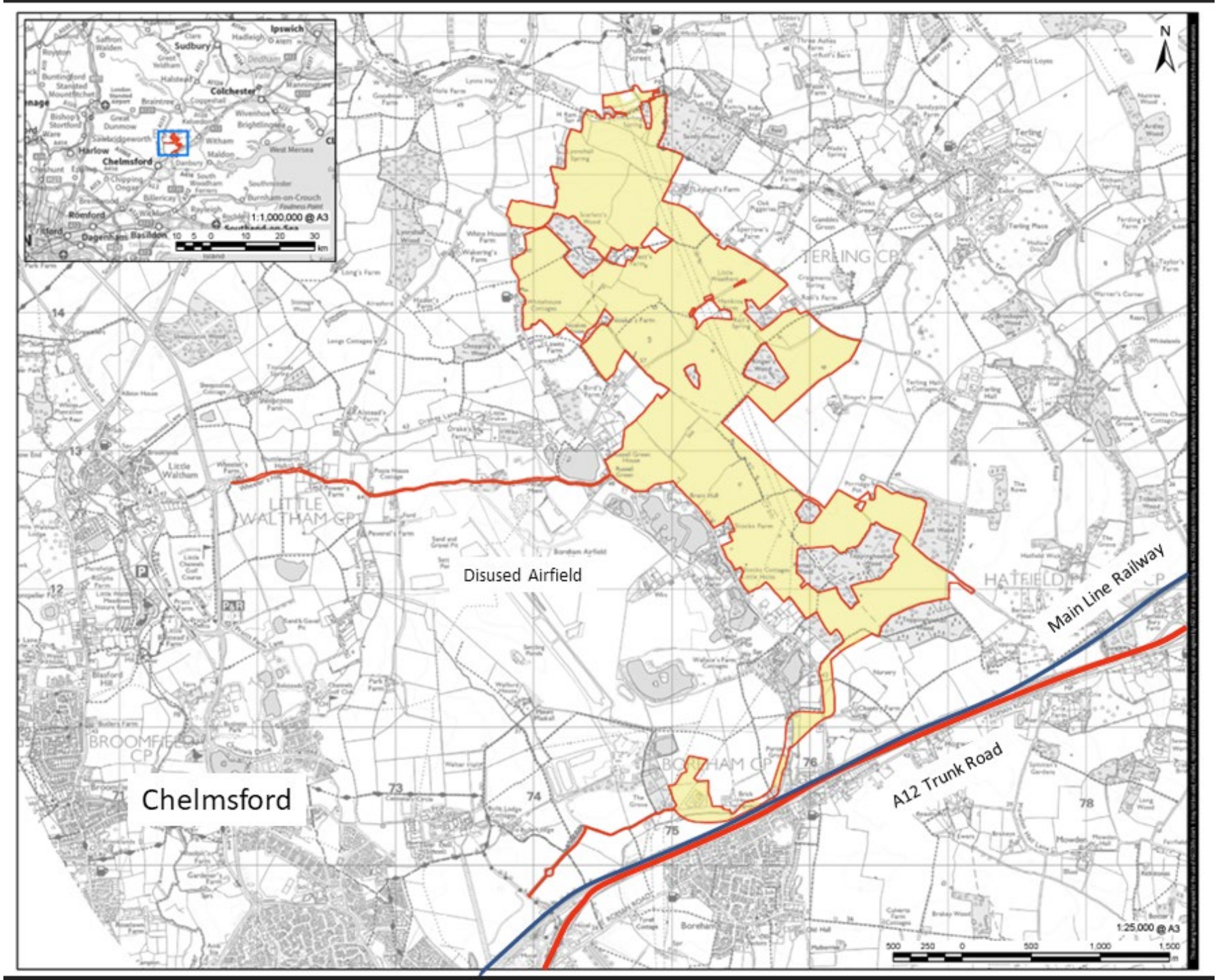
Operator (or Applicant)	Sunnica	Longfield Solar Energy Farm Limited (part of EDF Renewables)	Cleve Hill Solar (Hive Energy/ Wirsol Energy)	INRG Solar	NextEnergy Capital LLP	Statkraft UK Limited	Wentlooge Farmers' Solar Scheme	Green Energy International
Site Name	Sunnica Energy Farm (East and West)	Longfield	Cleve Hill Solar Project	Little Crow Solar Park	Llanwern Solar Farm & Battery Storage	Elwy Solar Energy	Wentlooge Renewable Energy Hub	Frodo Solar and Battery Energy Development
Technology Type	Solar Photovoltaics	Solar Photovoltaics	Solar Photovoltaics	Solar Photovoltaics	Solar Photovoltaics	Solar Photovoltaics	Solar Photovoltaics	Solar Photovoltaics
Installed Capacity (MWelec)	500	500	350	150	75	62	62.5	60.1
Mounting Type for Solar	Ground	Ground	Ground	Ground	Ground	Ground	Ground	Ground
Development Status	Planning Application Submitted	Planning Application Submitted	Planning Permission Granted	Planning Permission Granted	Operational	Planning Application Submitted	Planning Permission Refused	Planning Application Submitted
Address	Land 4.5km East of Burwell and Land 2.5km South-West of Mildenhall	North east of Chelmsford and North of the A12 between Boreham and Hatfield Peverel	Graveney, Whitstable	Land located 0.6km to the east of the British Steel site at Scunthorpe,	S/o Whitson Electricity Substa, Broad Street Common, Nash, Newport,	Land at Gwernigron Farm, The Roe, St Asaph,	Land SW of St Brides on the Gwent Levels	Frodo Solar Farm, Crimond, Fraserburgh
County	Cambs/Suffolk	Essex	Kent	Lincolnshire	Gwent	Denbighshire	Gwent	Aberdeenshire
Region	Eastern	Eastern	South East	Yorkshire and Humber	Wales	Wales	Wales	Scotland
Country	England	England	England	England	Wales	Wales	Wales	Scotland
Planning Authority	The Planning Inspectorate - National Infrastructure	The Planning Inspectorate - National Infrastructure	The Planning Inspectorate - National Infrastructure	The Planning Inspectorate - National Infrastructure	Welsh Government (NSIP)	Welsh Government (NSIP)	Welsh Government (NSIP)	Scottish Government (S36)
Planning Application Reference	EN010106	EN010118	EN010085	EN010101	DNS/3213968	DNS/3247619	DNS/3216558	ECU00003345
Planning Application Submitted	18/11/2021	28/02/2022	16/11/2018	04/12/2020	20/02/2018	22/03/2021	07/05/2020	16/03/2022
Planning Permission Refused							10/09/2021	
Planning Permission Granted			28/05/2020	05/04/2022	13/11/2018		Appeal	
Under Construction					01/06/2020			
Operational					01/03/2021			
Gross Area (Ha)	981	453	491.2	226	72	121	162	106
BESS Size	>50mw	>50MW	> 50MW	<=90 MW	Circa 200MW (Secondary Application)	Possibly 12 mw	62.5 (Separate application under TCPA)	50
Approx Distance to Nearest Settlement (Order Limits)	600m (Isleham), 590m (Freckenham), 0km (Worlington), 316m (Red Lodge), 1.4km (Fordham), 240m (Snailwell), 1km(Chippenham), 210m (Badlingham)	500m (Flacks Green), 315 m (Fuller Street), isolated houses closer	1.25km (Faversham), 0km (Country View Park), 0.65km (Graveney)	0.93 km (Broughton)	1.3 Km (Pontardulais Road), isolated dwellings and farms on perimeter.	0km	340m (Marshfield), 360m (Outfall Lane)	850m (Crimond)
Aggregated	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sunnica


N

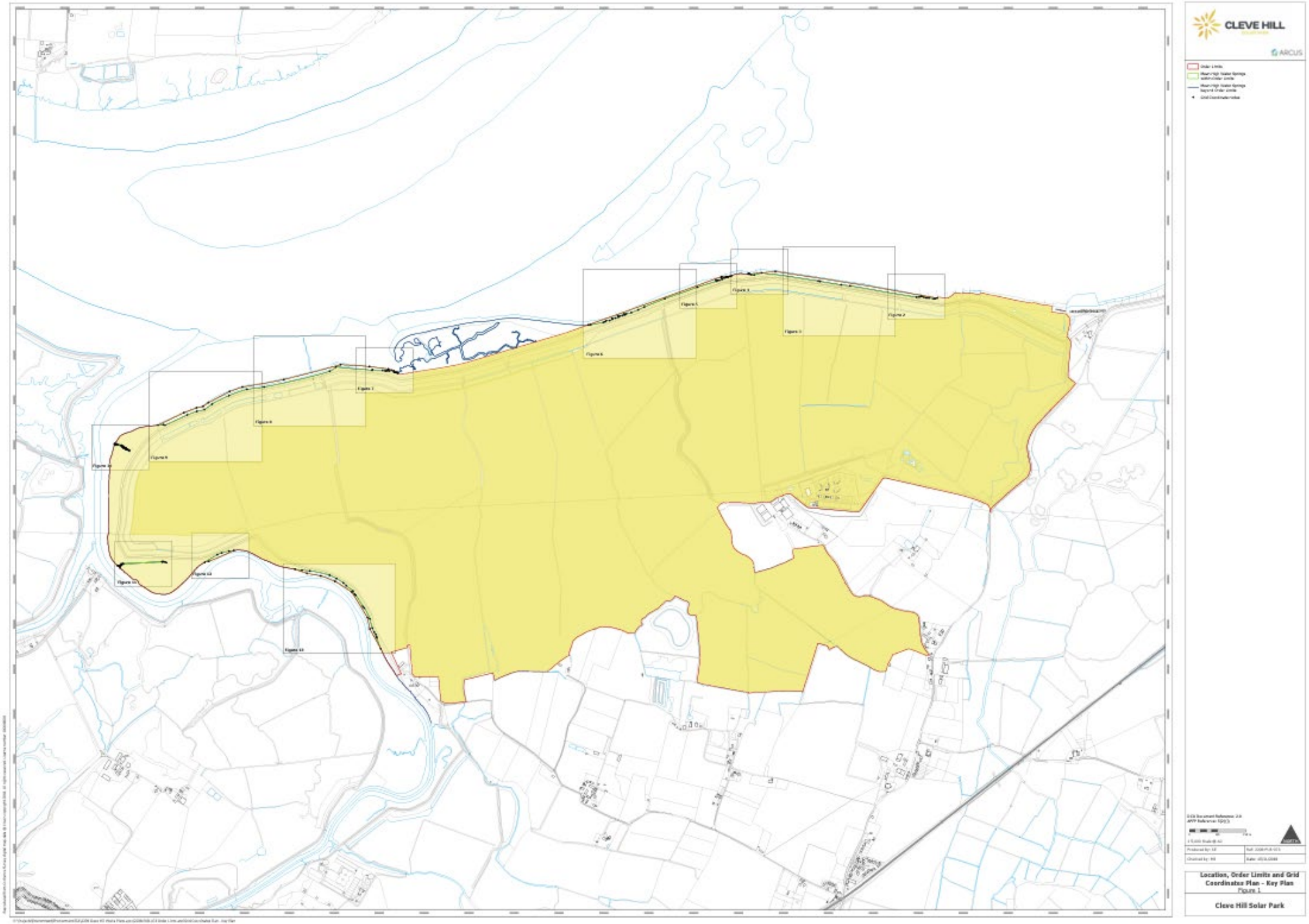

560000
565000
570000
275000
270000
265000
Grid Connection Route A
Sunnica East Site A
Sunnica East Site B
Grid Connection Route A
Grid Connection Route B
Sunnica West Site B
Grid Connection Route B
Sunnica West Site A
Burwell National Grid Substation Extension - Option 2
Burwell National Grid Substation Extension - Option 1
Soham
Fordham
Burwell
Exning
NEWMARKET
Moulton
0
1,000
2,000
3,000
4,000
5,000m
LEGEND
The Order limits
Not Included in the Order limits
Public Highway within Scheme
NOTE:
Public highways run through the Sunnica East Site, which are not part of the site boundary. These have been digitised based on the 1:1250 scale OS Mastermap.
Document Reference: EN010106/APP/6.3
APFP Regulation: 5(2)(a)
Locations of internal cable routes have not been fixed and will be determined at detailed design stage.
FOR DCO SUBMISSION
SUNNICA LTD
sunnica
FIGURE 2-1
THE ORDER LIMITS
60589004
1:50,000
AECOM
60589004_ES_SDS_001
0

Longfield

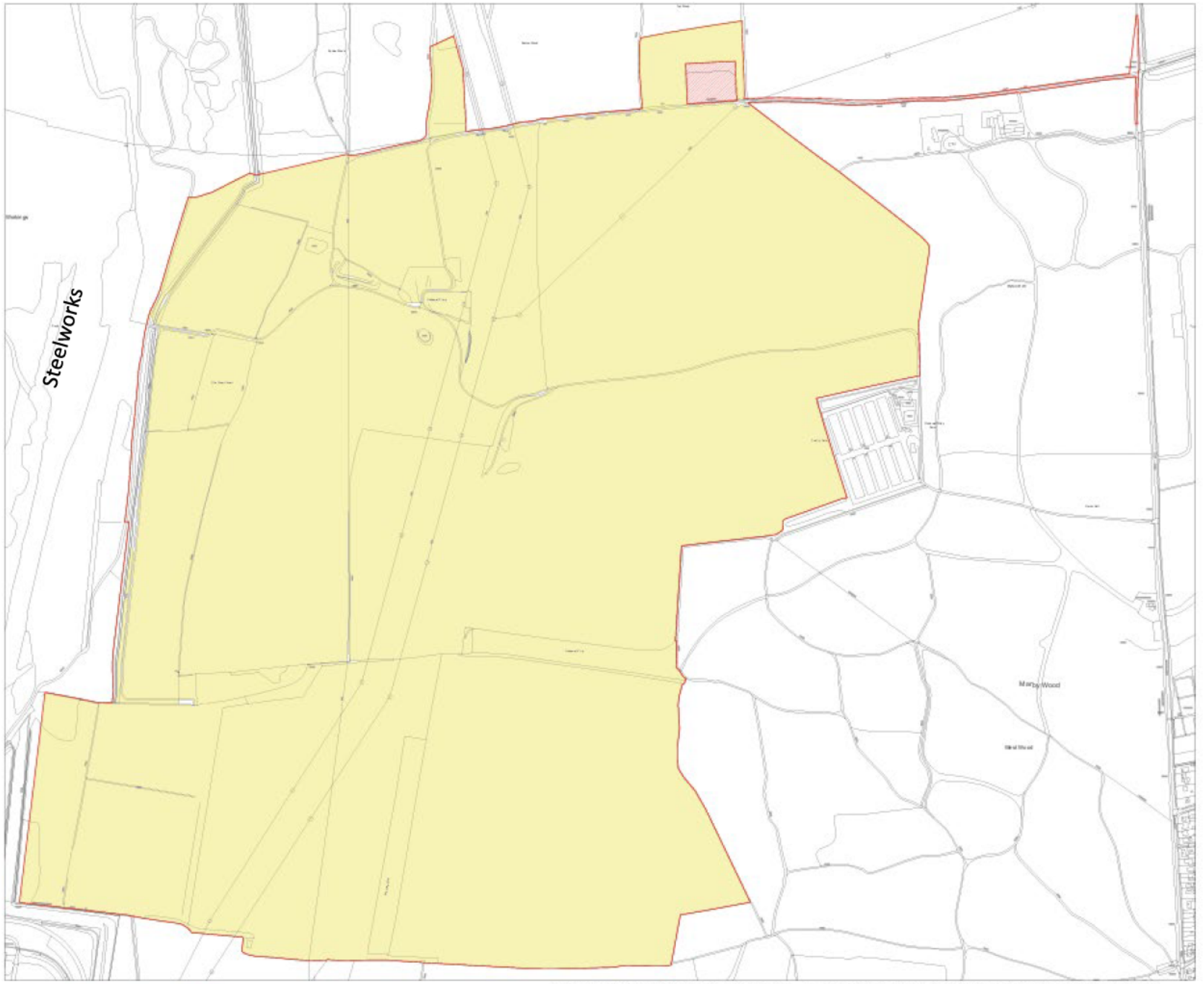

N
Disused Airfield
Chelmsford
Main Line Railway
A12 Trunk Road
1:25,000 @ A3
1:1,000,000 @ A3

Cleve Hill


N


CLEVE HILL
ARCUS
Location, Order Limits and Grid Coordinates Plan – Key Plan
Figure 1
Cleve Hill Solar Park

Little Crow Solar Park



KEY: LAND & ORDER LIMITS PLAN

ORDER LIMITS

AREA EXCLUDED FROM ORDER LIMITS

DOCUMENT REFERENCE NUMBER: 2.1 LC DRW

APP NOS EN010151

N W E S 0 50 150 250m

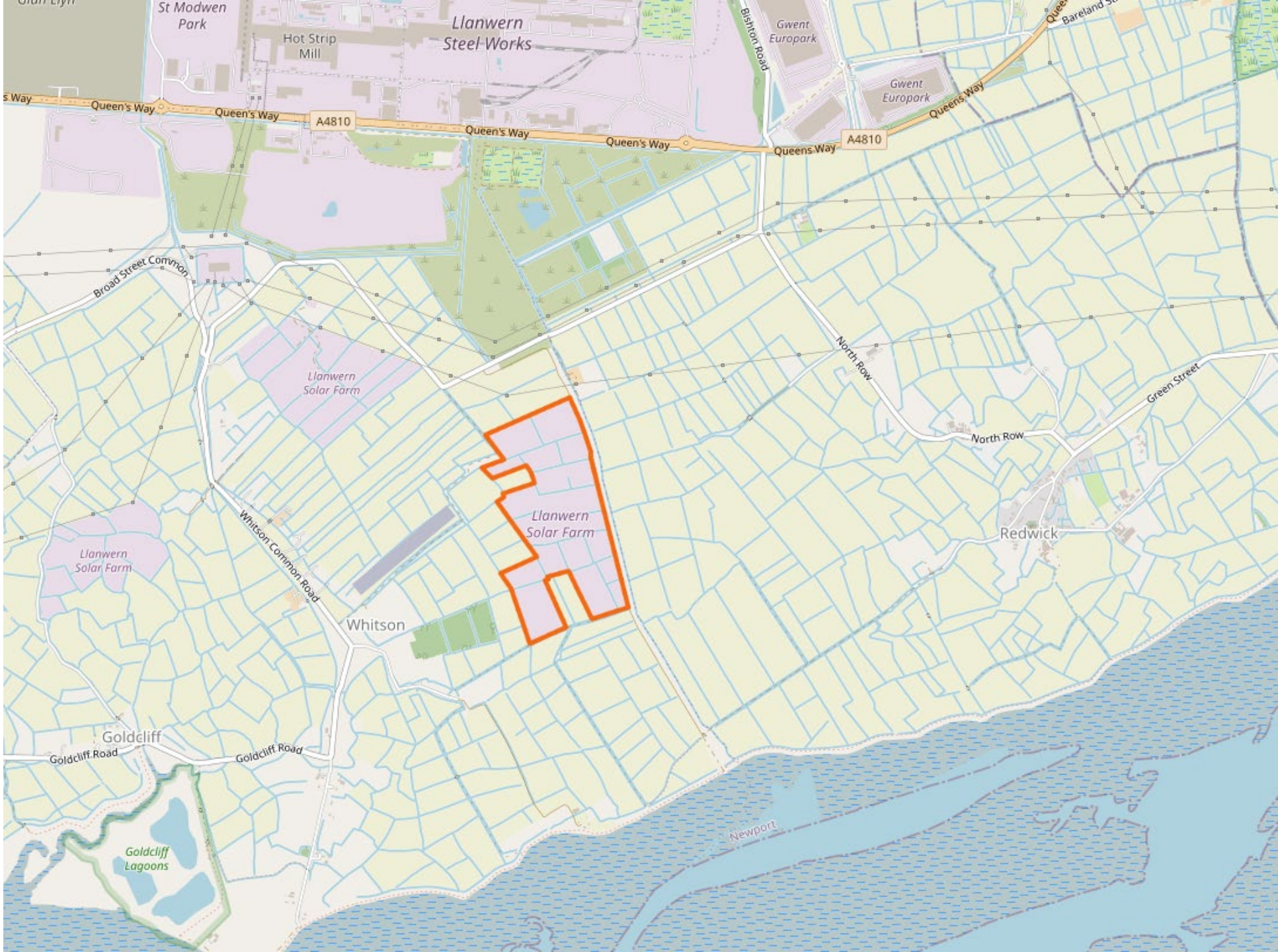
PLANNING | DESIGN | ENVIRONMENT | ECONOMICS

LITTLE CROW SOLAR PARK - **LAND PLAN INCLUDING ORDER LIMITS**

www.pegasusgroup.co.uk | TEAM/DRAWN BY: RIT | APPROVED BY: GR | DATE: 24/11/2020 | SCALE: 1:2500 @ A0 | DRWG: P17-0718_29 SHEET NO: __ REV: F | CLIENT: INRG SOLAR (LITTLE CROW) LTD. |

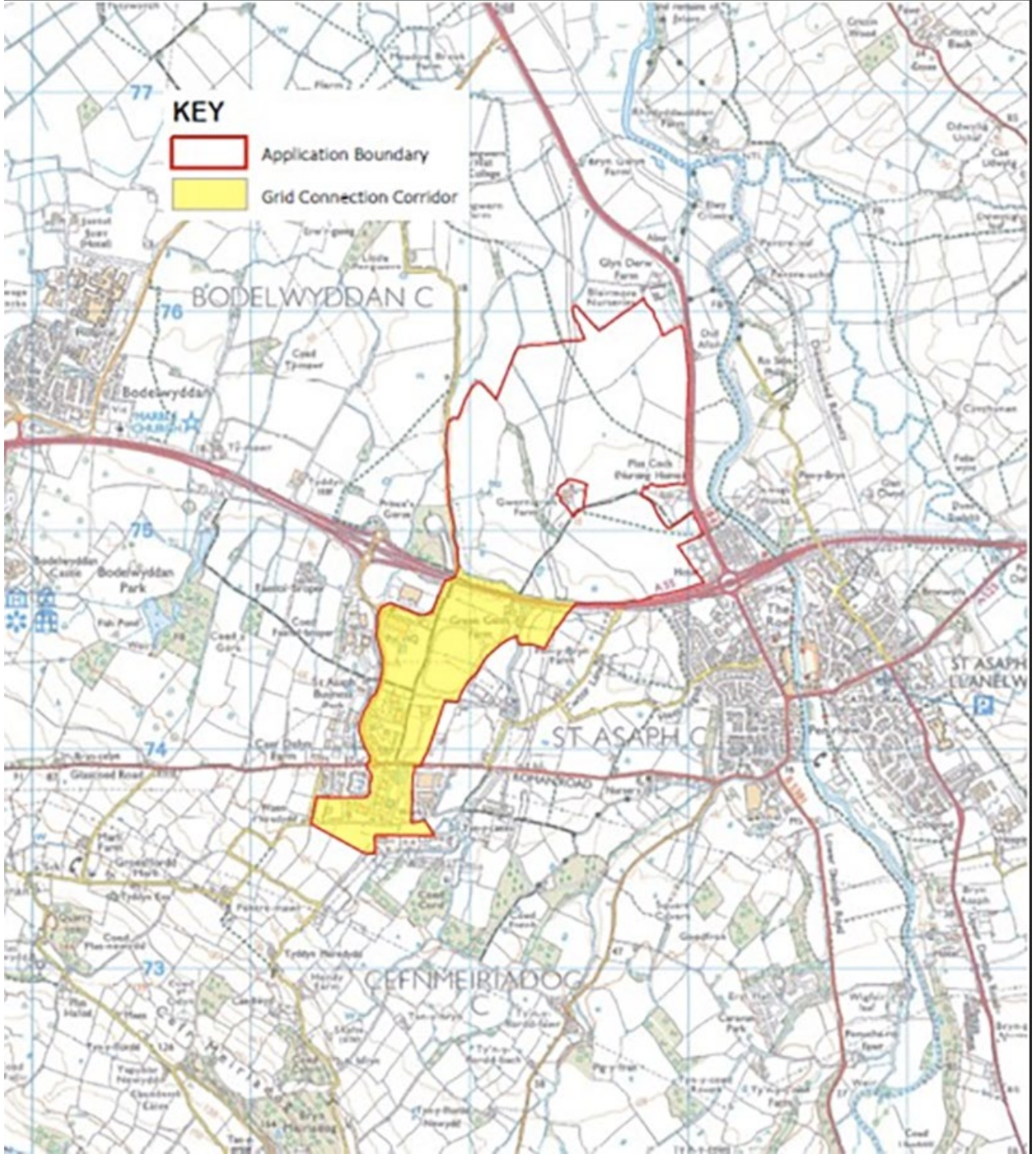
Pegasus Design

Llanwern Solar Farm and Battery Storage

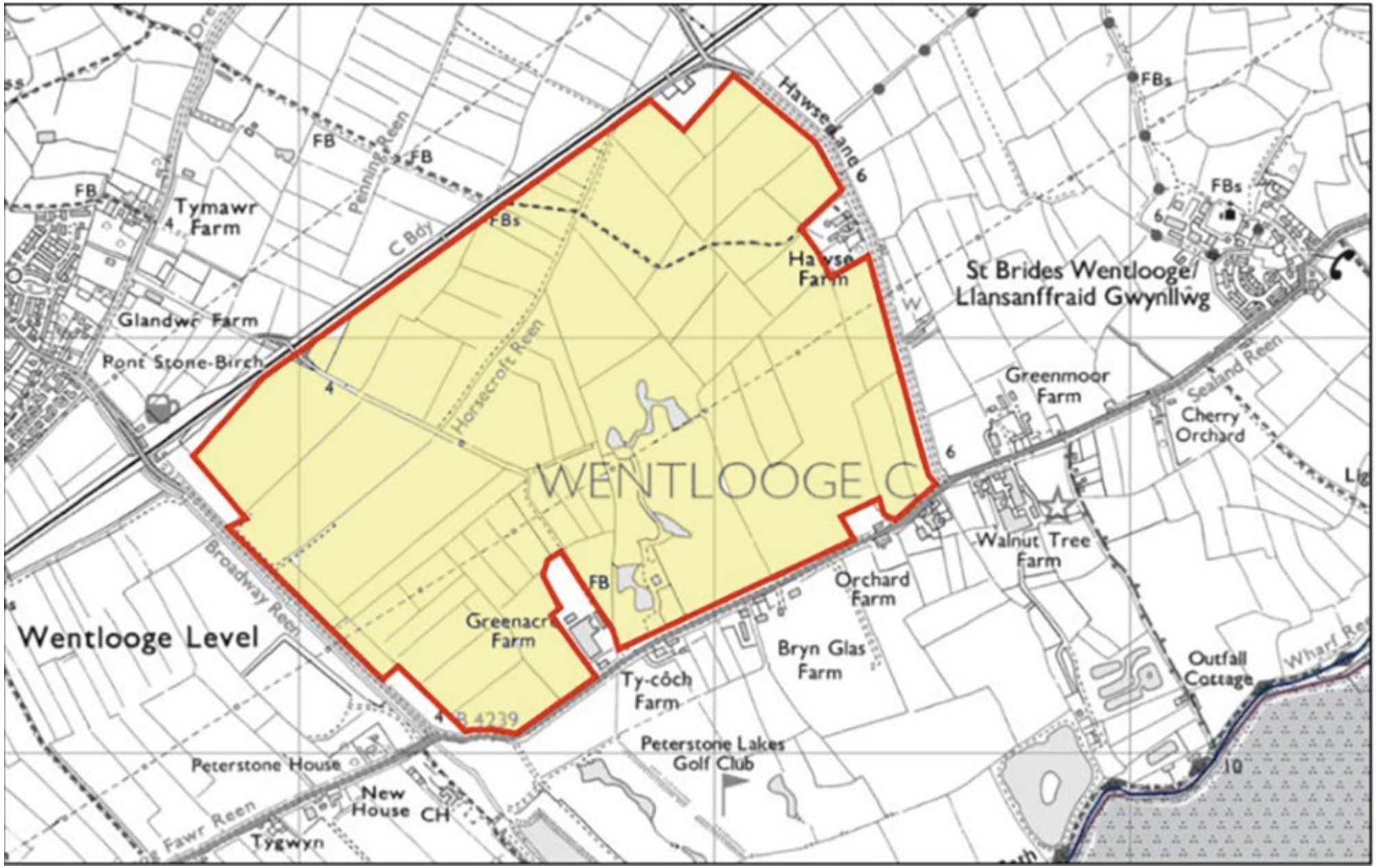


Elwy Solar Energy

N

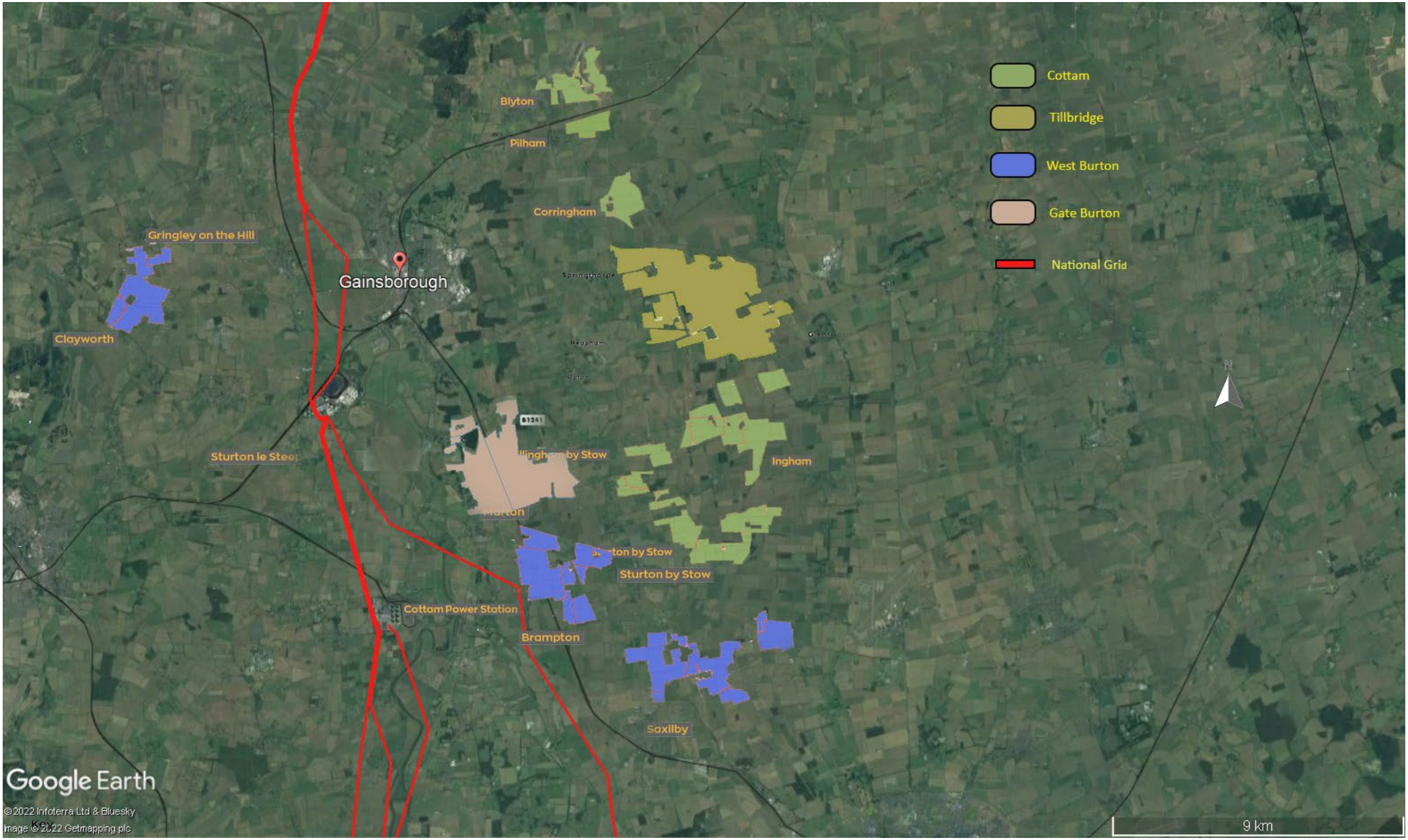


Wentlooge
Renewable
Energy Hub



Frodo Solar and Battery Energy Development

Appendix B – Cottam Solar Farm


Cottam
Tillbridge
West Burton
Gate Burton
National Grid
Blyton
Pilham
Corringham
Gringley on the Hill
Gainsborough
Clayworth
Sturton le Steeple
Ingham
Sturton by Stow
Cottam Power Station
Brampton
Saxilby
N
9 km
Google Earth
© 2022 Infoterra Ltd & Bluesky
Image © 2022 Getmapping plc

Appendix C – Ecology

SAY NO TO SUNNICA – WRITTEN RECORD OF SUBMISSIONS TO ISSUE SPECIFIC HEARING 2 (07.12.22) – TOPIC: ECOLOGY AND BIODIVERSITY

1. Introduction and explanation of table:

1.1 The table on the following pages sets down the oral contributions of Mr Woodfield, of Bioscan UK Limited, acting for Say No to Sunnica, to the agenda items concerning ecology and biodiversity at Issue Specific Hearing 2 (ISH2), and also provides further relevant comment around the issues that were discussed.

1.2 The first column indicates the agenda item concerned and (where relevant) the questions asked by Ms Taylor of the Examining Panel, as taken from the recordings of the session. The second column provides Mr Woodfield's oral contributions verbatim. The third column provides links to documentation in the Examination Library, where relevant to the point being discussed. The fourth column is likely to be of most interest to the Examining Authority. It provides a summary of contributions from others, mainly the applicant as represented by Mr Turney of counsel and by Professor Max Wade on ecology matters, and includes additional comments from Bioscan/SNTS in response, or otherwise relevant to the discussion topic (**this is information relevant to the discussion topics that wasn't specifically or wholly aired in the ISH, and it is therefore highlighted in bold for ease of reference**).

2 Overarching comment

2.1 Bioscan/Say No to Sunnica wish to make an overarching comment on the discussions around biodiversity during ISH2. At the end of the session, Richard Turney, counsel for the applicant, made something of a plea for perspective. We don't quote directly, but in essence 'the scale of what we are proposing', he said, 'in terms of taking arable land out of cultivation' is 'why we are going to deliver significant net gain'. 'It is not contestable that this will deliver net gain' he concluded.

2.2 But it is. The supposition that merely taking arable land out of cultivation delivers net gain is fallacious as it assumes arable land is always the lowest value form of habitat. That is simply not correct.

2.3 In the first instance, it is not correct where arable land is of importance for individual species or groups of species of fauna that are themselves of conservation importance – something which it is important to remember the BNG system does not and cannot take into account. But it is doubly incorrect here, at the edge of the Brecks, on locally thin, sandy and free-draining acid soils or heavier calcareous soils with a known elevated value for scarce and rare arable flora associated with depauperate soils and regular disturbance. The elevated value of these arable habitats would apply even if

there was not the additional layers of interest in the form of breeding stone curlew and a suite of other rapidly declining bird species associated with arable land.

2.4 So the premise that simply because land is arable, it is ecologically rubbish, is not only false, but dangerous for sound, sensible and policy-compliant decision making. Bioscan recognises that such false premises risk being encouraged by the technical limitations of the biodiversity metric – indeed the approach of the applicant in this case represents a clear example of the openness of that system to abuse.

2.5 We appreciate that this could trip up the unwary – after all, the lexicon of ecological literature does generally rate arable land as of lower value than other forms of habitat. But the sheer fact that certain types of arable land are also recognised as critical to the survival of a suite of specialist taxa, many of which being largely or wholly confined to this part of East Anglia (and especially points north and east), should be enough to expose that this is a dangerously simplistic approach to evaluation, especially with this particular scheme. The reasons that arable land at the edges of Breckland cannot be dismissed so readily are complex and to do with its similarity to semi-natural conditions that foster sparse vegetation and related ecological niches, such as the distinctive Breck heath habitats local to the Sunnica site. It is forgivable that for non-specialists, confusion can arise out of the concept of arable land being demonstrably important for biodiversity. But it is the job of the applicant's ecologists to present a fair and representative picture of the baseline conditions, not adopt convenient flaws in systems that attempt to distil complex ecological interactions into a series of simple sums. That is not forgivable.

2.6 At the end of the day, the applicant's own surveys, as incomplete as they are, show that the land within the order limits is of higher biodiversity value than they have hitherto sought to convey. In this context it was alarming to hear the applicant's ecologist's oral submissions at ISH2, which seek to perpetuate the myth that the applicant's own data and evidence disabuses. Bioscan and Say No to Sunnica will be looking to the applicant to present a much more sober and accurate picture of the baseline ecological value of the order limits at Deadline 5, including within their BNG calculations.

TABLE OVERLEAF

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
Agenda Item 2. Ecology and biodiversity			
2a. Adequacy of ecological surveys (Birds, other than stone curlews) Ms Taylor for the ExA asked the applicant: "*Do you consider that the surveys undertaken by the applicant of breeding and non-breeding birds are adequate, (especially in relation to Schedule 1 species), in order to ensure that the development proposals safeguard and mitigate adverse impacts on populations resident on or using land within the order limits. I have a specific reason for asking this question – I undertook an accompanied site inspection in April of this year, and observed a*	Adequacy of bird surveys (other than stone curlew): **Dominic Woodfield** said in response to Professor Wade's reply for the applicant (see right): "*We have not commented in much detail on the bird surveys because we've not been able to have independent access to some of the land to have the kind of experiences that you refer to back in April. But just from a simple review of the bird survey data, I must admit that there were several eyebrow raising elements to it, in terms of the paucity of records for certain declining farmland species. Given that we're talking about an area in excess of 1000 hectares, I was very surprised to see such low numbers of a whole suite of declining farmland species, and my experiences in July of this year on the brief site visits that I was able to undertake, suggested that for example in respect of stock dove, house sparrow – a single house sparrow for*	APP-085 Appendix 8I – report on surveys for breeding birds Tables 4-1 and 4-2.	**SNTS/Bioscan consider that Professor Max Wade's response to the question, on behalf of the applicant, was both illuminating and concerning. There seemed to be an inordinate degree of focus in his comments on the large scale of the site and the challenges this presented to achieving thorough survey (e.g. "*the methods that we use in terms of assessing bird populations and movements are obviously limited to the times that we are there*"). He also expressed a related lack of surprise that the survey results were subject to omissions ("*within a landscape such as this, it* [being the omission of marsh harrier and the low numbers of house sparrow recorded] *is not surprising*"). There was also a preconception (a running theme in the ISH) that because the dominant land-use is arable agriculture, the bird assemblage will automatically be poor ("*to start off with we just need to remind ourself of the environment that we have been undertaking surveys in – this is a sort of intensive arable agriculture environment and the diversity and numbers of birds not surprisingly is relatively low*"). This last remark is not a statement**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
marsh harrier flying low over the fields in between land parcels Eco1 and 2 and the B1104 station road which I understand is outside the Order Limits (just) but I think that raises a question about the adequacy of the bird surveys in general".	*that huge area of land? – it seems to be slightly questionable and we do have concerns, or I certainly do have concerns about the adequacy of the data, and I noticed that that's reflected all the way up to when we deal with stone curlew that other parties have expressed concerns about the adequacy of the stone curlew information, so I think it's kind of reflected across the piece".*		**supported by the applicant's own evidence which indicates that the land within the proposed Order Limits in fact supports higher than average populations (by land-use type) of several declining species of conservation concern, such as lapwing and skylark (see document reference to right).** **The attempt to explain the extremely low data returns from the bird surveys for the Red Listed house sparrow via Professor Wade's comment that "*house sparrow populations will vary through the year and time of day*" suggests a poor understanding of the readily anticipated position. The Order Limits include edges of settlements and numerous complexes of farm buildings where this species would be expected to be present and potentially locally abundant, year-round. The far more plausible explanation is that survey coverage was thin (notwithstanding Professor Wade's assurances that the 'spatial extent' was covered) because of the sheer size of the site, and indeed this logistical challenge does appear to be alluded to in Professor Wade's remarks. The key point here is that this has implications for the veracity of the**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
			surveys more generally. Professor Wade also mentioned additional habitat surveys in the context of Ms Taylor's questions about marsh harrier – presumably habitat suitability surveys for this species? Bioscan/SNTS are not clear whether these will be submitted at Deadline 5 along with the other additional survey work that has been done in 2022. Confirmation on this point is requested. **When taken together, the underlying implication of Professor Wade's comments is that the applicant considers that a lower standard of thoroughness and coverage in the bird surveys should be acceptable simply because of the large size of the project and the preponderance of arable agriculture. This is nonsensical. There should be no diminution of resource allocation to properly documenting the baseline solely due to the magnitude of the task[1]. It cannot be a correct approach to EIA to suggest**

[1] Similar comments were made by Professor Wade in response to concerns expressed by West Suffolk Council about the survey effort and coverage for stone curlew. Professor Wade drew the ExAs attention to the "significant challenges" of finding a bird present only at low densities across a large landscape. This is very close to seeking to excuse deficiencies, shortfalls or gaps in the survey data because attaining a robust standard is a challenge at this scale. It is a concerning approach that was returned to in many of the applicant's answers during ISH2.

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
			lower baseline data collection standards apply with increasing landtake of a project, and yet that appears to be the position being advanced by the applicant. **Bioscan/SNTS say that the result is that the Examining Authority can have reduced confidence in the thoroughness of the assessment on declining farmland birds, including species with attendant statutory obligations. This has relevance to the points about mitigation and compensation in the rows below.**
2a. Adequacy of ecological surveys (Stone curlew)	Adequacy of stone curlew surveys **Dominic Woodfield** commented on this topic having heard that West Suffolk Council remained concerned that the applicant has not demonstrated that there's no suitable stone curlew habitat within 500m of the order limits, and after hearing Professor Wade's response to that question. Mr Woodfield said: *"I have to say that I share the concerns expressed by West Sussex on this. The issue, the way that stone curlew uses the*	APP-085 Appendix 8I – report on surveys for breeding birds APP-258 6.6 Environmental Statement - Offsetting Habitat Provision for Stone-Curlew Specification REP-240e SNTS Written Representation Annex D (Page 1 of Appendix 2 thereof)	**Professor Wade's comments that surveys undertaken beyond the order limits relied upon experience of previous nesting records is not a statement that provides confidence that the ground was covered. He also stated that there was reliance placed on the Phase 1 habitat surveys (which the applicant now appears to accept are incorrect in numerous places- see Appendix 2 to SNTS's Written Representation). It should be noted that the Phase 1 deficiencies are particularly acute in the 500m buffer. He opined that there was no need to cover the whole of the 500m zone and stressed that "*We're talking about 4-5 pairs of birds that use this particular***

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
	local landscape around here is largely driven by particular kinds of physiological features such as large fields sizes but also the cropping regime in any particular year. So, the bird moves around quite a lot, and I can put t no more simply than if the bird moves around quite a lot, focusing on particular areas on the basis of past records, carries with it a relatively high possibility of missing breeding attempts, or territory holding in any particular area. I think if I was designing a survey of this nature, notwithstanding the expertise at my disposal, I would want everybody to cover the ground."		***area - 1 pair per 2.5 km^2. I think you'll appreciate that this poses significant challenges"***[1]**. This suggests a lack of confidence that the survey coverage is comprehensive.** **Richard Turney for the applicant confirmed that additional post-consent surveys of stone curlew would be carried out but the results of these will naturally not be available to inform the Examination and decision-making process, nor commitments on the appropriate quantum of mitigation and compensation for this iconic and sensitive species. He stressed that Natural England appeared to be satisfied, but (as discussed further below), Bioscan/SNTS ask the ExA to note that the focus of NE's concern will be stone curlew pairs believed to be functionally linked to the populations and integrity of the Breckland SPA. Mr Turney's follow-on comments on mitigation are dealt with under agenda item (b) below.**
2a. Adequacy of ecological surveys: (Flora and grassland surveys)	Adequacy of flora and grassland surveys	APP-079 – ES Appendix 8C Terrestrial Habitats and Flora Report (in particular see the accompanying maps for Phase 2 coverage)	**Professor Wade stated in response to Ms Taylor's question that "*here probably the point is more a spatial one than a temporal one*". Bioscan/SNTS say this is not correct as temporal concerns are at the heart of the**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
Ms Taylor for the ExA asked the applicant: "*The local authorities* [in the LIR] *have queried the geographical extent of surveys of arable habitat and notable flora- reference APP-079. I wondered if the applicant could help me please with some more information about the extent of surveys of arable flora and why there do appear to be significant gaps in the coverage of the survey work*"	**Dominic Woodfield** stated in response to Professor Wade's comments: *"Ma'am you'll have seen our representations on this. We identified lots of shortfalls, I mean I don't recognise Professor Wade's characterisation of how the surveys were approached because there is a temporal element to this, and as just picked up quite correctly by Ms Ahmed, the Phase 1 survey was subject to a whole manner of errors which are in part likely to derive from the fact that it was taken, took place, very late in the year in November and December, not a good time for looking for arable plants, and obviously the errors that were made at that stage which appeared to be recognised by the applicant in their commitment to undertake further Phase 2 surveys (although they were promised at Deadline 1 and we still haven't seen them), the errors there would have been compounded by the decision to screen out large areas of the site for further surveys for arable flora, so the work that was done – the targeted work that was done – looking for arable flora, was a*	REP1-024 - LIR para 8.89 REP-240e SNTS Written Representation Annex D (Page 1 of Appendix 2 thereof)	**concern, at least as regards Bioscan's and SNTS's position. This is because it is evident that the initial Phase 1 surveys were carried out at an inopportune time of year for assessing arable or grassland flora (particularly Breck species), and omissions at that stage (as highlighted in Bioscan's report at Annex D to SNTS's WR) appear to have been subsequently compounded by using the Phase 1 information to screen in or out areas for further Phase 2 surveys. Consequently, the coverage of Phase 2 surveys for arable flora, including the suite of scarce species for which the locality is of particular importance, was limited and Bioscan's submissions indicate how this has resulted in fields measurable at District levels of importance being omitted as a consequence.** **The claim that the surveys covered the full extent of field margins and associated grassland strips is patently not correct in respect of the crucial Phase 2 element, as again evidenced by the maps contained within APP-079. It also conflicts with the statement that all 'accessible' arable fields were surveyed a point picked up by the LPAs**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
	very much more restricted number of fields, and even in the cursory efforts that we managed in July, based on public access, we were able to find other fields which had elevated levels of value for arable flora. So, there are fairly significant gaps in the baseline information, and as I say we flagged these, we brought them to the applicant's attention, the applicant responded saying it is going to do some further work and it was promised to us at Deadline 1, and we've just gone past Deadline 3A and we still haven't seen it."		**in the LIR. Professor Wade also implied that rare arable flora are only found in field margins – again this is plainly wrong.** **Professor Wade stated that "*as with stone curlew and the birds we're talking about a dynamic landscape in terms of the intensive arable agriculture that occurs there. The arable flora is very much tied to that – in one year you may find a particular suite in one field margin, they could be gone for 4-5 years. That could explain some of the discrepancies*" Bioscan/SNTS say that this is an argument for caution when valuing the arable land resource within the order limits as a whole and yet (as per the discussion on BNG below) that is not the approach the applicant has taken.** Richard Turney for the applicant confirmed that the applicant will be submitting further survey work to the examination (later confirmed this would be at Deadline 5 – see below).
2a. Adequacy of ecological surveys: (invertebrates)	Deferred in view of prospective change request (removal of Sunnica West Site B)	-	Deferred in view of prospective change request (removal of Sunnica West Site B)

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
2b. Impacts on stone curlew and adequacy of proposed mitigation Ms Taylor for the ExA to the LPAs: "*Could you please summarise your key concerns as expressed in the LIR in respect of impacts on the local stone curlew population that will be during the construction and then the operational phases?*" Also (supplementary question to applicant from Ms Taylor):	Following on from West Suffolk's comments in response to the first question[2], **Dominic Woodfield** said "*Just quickly to endorse the comments of West Suffolk, in respect of the question marks over E12, E13 and E05. I'm concerned, as we're now talking about impacts and mitigation and compensation, I'm concerned about quantum here. Professor Wade earlier talked about one stone curlew every one and a half, no two and a half, kilometres, and by my calculations the amount of compensation or mitigation provision being provided under the scheme at present, is probably (particularly when you take into account the 500m buffer of disturbance zones), is probably only going to be enough to cater for something like 2-3 pairs, and*	REP1-024 - LIR para 8.6 bullet 2. APP-258 6.6 Environmental Statement - Offsetting Habitat Provision for Stone-Curlew Specification REP3-011 & REP3-12 Deadline 3 Submission - 6.2 Environmental Statement Appendix 10I: Landscape and Ecology Management Plan. NE Additional Submission – Position Statement in lieu of attendance at ISH2	**The applicant, via Professor Wade, sought to emphasise the uncertainty of future habitat availability for stone curlew without the development in light of cropping rotations and crop types, but this ignores the historical record which is of habitual use of land within the proposed order limits for some time. The suggestion is that a reduced quantum of more stable habitat will compensate for impacts and benefit the species, but by the same token Professor Wade acknowledged that "*it doesn't work like clockwork*" which appears to accept the point about delivery risk raised by Mr Woodfield for SNTS.** **In response to Ms Taylor's supplementary question, Professor Wade suggested that there will be an improvement on the habitat currently available to stone curlew in the**

[2] **WSC expressed particular concerns with the continued inclusion of field parcels E12, E05 and E13 as sites for solar arrays and asked why they weren't being avoided due to stone curlew use (particularly in E12 where it appears habitual in recent years) in accordance with the mitigation hierarchy. The issue of avoidance and the applicant's approach to the mitigation hierarchy was discussed at length. Bioscan/SNTS do not agree with Mr Turney's assertion that 'avoidance' should not apply in this instance as stone curlew moves around the area. Certain areas within the proposed Order Limits appear to be used almost habitually except where crop type is a negative factor. What the applicant's position fails to acknowledge is that PV arrays will sterilise these areas for 40+ years, not just intermittently due to the vagaries of crop rotation.**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
"Would the mitigation proposals in your opinion allow for potential expansion of the stone curlew population rather than just maintenance?"	*yet we hear that in some years the numbers of pairs nesting either within the order limits or very close to them exceeds that number. And in any event, there is no failsafe built into that level of provision for any degree of failure: it assumes it will automatically be successful, it will attract stone curlews and they will all flock to these mitigation/compensation habitats and eschew any other areas that they may previously have used. I think that builds in an extremely high level of risk for an extremely important species, and I just query whether the quantum of compensatory provisions is sufficient to build in those risk factors."* In response to Professor Wade's answer on the question of whether the stone curlew mitigation/compensation would deliver betterment, **Dominic Woodfield** said *"I don't know if it would assist you, but what we're hearing here is an awful lot of unevidenced conjecture about what may or may not happen, and I prefer to deal with evidence-based assertions. And the simple fact in terms*		**area, but caveated his response by drawing attention to factors affecting the species on migration, which rather suggests that confidence in the success of the mitigation is not absolute.** **The applicant, via comments from its counsel Richard Turney, sought to emphasise to the ExA the weight to be attached to Natural England's position, as set out in their position statement in lieu of attendance at ISH2 (reference to the right). Mr Turney portrayed NE's position as one of satisfaction. In the first instance, that is a slightly premature reading of the written submissions to ISH2 from the statutory authority which, while expressing a position of relative comfort, do so subject to some expected further detail. We would remark in any event that the ExA should similarly note the limits to NE's interest and remit with regard to stone curlew. NE's concerns are primarily focussed on protecting the Breckland SPA from indirect effects arising from impacts on stone curlew within the Order Limits affecting the SPA via functional linkages to that site. They do not appear to comment on stone curlew matters generally**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
	of territory sizes of stone curlew, you don't have to go very far from here to go to one of the most celebrated sites in the country at Weeting Heath, and in around 130-140 odd hectares, that supports 2-3 breeding pairs maximum. Now that's a site that's in optimum condition for the species. So it's a simple question of numbers. The question was rightly put, is there scope for achieving a no net loss situation and is there scope for expansion. My question and I think the question that the Examining Authority needs to satisfy itself on is does the actual physical amount of land that's been put aside for compensation, even in an ideal world, is it actually capable of doing that [compensating and/or expanding provision], when you take into account disturbance factors and everything else."		**beyond this threshold. This is made plain by their reference to 'other European Sites' in their position statement and by their lack of comment on any matters not squarely within their 'protection of statutory designated sites' remit. Bioscan/SNTS ask the ExA to note, in the absence of further clarity at this stage, that their comments on stone curlew are made specifically within the framework of considering the potential for likely significant functional linkage effects on the European Site.** **Bioscan/SNTS would also like the ExA to note that the applicant has not provided unredacted stone curlew data to them. Given Bioscan have expertise with this species we would suggest that it will assist the Examination for that situation to be remedied.**
2c. Impacts on other ecological receptors and adequacy of proposed mitigation measures (<u>badgers</u>)	**Dominic Woodfield** sought clarity from the applicant's Professor Wade about the use of fencing he was describing as "permeable" to badgers. Professor Wade ultimately clarified that the applicant proposed that the fencing		**The Examining Authority may wish to consider the security implications of this type of fencing design. In the event that there *are* implications for security of the solar facility, in the near or more distant future, it may wish to consider whether**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
Ms Taylor for the ExA asked a question about whether badger gates were proposed. She then asked a follow-up question as to whether the fencing would allow deer passage and if not what the implications for deer would be.	would be set sufficiently above ground to allow badger passage beneath, as at one point it was uncertain what was meant by permeable. This precipitated Ms Taylor's second question on this subject, which was answered by the applicant in the negative (i.e. deer passage would not be allowed). On implications for deer, **Dominic Woodfield** sought to assist by stating "*I can help in a generic sense. What will happen is that impact from deer on agricultural land will radiate out from the site so there will be knock-on impacts - I don't know if this has been looked at as part of the application and obviously, as you say, deer won't be a focus for the ecological assessment as they're not protected species, but the analogy I would draw is that at a site quite local to me, a wooded site, during lockdown that became an intensively used site for recreation, and all the deer from that site effectively left it and headed out into the surrounding agricultural fields and caused real problems there with crop damage. So there will be a displacement effect and it*		**there is a likelihood of a future attempt to improve security actively or inadvertently exclude badgers and whether that impact scenario has been adequately assessed and/or is adequately controlled by the provisions of the DCO.** **Professor Wade in response to DWs comment said that there's considerable resource within the scheme where deer will have access, and stated that this would, to a degree, but couldn't say to what extent, provide alternative grazing for the deer.**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
	will have surrounding effects but they will probably be largely agricultural rather than anything else".		
2c. Impacts on other ecological receptors and adequacy of proposed mitigation measures (bats) Ms Taylor for the ExA asked the applicant: "*the local authorities have made detailed comments in relation to bats especially in terms of trees and hedgerows used by bats for roosting and foraging. We'll be picking up mote on issues related to tree and woodland surveys later on, but will you be revisiting your assessment of the impact on bats and proposed mitigation measures in the light of the*	No oral contribution made at this juncture, but oral contributions on bats were made under agenda item 4d (see below)	REP3A-063 paras 2.2.45-2.2.50 on discrepancies between ES and AIA in respect of tree, hedgerow and woodland loss. REP3A-063 paras 2.2.1-2.2.3 on omission of any consideration of potential links to Eversden and Wimpole Woods SAC.	**Responding to the ExA's question, Professor Wade stated that there isn't anything within the AIA that's a surprise and that they could reassured that detailed extensive surveys have been undertaken, including a certain amount of trapping. This does not however accord with the discrepancies between the AIA and the ES, as commented upon by SNTS at Deadline 3A.** **As set out in Bioscan's Rep3A submission for SNTS (see reference to right), the assessment does not consider the scope for functional linkage to Eversden and Wimpole Woods SAC.**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
arboricultural impact report that you've now submitted"			
2c. Impacts on other ecological receptors and adequacy of proposed mitigation measures (arable flora) Ms Taylor (ExA) asked the local authorities: *"We've already touched on survey work, and in your joint LIR you suggest that compensation habitats needs to be designed and relocated to form functional and connected areas, could you expand on that please?"* She also put the following follow up question to the applicant:	**Dominic Woodfield** said *"on this issue I think that there is a kind of burning incongruity between what we heard earlier on today about deficiencies in the baseline survey information and how the applicant is moving to try and address those with further survey work which will be submitted at some point, and the basic drivers for how you define an adequate level of compensation. You have the applicant on one hand saying there is adequate compensation for the loss of arable flora, on the other hand it's saying we don't know which fields yet have got significant arable flora resources. And just to give you some statistics, were talking about an order limits area in excess of a thousand hectares I believe, and the sum total of compensation proposed for arable flora habitats amounts to twelve 3m x 20m strips. Now that's extraordinary and you heard earlier on from Professor Wade about how arable flora can pop up in some years and disappear in others, and*	REP1-024 - LIR para 8.92-8.95. REP3-011 & REP3-12 Deadline 3 Submission - 6.2 Environmental Statement Appendix 10I: Landscape and Ecology Management Plan. APP-079 – ES Appendix 8C Terrestrial Habitats and Flora Report (in particular see the accompanying maps for Phase 2 coverage)	Richard Turney for the applicant stated that the detailed specification of environmental mitigation measures is for post-consent. And that there is a further stage of analysis to do on this matter. He confirmed that the further baseline survey work on arable flora that's been carried out in 2022 is going to be produced at Deadline 5 along with a further updated BNG calculation. **Professor Wade recognised the need to work towards detail, covering arable flora as well as other aspects. He mentioned that the applicant had had a recent workshop with the LPAs from which it had taken away *"a number of aspects which will help to overcome the concerns"*. He further stated that there is scope to mimic disturbance around the edges of the solar sites – it was unclear of this was a commitment to more plots than the 12no 3x20m ones committed to in the ES. He also alluded to arable seed sources being 'moved around', but Bioscan/SNTS are not aware of any such commitment in the LEMP.**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
"arable plots are shown as a series of orange dots, would the arable flora in field margins be something that just happens, or is the applicant proposing to expand the orange dots and build them into the masterplan in a more coherent way"	*it effectively works in a kind of metapopulation structure – it needs large area to be able to pop up in some areas and not pop up in others in order to survive into the long term. And on any analysis, that level of compensatory provision is going to be woefully inadequate when you look at the amount of resource that there is available over this order limits area. Notwithstanding that we still don't know, and it still hasn't been provided by the applicant, exactly how many arable fields have flora elevated above the local level".* In response to Mr Turney's replies, in particular the assertion that full survey coverage had been achieved everywhere except in the cable corridor, **Dominic Woodfield** made a further submission as follows: *"For the first time in quite a long time, I'm going to take issue with something that Mr Turney said. The survey coverage – I think the reference you need Ma'am is Appendix 8C of the Environmental Statement which refers*		**Bioscan/SNTS look forward to seeing the applicant's improved offer regarding compensation for impacts on arable flora and expects that it will be significantly improved on the 12no 3x20m plots previously mooted as adequate.**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
	to the Phase 2 surveys done of arable habitat. That was a process arrived at as we discussed earlier through a kind of screening process whereby Phase 1 survey coverage may have covered the entirety of the order limits, but it now appears to be beyond contention that it missed some significant habitat resources within that, even if the ground was covered. So when I refer to gaps in the survey coverage, I'm referring to the fact that there was a focused effort for Phase 2 surveys in some fields, but not others, within the main order limits area, and that those omissions in large part some of them have been accepted by the applicant in response to our written representations and the report contained in them and they've accepted the need to go and do further survey work. So, when it's characterised as gap filling, and 'the survey coverage is complete we just need to update it', I think that's slightly missing the key point here which is that there are important ecological resources that have been missed, and until those are characterised, and until that information		

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
	is before you, it is very difficult to define the quantum of compensation that's required. One follows the other."		
2c. Impacts on other ecological receptors and adequacy of proposed mitigation measures (birds other than stone curlew)	**Dominic Woodfield** said "*This goes back to a point I raised earlier which is that we still maintain that the impact on declining farmland bird species, by which I mean a particular suite of species that have statutory obligations attached to them, so things like skylark especially, haven't been adequately assessed in the applicant's assessments. We provided information to the Examination in our written representations which demonstrates or is evidence that these birds tend to be or certain species of these birds tend to be displaced from solar farm sites, certainly in a breeding capacity, and just in terms of the adequacy of the survey baseline that would inform that assessment of impacts, you'll have heard me say earlier on that I had some eyebrow raising figures for the number of some of the bird species, but that goes beyond that in terms of the interpretation of the results, because I've seen a statement in the appendix to the ES that deals with*	APP-085 Appendix 8I – report on surveys for breeding birds	It is noted that the applicant committed to picking up more precise calculations of figures for declining farmland bird species (population estimates by reference to county) outside the hearing and further information on this is awaited at Deadline 4, as per Richard Turney's comment. **Richard Turney stated that it needed to be clear that the applicant is proposing substantial loss of land in arable cultivation which will deliver substantial Biodiversity Net Gain. The arable is predominantly very poor and what will be delivered would be better. To merely observe change in particular species, risks detracting from the overall position which is net gain. Arable crop rotation has not been good for nature in East Anglia. Professor Wade referred to agro-chemical and abstraction impacts being lessened with the development. SNTS are providing evidence to the Examination separately on the latter. On the former, Bioscan/SNTS's understanding is that weedkillers and other chemicals are used to**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
	the breeding birds survey work, that suggests that no bird population is present at above 1% of the county population level. And they seem to be effectively screened out on that basis. Well, by reference to the most recent Cambridgeshire and Suffolk bird reports, that figure sems to actually be incorrect. So for example, certain species such as skylark and yellow wagtail for example, seem to be present at above 1% of the county population level. So I think that matters needs to be looked at again, but more particularly I think the potential impact of displacement of a whole suite of species which are in significant decline needs to be looked at. It's not enough to just say 'oh well they'll find somewhere else in the wider countryside'. It's a matter that goes to the point about cumulative impacts and in-combination effects, but as is said in the article that we provided to you as evidence, this is a matter that is so often overlooked when it comes to assessing the impacts of solar farms because species such as skylarks will be displaced. They may continue to use it in		**clean PVs and control growth in front of inclined panels. If the applicant is committing to no use of weedkillers or other chemicals whatsoever in managing and maintaining the solar arrays, this would be useful to understand.** **<u>Please also see Bioscan's/SNTS's covering comments on his matter at the head of this document.</u> The supposition that all arable is bad, and that within the Order Limits is no better than the lowest common denominator, ran through very many of the applicant's oral submission's to ISH2. Yet their own evidence, as incomplete as we would argue that it is, runs counter to that proposition. If the presence of stone curlew and good populations of declining farmland birds is not enough to demonstrate that this is not 'ordinary' arable land, the applicant's own recognition that many of the limited number of fields it looked at in its Phase 2 surveys are of District or higher level importance for arable flora should be. The applicant's case rests on 'dumbing down' the baseline value of the land within the order limits while 'bigging up' the future value with the scheme, despite the**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
	some capacity, but it is not enough to say 'OK that's fine they will find somewhere else in the wider countryside'".		**significant practical and logistical challenges to its proposed compensation and mitigation delivery, and despite close scrutiny showing it to be barely above the minimum possible to make such a case, let alone aligned with 'bigger, better, more joined up' principles advocated by Lawton. We will return to this matter when the applicant finally releases the additional survey information and revised BNG calculation promised at Deadline 1 but now, we are told, to be expected at Deadline 5.**
2d. Impact on Chippenham Fen and Snailwell Poor's Fen and potential mitigation In light of the applicant's confirmation at Deadline 3A that it intended to withdraw Sunnica West Site B from the scheme (other than in respect of cable routing), this matter was largely deferred by the Examining Panel.	No oral submissions from Dominic Woodfield on this agenda item, but see comments in next column.	Procedural decision to invite change application to withdraw Sunnica West Site B	**SNTS welcome the proposed withdrawal of Sunnica West Site B as this substantially reduces the scope for significant impacts on the important designated site complex at Chippenham Fen.** **Bioscan/SNTS would observe, however, and especially in the light of Ms Taylor's question to the applicant at the close of the ecology and biodiversity session (see agenda item 2f below) about application of the Lawton principles, that the applicant's withdrawal of any habitat creation or enhancement from the land it presumably can still retain control over at Sunnica West Site B, is not consistent with its portrayal of**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
However, Ms Taylor sought clarity that the mitigation and compensation proposals originally to be delivered at Sunnica West Site B were also to be withdrawn and Mr Turney., for the applicant, confirmed that to be the case. A follow on question to be answered by the applicant in terms of further submissions is the extent to which this changes the Biodiversity Net Gain assessment. In response, the applicant has committed to submitting a revised BNG calculation at Deadline 5.			**going above and beyond as regards mitigating and compensating for ecological impacts.** **If ISH2 has revealed anything, it is that the applicant's mitigation and compensation proposals may well fall short of the mark in terms of simple quantum, and in that context it seems at best premature to withdraw measures that, were they to be kept in to the scheme, might put it into a more healthy position in terms of its ecology case.**
2e. Impacts on other designated sites and adequacy of proposed mitigation	No oral submissions from Dominic Woodfield on this agenda item.		SNTS note that a revised CEMP is to be submitted at Deadline 5. SNTS may wish to make comments on this document in due course.

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
2f. Adequacy of mitigation measures in general; connectivity Ms Taylor (ExA) to the applicant: "*do you consider that in terms of mitigating impacts on ecology and biodiversity, you have followed the principles set out in the Lawton Review – i.e. bigger, better and more joined-up*"	**Dominic Woodfield** said "*Two points if I may, Ma'am. The first one is to respond to the comments that we have just heard [from Professor Wade for the applicant]. So, in the first instance there does seem to be this fixation on the part of the applicant with saying that because it's all arable land it's rubbish. Now, there is a general element of support that arable land can be damaging to biodiversity, but as an accident of geography and soils and various factors, the arable land in this case is not the lowest possible denominator. Yet that's how it has been treated in both the [EIA] assessments and in the biodiversity net gain assessments. And yet, by the applicant's own information, it is grading some of the arable flora fields as of district or county importance, and yet when it comes to actually calculating the value in the biodiversity net gain calculations, it demotes that value back down to the lowest possible common denominator. Now that's an incongruous position for it to take, and one of the things I would ask is whether the applicant is intending*		**Professor Wade (in answer to the ExAs question about application of the Lawton principles) said "absolutely yes". He said the application affects a farmed landscape at an industrial level which has left a legacy from a biodiversity point of view of significant damage. It presents an opportunity to substantially enhance biodiversity and wildlife. The applicant's BNG calculations he stated (although needing to be updated) "*will demonstrate a significant calculated net gain*".** **Bioscan/SNTS would make the following comments on this.** **1) The applicant's driver for stone curlew compensation is to attempt to cater for no more than, and perhaps less than, the number of pairs that use the land within the order limits at present. No multiplier for failure risk is built in and consequently any failure of the plots to be successful will result in net displacement of breeding pairs. <u>This is not 'bigger, better or more joined up'</u>** **2) The applicant's current proposals for mitigation and compensation for impacts on**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
	to take a more considered view in its use of the metric calculator t reflect the actual reality on the ground, and not the defaults that the calculator allows it to exploit if it wants to. So, there's that question there. The second point I wanted to make is again another query I think to perhaps take away is that all of, look, we've heard lots of reference today to the CEMP, to the LEMP, to the monitoring and to all of the reactive measures. That is going to take an army of ecological clerks of works, over an area of land of this scale. There are going to be so many interfaces between construction works and sensitive habitats and sensitive species that are going to be monitored, and yet all we ever see is reference to ecological clerks of works in the singular. Now, I think there needs to be a resourcing implication there that needs to be looked at and I'll be looking to the applicant to address that question in further submissions".		**arable flora is a mere 12no 3x20m strips of cultivated land managed for flora out of a current expanse and habitat opportunity for such species in excess of 1000 ha. This is *de minimis* on any analysis and certainly not 'bigger, better or more joined up'** **3) The applicant's proposals for mitigating and compensation for displacement of open country species such as skylark, lapwing and yellow wagtail, are largely limited to a supposition that these species will pack themselves into the stone curlew compensation areas (alongside the stone curlews), be accommodated somewhere else, or learn to live with the solar arrays. This is not 'bigger, better or more joined up'** **4) The applicant's withdrawal of any habitat creation or enhancement proposals from the land it presumably will retain control over at Sunnica West Site B, is similarly not consistent with its portrayal of going above and beyond as regards mitigating and compensating for ecological impacts. If ISH2 has revealed anything, it is that the applicant's mitigation and compensation proposals may well fall short of the mark in**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
			terms of quantum, and in that context it seems at best premature to withdraw measures that, were they to be kept in to the scheme, might put it into a more comfortable position.
4. Landscape and visual impact			
4d. general impacts on the landscape of the area; potential for mitigation and impact of mitigation proposals on the landscape (The Arboricultural Impact Assessment submitted at Deadline 3A)	**Dominic Woodfield** said "*I too welcome the provision of the AIA, something that I would have expected to see with the original submission, and I welcome the clarifications that the applicant has committed to, although it does seem that everything is piling up on Deadline 4 [Deadline 5 was meant], matters that I would have expected to have seen at Deadline 1, but be that as it may, the other perhaps issue that needs to be looked at, perhaps at Deadline 4 or later during the course of the examination, is that there do seem to be significant discrepancies between the total tree and hedgerow loss that's arrived as a consequence of the arboricultural impact assessment, and the assumptions made in the ES. And I just, it's an open question really, whether the examination is going to be requiring the*	REP3A-063 paras 2.2.45-2.2.50 on discrepancies between ES and AIA in respect of tree, hedgerow and woodland loss.	Richard Turney for the applicant responded to the ExA by saying that the AIA has been produced in light of representations from the LPAs. He said it is work that would have taken place in any event as secured by the management plans. Despite it portraying a different picture to the ES, he stated there's no intention from the applicant to revise the ES as the collective material submitted to the Examination meets the EIA requirements. **Bioscan/SNTS merely remark that this is symptomatic of the applicant's approach of designing the scheme 'on the hoof' and would contend that it is a less than satisfactory approach to national infrastructure projects.**

ISH2 agenda item / issue	Summary of Bioscan's (Dominic Woodfield's) oral submissions to the Hearing, made on behalf of Say No To Sunnica (SNTS)	Relevant document references	Relevant additional/contextual points, including on others' submissions including **new information/comment in bold**
	applicant to revise the environmental statement, and as a corollary to that, obviously the potential impacts on ecological features such as bats, in light of that new information".		
5. In-combination impacts			
This matter was deferred by the Examining Panel to written submissions and/or a later Issue Specific Hearing.	None.	APP-085 Appendix 8I – report on surveys for breeding birds	SNTS will wish to make representations on this issue in due course, particularly in respect of the absence of a thorough assessment of in-combination effects on declining farmland birds, noting that land within the proposed Order Limits appears of elevated importance for a suite of declining farmland bird species, including those with attendant statutory obligations (e.g. lapwing, skylark, yellow wagtail etc).

Appendix D – Heritage

ISH2: Say No To Sunnica Heritage Summary

Dr Richard Hoggett FSA MCIfA (Heritage Consultant, Richard Hoggett Heritage)

1. Introduction

1.1 During Issue Specific Hearing 2, held on Wednesday 7th December 2022, Say No To Sunnica made a number of representations to the Examining Authority on the subject of the Historic Environment. The discussion of the Historic Environment took place under a series of headings identified by the Examining Authority and these headings are used to structure this summary of the arguments put forward by Say No To Sunnica. The session ended with a discussion of other heritage-related matters, on which Say No To Sunnica also made representations.

1.2 Many of the representations made draw upon and complement the Heritage Assessment prepared by me on behalf of Say No To Sunnica and submitted as Annex B to the Deadline 2 Written Representation.

1.3 The headings identified by the Examining Authority and followed here are:

a. Heritage Assessment
b. Impacts on Snailwell Fen historic landscape and proposed mitigation
c. Impacts on Chippenham Park Registered Park and Garden and adequacy of proposed mitigation measures
d. Isleham plane crash site – impacts and potential for mitigation
e. Impacts on Conservation Areas and their settings

2. Discussion Item A: Heritage Assessment

2.1 The initial discussion pertained to the Heritage Assessment submitted by the Applicant as part of the Environmental Statement. We offered a detailed critique of this document in our Deadline 2 Written Representation, but a number of key points are summarised here.

2.2 As was highlighted by the Examining Authority in their First Written Questions, the Applicant does not set out in detail the methodology which they have applied when assessing the significance of heritage assets or the contribution which setting makes to their significance.

2.3 As was discussed in ISH2, the criteria for determining the value of heritage assets is set out in Table 7-1 of the Environmental Statement. Here, heritage assets are ascribed a value of 'High', 'Medium', 'Low' or 'Very Low'. There is no corresponding category of 'Very High', and we contend that this results in a skewing of assessments towards the lower end of the 'value' scale.

2.4 Similarly, the criteria for determining the magnitude of impact on heritage assets set out in Table 7-2 of the Environmental Statement also adopts a 'High', 'Medium', 'Low' and 'Very Low' scale, again resulting in a skewing of assessments towards the lower end of the 'impact' scale.

2.5 The matrix used to assess the significance of effect upon heritage assets is not included in the Cultural Heritage chapter of the Environmental Statement, but is instead cross-referenced to the generic example of such a matrix presented in Chapter 5 of the Environmental Statement. There are also instances where this matrix has been inconsistently applied, for example at paragraph 7.7.2 of the Environmental Statement the

applicant identifies a 'low' impact on a 'high' value heritage asset as having a 'minor' significance of effect. The matrix indicates this to be a 'moderate' effect, and this is the conclusion reached in other places in the report when different assets are considered.

2.6 No aerial photographic assessment of the proposed development area was undertaken as part of the application process, with Covid restrictions cited as the main reason for this (ES para. 7.2.4). However, as is discussed further below, it *was* possible for a parallel aerial photographic assessment of the area to be undertaken on behalf of Historic England during the same period, which resulted in the identification and recording of the Isleham crash site amongst other features.

2.7 Other shortcomings of the submitted Heritage Assessment include the fact that there is no consideration of the heritage of the Newmarket horse-racing industry on the landscape surrounding the development area, that the full extent of the geophysical survey was not complete at the time of submission of the application, and that the full extent of the archaeological trial trenching was not complete at the time of submission of the application. Given these omissions, it is difficult to conclude that the submitted documents provide a comprehensive assessment of the baseline heritage of the proposed development area. Likewise, it is difficult to be confident of the identified heritage impacts and the efficacy of the mitigation strategies derived from this baseline.

3. Discussion Item B: Impacts on Snailwell Fen historic landscape and proposed mitigation

3.1 Our own Heritage Assessment submitted at Deadline 2 (section 4.2.1.2) and Written Representations made by the local councils and Historic England all identified that the development of the Sunnica West B site would result in harm to the setting of the scheduled Roman Villa south of Snailwell Fen, while the construction of the scheme would have a direct impact upon significant and sensitive archaeological deposits relating to multi-period settlement on the fen edge.

3.2 In light of the Applicant's statement of intent to submit a change request removing the Sunnica West B site from the proposed development, primarily as a consequence of the need for archaeological mitigation, discussion of this subject was held over until such time as the details of the proposed changes are put before the Examination.

3.3 Say No To Sunnica will offer a full response to the proposed changes following their formal submission, but in principle the removal of the Sunnica West B site from the proposed scheme is welcomed, not least because of the additional protection which this step offers to the scheduled Roman villas and to the buried archaeological deposits.

4. Discussion Item C: Impacts on Chippenham Park Registered Park and Garden and adequacy of proposed mitigation measures

4.1 As was discussed at ISH2, the proposed development will have a detrimental impact upon the Grade II Chippenham Hall Registered Park and Garden, the majority of which lies immediately to the north of the Sunnica West Site A. The 3km avenue extends southwards from the main body of the Registered Park and Garden and is traversed by the Sunnica West Site A area and, although solar arrays are pulled back from the avenue itself, it is proposed that a cable route and track will traverse the avenue, requiring the felling of trees from within the avenue and having a direct impact upon the designated heritage asset.

4.2 The significance of the asset is derived from the park itself and the listed buildings within it, but is also derived from the surrounding landscape within which it is situated. As discussed at ISH2, it is important to consider that, although the park itself is an enclosed space, the exterior view of the park wall and the symbolic message which it conveys to those outside the park is an important part of its significance. The avenue, which apparently formed the original entrance to the park, was constructed in order to facilitate long views of the park in its surrounding landscape as those entering or leaving the park traversed its length. The avenue survives as a legible landscape feature, is part of the Registered Park and Garden and makes a strong contribution to the significance of the park.

4.3 The proposed development will have a significant impact upon the character of the agricultural landscape which forms the setting of the Registered Park and Garden. The Applicant concludes that, even after the implementation of mitigation, the construction of the Sunnica West Site A will have a moderate adverse effect on this heritage asset. This is a significant effect, but I consider that the impact is understated. I conclude that the change of landscape character caused by the development will result in a 'major adverse' significance of effect. In planning terms, this constitutes 'less than substantial harm' at the upper end of the scale. As highly graded designated heritage assets, 'great weight' needs to be given to this harm during the application of the planning balance.

4.4 The Applicant concludes that the development will have a very low impact on the setting of the Grade II* listed southern entrance lodges and triumphal arch, resulting in a minor adverse effect. The significance of these buildings is derived from their history and architecture, but also from their setting, which incorporates the avenue and the surrounding landscape. Given the significant change which development will bring to the character of this landscape, I consider that the scheme will result in a 'major adverse' significance of effect. In planning terms, the identified harm to the Grade II* listed lodges and triumphal arch represents 'less than substantial harm' at the upper end of the scale. As highly graded designated heritage assets, 'great weight' needs to be given to this harm during the application of the planning balance.

4.5 Tree Protection Plan (Sheet 6) of the Arboricultural Impact Assessment Report submitted by the Applicant at Deadline 3 depicts a section of trees within the central section of the avenue of Chippenham Park which is proposed to be removed in order to accommodate an access track linking the two areas of proposed solar panels situated to either side of the avenue. There is apparently no recognition in the submitted Arboricultural Impact Assessment Report report of the fact that these trees stand within the area of the Chippenham Park Registered Park and Garden. Nor is there any recognition of the fact that these trees may represent part of the original planting of the avenue and as such would constitute part of the original Chippenham Park complex. The direct physical impact on the Registered Park and Garden caused by the construction of the access track across the avenue and the resultant loss of trees from the avenue itself are not identified and assessed as heritage impacts in the submitted Environmental Statement, despite the fact that they have the potential to cause significant harm to the heritage asset. Following the discussion of this subject at ISH2, Say No To Sunnica hope that greater clarity will be brought to this issue in subsequent submissions.

4.6 Finally, Say No To Sunnica welcome the Examining Authority's request for additional research into the cartographic history of the park, as this is lacking from the submitted Environmental Statement and will allow much greater clarity and understanding of the

historical development of the park. Likewise, the request for a more detailed analysis of surviving parklands features is welcomed, as without a full and proper understanding of the extant features, it is difficult to fully assess the heritage impact of the scheme and the efficacy of the proposed mitigation strategy. It is similarly impossible to propose restoration of original planting on the avenue or of other features without a full understanding of their historic character. Say No To Sunnica intend to comment more fully on the documents and their implications once they have been submitted.

5. Discussion Item D: Isleham plane crash site – impacts and potential for mitigation

5.1 The site where a military aircraft crashed on 13 October 1949, killing all 12 of the aircrew, is located to the south-east of the village of Isleham, within the proposed Sunnica East Site A parcel E05. The site is well known locally and has been widely publicised during the last 70 years. The location of the crash site was added to the Cambridgeshire Historic Environment Record in 2021 as the result of an aerial photographic interpretation and mapping project undertaken on behalf of Historic England (MCB31260). The fact that the crash site was not identified in the Applicant's Heritage Assessment is a significant omission. Had the proposed aerial photographic assessment been undertaken by the Applicant, they, too, would have identified the site. While the Applicant's geophysical survey indicated the presence of a large ferrous scatter surrounding the point of impact, which is itself still marked by a major area of magnetic disturbance, this was not recognised as the crash site or interpreted as such in any of the submitted documents. The crash site was only retrospectively recognised by the Applicant following its being brought to their attention by other interested parties.

5.2 Under the terms of the Protection of Military Remains Act 1986, the remains of all aircraft which crashed whilst in military service are considered controlled sites. It is an offence under this act to tamper with, damage, move or unearth any items at such sites, unless the Ministry of Defence (via the Joint Casualty and Compassionate Centre (JCCC)) has issued a licence authorising such activity. It is understood that the applicant has applied for a licence to develop the site and proposes only to leave the area of the immediate impact undeveloped. At ISH2, it was indicated that a decision on this application may take several months to be made. The site is also considered to be a Non-Designated Heritage Asset connected with a significant episode in the history of the local area and military history more widely.

5.3 During ISH2, the Applicant's archaeological team stated that they have consulted the original MoD report into the crash, which identifies the location of the crash and states that the aircraft and crew were recovered. A copy of this report has not been shared with the Examination, and we would request that its content is submitted at an appropriate deadline.

5.4 We would caution against taking the conclusions of this report at face value, and consider that there is a very high potential for parts of the aircraft and, indeed, human remains to still be present on the site, despite the 1949 recovery effort. The facts that the point of impact of the crash was identified as a large magnetic anomaly and that the surrounding area was identified as a ferrous debris scatter are both strongly suggestive that considerably more of the airframe survives on the site than official reports suggest. Similarly, aerial photographs taken during the aftermath of the crash clearly show a row of nine stretchers covered which white sheets, and other excavations undertaken on similar sites have indicated that it was not always possible to fully recover the bodies of the crew. Locally, the recent excavation of

a spitfire which crashed at Holme Fen in Cambridgeshire in 1940 revealed that the body of the pilot had not been able to be fully retrieved during the initial recovery effort. It should be presumed that human remains are present on the site of the crash.

5.5 The Applicant has indicated that they intend to address the mitigation of the Isleham crash site in their proposed change request, and Say No To Sunnica will respond to these proposals in detail once they are submitted to the Examination. However, the outline proposals for this mitigation are set out in the *Update by the Applicant on Heritage Matters and Substation Connection* submitted at Deadline 3A and were discussed in outline at ISH2.

5.6 The Applicant has indicated that, should they be granted a licence by the MoD, they propose to mitigate the impact on the crash site by leaving an undeveloped box measuring 50m x 50m centred on the point of impact. If a licence is not granted by the MoD, the Applicant will be required to leave an undeveloped circle with a 100m radius around the site. In addition, the Applicant proposes the erection of an interpretation panel and memorial plaque.

5.7 We consider that the applicant's proposed 50m x 50m exclusion area is inadequate. It barely covers the dimensions of the plane (which had a wingspan of 46m) and certainly does not cover the large scatter of crash-related debris located (but not identified) during the geophysical survey. The dimensions of the impact crater on the geophysical survey measure 15m x 10m, but the wider scatter which surrounds the crater measures at least 85m x 55m, well beyond the limits of the small exclusion area. We consider that the Applicant's proposed 'Expanded Exclusion Area', comprising a 100m-radius circle around the crash site, would be more appropriate irrespective of the outcome of the licence application on heritage-related grounds, but also for moral and ethical reasons, given the loss of life and the significance of the site to the local community.

6. Discussion Item E: Impacts on Conservation Areas and their settings

6.1 The local councils have concluded that the proposed development would not have an impact upon the settings of any of the surrounding Conservation Areas within the West Suffolk or East Cambridgeshire administrative areas. At ISH2, they confirmed this position.

6.2 Say No To Sunnica note that the Applicant's own Heritage Assessment identifies that the proposed scheme will result in a minor adverse effect on the setting of the Isleham Conservation Area, which in planning terms equates to 'less than substantial harm' at the lower end of the scale. Likewise, the Applicant identifies that the proposed scheme would result in a minor adverse effect on the setting of the Freckenham Conservation Area, again equating to 'less than substantial harm' at the lower end of the scale.

6.3 Finally, the Applicant also identified a minor adverse effect on the Snailwell Conservation Area, but I conclude that this understates the likely impact of the scheme and that it would result in a moderate impact, which in planning terms equates to 'less than substantial harm' in the middle of the scale. In light of the Applicant's statement of intent to submit a change request removing the Sunnica West B site from the proposed development, this potential impact would potentially no longer occur. Say No To Sunnica will offer a full response to the proposed changes following their formal submission.

7. Other Issues: Limekilns Gallops

7.1 As is recognised by all parties, the proposed development will have an impact upon the heritage, ecology and landscape of the Limekilns Gallops. Given the interconnected nature of these issues, during ISH2 the discussion of the potential impacts on the Limekilns were to

be considered under item 5 on the agenda, concerning 'In-combination Impacts'. ISH2 was adjourned before discussion of item 5 began and the subject of the Limekilns, amongst others, has been held over to a future hearing.

7.2 Discussion of the Limekilns is almost entirely absent from the Applicant's cultural heritage assessment, as is an appreciation of the extent and historical significance of the wider racing landscape which surrounds Newmarket. The Limekilns have been actively used as gallops since at least the early 19th century and probably longer. Their heritage significance is derived from the deliberate creation and management of the Limekiln Gallops, the longevity of their use and the fact that generations of horses have continued to be trained in much the same fashion and same location for centuries. Significance is also derived from the open and undeveloped landscape setting of the Limekilns Gallops. The additional significance of the Limekiln Gallops as the showcase and shop-window of the Newmarket Racing Industry and its significance to the landscape character of the area are explored by other expert witnesses instructed by Say No To Sunnica.

7.3 The Limekilns Gallops constitute significant features of the historic environment and should be considered to be a non-designated heritage asset. The close proximity of the southern boundary of the Sunnica West Site A to the Limekilns Gallops will have a detrimental impact upon their setting by transforming what is currently an open agricultural landscape to its north into the semi-industrialised landscape of the solar farm. This will in turn cause harm to the significance of the non-designated heritage asset. This is a significant impact, and is one which by the Applicant's own admission cannot be mitigated by the proposed landscape management strategy. In planning terms, the identified harm constitutes 'less than substantial harm', which given the contribution setting makes to the significance of the Limekilns lies at the upper end of the scale.

8. Other Issues: Scheduled Barrows

8.1 The Sunnica Energy Farm will impact upon a scheduled group of four prehistoric barrows located entirely within the Sunnica West Site A and other scheduled examples located nearby. These barrows form part of the wider Chippenham Barrow cemetery. As Scheduled Monuments, individually each of these barrows is of the highest heritage value, and the fact that so many individual elements of the barrow cemetery survive gives the group a high collective value, too. Their significance is derived from the archaeological remains of each feature, but is also related to their group value as interconnected sites. Such funerary monuments were deliberately located within the landscape and their landscape setting also contributes towards their significance.

8.2 The development of the scheme will result in a dramatic change in the landscape character of these barrows, which will result in harm to their significance. The Applicant acknowledges that this is a significant detrimental effect, although I consider that the Applicant understates the impact which the development of the scheme will have. In planning terms, this represents 'less than substantial harm' at the upper end of the scale. As highly graded designated heritage assets, 'great weight' needs to be given to this harm during the application of the planning balance.

9. Conclusion

9.1 Overall, the construction of the Sunnica Energy Farm will have a negative impact upon the significance of a number of designated and non-designated heritage assets, either directly or

via changes to their settings. The Applicant's own assessment identifies that several of these impacts are of sufficient magnitude to be considered 'significant' and in many cases it is apparent that the Applicant's assessments understate the full extent of the impact. It is also apparent from the submitted documents that the Applicant does not consider their proposed landscape mitigation scheme will reduce the scale of this impact further.

9.2 The identified cultural heritage impacts affect numerous Scheduled Monuments, a Registered Park and Garden, several listed buildings, surrounding Conservation Areas and the historic Limekilns Gallops. The scheme will also have a considerable impact upon the extensive archaeological deposits which survive within the proposed development area.

9.3 Under existing planning legislation and policy it is required that this 'less than substantial harm' be weighed against the wider benefits of the DCO application. In doing so, 'great weight' should be given to the conservation of the heritage assets concerned, and the more important the assets, the greater that weight should be. Both the Applicant's own assessment and that undertaken for Say No To Sunnica conclude that the development will result in multiple instances of adverse heritage impact, which cannot be mitigated. As such, considerable benefits will need to be demonstrated in order to justify the approval of a DCO Application which will result in such high levels of harm to so many designated and non-designated heritage assets.

Appendix E - Landscape

Landscape Briefing Note 10

Project: 1186 Sunnica PVD
Date: 13th December 2022
Purpose: ISH2 post-hearing submissions
Reference: 1186 BN10 Sunnica PVD Post Hearing ISH2.docx
Author: John Jeffcock CMLI

1. This note has been prepared in relation to agenda items A - E on landscape and visual impact and related matters discussed or scheduled to be discussed at Issue Specific Hearing 2 (ISH2) on 7th December 2022. This note provides:

   - A summary of what I said at ISH2, with supplementary information and references where necessary (John Jeffcock on behalf of Say No to Sunnica).
   - Key points arising out of the matters discussed at ISH2.
   - Key points relating to agenda items not discussed at ISH2 due to time restrictions on the day.

Summary of what I said at ISH2

Agenda Item A (General points and methodology)

2. I agreed with Suffolk County Council's (SCC) conclusion that the site selection process was flawed and that this is the fundamental cause of many of the landscape problems with the application. In particular I agreed that the assessment used to discount other alternative sites was flawed and should not have been relied upon to inform the site selection process because it failed to consider landscape and visual criteria.

3. Following SCC's request that the Examining Authority (ExA) compare Figures 5 and 7 in the applicant's Alternative Sites Assessment[1], I highlighted that the easiest way to compare these figures is to review Figure 1.1 attached to my review of the application[2], as it contains the information from both Figures. I explained that when looking at Figure 1.1, it is evident that the majority of the order limits are located outside of the land identified by the applicant as being unconstrained. I highlighted the fact that all of Sunnica East Site A and almost all of Sunnica West Site A are located within land identified by the applicant as constrained land.

[1] Environmental Statement 6.2 Appendix 4A: Alternative Sites Assessment [**APP-054**].
[2] Annex A to the Deadline 2 written representations submitted by Say No to Sunnica [**REP2-240b**].

4. I explained that chapter 11 of my review of the application[3] contained detailed comments on methodological issues with the applicant's landscape and visual impact assessment. I highlighted two key methodological issues during ISH2. The first issue being the applicant's failure to properly consider and apply best practice factors for assessing landscape value, as set out in Table 1 (page 7 onwards) in Technical Guidance Note 02/21 (TGN 02/21) on Assessing landscape value outside national designations prepared by the Landscape Institute. For example, the applicant's description of the value of *LLCA 26: The Limekilns and Gallops*[4], fails to consider all of the factors in Table 1 of TGN 02/21. In particular there is no consideration of cultural heritage factors or functional factors. Other factors are referenced in the LVIA but are not adequately addressed. For example, the LVIA states that the Gallops have cultural associations but doesn't explain what the associations are or their significance. In not considering certain factors and failing to adequality consider others, the applicant has underestimated the value of the landscape, and this has led to their underestimation of the impacts of the development, notably in relation to the Limekilns Gallops. A comprehensive assessment of value is provided in my report[5].

5. The second issue was the applicant's failure to assess the impacts of the proposals in the winter at year 15. This is a significant failing as the applicant has not reported the level of impact during winter, when leaves are not on trees and mitigation planting is less effective. They have only considered the best-case scenario, which is the impact in summer months when mitigation planting is more effective. I also highlighted that the applicant has not prepared any winter photomontages for year 15. All the photomontages, even those where the baseline photographs were taken in winter, show the mitigation planting in full leaf. This approach is inappropriate and contrary to best practice guidance.

6. In relation to the applicant's photomontages in Figure 10-90 [**APP-220**] to Figure 10-102 [**APP-232**], I raised the fact that when printed at the stated paper size (A1), the photomontages underestimate the scale of the proposals. I explained that I had raised this issue during ASI2 in relation to the applicant's Viewpoint 15A from U6006. I noted that although Sunnica state[6] they have checked the printing using acetates, and consider the photomontages to be correct, that I do not accept this given the obvious disparity in scale when comparing the elements depicted in the photomontages with the same elements on the ground, as was apparent during ASI2. The only way that the acetates could provide an accurately scaled representation of the proposals is by increasing the scale of the photomontages/printing so that the images are larger in size than those used on the ASI

[3] Annex A to the Deadline 2 written representations submitted by Say No to Sunnica [**REP2-240b**].
[4] Environmental Statement 6.2 Appendix 10E: Local Landscape Character Areas Page 10E-31 [**APP-104**]
[5] Annex A to the Deadline 2 written representations submitted by Say No to Sunnica [**REP2-240b**].
[6] In their reply to Rep2-240 (page 157) [**REP3A-035**]

visits. However, the applicant has not changed the scale of the photomontages or the recommendation for them to be printed at A1, and therefore I remain of the opinion that the photomontages are inaccurate in terms of their scale. If tested on site, the ExA will find the photomontages - when printed at A1 and when '*viewed at a comfortable arm's length*' (as stated on the photomontages) - to be erroneous in relation to scale. This is possible to see without using an acetate. The ExA should therefore conclude that the photomontages cannot be relied upon, as intended, to provide an accurate representation of the development proposals.

Agenda Item C (Impact on views from the Limekilns and Water Hall Gallops and impact on the landscape character of the area; potential for mitigation).

7. I agreed with SCC and Cambridgeshire County Council (CCC) that the level of adverse impacts on the Limekilns and Water Hall Gallops stem from the flawed site selection process; in essence Sunnica West Site A should have been discounted because of the significant adverse impacts on the Gallops and the impossibility of mitigating these impacts due to landform.

8. I referred to my Figures 13-19[7] which provide an accurate representation of the scale of views from the Limekilns and confirmed with the ExA that they had received hard copies printed on A3 paper. I explained these figures were only one viewpoint, and that, as was our experience during ASI 1, parts of the order limits are visible throughout the Water Hall Gallops and the Limekilns, such that the scheme is ever present. Referring to my Figures 13-19 I described how one can see the full length of Sunnica West A from the Limekilns, from the westernmost parts (W03) to the easternmost parts (W15).

9. Expanding on the points made by SCC and CCC concerning the use of the Limekilns by members of the public, I explained that the Limekilns are a particularly valuable public recreational resource because:

    - The Gallops provide permissive access in an area that is not well served by public rights of ways.
    - The Gallops afford elevated long-distance views, in a landscape where such views are generally scarce. Located on a chalk hill the Gallops afford views over the landscape to the north, including the landscape of the site but also features such as Chippenham Park and the landmark of Ely Cathedral.

[7] Annex A to the Deadline 2 written representations submitted by Say No to Sunnica [**REP2-240b**].

10. I highlighted the importance of views from the Gallops to the overall character of the Gallops. I explained that views over the landscape north of the Gallops, including parts of the site, provide a rural setting to the Gallops which has long been celebrated, including in numerous paintings such as those shown on Figure 12 to my review of the application[8].

11. In response to the applicant's assertion at the hearing, that there would be no direct effects on the Gallops, I explained that whilst there would not be a physical change to the fabric of the Gallops, changes within the setting of the Gallops would result in a direct effect on the character of the Gallops. A 'direct effect' is defined in the glossary of the Guidelines for Landscape and Visual Assessment, 2013 (GLVIA3) as '*An effect that is directly attributable to the proposed development*'. Therefore, an effect on the landscape character of the Gallops, caused by development within its setting, should be considered as a direct effect of the proposals on the Gallops for the purposes of assessing the proposed development.

12. I disagreed with the applicant's assertion that the order limits and the Gallops are in different landscapes and referred the ExA to the fact that Sunnica West A and the Gallops are located in the same chalkland landscape type at a national, regional, and county level (referring to my Figures 6-8[9]). Emphasising the fact that these areas are in reality part of the same landscape, I highlighted that historically the Limekilns and Sunnica West were once both part of the same Estate (Chippenham Park).

Key points arising out of the matters discussed

Policy matters

13. I dispute the applicant's assertion that the proposals are acceptable in relation to landscape considerations within national policy. Overarching National Policy Statement for Energy (EN-1) stresses the importance of minimising landscape harm through careful siting decisions[10]. In many cases it is possible for the landscape and visual harm of PV and BESS development to be minimised when located carefully, taking into account the relative sensitivity of different landscape and visual receptors. However, in the case of the Sunnica Energy Farm, the landscape and visual harm has been exacerbated by the applicant's decisions on location, as their decisions ignored particularly sensitive landscape and visual receptors such as the Limekilns.

[8] Annex A to the Deadline 2 written representations submitted by Say No to Sunnica [**REP2-240b**].
[9] Annex A to the Deadline 2 written representations submitted by Say No to Sunnica [**REP2-240b**].
[10] Overarching National Policy Statement for Energy (EN-1) Paragraph 5.9.8

14. Furthermore, because of the location of the development, the landscape and visual harm of the scheme cannot be minimised. In particular, it is not possible to mitigate effects in those parts of the order limits that are inherently open in character (e.g., Sunnica East B), or are overlooked due to changes in landform and where there are also historically important views (e.g., Sunnica West Site A). Attempting to mitigate the impact on the open landscape, especially south and east of Isleham (Sunnica East B) with woodland or other types of screen planting, would itself harm the openness of this landscape, which is an intrinsic characteristic and fundamental to local identity. In this regard the proposals conflict with the general objective in EN-1 for infrastructure to be '*sensitive to place*'[11] and also with NPPF Para 174(b), as they fail to recognize the intrinsic character and beauty of the countryside.

15. When considered against the range of factors that help to identify landscape value outside of national designations (i.e., the aforementioned factors in TGN 02/21), the landscape in which Sunnica West A is located must be considered to be a valued landscape for the purposes of NPPF Paragraph 174(a). Development in Sunnica West A would harm factors within the landscape that are valued, including the scenic qualities of the Limekilns and the coherent landscape setting to Chippenham Park. Because of the impacts on this valued landscape, the proposals also conflict with NPPF Para 174(a).

Key points not covered at ISH2

Agenda Item B (Snailwell Fen – combined impacts on landscape and adequacy of proposed mitigation measures)/

16. This item was not addressed during ISH2 as the applicant is proposing to change the application to remove Sunnica West B from the order limits. It is understood that they are proposing to remove Sunnica West B to avoid harm to heritage/ archaeological assets.

17. As an opportunity to also avoid the significant landscape and visual harm that would otherwise be caused by Sunnica West B, I support its removal from the order limits. The harm relating to this part of the order limits is described in detail in chapters 9 & 10 of my report[12].

[11] Overarching National Policy Statement for Energy (EN-1) Paragraph 4.5.1
[12] Annex A to the Deadline 2 written representations submitted by Say No to Sunnica [**REP2-240b**].

Agenda Item D (General impacts on the landscape of the area; potential for mitigation and impact of mitigation proposals on the landscape).

18. This item was not covered during ISH2 because of time constraints. Although the matters intended to be discussed by the ExA under this item are not known, I had anticipated covering the following points in relation to general landscape impacts and mitigation.

19. **Point 1 (Scale and speed of transformation)** – The scale of the changes proposed are such that the development would have a significant adverse impact on sense of place and identity. The proposals would result in a transformation of the landscape at a landscape scale, from a rural productive landscape to a landscape defined by electrical development. At 652.1 hectares (629.1ha minus West B), the combined development footprint of the solar PV developments and the BESS developments would dwarf surrounding rural villages whose identities are intrinsically linked to the productive countryside. This will be compounded by the speed of the changes which would not be gradual or incremental, but would be perceived to happen all at once, with construction over a single 24-month period. The impacts of the proposals on sense of place relate to the scale, location, and speed of change, and these impacts cannot be mitigated by detailed design measures or planting.

20. **Point 2 (Dispersal of development sites)** - Although Sunnica refer to 4 development sites, these sites are fragmented and several of the development areas have parts that are physically detached and separated by substantial distances or by the A11 e.g., W15. In reality there are seven (six minus West B) separate development sites. As a consequence of this dispersal, the proposals will themselves generate significant adverse cumulative impacts. There will be a repeated awareness of electrical development for people travelling between different settlements and visiting different locations in the landscape. The impression of a landscape transformed by electrical development would be experienced on single journeys and visits within the landscape (e.g., driving between settlements), but would also build up across multiple visits over time (e.g., visiting different parts of the landscape on different days).

21. **Point 3 (BESS development)** – Each of the three separate BESS developments would be a substantial development in their own right (they are between 6.6ha - 16.2ha). These developments would include storage containers, battery stations, substations, and other ancillary buildings and structures. Unlike the solar PV modules, which are height limited to 2.5m, infrastructure within the BESS compounds would be up to 10m in height and would therefore be more visually prominent in the landscape. Mitigation planting intended to screen PV development will be less effective in screening the BESS development, particularly during the initial 15 years of operation. The BESS developments would exacerbate the industrial characteristics of the solar PVD development and add further

clutter to parts of the landscape that are currently free from urbanising features, and which have a prevailing rural character.

22. **Point 4 (Mitigation)** – In general, the effectiveness of mitigation measures has been overestimated by the applicant, and this together with other factors (e.g., a lack of winter assessment) has led to an underestimation of the effects reported in the applicant's LVIA.

23. It is not possible to adequately mitigate the adverse landscape and visual impacts and in places the mitigation itself exacerbates the impacts. This all stems from the poor location of the proposed developments. In particular, it is not possible to mitigate effects in those parts of the order limits that are inherently open in character (e.g., Sunnica East B), or are overlooked due to changes in landform and where there are also historically important views (e.g., Sunnica West Site A). As aforementioned, attempting to mitigate the impact on the open landscape, especially south and east of Isleham (Sunnica East B) with woodland or other types of screen planting, would harm the openness of this landscape, which is an intrinsic characteristic and fundamental to local identity. Rather than mitigating the effects of the development, the measures themselves would be incongruous features. The mitigation proposals to plant woodland along the outer edge of the PV development in E05, in an attempt to hide it, would exacerbate the harm to the openness of this landscape, and therefore one of its intrinsic characteristics.

24. Additionally, in relation to Sunnica East A, the applicant claims in their reply to Rep2-240 (page 178) [**REP3A-035**] that siting the BESS next to Lee Farm will mean its massing and land uses are perceived in the context of existing infrastructure. Lee Farm is not 'infrastructure'. It is an isolated farm in the countryside. Its buildings are typical of a rural farm, in both scale and number. The presence of these buildings does not justify or mitigate the scale of development that is proposed. The farm buildings would be lost in the expanse and clutter of the neighbouring development. The BESS development would not be seen as a logical extension of the farm, but an incongruous development in the open countryside.

Agenda Item E (Specific impacts on visual amenity around land parcels E19, E20, E21 and E22 (south of Elms Road) and potential for mitigation).

25. This item was not covered at ISH2 due to time constraints. I assume this item was included to address the impacts of E19 – E22 on the Elms Rd caravan site. This issue was highlighted in a previous version of the agenda and during ASI2. The applicant should have undertaken an assessment of the impact on the visual amenity of residents within the caravan site. The fact that they didn't is another example of fundamental failures by the applicant to properly identify relevant landscape and visual receptors when sites were being selected.

26. The failure to identify this receptor has led to a failure to provide any mitigation. The applicant's latest Environmental Masterplan [**REP3-022**] which was submitted after this issue was highlighted to them during ASI2, shows PV modules close to the edge of E20 and E21, the fields which neighbour the caravan site. No mitigation planting is shown along this edge – only a 'retained hedgerow'. Annotations on the Masterplan suggest tree belts and 'set backs' would be provided along this edge, but the space allowed between the PV modules and the eastern edge of E20 and E21 is too narrow to accommodate such measures and for them to be effective. The impact of the proposals on the visual amenity of residents within the Elms Rd caravan site will be major adverse and this impact would not be mitigated.

End of Note.

Technical Guidance Note | 02/21

Assessing landscape value outside national designations

Landscape Institute
Inspiring great places

Contents

Acknowledgements

This technical guidance note (TGN) has been authored, on behalf of the Landscape Institute, by:

- Rebecca Knight CMLI (LUC), Chair
- Kate Bailey CMLI, MRTPI (retired), LI Trustee
- Michelle Bolger CMLI (MBELC)
- Jeremy Smith CMLI (SLR).

The author group worked in close consultation with a working group comprising:

- David Vose and Susannah England (Natural England)
- Jill Bullen FLI and John Briggs CMLI (Natural Resources Wales)
- Laura Campbell CMLI MRTPI and Simon Brooks (Nature Scot)
- Neil Rainey CMLI (Department of Agriculture, Environment and Rural Affairs for Northern Ireland)
- Jonathan Billingsley CMLI (The Landscape Partnership)
- Melanie Croll CMLI (Devon County Council)
- Joanna Ede CMLI (Turley)
- Alison Farmer CMLI (Alison Farmer Associates)
- Mary O'Connor FLI
- Professor Carys Swanwick HFLI
- Carly Tinkler CMLI (Landscape, Environmental and Colour Consultancy)

Feedback on an early draft was also received from David Smith (Professional Lead - Planning Appeals, The Planning Inspectorate), Helen Slade (former Planning Inspectorate Public Rights of Way Inspector), Sasha White QC, Dr Ashley Bowes and the Landscape Institute's Technical Committee.

A draft was produced in January 2021 for consultation via the Landscape Institute's website.

The co-authors of this TGN are very appreciative of the many thoughtful comments provided by the working group and the constructive responses received from the wider LI membership during the consultation period, all of which have informed this version of the TGN.

Photo acknowledgements:

- Font cover: Pensford Viaduct viewed across the rural landscape of Bath and North East Somerset, credit LUC.
- Appendices cover: River Findhorn, Strathdearn, credit LUC.

1 Introduction

1.1 Purpose, aims and objectives

1.1.1 This technical guidance note (TGN) provides information and guidance[1] to landscape professionals and others who need to make judgments about the value of a landscape (outside national landscape designations[2]) in the context of the UK Town and Country Planning system. It is also intended to be of assistance to those who review these judgements, so that there is a common understanding of the approach.

1.1.2 Although the discussion that led to the drafting of this document was prompted by a need to interpret the (England) National Planning Policy Framework February 2019 (NPPF) term 'valued landscape', the main body of this TGN is intended to be independent of national policy, which differs across the four nations of the UK.

1.2 Structure

1.2.1 In Part 2, this TGN:

- *identifies the stages in the planning process at which landscape value might be assessed;*
- *reviews the tools available to enable practitioners to assess landscape value; and*
- *presents a list of factors that could be considered when identifying landscape value.*

1.2.2 Appendices provide:

- *a summary of historical background and context;*
- *a summary of the evolution of factors used to describe landscape value;*
- *a summary of policies and guidance relating to designated landscapes in the four nations of the UK;*
- *the Landscape Institute's understanding of the term 'valued landscape' as it is used in the context of the (England) NPPF; and*
- *an analysis of planning decisions and judgements concerned with the [England] NPPF term 'valued landscape'.*

1.3 Context and relationship to existing UK guidance

1.3.1 The TGN does not seek to provide an evaluative methodology that would replace those provided by other established advisory documents. It is intended to supplement existing advice to practitioners, such as guidance on Landscape Character Assessment and Landscape Sensitivity Assessment (Natural England, NatureScot, Natural Resources Wales, Marine Management Organisation), Local Landscape Designation (NatureScot, Natural Resources Wales) and Landscape and Visual Impact Assessment (the Landscape Institute and Institute of Environmental Management and Assessment). The TGN acknowledges and reflects all these important sources of guidance.

1.3.2 Although the history of how we value landscape is closely related to the concept of 'natural beauty' (summarised in **Appendix A2**), it is not the purpose of this document to define the expression 'natural beauty' and this TGN does not apply to national landscape designations.

[1] Some parts of the note are for information, some parts supplement existing guidance and other parts (e.g. **Appendix A4**) provide new guidance.
[2] Designation of nationally important landscapes is a matter for government and its agencies, some of whom have prepared technical guidance.

1.3.3 There is a difference between landscape value and the wider topic of environment value. For example, the assessment of Ecosystem Services (which combines quantitative and qualitative information) and Natural Capital Accounting (a quantitative approach) are two approaches to valuing the environment, of which landscape forms an important part. More information about these approaches can be found in the following LI Technical Information Notes (TIN):

- *TIN 02/2016 - Ecosystem Services;*
- *TIN 02/2018 - Natural Capital Accounting.*

1.4 Potential future revisions

1.4.1 Landscape offers multiple values, benefits and services and the way in which landscapes are valued by people is a dynamic process that can change over time. The landscape profession's understanding of landscape value is still evolving, particularly in light of the nature and climate emergency. This TGN is the Landscape Institute's current reflection on the subject of landscape value.

1.4.2 The wide range of comments on the consultation draft document suggested that further guidance would be welcome, including:

- *how the landscape design process can respond to value assessments;*
- *how value can be expressed in local plan policy;*
- *how the increased emphasis on 'beauty' in Government papers (in England) relates to landscape value; and*
- *how to interpret value in relation to other aspects of England's NPPF such as Local Green Spaces.*

1.4.3 It has not been possible to address all these as part of this TGN, although they could form topics for future TGNs.

1.4.4 This TGN is written in the context of current policy guidance and evaluation factors that have evolved since 1945 (see **Appendices A1** and **A2)**. The LI is committed to equity, diversity and inclusion within the landscape profession and emerging sources of 'evidence' of value, for example from social data, will feed into future revisions to this TGN.

.

2 Tools to enable practitioners to assess landscape value

This TGN uses the following definitions:

Landscape qualities = characteristics/ features of a landscape that are valued

This term is being used to distinguish landscape qualities from landscape characteristics which are elements, or combinations of elements, which make a particular contribution to landscape character. Landscape qualities (in the sense meant in this TGN) are usually referred to as 'special qualities' or 'special landscape qualities' in relation to nationally designated landscapes. For example, 'special qualities' is a statutory expression used in relation to National Parks, in policy for Scotland's local landscape designations, and is a term used informally to describe components of natural beauty set out in AONB Management Plans[3].

Landscape value = the relative value or importance attached to different landscapes by society on account of their landscape qualities (see Table 1).

The definition of landscape value used in this TGN draws on, and is compatible with, the GLVIA3 definition of landscape value as well as Natural England's definition (Landscape Institute and Institute of Environmental Management & Assessment, 2013; Tudor, 2014). The definition makes it clear that it is 'society' that assigns value to landscapes. However, landscape value means more than popularity and the Landscape Institute suggests that value assessments should be undertaken by a landscape professional, drawing on evidence from stakeholders where available.

2.1 Introduction

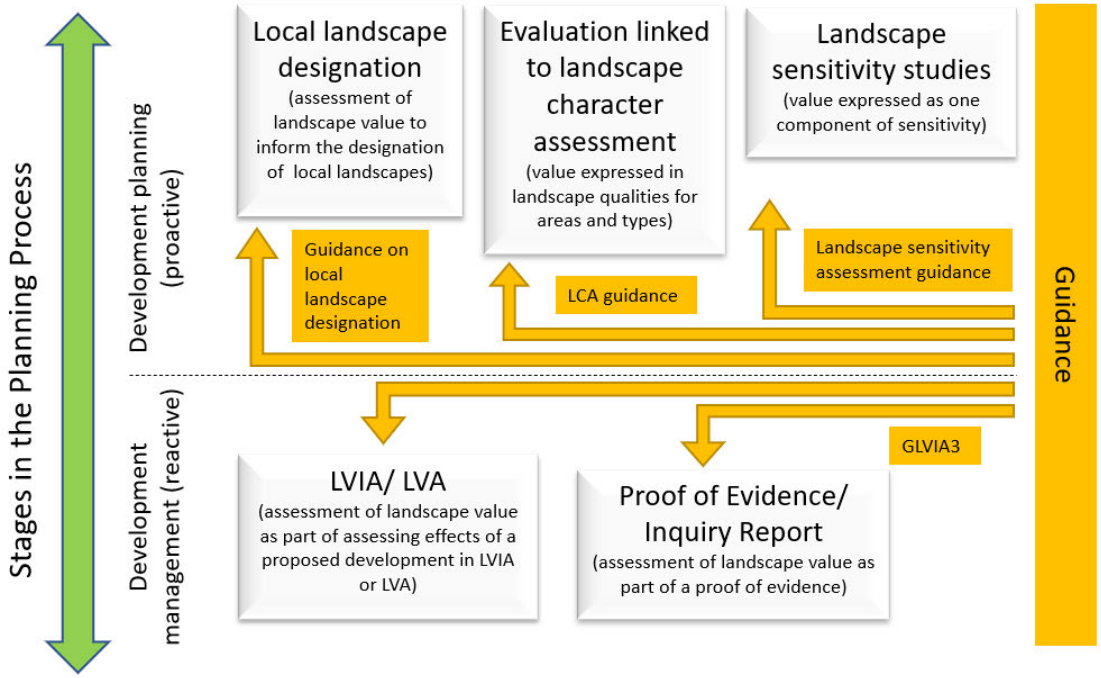
2.1.1 Assessments of landscape value (for landscapes which are outside, and not candidates for, national designation) may be required at different stages of the planning process, for example:

- *Local planning authorities (LPAs), neighbourhood planning groups and other parties at the evidence-gathering and plan-making stages;*
- *LPAs, applicants/appellants and others considering a site on which future development or other form of change is proposed, usually at the planning application or appeal stage.*

2.1.2 These scenarios are shown by **Figure 1**, along with the type of guidance that might feed in.

[3] National Parks are UK-wide. AONBs are found in England, Wales and Northern Ireland, and NSAs are unique to Scotland.

Figure 1: Assessing landscape value at different stages of the planning process



2.2 Assessing landscape value as part of plan making (development planning)

2.2.1 Landscape value at the local authority or neighbourhood level can be assessed and mapped spatially, i.e. through identifying areas for local landscape designation. Studies to support spatial designations should identify the landscape qualities of each area of landscape proposed for designation.

2.2.2 Landscape value can be assessed as an evaluation stage of a landscape character assessment or as a follow-on study. In this case landscape qualities will be identified in relation to individual character areas or types. Currently these are commonly described as 'valued landscape characteristics' or 'landscape qualities'.

2.2.3 Landscape value can also be assessed as part of a landscape sensitivity study, as landscape value is one of the two components of landscape sensitivity (the other being susceptibility). The areas to be assessed will depend on the purpose of the study.

2.2.4 The LI supports all approaches as they are all capable of highlighting the particular aspects of a landscape that are valued. Where value has been placed on a landscape by the local planning authority, this should ideally be defined in the development plan documents. Where value is not defined in the development plan, evaluations undertaken by local planning authorities and neighbourhood planning groups still form part of the evidence base.

Local landscape designations: the spatial approach

2.2.5 Although the guidance in this note is independent of policy, it is worth noting that different parts of the UK currently have different policy approaches to local landscape designations, as described in **Appendix A3**. Local landscape designation is supported by national policy in Scotland, Wales and Northern Ireland, but across England local landscape designations have been inconsistently applied due to past changes of emphasis in national planning guidance. Therefore, the absence of local landscape designations in England does not necessarily indicate there are no landscapes worthy of local designation. Additionally, in all nations, the lack of designation does not mean that a landscape has no value.

2.2.6 Guidance on how to identify local landscape designations has been produced in Scotland and Wales. This TGN is intended to support the approach set out in these guidance documents:

- *NatureScot and Historic Environment Scotland (2020) have jointly produced guidance on designating Local Landscape Areas (LLAs) in Scotland which is intended primarily for local authorities to use in taking forward their own designation process. The guidance acknowledges that local landscape designations are a valuable tool in the development plan toolbox and outlines the process for designating new LLAs and refreshing existing designations, noting that 'designations do not mean other places are unimportant or not valued' (paragraph **1.16**).*

- *NRW has published LANDMAP Guidance Note 1: LANDMAP and Special Landscape Areas (2017)[4] which sets out an approach for defining Special Landscape Areas in Wales using LANDMAP[5] information. These areas may be designated for 'their intrinsic physical, environmental, visual, cultural and historical importance, which may be considered unique, exceptional or distinctive to the local area' and they should be 'important for their distinctive character, qualities and sense of place'.*

2.2.7 The guidance produced by NatureScot and NRW may be helpful for other nations that do not have their own guidance.

2.2.8 Where local designations are used, the identification of their spatial boundaries and their landscape qualities should be supported by evidence.

2.2.9 **Table 1** of this TGN sets out a range of factors that could be considered to define the value of a landscape[6] and to inform the designation process. These factors are intended to be consistent with the factors set out in existing guidance in relation to local landscape designations in Scotland and Wales, as well as guidance in relation to national landscape designations (e.g. guidance for assessing landscapes for designation as National Park or Area of Outstanding Natural Beauty in England). However, they are not intended to be an exhaustive list.

2.2.10 Stakeholder engagement and early collaboration with local communities will add depth to the assessment by helping the landscape professional to understand what people value about the local landscape. Community engagement should be encouraged whenever practicable in line with existing planning guidance.

Evaluative studies linked to landscape character assessment

2.2.11 The guidance on Landscape Character Assessment (The Countryside Agency and Scottish National Heritage, 2002), which is still in use in Scotland, acknowledges that 'most assessments will usually move beyond the characterisation stage to the stage of making judgements to inform particular decisions'[7]. Natural England's 2014 document, which replaced the 2002 guidance in England, also notes that landscape character assessment can be used to identify special qualities and inform judgements (Tudor, 2014). These evaluative studies can be undertaken as an extension to a landscape character assessment, or as a separate follow-on study. Such studies can include the identification of landscape qualities that contribute to the value of landscape areas or types[8]. **Table 1** of this TGN sets out a range of factors that could be considered as part of the process.

2.2.12 In these types of assessments, information from stakeholders (where available) about what is valued should inform the landscape professional's consideration of landscape value.

Landscape sensitivity studies

2.2.13 Landscape value is assessed as one of the two components of landscape sensitivity in strategic landscape sensitivity assessments. As explained in Natural England's *An Approach to Landscape Sensitivity Assessment – to Inform Spatial Planning and Land Management* (Tudor, 2019), landscape

[4] https://naturalresources.wales/media/680613/landmap-guidance-note-1-landmap-slas-2017.pdf https://gov.wales/sites/default/files/publications/2018-12/planning-policy-wales-edition-10.pdf

[5] LANDMAP is an all-Wales landscape resource where landscape characteristics, qualities and influences on the landscape are recorded and evaluated.

[6] It should be noted that designation is a process that may include factors other than landscape value.

[7] This is a two-stage process with the landscape character assessment being separate from subsequent assessments of value or sensitivity.

[8] It should be noted that, in Wales, LANDMAP already includes a range of criteria-based evaluations relating to the landscape.

sensitivity combines judgements about the susceptibility to the specific development type/development scenario or other change being considered together with the value(s) related to that landscape and visual resource.

2.2.14 Existing guidance on landscape sensitivity assessment should be followed where available. In addition to the guidance from Natural England above, Natural Resources Wales and NatureScot are also preparing guidance documents for Wales and Scotland which should be available soon. The Marine Management Organisation (MMO) has also published guidance on seascape sensitivity assessment (see further reading). The factors in **Table 1** of this TGN may be helpful to consider as part of the process of landscape sensitivity assessment.

2.3 Assessing landscape value of a site in its context (as part of development management)

2.3.1 The landscape value of a site in its context needs to be assessed as part of carrying out a Landscape and Visual Impact Assessment (LVIA) or Landscape and Visual Appraisal (LVA)[9]. Most commonly this will be as part of the assessment of a development proposal (for a planning application or appeal). The current guidance for LVIA/LVA is the third edition of *Guidelines for Landscape and Visual Impact Assessment* (GLVIA3; LI and IEMA, 2013) which states that the value of a landscape should be assessed as one of two components of landscape sensitivity[10]. Landscape value is the 'inherent' component, which is independent of the development proposal, while the other component, susceptibility, is development specific.

2.3.2 GLVIA3 recognises that landscape value is not always signified by designation: 'the fact that an area of landscape is not designated either nationally or locally does not mean that it does not have any value' (paragraph **5.26**). GLVIA3 recommends that when undertaking a LVIA/LVA in an undesignated area, landscape value should be determined through a review of existing assessments, policies, strategies and guidelines and, where appropriate, by new survey and analysis (paragraphs **5.27** and **5.28**). It is recommended that the process for identifying landscape value outside nationally designated areas is based upon a structured and transparent assessment process including community-based evidence where practical to do so.

2.3.3 The list of factors set out in Box 5.1 on page **84** of GLVIA3, which is a slightly modified form of the list of criteria from the 2002 landscape character assessment guidance, is described as an example of 'the range of factors that can help in the identification of valued landscapes'. It should be noted that they are not comprehensive nor intended to be prescriptive. Nevertheless, 'Box 5.1' has been widely used to inform judgements about landscape value as part of LVIA/LVA in the planning process.

2.3.4 Since GLVIA3 was published in 2013, appeal decisions, high court judgements and practitioners' experience have provided further information about the factors which can be considered in assessing landscape value outside nationally designated landscapes. These have been incorporated into **Table 1** of this TGN.

2.4 Range of factors that can be considered when identifying landscape value

2.4.1 **Table 1** sets out a range of factors that can be considered when identifying landscape value in any of the contexts described above. It also includes examples of potential indicators of value.

2.4.2 This broadly presents the same factors as Box 5.1 from GLVIA3 (and the 2002 Landscape Character Assessment Guidance), with the following changes:

- *'Conservation interests' is separated into natural heritage and cultural heritage factors (reflecting the approach in NatureScot's guidance on local landscape designations and Natural England's*

[9] Landscape and Visual Impact Assessments (LVIA) form part of an Environmental Impact Assessment (EIA). Landscape and Visual Appraisals (LVA) are standalone assessments.
[10] This is consistent with the approach set out in Tudor (2019).

Guidance for assessing landscapes for designation as National Park or Area of Outstanding Natural Beauty in England);

- *The term 'landscape condition' is used in place of 'landscape quality (condition)';*
- *'Rarity' and 'representativeness' are combined into a newly-named factor 'distinctiveness'; and*
- *A new factor, 'function' is included which addresses the value attached to landscapes which perform a clearly identifiable and valuable function.*

2.4.3 It should be noted that the factors are not presented in order of importance.

2.4.4 As with Box 5.1 in GLVIA3, **Table 1** is not intended to be an exhaustive list of factors to be considered when determining the value of landscapes, but to provide a range of factors and indicators that could be considered. This TGN is intended to be complementary to GLIVA3.

Table 1: Range of factors that can be considered when identifying landscape value

Factor	Definition	Examples[11] of indicators of landscape value	Examples of evidence[12]
Natural heritage	Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest which contribute positively to the landscape	Presence of wildlife and habitats of ecological interest that contribute to sense of place Extent and survival of semi-natural habitat that is characteristic of the landscape type Presence of distinctive geological, geomorphological or pedological features Landscape which contains valued natural capital assets that contribute to ecosystem services, for example distinctive ecological communities and habitats that form the basis of ecological networks Landscape which makes an identified contribution to a nature recovery/ green infrastructure network	Landscape character assessment LANDMAP Geological Landscape and Landscape Habitats Aspects (in Wales) Ecological and geological designations SSSI citations and condition assessments Geological Conservation Review Habitat surveys Priority habitats Nature recovery networks/ nature pathways Habitat network opportunity mapping/ green infrastructure mapping Catchment management plans Ecosystem services assessment/ schemes Specialist ecological studies
Cultural heritage	Landscape with clear evidence of archaeological, historical or	Presence of historic landmark structures or designed landscape elements (e.g. follies,	Landscape character assessment

[11] These examples are not exhaustive.

[12] Evidence may be set out in development plans (or evidence that sits alongside development plans). Online mapping may also provide useful information (see 'useful data links' at the end of this TGN).

Factor	Definition	Examples[11] of indicators of landscape value	Examples of evidence[12]
	cultural interest which contribute positively to the landscape	monuments, avenues, tree roundels) Presence of historic parks and gardens, and designed landscapes Landscape which contributes to the significance of heritage assets, for example forming the setting of heritage assets (especially if identified in specialist studies) Landscape which offers a dimension of time depth. This includes natural time depth, e.g. presence of features such as glaciers and peat bogs and cultural time depth e.g. presence of relic farmsteads, ruins, historic field patterns, historic rights of way (e.g. drove roads, salt ways, tracks associated with past industrial activity)	LANDMAP Historic Landscape and Cultural Landscape Services Aspect (in Wales) Historic environment and archaeological designations Conservation Area appraisals, Village Design Statements Historic maps Historic landscape character assessments[13] Historic Land Use Assessment[14] and Historic Area Assessments[15] Place names Specialist heritage studies
Landscape condition	Landscape which is in a good physical state both with regard to individual elements and overall landscape structure	Good physical condition/ intactness of individual landscape elements (e.g. walls, parkland, trees) Good health of elements such as good water quality, good soil health Strong landscape structure (e.g. intact historic field patterns) Absence of detracting/ incongruous features (or features are present but have little influence)	Landscape character assessment LANDMAP condition and trend questions (in Wales) Hedgerow/ tree surveys Observations about intactness/ condition made in the field by the assessor SSSI condition assessments Historic landscape character assessments/ map regression analysis
Associations	Landscape which is connected with notable people, events and the arts	Associations with well-known literature, poetry, art, TV/film and music that contribute to perceptions of the landscape	Information about arts and science relating to a place Historical accounts, cultural traditions and folklore

[13] Historic Landscape Characterisation has developed as a GIS mapping tool to capture how land use has changed and the 'time-depth' of the present-day landscape.

[redacted]

[14] Mapping of Scotland's Historic Landscape: [redacted]

[15] [redacted]

Factor	Definition	Examples[11] of indicators of landscape value	Examples of evidence[12]
		Associations with science or other technical achievements Links to a notable historical event Associations with a famous person or people	Guidebooks/ published cultural trails LANDMAP Cultural Landscape Services aspect (in Wales)
Distinctiveness	Landscape that has a strong sense of identity	Landscape character that has a strong sense of place (showing strength of expression of landscape characteristics) Presence of distinctive features which are identified as being characteristic of a particular place Presence of rare or unusual features, especially those that help to confer a strong sense of place or identity Landscape which makes an important contribution to the character or identity of a settlement Settlement gateways/approaches which provides a clear sense of arrival and contribute to the character of the settlement (may be ancient/historic)	Landscape character assessment LANDMAP Visual & Sensory question 3 and 25, – Historic Landscape question 4 (in Wales) Guidebooks Observations about identity/ distinctiveness made in the field by the assessor
Recreational	Landscape offering recreational opportunities where experience of landscape is important	Presence of open access land, common land and public rights of way (particularly National Trails, long distance trails, Coastal Paths and Core Paths) where appreciation of landscape is a feature Areas with good accessibility that provide opportunities for outdoor recreation and spiritual experience/ inspiration Presence of town and village greens Other physical evidence of recreational use where experience of landscape is important Landscape that forms part of a view that is important to the	Definitive public rights of way mapping/ OS map data National Trails, long distance trails, Coastal Paths, Core Paths Open access land (including registered common land) Database of registered town or village greens Visitor surveys/ studies Observations about recreational use/ enjoyment made in the field by the assessor

Factor	Definition	Examples[11] of indicators of landscape value	Examples of evidence[12]
		enjoyment of a recreational activity	
Perceptual (Scenic)	Landscape that appeals to the senses, primarily the visual sense	Distinctive features, or distinctive combinations of features, such as dramatic or striking landform or harmonious combinations of land cover Strong aesthetic qualities such as scale, form, colour and texture Presence of natural lines in the landscape (e.g. natural ridgelines, woodland edges, river corridors, coastal edges) Visual diversity or contrasts which contributes to the appreciation of the landscape Memorable/ distinctive views and landmarks, or landscape which contributes to distinctive views and landmarks	Landscape character assessment LANDMAP Visual and Sensory scenic quality question 46 (in Wales) Protected views, views studies Areas frequently photographed or used in images used for tourism/ visitor/ promotional purposes, or views described or praised in literature Observations about scenic qualities made in the field by the assessor Conservation Area Appraisals Village Design Statements, or similar
Perceptual (Wildness and tranquillity)	Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies	High levels of tranquillity or perceptions of tranquillity, including perceived links to nature, dark skies, presence of wildlife/ birdsong and relative peace and quiet[16] Presence of wild land and perceptions of relative wildness (resulting from a high degree of perceived naturalness[17], rugged or otherwise challenging terrain, remoteness from public mechanised access and lack of modern artefacts) Sense of particular remoteness, seclusion or openness Dark night skies	Tranquillity mapping and factors which contribute to and detract from tranquillity Dark Skies mapping Wildness mapping, and Wild Land Areas in Scotland Land cover mapping Field survey LANDMAP Visual and Sensory Aspect

[16] More about tranquillity can be found in Landscape Institute Technical Information Note 01/2017 (Revised; Landscape Institute, 2017).

[17] Relating to extensive semi-natural vegetation, presence of wildlife and presence of natural processes/ lack of human intervention.

Factor	Definition	Examples[11] of indicators of landscape value	Examples of evidence[12]
		A general absence of intrusive or inharmonious development, land uses, transport and lighting	
Functional	Landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape	Landscapes and landscape elements that contribute to the healthy functioning of the landscape, e.g. natural hydrological systems/ floodplains, areas of undisturbed and healthy soils, areas that form carbon sinks such as peat bogs, woodlands and oceans, areas of diverse landcover (benefits pest regulation), pollinator-rich habitats such as wildflower meadows Areas that form an important part of a multifunctional Green Infrastructure network Landscapes and landscape elements that have strong physical or functional links with an adjacent national landscape designation, or are important to the appreciation of the designated landscape and its special qualities	Land cover and habitat maps Ecosystem services assessments and mapping (particularly supporting and regulating services) Green infrastructure studies/strategies Development and management plans for nationally-designated landscapes, Local Plans and SPDs Landscape character assessments

The practical application of factors in coming to a judgement on landscape value

2.4.5 The following bullet points provide some advice on the practical application of the factors in **Table 1**:

- *The factors to be considered are not fixed as they need to be appropriate to the particular project and location. It is recommended that the factors used to assess landscape value in a particular assessment are, where appropriate, discussed with the relevant planning authority or statutory consultees.*
- *The indicators of value should be reviewed on a case-by-case basis, taking into account what they contribute (positively or negatively) to a specific landscape. The relative importance to be attached to each indicator is likely to vary across different landscapes. Once evidence for each factor has been collated and assessed, it is important to step back and judge the overall 'weight of evidence' in coming to an overall judgement on landscape value.*
- *There are likely to be overlaps between the factors, as well as overlaps with other specialist studies for example in relation to natural and cultural factors. These overlaps should be acknowledged and considered when presenting conclusions on the overall value of the landscape.*
- *While condition/intactness of a landscape is one factor that can influence value, poor landscape management should not be a reason to deny a landscape a valued status if other factors indicate*

value. Deliberately neglecting an area of landscape and allowing its condition to deteriorate should not be allowed to diminish its value in a planning context.

- *When assessing landscape value of a site as part of a planning application or appeal it is important to consider not only the site itself and its features/elements/characteristics/qualities, but also their relationship with, and the role they play within, the site's context. Value is best appreciated at the scale at which a landscape is perceived – rarely is this on a field-by-field basis.*
- *Landscape function can influence value, but the presence of a spatial designation (e.g. Green Belt or Green Gap) is not in itself an indicator of high landscape value.*
- *The presentation of information about landscape value should be proportionate to the task at hand.*
- *Landscape value, and the way in which landscapes are valued by people, is a dynamic process, and can change over time. Any value assessment will be a snapshot in time.*

3 References and further reading

Building Better, Building Beautiful Commission (MHCLG) (2020) *Living with Beauty: Promoting Health, Well-being and Sustainable Growth*. London: MHCLG.

Countryside Agency and Scottish Natural Heritage (2002a) *Landscape Character Assessment: Guidance for England and Scotland (CAX 84)*. Cheltenham: Countryside Agency and Scottish Natural Heritage.

Countryside Agency and Scottish Natural Heritage (2002b) *Topic Paper 1: Recent Practice and the Evolution of Landscape Character Assessment*. Cheltenham: Countryside Agency and Scottish Natural Heritage.

Countryside Commission (1987) *Landscape Assessment: Countryside Commission Approach (CCD 18)*. Cheltenham: Countryside Commission.

Countryside Commission (1993) *Landscape Assessment Guidance (CCP 423)*. Cheltenham: Countryside Commission.

Countryside Commission for Scotland (1991) *Landscape Assessment: Principles and Practice*. Out of print.

Countryside Council for Wales (1996) *The Welsh Landscape: A Policy Document*. CCC136. Bangor: Countryside Council for Wales.

Countryside Council for Wales (2001) *The LANDMAP Information System: LANDMAP Method*. Bangor: Countryside Council for Wales.

CPRE (undated) *What's Special to You: Landscape Issues in Your Neighbourhood Plan*. London: CPRE.

Department for Health for Scotland (1945) *National Parks: A Scottish Survey Report by the Scottish National Parks Survey Committee 'The Ramsay Report' Cmd.6631*. Edinburgh: Scottish Government.

DEFRA Science Advisory Council (2019) *Landscape Quality: A Rapid Review of the Evidence by Simin Davoudi and Elizabeth Brooks, Newcastle University*. London: DEFRA.

Glover, J. (2019) *Landscapes Review: Final Report*. London: DEFRA.

HM Government (2018) *A Green Future: Our 25 Year Plan to Improve the Environment*. London: TSO.

IUCN (2013) *Guidelines for Applying Protected Area Management Categories Including IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types*. Various locations: IUCN.

Landscape Institute (LI) (2015) *Landscape Character Assessment* (TIN 08/2015). London: Landscape Institute.

Landscape Institute (LI) (2017) *Tranquillity: An Overview* (TIN 01/2017). London: Landscape Institute.

Landscape Institute (LI) and Institute of Environmental Management & Assessment (IEMA) (1995) *Guidelines for Landscape and Visual Impact Assessment (GLVIA1)*. Abingdon: Routledge.

Landscape Institute (LI) and Institute of Environmental Management & Assessment (IEMA) (2013) *Guidelines for Landscape and Visual Impact Assessment (GLVIA3)*. Abingdon: Routledge.

Marine Management Organisation (MMO) (2019) *An Approach to Seascape Sensitivity Assessment (MMO1204)*. Poole: MMO.

Ministry of Town and Country Planning (1945) *National Parks in England and Wales: Report by John Dower*. Cmd. 6628. London: Ministry of Town and Country Planning.

Ministry of Town and Country Planning (1947) *Report of the National Parks Committee (England and Wales) 'The Hobhouse Report'*. London: Ministry of Town and Country Planning.

Natural England (2011) ***Guidance for Assessing Landscapes for Designation as National Park or Area of Outstanding Natural Beauty in England*****. Various locations: Natural England.**

Natural Resources Wales (2017) ***LANDMAP Methodology Overview and LANDMAP Guidance Note 1: LANDMAP and Special Landscape Areas*****.**

NatureScot and Historic Environment Scotland (2020) ***Guidance on Designating Local Landscape Areas*****. Inverness: NatureScot.**

Scottish Natural Heritage (2008) ***Guidance for Identifying the Special Qualities of Scotland's National Scenic Areas*****. Inverness: Scottish Natural Heritage.**

Selman, P. H. and Swanwick, C. A. (2010) 'On the Meaning of Natural Beauty in Landscape Legislation'. ***Landscape Research*** **35(1): 3–26.**

Swanwick, C. (2009) 'Society's Attitudes to and Preferences for Land and Landscape'. ***Land Use Policy*** **26(1): S62–S75.**

Swanwick, C. (2012) 'Countryside Planning: The Assessment of Countryside and Landscape Character' in Bishops, K. and Phillips, ***A. Countryside Planning: New Approaches to Management and Conservation*****. Abingdon: Routledge.**

Tudor, C. for Natural England (2014) ***Approach to Landscape Character Assessment*****. Various locations: Natural England.**

Tudor, C. for Natural England (2019) ***An Approach to Landscape Sensitivity Assessment – to Inform Spatial Planning and Land Management*****. Various locations: Natural England.**

University of Sheffield (2006) ***A Statement on Natural Beauty: A Report to the Countryside Council for Wales*****, CCW policy research report no. 06/12 – particularly 'Part 4' (a background research report on Natural Beauty).**

Welsh Government (2018) ***Valued and Resilient: The Welsh Government's Priorities for Areas of Outstanding Natural Beauty and National Parks*****. Cardiff: Welsh Government.**

Useful data links

England

[redacted]

https://www.gov.uk/right-of-way-open-access-land/access-private-land

https://magic.defra.gov.uk/

Wales

[redacted]

http://lle.gov.wales

Scotland

Landscape Character [redacted] [*the general LCA page; links from these pages include Coastal Characterisation guidance]*

Local Landscape Areas guidanc [redacted]

Wild Land [redacted]

Historic Land Use [redacted]

Northern Ireland

https://www.daera-ni.gov.uk/services/natural-environment-map-viewer

https://www.daera-ni.gov.uk/topics/land-and-landscapes/landscape-character-areas

https://www.daera-ni.gov.uk/articles/seascape-character-areas

4 Glossary

Term	Definition
Aesthetics	Philosophical study of beauty and taste
Characteristics (landscape)	Elements, or combinations of elements, which make a particular contribution to distinctive character (An Approach to Landscape Character Assessment Natural England 2014)
Green infrastructure	The network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect villages, towns and cities. Individually, these elements are GI assets, and the roles that these assets play are GI functions (Green Infrastructure Landscape Institute Position Statement 2013)
Elements	Individual parts which make up the landscape, such as, for example, trees, hedges and buildings (GLVIA3)
Features	Particularly prominent or eye-catching elements, like tree clumps, church towers, or wooded skylines (from GLVIA3 and An Approach to Landscape Character Assessment 2014)
Landscape	An area as perceived by people whose character is the result of the action and interaction of natural and/or human factors (European Landscape Convention)
Landscape condition	A measure of the physical state of the landscape (including the intactness of the landscape structure and the condition of individual elements)
Landscape management	Action, from a perspective of sustainable development, to ensure the regular upkeep of a landscape, so as to guide and harmonise changes which are brought about by social, economic and environmental processes (European Landscape Convention)
Landscape planning	Strong forward-looking action to enhance, restore or create landscapes (European Landscape Convention) The development and application of strategies, policies and plans to create successful environments, in both urban and rural settings, for the benefit of current and future generations (Landscape Institute)
Landscape policy	An expression by the competent public authorities of general principles, strategies and guidelines that permit the taking of specific measures aimed at the protection, management and planning of landscapes (European Landscape Convention)
Landscape protection	Actions to conserve and maintain the significant or characteristic features of a landscape, justified by its heritage value derived from its natural configuration and/or from human activity (European Landscape Convention)
Landscape qualities	Characteristics/features of a landscape that have been identified as being valued

Term	Definition
	Landscape qualities are usually referred to as 'special qualities' or 'special landscape qualities' in relation to nationally designated landscapes or 'wildness qualities' in relation to Wild Land Areas.
Landscape value	The relative value or importance attached to different landscapes by society on account of their landscape qualities (see **Table 1**).
LVA	Landscape and visual appraisal
LVIA	Landscape and visual impact assessment
Natural beauty	The term 'natural beauty' is enshrined in the 1949 National Parks and Access to the Countryside Act (it was also subsequently included in the Nature Conservation and Amenity Lands Order (NI) 1985), the Town and Country Planning (Scotland) Act 1997, and the Planning etc. (Scotland) Act 2006). Natural beauty is not exhaustively defined in the legislation, but its meaning has been clarified and interpreted through a series of studies, guidance documents and public inquiries (see 'Further reading'). *N.B. Since the term 'natural beauty' applies to national designation, it is not the purpose of this note to define it.*
Natural capital	The elements of nature that directly and indirectly produce value or benefits to people, including ecosystems, species, fresh water, land, minerals, the air and oceans, as well as natural processes and functions. (Natural Capital Committee, 2014)
Scenic quality	The extent to which the landscape appeals to the senses (primarily, but not only, the visual senses) (Landscape Character Assessment Guidance 2002)
Special qualities	A statutory expression used in (amongst other places) sections 5 and 11A of the National Parks and Access to the Countryside Act 1949 (as amended), section 87 of the Countryside and Rights of Way Act 2000 and National Parks (Scotland) Act 2000 (although the term is not defined in legislation). Special qualities are defined by Nature Scot as 'the characteristics that, individually or combined, give rise to an area's outstanding scenery'

Appendices

A1 (Appendix 1) Assessment of landscape value: a summary of historical background and context

A1.1.1 Land has always had a productive value for food and other natural resources, but our appreciation of the landscape has evolved over time. A summary is provided below.

A1.1.2 During the 17th century in Europe, an appreciation of landscape became closely linked to ideas about beauty and aesthetics. In the 18th–19th centuries influential artists writers and thinkers such as Turner, Ruskin, Wordsworth and others publicly described their appreciation of scenic qualities, landform, nature, vernacular architecture, traditional agriculture, tranquillity and wildness, raising awareness of these landscape qualities.

A1.1.3 From the 19th century, the value of access to natural landscapes for recreation and wellbeing was also recognised, partly as a response to industrialisation. The National Trust was the first organisation to use the term natural beauty. Originally called the National Trust for Places of Historic Interest or Natural Beauty, it was established in 1895.[18] Its purpose, confirmed in the first National Trust Act passed in 1907, was 'promoting the permanent preservation for the benefit of the nation of lands and tenements (including buildings) of beauty or historic interest and as regards lands for the preservation (so far as practicable) of their natural aspect features and animal and plant life'.[19]

A1.1.4 Pressure in the early decades of the 20th century resulted in the establishment of the Addison Committee in 1929 and in 1931 the Addison Report (see Ministry of Town and Country Planning, 1947) recommended the identification of national parks in England and Wales. However, it was the establishment of the National Parks Committee and the publication of the Dower report (Ministry of Town and Country Planning, 1945), the Ramsay Report (Department for Health for Scotland, 1945) and the Hobhouse Report (Ministry of Town and Country Planning, 1947) that finally led to the 1949 National Parks and Access to the Countryside Act. This Act established a National Parks Commission with the purpose of preserving and enhancing 'natural beauty in England and Wales', and particularly in the areas designated under this Act as National Parks or as 'areas of outstanding natural beauty', for encouraging the provision of 'opportunities for open air recreation and the study of nature'.[20]

A1.1.5 The 1949 Act did not define 'natural beauty', but since then its meaning has been debated and tested through a series of studies, guidance documents (see the section on 'Further reading'), Secretary of State Decision letters, an Appeal Court judgement, and public inquiries. Some clarification has also been provided through legislative amendments to the 1949 Act, e.g. NERC Act 2006 Section 99. Following the 1949 Act national landscape designations were made in England and Wales following advice from experts who relied on criteria originally defined by Hobhouse (Ministry of Town and Country Planning, 1947) to assess the value of an area for its natural beauty and recreational opportunity. The first statutory designations in the UK were the Peak District and Lake District National Parks in England, and Snowdonia in Wales (all confirmed in 1951).[21] This approach to assessing

[18] For England, Wales and Northern Ireland. The National Trust for Scotland was established in Scotland in 1931.
[19] National Trust Act 1907.
[20] National Parks and Access to the Countryside Act 1949.
[21] Scotland passed the National Parks (Scotland) Act in 2000 and designated the Loch Lomond and the Trossacks National Park in 2002. Northern Ireland passed the Nature Conservation and Amenity Lands (Northern Ireland) Order in 1985 but has no designated National Parks at present, despite a proposal to designate the Mourne Mountains.

landscape value continued throughout the 1950s and 60s. **Appendix A3** provides a summary of current landscape designations within the UK.

A1.1.6 In the 1970s there were attempts to introduce a quantitative approach to assessing landscape value. These, along with other methods, were tested at the North Pennines AONB Public Inquiry in 1985. The inspector noted the lack of an agreed methodology to evaluating landscape, acknowledged that there was inevitably a degree of subjectivity, and recommended the use of informed opinion, a trained eye and common sense. The quantitative approach was generally considered inappropriate because it reduced complex concepts to a series of numerical values.

A1.1.7 In the 1980s a new methodology for understanding and recording what is important about a landscape began to emerge. Then known as Landscape Assessment, and now known as Landscape Character Assessment (see Landscape Institute, 2015), it was not limited to identifying landscapes worthy of designation but considered all landscapes with the objective of identifying what makes one area 'different' or 'distinct' from another (Countryside Agency and Scottish National Heritage, 2002b). Although the landscape assessment approach covered all landscape, early guidance included advice on evaluating landscapes (Countryside Commission, 1987) by identifying factors for evaluating 'natural beauty' which built on the Hobhouse criteria. The 1993 landscape assessment guidance (Countryside Commission, 1993) was specific in separating the classification and description of landscape character, which concerns what makes one area 'different' or 'distinct' from another, from landscape evaluation, which concentrates on relative value (Countryside Agency and Scottish National Heritage, 2002b). The 1993 guidance included criteria for evaluating 'landscape quality' (particularly in relation to designating landscapes) and identified factors important for evaluating natural beauty (see **Appendix A2**). Historic Landscape Characterisation, piloted at the end of the 1990s, also developed as a way of understanding and mapping the time-depth of places.

A1.1.8 In 1996, the evolving national approach for Landscape Assessment in Wales (Countryside Council for Wales, 1996), LANDMAP, took the strategic decision to include landscape evaluation information. A range of national criteria, grouped under different landscape themes, was developed to provide a relative indication of landscape value to prompt further investigation and consideration as part of planning projects or landscape assessments (see **Appendix A2**).

A1.1.9 The Countryside Agency and Scottish Natural Heritage (2002a) guidance on Landscape Character Assessment developed the criteria set out in the 1993 Landscape Assessment Guidance further, and these were presented as criteria for making judgements about 'landscape value' more widely (i.e. not just in relation to designated landscapes). These criteria informed subsequent guidance including guidance on Local Landscape Designations in Scotland (2006, updated 2020), Natural England's *Guidance for Assessing Landscapes for Designation as National Park or Area of Outstanding Natural Beauty in England* (2011) and Box 5.1 in the *Guidelines for Landscape and Visual Impact Assessment* (GLVIA3) (LI and IEMA, 2013). **Appendix A2** provides a summary of the evolution of factors used in the assessment of natural beauty and landscape value from 1945 onwards.

A1.1.10 The European Landscape Convention (2000) (ELC) was informed and influenced by the UK's landscape assessment work in the 1980s and 1990s. The first international treaty dedicated to the protection, management and planning of all landscapes in Europe, it was signed by the UK government in 2006[22]. Signatories acknowledge that 'the landscape is an important part of the quality of life for people everywhere: in urban areas and in the countryside, in degraded areas as well as in areas of high quality, in areas recognised as being of outstanding beauty as well as everyday areas'[23] and that 'the landscape is a key element of individual and social well-being'. Article 6 of the Convention places a responsibility on all signatories to increase awareness of 'the value of their landscapes, their role and changes to them'.[24] As a signatory to the ELC, the UK has an obligation to enhance the natural and cultural value of all landscapes though a blend of strategies: managing and planning (restoring, creating/enhancing) landscapes.

A1.1.11 The importance of landscape and its value continues to be recognized, for example in DEFRA's 25 Year Environment Plan (HM Government, 2018). There has also recently been a re-emergence of the

[22] The UK remains a member of the Council of Europe, which is a separate body from the European Union.
[23] European Landscape Convention – Preamble.
[24] European Landscape Convention – Article 6.

word ‘beauty’ in the field of planning and placemaking (for example in the UK Government's commissioned ‘Living with Beauty’ report; see Building Better, Building Beautiful Commission/MHCLG, 2020).

A1.1.12 The landscape profession’s understanding of landscape value is still developing, particularly in light of the nature and climate emergency (as well as the lockdowns caused by the Covid-19 pandemic). People today value different aspects of landscape than they did in the past or may do in the future, but it is clear that landscape value is more than just beauty and aesthetics.

A2 (Appendix 2) An evolution of factors used to describe landscape value

A2.1 Introduction

A2.1.1 This Appendix summarises the factors used in the assessment of natural beauty and landscape value from 1945 onwards.

A2.2 1945

Report on National Parks in England and Wales (Cmd 6628), John Dower, Ministry of Town and Country Planning

A2.2.1 In 1942 John Dower, a research officer in the Planning Department of the Ministry of Works and Planning, was requested to report on the establishment of National Parks in England and Wales. In his 1945 report, he noted that 'the task of selecting and delimiting the areas which are to be established as National Parks ... will clearly be no easy matter ... It must rest on an adequate and disinterested survey and investigation of all areas which are, or are claimed to be, in any way suitable, and it must take into account a wide range of factors' (Ministry of Town and Country Planning, 1945).

A2.2.2 These factors were included in **paragraph 6**, as:

- *landscape beauty*
- *wildlife*
- *suitability for rambling access*
- *popularity*
- *existing and potential land utilization*
- *existing or threatened disfigurements*
- *transport and accommodation facilities, and*
- *the financial and administrative strength of the local authorities concerned.*

National Parks: A Scottish Survey, 'The Ramsay Report', Department of Health for Scotland

A2.2.3 The Scottish National Parks Survey Committee was set up to advise on areas suitable for National Parks and to supervise a survey of potential areas. The Committee laid down seven selection criteria (see Department for Health for Scotland, 1945):

- *outstanding scenic beauty*
- *accessibility*
- *preservation and preservability*
- *recreational facilities (of an open-air type)*

- *educational, cultural and social interests*
- *flora and fauna, and*
- *accommodation.*

A2.3 1947

Report of the National Parks Committee (England & Wales) (CMD 7121), Sir Arthur Hobhouse, Ministry of Town and Country Planning

A2.3.1 **Para 35 -** Factors in selection (of National Parks; see Ministry of Town and Country Planning, 1947)):

Natural beauty	Great natural beauty
Recreation	A high value for open-air recreation
Substantial continuous extent	Distribution so that at least one of them is quickly accessible from each of the main centres of population in England and Wales
Merit in variety	With the wide diversity of landscape which is available in England and Wales, it would be wrong to confine the selection of National Parks to the more rugged areas of mountain and moorland, and to exclude other districts which, though of less 'outstanding' grandeur and wildness, have their own distinctive beauty and high recreational value

A2.4 1986

Wildlife and Countryside Acts 1981 & 1985: Section 3 Conservation Maps of National Parks – Guidelines (CCD6), Countryside Commission (out of print)

A2.4.1 This guidance included a table of 'factors affecting natural beauty' in response to Section 3 of the Wildlife and Countryside Acts of 1981 and 1985 which placed a responsibility on each of the National Parks of England and Wales to prepare a map showing those areas of mountain, moor, heath, woodland, down, cliff or foreshore, the natural beauty of which the Authority considers it is particularly important to conserve. The same factors were subsequently reproduced in Countryside Commission (1987).

Physiographic	Geology, soils, relief/landform, land use, vegetation, ecological habitats, natural history/wildlife, archaeology, artefacts – buildings, walls
Associations	a. Historical – general history of settlements, special events b. Cultural – well-known personalities, literary, painting, music
Aesthetics	a. Visual – extent/degree of enclosure, form, scale, continuity/harmony/ contract, diversity, colour (hue, time), texture, presence of eyesores, detractors from scene, contribution to wider landscape, views out – length and breadth, views in – length and breadth, boundaries to views b. Other Senses – sounds, smalls, tastes, touch
Relative to other areas	Nationally rare, regionally rare, typical/representative of an area

Feelings evoked in the observer	Comfort, awe, remoteness, solitude, joy
Public accessibility	Indirect/visual, direct/actual – by vehicle, bicycle, horse or foot

A2.5 1991

Landscape Assessment: Principles and Practice, Countryside Commission (out of print)

A2.5.1 This Countryside Commission for Scotland (1991) guidance proposed criteria for evaluating landscape quality in Scotland, in relation to designation of National Scenic Areas, which are summarised in **Table 2** (originally **Table 4.2** of Part 4) of the University of Sheffield's 'A Statement on Natural Beauty: A Report to the Countryside Council for Wales' (2006).

Table 2: Proposed criteria for evaluating landscape quality in Scotland:

Main criterion	Factors considered	Explanation
Landscape as a resource	Rarity	Value conferred by virtue of scarcity value either of landscape as a whole or elements within it
	Representativeness/ typicality	Value because a landscape is typical or representative of its type demonstrating better than other areas the combination of features and attributes which characterise that type
Scenic quality	Combination of landscape elements	Landscape quality arising from the particular mix of landscape elements in an area of their disposition in relation to each other
	Aesthetic quality	Landscape quality resulting from the interaction of elements in terms of visual characteristics such as form, line, colour, texture, diversity, memorability, intactness and so on
	Intangible qualities	Includes sense of place or the 'genius loci' and ideas from preference theory including ideas of prospect/refuge and landscape legibility
Preference	Evidence on public preference	Ideally based on preference attitude surveys
	Informed consensus on value	Evidence from planners and landscape professionals, interest groups involved with landscape and writers, artists and photographers
Special values	Wild land/wilderness quality	Depends on factors such as apparent naturalness, remoteness, extent and feelings of solitude, escape and exposure
	Cultural associations	Landscape can assume significance because of its special cultural associations with people or events
	Special heritage interests	Landscape cannot be divorced from other interests and wildlife, archaeological and historical features and geological or geomorphological features will make major contributions to landscape character as well as having conservation value in their own right

A2.6 1993

Landscape Assessment Guidance (CCP 423), Cobham Resource Consultants, Countryside Commission (1993)

A2.6.1 The section of the 1993 guidance dealing with landscape evaluation dealt explicitly with the need to evaluate the quality of the landscape, especially where the assessment related to an area of designated landscape. A list of criteria for evaluating landscapes for designation was included, developing the factors contained in the Countryside Commission's 1991 guidance. They were:

Landscape as a resource	Important for reasons of rarity or representativeness
Scenic quality	High scenic quality, with pleasing patterns and combinations of features
Unspoilt character	Unspoiled by large scale, visually intrusive industry, mineral extraction etc.
Sense of place	Distinctive and common character, including topographic and visual unity
Conservation interests	Such as features of historical, wildlife or architectural interest
Consensus	Consensus of both professional and public opinion as to its importance

A2.7 1995

Guidelines for Landscape and Visual Impact Assessment (GLVIA1), Landscape Institute and Institute of Environmental Assessment (1995)

A2.7.1 Paragraph **3.41** suggested that a qualitative analysis requires an assessment to be made of landscape condition and importance in the sense of aesthetic or cultural value. It suggested that the analysis may include:

Landscape designations	List of landscape designations that may apply
Reasons for designations	Summary of the reasons for landscape designations, e.g. landscape type is rare in a national or regional context
Scenic quality	Professional judgements as to the scenic quality of the site and its wider landscape context, and to the importance of landscape components
Condition of landscape components	Assessment of the condition of important landscape components, including management of land, and the extent of deviation from the perceived optimum condition
Conservation interests	Details of any notable conservation interests such as features of historical, wildlife or architectural importance
Cultural associations	Reference to any special cultural associations, such as important writing and paintings that feature local landscapes
Local perceptions	Past and present perceptions of local value

A2.7.2 GLVIA1 also referred to Countryside Commission (1993) for further advice on criteria for evaluating landscape quality in England.

A2.8 1999

Interim Landscape Character Assessment Guidance, C. Swanwick & Land Use Consultants, Countryside Agency and Scottish Natural Heritage (out of print)

A2.8.1 Criteria for making judgments about landscape value were:

Landscape as a resource	Rarity, representativeness or typicality
Landscape quality	Extent to which typical character is demonstrated in an area and condition or state of repair of the landscape
Scenic quality	Depends upon perception and reflects the particular combination and pattern of elements in the landscape, its aesthetic qualities and its more intangible sense of place or genius loci
Consensus	Consensus of opinion, expressed by the public, informed professionals, interest groups, and artists, writers and other media
Conservation interests	Presence of features of wildlife, earth science or archaeological or historical interest which add to the value of the landscape as well as having value in their own right
Other values	Landscapes may be valued for their wilderness qualities, or particular cultural associations, or because of their tranquillity

A2.9 2001

LANDMAP 2001, and as amended to date. Countryside Council for Wales (2001)

A2.9.1 The LANDMAP assessment for Wales developed a set of evaluation criteria for separate themed layers.

A2.9.2 A method document for each theme set out and defined each criterion[25], as follows:

[25] LANDMAP methodology, including definitions of each layer, reports, guidance and interactive map browser.

Geological Landscape	*Landscape Habitats*	*Visual and Sensory*	*Historic Landscape*	*Cultural Landscape (NB: not evaluated by degree of importance)*
• *Research value* • *Educational value* • *Historical value* • *Rarity/ uniqueness* • *Classic example*	• *Priority habitats* • *Significance* • *Opportunity* • *Expansion rates* • *Sensitivity* • *Connectivity/ cohesion* • *Habitat evaluation* • *Importance for key species*	• *Scenic quality* • *Integrity* • *Character (strength of)* • *Rarity*	• *Integrity* • *Survival* • *Condition* • *Rarity* • *Potential*	• *Recognition/ transparency* • *Rarity* • *Group value* • *Survival*

Further layers, for seascapes and (ecosystem cultural) services are being added. The latter responds to the Welsh policy context, which views landscape value through ecosystem services, well-being and placemaking.

A2.9.3 Not all evaluations will be relevant to all projects, so intelligent selection is needed. 'Adding up' evaluations for different themes is discouraged as that masks what is important about a landscape (and would just confirm that all landscapes are very important in some way). Their intended use is to open rather than close discussion of landscape value, by alerting users to topics and areas that may need more detailed enquiry.

A2.10 2002

Landscape Character Assessment: Guidance for England and Scotland (CAX 84), Countryside Agency and Scottish Natural Heritage (2002a)

A2.10.1 Paragraph 7.22 states, 'In considering natural beauty and amenity, and in any other situation which requires that a landscape be identified as requiring special attention, judgements must be based at least in part on the concept of landscape value'. The reasons may be set out according to a range of more detailed criteria that may include the following:

Landscape quality/ condition	Intactness of the landscape and the condition of features and elements
Scenic quality	The term that is used to describe landscapes which appeal primarily to the visual senses
Rarity	The presence of rare features and elements in the landscape, or the presence of a rare landscape character type

Representativeness	Whether the landscape contains a particular character, and/or features and elements, which is felt by stakeholders to be worthy of representing
Conservation interests	Presence of features of particular wildlife, earth science or archaeological, historical and cultural interest can add to the value of a landscape as well as having value in their own right
Wildness	Presence of wild (or relatively wild) character in the landscape which makes a particular contribution to sense of place
Associations	Associations with particular people, artists, writers, or other media, or events in history

A2.11 2006

A Statement on Natural Beauty, Sheffield University Landscape Department, Countryside Council for Wales (CCW; Selman and Swanwick, 2010)

A2.11.1 This was an academic study commissioned by CCW. Paragraph **6** refers to criteria that can be taken into account in defining landscape value and hence defining landscapes which have outstanding 'natural beauty' as:

Scenic quality	Aesthetic aspects of landscape (those which give pleasure to the senses), its perceptual dimensions and the spiritual or emotional impact that both have on people
Sense of place	Unity and distinctiveness of landscape character
Landscape quality/condition	Intactness of the landscape and its condition, distinctiveness of landscape character in a particular locality
Integrity	Intact rural character and general lack of large-scale, visually intrusive or otherwise inharmonious development
Perceptual qualities	Perceptual qualities which make a particular contribution to sense of place, including wildness and tranquillity
Associations	Important associations of the landscape with people, places or events relevant to a particular place
Cultural descriptions	Expressions or descriptions of the landscape in art, literature, music and other art forms, through language and folklore, and through modern media
Rarity or representativeness	Either of the landscape as a whole, or of individual elements and features within it
Conservation interest	Presence of features of particular wildlife, earth science or archaeological, historical and cultural interest which add value to the landscape as well as having conservation value in their own right

Guidance on Local Landscape Designations, SNH and Historic Environment Scotland[26]

A2.11.2 SNH and Historic Environment Scotland's (2006) guidance on local landscape designations suggested that local authorities need to identify both the character and qualities of the landscape considered to be of particular value in the local context, and suggested the following aspects/factors could be considered:

	Definition	Description
Aspects of landscape character		
Typicality	Elements of landscape character which are particularly common within the assessment area as a whole	Landscape features or combination of features that recur throughout the area
Rarity or uniqueness	Particular aspects of landscape character which are rare or unique in the area	Landscape features or combination of features which are rare or unique within the assessment area as a whole
Condition or quality	The degree to which individual characteristics of landscape character are in a good state of repair or health	Landscape features or combination of features which are in a good state of repair
Landscape qualities		
Scenic	Aspects of the landscape and our reaction to it which contribute to its natural beauty and aesthetic appreciation	Landscapes with strong visual, sensory and perceptual impacts and experiential appeal. May contain a pleasing combination of features, visual contrasts or dramatic elements
Enjoyment	Aspects of the landscape and our reactions to it which contribute to its potential for recreation and amenity	Landscapes of importance as local greenspace, as tranquil areas and/or for countryside recreation. May contain viewpoints and landmarks
Cultural	Aspects of the landscape and our reactions to it which contribute to the understanding of its historic character and the wider cultural record	Landscapes rich in archaeology, built heritage, literary, artistic and other cultural associations and local history. May include historic gardens and designed landscapes
Naturalness	Aspects of the landscape and our reactions to it which contribute to its naturalness	Landscapes with extensive semi-natural habitat, a lack of human presence and perceived qualities of wildness. May include areas of wild land

A2.12 2011

Guidance for assessing landscapes for designation as National Park or Area of Outstanding Natural Beauty in England, Natural England (2011)

A2.12.1 Table 3 of this guidance sets out factors that are related to Natural Beauty. These are expanded upon in Appendix 1 to include sub-factors and indicators, as follows:

[26] Accessible at H[redacted]

Factor	Example sub-factor	Example Indicator
Landscape quality	Intactness of the landscape in visual, functional and ecological perspectives	Characteristic natural and man-made elements are well represented throughout
	The condition of the landscape's features and elements	Landscape elements are in good condition
	The influence of incongruous features or elements (whether man-made or natural) on the perceived natural beauty of the area	Incongruous elements are not present to a significant degree, are not visually intrusive, have only localised influence or are temporary in nature
Scenic quality	A distinctive sense of place	Landscape character lends a clear and recognisable sense of place
	Striking landform	Landform shows a strong sense of scale or contrast
		There are striking landform types or coastal configurations
	Visual interest in patterns of land cover	Land cover and vegetation types form an appealing pattern or composition in relation to each other and/or to landform which may be appreciated from either a vantage point or as one travels through a landscape
	Appeal to the senses	Strong aesthetic qualities, reflecting factors such as scale and form, degree of openness or enclosure, colours and textures, simplicity or diversity, and ephemeral or seasonal interest
		Memorable or unusual views and eye-catching features or landmarks
		Characteristic cognitive and sensory stimuli (e.g. sounds, quality of light, characteristic smells, characteristics of the weather)
Relative wildness	A sense of remoteness	Relatively few roads or other transport routes
		Distant from or perceived as distant from significant habitation
	A relative lack of human influence	Extensive areas of semi-natural vegetation
		Uninterrupted tracts of land with few built features and few overt industrial or urban influences
	A sense of openness and exposure	Open, exposed to the elements and expansive in character
	A sense of enclosure and isolation	Sense of enclosure provided by (e.g.) woodland, landform that offers a feeling of isolation
	A sense of the passing of time and a return to nature	Absence or apparent absence of active human intervention

Relative tranquillity	Contributors to tranquillity	Presence and/or perceptions of natural landscape, birdsong, peace and quiet, natural-looking woodland, stars at night, stream, sea, natural sounds and similar influences
	Detractors from tranquillity	Presence and/or perceptions of traffic noise, large numbers of people, urban development, overhead light pollution, low flying aircraft, power lines and similar influences
Natural heritage features	Geological and geo-morphological features	Visible expression of geology in distinctive sense of place and other aspects of scenic quality
		Presence of striking or memorable geo-morphological features
	Wildlife and habitats	Presence of wildlife and/or habitats that make a particular contribution to distinctive sense of place or other aspects of scenic quality
		Presence of individual species that contribute to sense of place, relative wildness or tranquillity
Cultural heritage	Built environment, archaeology and designed landscapes	Presence of settlements, buildings or other structures that make a particular contribution to distinctive sense of place or other aspects of scenic quality
	Historic influence on the landscape	Visible presence of historic landscape types or specific landscape elements or features that provide evidence of time depth or historic influence on the landscape
	Characteristic land management practices	Existence of characteristic land management practices, industries or crafts which contribute to natural beauty
	Associations with written descriptions	Availability of descriptions of the landscape in notable literature, topographical writings or guidebooks, or significant literature inspired by the landscape
	Associations with artistic representations	Depiction of the landscape in art, other art forms such as photography or film, through language or folklore, or in inspiring related music
	Associations of the landscape with people, places or events	Evidence that the landscape has associations with notable people or events, cultural traditions or beliefs

A2.13 2013

Guidelines for Landscape and Visual Impact Assessment (GLVIA3), Landscape Institute and Institute of Environmental Management & Assessment (2013)

A2.13.1 Box 5.1 contains a 'Range of factors that can help in the identification of valued landscapes'. These are:

Landscape quality (condition)	A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual area, the intactness of the landscape and the condition of individual elements
Scenic quality	The term used to describe landscapes that appeal primarily to the senses (primarily but not wholly the visual senses)
Rarity	The presence of rare elements or features in the landscape or the presence of a rare Landscape Character Type.
Representativeness	Whether the landscape contains a particular character and/or features or elements which are considered particularly important examples
Conservation interests	The presence of features of wildlife, earth science or archaeological or historical and cultural interest can add to the value of the landscape as well as having value in their own right
Recreation value	Evidence that the landscape is valued for recreational activity where experience of the landscape is important
Perceptual aspects	A landscape may be valued for its perceptual qualities, notably wildness and/or tranquillity
Associations	Some landscapes are associated with particular people such as artists or writers, or events in history that contribute to perceptions of the natural beauty of the area

A2.14 2017

Guidance Note 1: LANDMAP and Special Landscape Areas, Natural Resources Wales (2017)

A2.14.1 Paragraph **6.1.2** states that 'by definition, an SLA designation usually only applies to areas that are deemed as 'special' in terms of their local landscape character. This reflects both local distinctiveness and sense of place, as well as landscape quality in its own right'. Examples of landscape criteria are:

Rarity	A landscape that is particularly rare/unique or special in the local context
Distinctiveness	An area with a distinct landform or topography, forming a discrete and recognisable area in the local landscape
Natural or cultural character	A landscape with strong character linked to natural or cultural factors, which contribute to an understanding of historic character, wider cultural values or create a strong degree of naturalness
Cultural associations	A landscape with particular cultural associations, represented in art, literature, music, language or folklore
Scenic qualities	An area of recognisable character with a strong sense of place and/or scenic qualities

Guidance on Local Landscape Areas (Draft), Scottish Natural Heritage and Historic Environment Scotland (now superseded)

A2.14.2 **Table 1** of Scottish Natural Heritage and Historic Environment Scotland's (2017) draft guidance set out the common criteria used to define landscape qualities:

Landscape Qualities	Definition	Description
Scenic	Landscape that appeals primarily to the visual senses, appreciated for its natural beauty	Landscapes with strong visual, sensory and perceptual impacts and experiential appeal. May contain a pleasing combination of features, visual contrasts or dramatic elements
Cultural	Landscape with features of archaeological, historical or cultural interest, offering a time-depth to people's experience.	Landscapes rich in archaeology, built heritage, literary or artistic connections, consciously designed (parks and gardens), the scene of historic events (such as battles), other cultural associations and local history. and designed landscapes
Natural	Landscape of strong natural or semi-natural character, with wildlife or earth science features	Landscapes with extensive semi-natural habitat, distinctive topography or geology, a lack of human presence and perceived sense of 'wildness'
Enjoyment	Landscape recognised for recreation and amenity, which evokes pleasure	Landscapes valued as tranquil areas and/or for countryside recreation. May contain viewpoints and landmarks
Rarity or uniqueness	The presence of rare elements or features in the landscape or a rare landscape character type	Landscape features or combination of features which are rare or unique within the assessment area as a whole. Landscapes that are distinctive with a strong 'sense of place'
Typicality	A landscape that is a good example of a particular landscape type, and often relatively common within the assessment area	Landscape features or combination of features that recur throughout the area

A2.15 2020

Guidance on Designating Local Landscapes, NatureScot and Historic Environment Scotland (2020)

A2.15.1 This guidance states, at paragraph **2.4.2**: 'Selection criteria are essential. These must be fit for purpose, developed by agreement with interested stakeholders where possible, and applied consistently. The criteria relate to the special qualities of a landscape'. **Table 1** of the guidance sets out the range of evaluation criteria commonly used, noting 'this is not a fixed list as the criteria need to be appropriate to each designation process' (paragraph **2.4.4**). The criteria in **Table 3** of the guidance are:

Landscape criterion	Definition	Description
Scenic	Landscape that appeals primarily to the visual senses, and is appreciated for its beauty	Landscapes with strong visual, sensory and perceptual impacts and experiential appeal. May contain a pleasing combination of features, visual contrasts or dramatic elements

Cultural	Landscape with clear evidence of archaeological, historical or cultural interests / associations / significance, offering a time-depth to people's experience	Landscapes rich in archaeology or built heritage, or consciously designed (e.g. parks and gardens), or largely the product of human interaction. May include the scene of historic events (such as battles), have literary or artistic connections, or other cultural associations and local history
Natural	Landscape of strong natural or semi-natural character, with clear evidence of ecological, geological or geomorphological interest	Landscapes with extensive semi-natural habitat, distinctive topography or geology, a general lack of permanent human presence and a perception of wildness
Recreation and enjoyment	Landscape recognised as offering opportunities for recreation and amenity, where experience of landscape is important	Landscapes valued for recreation. May contain viewpoints, landmarks and renowned vistas; paths and trails including core paths, rights of way, long distance trails, national cycle routes; and scenic routes
Local distinctiveness and sense of place	Landscape that has a strong sense of identity	Landscape features or combination of features which are identified as being characteristic of a particular place. Landscapes that are distinctive with a strong 'sense of place'
Health and wellbeing	A landscape which makes particular contribution to both the physical and psychological health and wellbeing of a local community and/or visitors	Landscape facilities and features which are well-used and valued by local communities and visitors
Important spatial function	Landscape that performs a clearly identifiable and valued spatial role	Can include, for example, settlement 'gateways', or separation between developments

A2.15.2 The guidance notes that the list is not fixed as the criteria need to be appropriate to each designation process. It also recognises that not all the criteria need to be met in every case: a landscape might be deemed so valued under one criterion that it merits designation on that basis alone. The guidance explains that the aim is to identify and analyse what the qualities are that, individually or when combined, make the area special in terms of its landscape and scenery.

A3 (Appendix 3) Designated landscapes: UK policy and guidance

A3.1 Introduction

A3.1.1 This Appendix considers how landscape is valued in UK legislation and in UN, European and UK policy statements, regulations and guidance. It describes the current UK hierarchy of international, nationally protected, and locally designated landscapes, including the different approaches of devolved nation governments.

A3.2 Internationally valued landscapes

A3.2.1 Globally, under the **UNESCO World Heritage Convention 1992**, landscapes may be designated to ensure the protection of their natural and/or cultural heritage. World Heritage Sites must have values that are outstanding and universal, and it is each site's Outstanding Universal Value (OUV) that is to be protected. Cultural landscapes are said to 'express a long and intimate relationship between peoples and their natural environment'.

A3.2.2 In the UK there are 32 sites on the current list. The UNESCO 2008 operational guidelines describe categories of 'clearly defined landscape designed and created intentionally by man, organically evolved landscape, and associative cultural landscape, identified on the international list as 'cultural, natural or mixed' sites'. Criteria for selection are described on UNESCO's website[27].

A3.2.3 **The International Union for Conservation of Nature (IUCN)** provides a global classification system for Protected Areas. National Parks in England, Wales and Scotland, and Areas of Outstanding Natural Beauty (AONBs) in England, Wales and Northern Ireland are internationally recognised as **Category V Protected Areas**, as living, working landscapes and seascapes. National Parks and AONBs are periodically assessed by the IUCN to ensure continued compliance with the standards and management guidelines[28].

A3.3 The European Landscape Convention

A3.3.1 The UK is a member state on the Council of Europe and a signatory to the **European Landscape Convention (ELC) 2004**, which came into effect in the UK in 2007. The first aim of the ELC is to encourage public authorities to adopt policies and measures at local, regional, national and international level for protecting, managing and planning landscapes throughout Europe.

A3.3.2 The treaty introduces the concept of all landscapes having value in terms of quality of life and wellbeing. Signatories commit to 'acknowledging that the landscape is an important part of the quality of life for people everywhere: in urban areas and in the countryside, in degraded areas as well as in areas of high quality, in areas recognised as being of outstanding beauty as well as everyday areas.' The ELC's 'all-landscapes' approach is compatible with the identification of 'valued landscapes' as it seeks to promote 'measures to preserve the present character and quality of a landscape which is greatly valued'.[29]

[27] [redacted]

A3.4 National landscape designations

A3.4.1 Planning legislation and policy in each of the UK's devolved nations recognise landscape value at both national and local levels. England, Wales, Scotland and Northern Ireland each have their own primary planning legislation.

A3.4.2 It should be noted that Green Belt is not a landscape designation and does not denote landscape value, although it does perform a spatial function in the landscape.

England

A3.4.3 Statutory designations of landscapes in England, which are safeguarded by legislation, originated with the National Parks and Access to the Countryside Act 1949. The Broads National Park is designated under its own Act of Parliament (the Broads Act 1988). National Park purposes are defined as 'conserving and enhancing its natural beauty[30], wildlife and cultural heritage, and promoting understanding and enjoyment of its special qualities by the public'. The 1949 Act also made provision for the designation of AONBs to 'preserve and enhance natural beauty'. This original purpose of 'preserving and enhancing' was subsequently changed to 'conserving and enhancing' (Environment Act 1995).

A3.4.4 The Countryside & Rights of Way (CROW) Act 2000 consolidated the provisions of the 1949 Act, enabling conservation boards to be set up for larger AONBs and requiring management plans to be adopted for AONBs. Two AONBs have Conservation Boards, the Chilterns and Cotswolds AONBs.

A3.4.5 AONBs carry the same status and level of landscape protection as National Parks (Defra Vision and Circular 2010). Paragraph 20 states: 'The Government continues to regard National Park designation (together with that for Areas of Outstanding Natural Beauty ['AONBs']) as conferring the highest status of protection as far as landscape and natural beauty is concerned'.

A3.4.6 In England, Heritage Coasts (from 1973) are protected by policy rather than statute, though many are located within National Parks or AONBs and benefit from their statutory protection. They are defined (rather than designated) by agreement between local authorities and Natural England. The policy framework for Heritage Coasts in England was issued by the Countryside Commission (the predecessor to Natural England) in 1992. Heritage Coasts are defined as coastlines of exceptionally fine scenic quality, which are more than a mile in length, substantially undeveloped and contain features of special significance and interest.

A3.4.7 Historic England maintains a statutory 'Register of parks and gardens of special historic interest in England' and a separate 'Register of historic battlefields'. Although these designations bring no additional statutory controls, they contribute to landscape value as well as being heritage assets which are protected through national policy. National policy also requires local authorities to make provision for the protection of the historic environment in their policies and their allocation of resources.

Wales

A3.4.8 Historically, Wales shared most of the legislation and guidance relevant to landscape with England, notably the National Parks and Access to the Countryside Act 1949. The statutory landscape designations that apply in Wales are therefore the same as in England: National Parks, which are valued for their 'natural beauty and recreational value', and AONBs, valued for their 'outstanding distinctive landscape character and natural beauty'. In Wales, National Parks and AONB authorities are legally required to produce a management plan which sets out the Special Qualities of the area and policies to conserve and enhance the natural beauty of the designation. As set out in Planning Policy Wales, National Parks and AONBs are of equal status in terms of landscape and scenic beauty, and must both be afforded the highest status of protection from inappropriate developments.

A3.4.9 In 2014 Welsh Government commissioned a Review of Designated Landscapes and the 'Marsden Report' was published the following year. The review concluded in 2018 with Welsh

[30] The term 'natural beauty' is enshrined in the 1949 Act. The 1949 Act did not define what 'natural beauty' actually meant. Since then, its meaning has been clarified and interpreted through a series of studies, guidance documents, Secretary of State Decision letters, an Appeal Court judgement and public inquiries. Some clarification has also been provided through legislative amendments to the 1949 Act, e.g .NERC Act 2006 Section 99. Today, it is understood that natural beauty goes well beyond scenic or aesthetic value: it is to do with the relationship between people and place, and encompasses everything - 'natural' and human - that makes an area distinctive.

Governments response: 'Valued and Resilient' (Welsh Government, 2018). This sets out Welsh Governments priorities for the National Parks and AONBs in Wales.

A3.4.10 Non-statutory landscape designations valued at a national level include Heritage Coasts, which represent the most scenically outstanding stretches of undeveloped and unspoilt coast in Wales. Cadw, the historic environment service of the Welsh Government, in partnership with Natural Resources Wales (NRW) and the International Council on Monuments and Sites (ICOMOS UK) compiled (in 2014) a Register of landscapes of outstanding or special historic interest in Wales. This is a non-statutory register, 'intended to provide information and raise awareness of an initial selection of the most important and significant historic landscape areas in Wales in order to aid their protection and conservation'.[31]

Scotland

A3.4.11 Scotland's two National Parks (Loch Lomond and The Trossachs National Park and the Cairngorms National Park) are designated under the National Parks (Scotland) Act 2000. Scotland also has National Scenic Areas (NSAs), designated as *'areas of outstanding scenic value in a national context'*[32], and broadly equivalent to AONBs in England and Wales. NSAs were first described in 'Scotland's Scenic Heritage' (CCS 1978) and have been recognised within the planning system since 1980. As explained on the Scottish Government's website[33], in 2010, Scottish Ministers issued directions to local authorities under provisions in section 263A of the Town and Country Planning (Scotland) Act 1997 (inserted by section 50 of the Planning etc. (Scotland) Act 2006) to designate the current suite of NSAs. The NSAs include areas of landscape described variously on the www.nature.scot website as 'spectacular, dramatic, picturesque and richly diverse'.

A3.4.12 Wild land is not a statutory designation but the third National Planning Framework (NPF3, 2014) 'recognises wild land as a nationally important asset and indicates that Scotland's wildest landscapes merit strong protection'. NatureScot has identified 'wild land areas' – nationally important extensive areas of semi-natural landscapes that show minimal signs of human influence.[34] Historic Environment Scotland maintains the Inventory of Gardens and Designed Landscapes and the Inventory of Historic Battlefields. The cultural significance of sites can be taken into account in the planning process.

Northern Ireland

A3.4.13 In 2015, a new two-tier planning system came into force under the Planning Act (Northern Ireland) 2011. It introduced a sharing of planning responsibilities between eleven Councils and the Department for Infrastructure (DfI). The new planning system involved a move away from a suite of Planning Policy Statements (PPS) to a single Strategic Planning Policy Statement (SPPS 2015). However, a transitional period is in operation until local authorities adopt their Local Development Plans (LDPs). The Department of Agriculture, Environment and Rural Affairs (DAERA) has two Executive Agencies, namely Northern Ireland Environment Agency (NIEA) and Northern Ireland Forest Service.

A3.4.14 The main legislative basis for DAERA NIEA in relation to landscape and amenity protection is the Nature Conservation and Amenity Lands Order (NI) 1985 (NCALO). Through this, the former Department of the Environment for Northern Ireland (DOE NI) designated the seven landscape areas with the highest amenity value as Areas of Outstanding Natural Beauty (AONB), although the Lagan Valley AONB remains designated under an earlier act, The Amenity Lands Act 1965.

A3.4.15 'Shared Horizons' (2003) is the former DOE NI's Statement of Policy on Protected Landscapes, relating to the protection and sustainable use of Northern Ireland's finest landscapes. Such areas are usually recognised by some form of designation, which sets them apart from the wider countryside. Whilst the only designation currently in use in Northern Ireland to identify areas of high landscape

[31] https://lle.gov.wales/catalogue/item/RegisteredLandscapesOfOutstandingHistoricInterestInWales/?lang=en
[32] Planning etc. (Scotland) Act 2006 2006 asp 17.
[33] https://www.gov.scot/policies/landscape-and-outdoor-access/natural-heritage-designations/

quality is that of Area of Outstanding Natural Beauty (AONB) provision has been made for the potential designation of National Parks in future.[35]

A3.5 Local landscape designations

England

A3.5.1 England has seen a rise and fall in the use of local landscape designations over the years. In line with the Town and Country Planning Act 1968, many county councils adopted some form of non-statutory landscape designation when preparing their structure plans. Local designations had various names such as Areas of Great Landscape Value, Special Landscape Areas, Areas of Special Landscape Value, Undeveloped Coast and Coastal Preservation Areas.

A3.5.2 In 2004 national guidance in Planning Policy Statement (PPS 7): Sustainable development in rural areas (ODPM 2004) (now cancelled and superseded by the National Planning Policy Framework (NPPF 2019)) advised local planning authorities only to rely on statutory designations when seeking to conserve 'specific features and sites of landscape, wildlife and historic or architectural value'. Paragraph 25 stated that 'Local landscape designations should only be maintained or, exceptionally, extended where it can be clearly shown that criteria-based planning policies cannot provide the necessary protection'. This resulted in a decline in the use of local landscape designations in England, and in many places they were replaced by criteria-based local plan policies linked to local landscape character assessments.

A3.5.3 NPPF paragraph 171 requires development plans to 'distinguish between the hierarchy of international, national and locally designated sites'; but does not make any specific reference to local landscape designations. However, national Planning Practice Guidance (PPG) Paragraph: 036 [Reference ID: 8-036-20190721] makes it clear that strategic policies should provide for the conservation and enhancement of landscapes and that this can include locally designated landscapes. The NPPF also enables land to be designated as a 'Local Green Space' through local and neighbourhood plans – these are areas that are special to a local community or have particular local significance, for example because of their beauty, historic significance, recreational value, tranquillity or richness of wildlife.

A3.5.4 Future changes in the planning system are proposed in the Government's draft planning white paper: *Planning for the Future* (2020), but it is not yet clear how 'valued landscapes' may be interpreted within the proposed categories of 'growth', 'renewal' and 'protected' areas.

Wales

A3.5.5 Since the establishment of the Welsh Assembly Government in 1999, and following the 2011 referendum and the Wales Act 2017, Wales has been developing its own regulatory framework for landscape. Planning Policy Wales (PPW10 2018) currently sets the context for planning in Wales. Para 6.3.3 explains that 'all the landscapes of Wales are valued for their intrinsic contribution to a sense of place'.

A3.5.6 PPW10 supports local landscape designations and advises (para 6.3.11) that 'Planning authorities should provide for the conservation and, where appropriate, enhancement of local landscapes. This may include policies for landscape features, characteristics and qualities of local significance, and the designation of Special Landscape Areas (SLAs). Planning authorities should state which features, characteristics or qualities require extra protection, and explain how the policy or designation will achieve this protection'. Special Landscape Areas (SLAs) in Wales are non-statutory local landscape designations used by some local authorities to define areas of high landscape importance and to provide for their conservation and enhancement through policies in their local plans and supplementary guidance. SLAs are defined using LANDMAP, and mainly include landscape areas evaluated as Outstanding and High (of national or county importance). In June 2020, 17 local authorities out of 22 had SLAs linked to a local policy plan.

A3.5.7 LANDMAP is the all-Wales GIS based landscape resource that records and evaluates landscape characteristics, qualities and influences on the landscape for the purposes of landscape assessment. LANDMAP Guidance Note 1 (Natural Resources Wales, 2017) sets out an approach for defining Special

[35] https://www.daera-ni.gov.uk/articles/shared-horizons

Landscape Areas (SLAs). These may be designated for 'their intrinsic physical, environmental, visual, cultural and historical importance, which may be considered unique, exceptional or distinctive to the local area'. They should be 'important for their distinctive character, qualities and sense of place'.

Scotland

A3.5.8 National policy in Scotland is set out in NPF3 and Scottish Planning Policy (SPP 2014). SPP states that the planning system should 'facilitate positive change while maintaining and enhancing distinctive landscape character' (paragraph 194), and the ELC is listed as a key document. Paragraph 197 advises that 'Planning authorities are encouraged to limit non-statutory local designations to areas designated for their local landscape or nature conservation value: the purpose of areas of local landscape value should be to safeguard and enhance the character and quality of a landscape which is important or particularly valued locally or regionally; or promote understanding and awareness of the distinctive character and special qualities of local landscapes; or safeguard and promote important local settings for outdoor recreation and tourism'.

A3.5.9 Local Landscape Area (LLA) designations (previously Special Landscape Area; prior to that a variety of names was used), are used in local development plans across Scotland. NatureScot and Historic Environment Scotland (2002) jointly published *Guidance on Designating Local Landscape Areas* (LLAs) is a revised and updated version of guidance originally produced in 2006). This is intended primarily for local authorities to use in taking forward their own designation process. The guidance acknowledges that local landscape designations are a valuable tool in the development plan toolbox and outlines the process for designating new LLAs and refreshing existing designations.

Northern Ireland

A3.5.10 Planning Policy Statement 2 (PPS2 2013) sets out policies for the conservation, protection and enhancement of Northern Ireland's natural heritage. Local authorities are responsible for zoning a variety of landscape related areas as part of their Local Development Plan process. The designations that may be used for local landscapes include Local Landscape Policy Areas (LLPAs) and Areas of High Scenic Value (AoHSVs), although Areas of Townscape Character (ATCs), Areas of Village Character (AVCs) and Countryside Policy Areas (CPAs) may also be designated.

A3.5.11 Planning Policy Statement 6 (PPS6 1999) explains that 'Environmental assets, identified as part of the process of Countryside Assessment, will normally form the basis for the designation of local landscape policy areas. These consist of those features and areas within and adjoining settlements considered to be of greatest amenity value, landscape quality or local significance and therefore worthy of protection from undesirable or damaging development'.

A3.5.12 The Department of the Environment's 'Strategic Planning Policy Statement for Northern Ireland' (SPPS 2015), which will supersede PPS6, highlights Local Landscape Policy Areas (LLPAs) stating that Local Development Plans should, where appropriate, designate LLPAs and bring forward local policies and guidance to maintain the intrinsic landscape, environmental value and character of such areas.

A4 (Appendix 4) The valued landscape 'policy test' in England

A4.1 2012 National Planning Policy Framework (NPPF)

A4.1.1 In 2012, the first version of the NPPF was published. It included a policy (paragraph 109) which stated that 'The planning system should contribute to and enhance the natural and local environment by: [inter alia] protecting and enhancing valued landscapes'.[36] No definition of a 'valued landscape' was given in the NPPF[37]. Planning Practice Guidance paragraph 036 Ref ID:036-20190721 provides advice on the use of policies for landscapes of a particular local value but there is no guidance on how to identify such landscapes.

A4.1.2 The term valued landscape appears in the 2002 landscape character assessment guidance and in the title of GLVIA3 Box 5.1 ('Range of factors that can help in the identification of valued landscapes') which was published in 2013. However, the reference in GLVIA is a quote from the 2002 guidance and not a response to the use of the term 'valued landscapes' in the 2012 NPPF.

A4.1.3 Following the 2012 NPPF the identification of 'valued landscapes' took on a new level of significance in planning appeals. Methods used to identify 'valued landscapes' in the context of the NPPF began to emerge, based on evidence presented by expert landscape witnesses at inquiry, Inspectors'/Secretary of State's decisions, and court judgements. The evolution of approaches to the identification of 'valued landscapes' is summarised in **Appendix A5.** The 'preferred' approach that has emerged is based on the value factors set out in GVLIA3 Box 5.1.

A4.1.4 One particularly influential judgment[38] accepted an approach which identified whether a landscape had sufficient 'demonstrable physical attributes' to take it beyond 'ordinary landscape'. This judgment also found that the 2012 NPPF was clear that 'designation' and 'valued' in relation to landscapes do not mean the same thing. Although this approach is still widely accepted the particular term 'demonstrable physical attributes' is not used in this TGN because it can be misunderstood as focusing exclusively on physical factors and excluding the perceptual and associative factors that may contribute towards the value of a landscape.

A4.2 2018/9 NPPF

A4.2.1 In July 2018, the NPPF was revised, and the 2012 'valued landscape' paragraph 109 was transposed, with modifications, to paragraph 170. The NPPF was revised again in February 2019[39] but paragraph 170 remained unchanged. There is still no definition of 'valued landscapes'.

A4.2.2 Paragraph 170 a) qualifies the term 'valued landscapes' as follows (qualification underlined): 'Planning policies and decisions should contribute to and enhance the natural and local environment by:

[36] Planning Policy Statement 7 Sustainable Development in Rural Areas P24 introduces the idea of valued landscapes which can be protected via of criteria-based policies rather than local designations.

[37] The Landscape Institute is aware of the lack of clarity regarding the expression 'valued landscapes'. The LI drew attention to this wording in a response to the government consultation on the draft NPPF 2012, and again on the draft revised NPPF 2018 (in 2017). The LI continues to respond to all relevant government consultations, in particular those issued by MHCLG and DEFRA. The LI uses these invitations to comment and draw attention to any perceived lack of clarity or inconsistencies in the text of consultation drafts, making suggestions for revised wording where appropriate.

[38] Stroud DC v SoSCLG [2015] EWHC 488 (See Appendix 2 for further discussion of this judgement).

[39] The current consultation draft of a proposed revision to the NPPF (2020) does not include any changes to the wording of paragraph 170.

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (*in a manner commensurate with their statutory status or identified quality in the development plan*)'.

A4.2.3 The precise meaning of *in a manner commensurate with their statutory status or identified quality in the development plan* has been the subject of much debate, especially at planning inquiries, since 2018. **Appendix A5** refers to a number of decisions relating to its interpretation which provide an indication of the issues inspectors have considered to be relevant in the light of this qualification. However, there is no consensus on the meaning of the qualification and the interpretation of policy intentions and meanings can only be determined by the Courts. At the time of writing there have been no court judgments, post the 2018 revision, that have addressed the issue of 'valued landscapes'.

A4.2.4 This Appendix sets out the Landscape Institute's guidance on how landscape professionals should identify 'valued landscapes' and in particular how landscape professionals might interpret the phrase 'in a manner commensurate with their statutory status or identified quality in the development plan'. It is intended to:

- *guide landscape professionals undertaking landscape assessments in England, so that their judgments about landscape value are based on a transparent and structured approach such as the one set out in Table 1 above; and*
- *assist decision-makers in England who have to interpret and balance the judgments made by different landscape professionals.*

Statutory status

A4.2.5 The interpretation of the phrase 'in a manner commensurate with their statutory status' is relatively straightforward. Where a landscape has a statutory status, such as a National Park or AONB, it is self-evident that it is a valued landscape[40]. The great weight that should be given to conserving and enhancing landscape and scenic beauty in nationally designated landscapes is set out at NPPF paragraph 172 and relates to the statutory requirements with regard to natural beauty and (for National Parks only) the opportunities afforded for open-air recreation. Paragraph 170 a) does not alter those requirements.

Identified quality in the development plan

A4.2.6 The interpretation of 'identified quality in the development plan' is not clear. There are two fundamentally different interpretations that have been adopted by inspectors, which are considered below in more detail:

1. It means non-statutory, locally designated landscapes;
2. It means any landscape where there is evidence to justify the identification of a 'valued landscape'. Local designation alone may not be sufficient evidence.

In both cases it is assumed that the word 'quality' means degree of excellence.

Locally designated landscape

A4.2.7 The phrase 'identified quality in the development plan' was interpreted by one inspector as meaning a locally designated landscape. This interpretation was accepted by the Secretary of State, although the acceptance was implicit not explicit.[41] However, this interpretation has not been adopted by subsequent inspectors who have identified problems with this approach, in particular:

[40] In cases where a particular area within a National Park or AONB may not demonstrate the level of quality expected of its designation status, this does not mean that its value is diminished. Such an area is still a component of the nationally designated area with the characteristics associated with the park or AONB as a whole, and the aim should be to bring it back or much closer to the quality and character of the wider designated area so that it can be a positive contributor to the statutory purpose (to conserve and enhance the area's natural beauty).

[41] App 3197293 Pods Brook Road, Braintree, Essex (June 2019).

- *that many planning authorities, following previous policy guidance,[42] no longer have local landscape designations; and*
- *that some local designations do not have an underlying evidence-base.*

A4.2.8 At least one inspector has disagreed with the interpretation that any locally designated landscape must automatically be a valued landscape because in that case the parties agreed there was no evidence base to support the designation.[43]

Development plan policy support

A4.2.9 Many inspectors have continued to consider evidence presented to support the identification of a 'valued landscape' whether a local landscape designation exists or not. Evidence that has been used in reaching judgements about whether a landscape should be considered to be a valued landscape includes:

- *factors that are generally agreed to influence landscape value as set out in GLVIA3 Box 5.1;*
- *the presence of qualities in the landscape that are identified in the development plan (which includes neighbourhood plans) as requiring protection, such as in policies that require development to respect key aspects of a local landscape identified in the local landscape character assessment; and*
- *when a local designation exists, whether the landscape in question demonstrates the landscape qualities that are identified as important for that designation.*

A4.2.10 The Landscape Institute supports the evidence-based approach. The Landscape Institute does not consider that planning authorities which removed local designations following previous policy guidance, or those which never had local landscape designations, should be considered to have no 'valued landscapes' outside nationally designated areas.

A4.2.11 Where a landscape has a statutory status, it will not be necessary to undertake an assessment based on Box 5.1 of GLVIA3 or the factors identified in Table 1 of this TGN. It may also be unnecessary where a local designation is supported by a strong evidence base. However, where there is little published evidence to support existing local landscape designations, an assessment based upon these factors would be helpful to support planning decision making.

Valued landscape definition

A '**valued landscape'** is an area identified as having sufficient landscape qualities to elevate it above other more everyday[44] landscapes.

A4.2.12 Where possible the development plan should be referenced to support the value placed on the landscape. Where the development plan is silent, evidence should be provided in the form of professional analysis. Key points to note are as follows:

- *It is not possible to set a definitive threshold in this TGN above which a landscape is considered to be a 'valued landscape'. It is a judgment that must be made on a case-by-case basis, based on the evidence. There should be a weight of evidence that supports the recognition of a landscape as valued above more everyday landscapes.*
- *The character and quality of landscapes across England are variable and what may be defined as reaching the 'valued landscape' threshold/criteria in one part of the Country may be considered to be an 'everyday landscape' in another.*
- *It would be expected that a 'valued landscape' would demonstrate the presence of a number of indicators of landscape value, as set out in Table 1, although it is possible for one indicator to be of*

[42] Planning Policy Statement (PPS 7): Sustainable development in rural areas (ODPM 2004) – see Appendix A3.
[43] App 3215534 Tuffs Road and Maple Way, Eye, Suffolk (March 2020) The local plan policy was based on an old structure plan and the parties agreed there was no evidence base for that.
[44] 'Everyday' landscapes may nevertheless have value to people.

such importance (e.g. rarity, association or perceptual aspects) that the landscape is judged to be a 'valued landscape' even if other indicators are not present.

- *The identification of landscape value needs to be applied proportionately ensuring that identification of 'valued landscape' is not over used.*
- *In line with the ELC's approach, landscapes that are not judged to be 'valued landscapes' may still have value, and NPPF paragraph 170 b) requires planning policies and decisions to recognise the intrinsic character and beauty of the countryside. It is well-established that a landscape does not have to be a 'valued landscape' to be afforded protection from inappropriate development (**see Appendix A5**).*

A5 (Appendix 5) Inspectors' decisions and case law in relation to the interpretation of 'valued landscapes' in the National Planning Policy Framework (NPPF) in England

A5.1 Introduction

A5.1.1 This Appendix summarises how inspectors' decisions and case law have dealt with the interpretation of 'valued landscapes', first set out in Paragraph 109 of the NPPF 2012 which referred to 'protecting and enhancing valued landscapes'. This was subsequently updated in Paragraph 170 of the revised NPPF 2018 (with the addition of the qualifying phrase 'in a manner commensurate with their statutory status or identified quality in the development plan') and carried forward to the 2019 NPPF.

A5.1.2 The aim of this Appendix is to demonstrate some of the permutations of the arguments and evidence presented in relation to valued landscapes. Planning appeal decisions, by Inspectors and the Secretary of State, must be read as a whole to understand the full context of decisions, noting that Appeal decisions are made independently and on the basis of the evidence before the Inspector or Secretary of State at that time. Interpretation of policy intentions and meanings can only be determined by the Courts.

The 'Stroud Judgement'

A5.1.3 The 'Stroud' Appeal decision in 2014 is of significance because it became the subject of the first definition of 'valued landscape' (in relation to Paragraph 109 of the NPPF) by the courts. An Appeal was made by Gladman Developments Ltd against Stroud District Council's refusal of planning permission for 150 houses at the foot of the escarpment to the Cotswold Hills (Appeal reference APP/C1625/A/13/2207324). In his decision, the Inspector acknowledged that there was no agreed definition of 'valued' as used in Paragraph 109 of the NPPF and that in the absence of any formal guidance on the point, he considered that to be valued would 'require the site to show some demonstrable physical attribute rather than just popularity'. He went on to say that 'In the absence of any such designation, I find that paragraph 109 is not applicable to the appeal site' (Paragraph 18). In this instance, the Inspector found that the site was not a 'valued landscape' and allowed the Appeal.

A5.1.4 Stroud District Council challenged the Inspector's decision (summarised above) in the High Court on four grounds including the Inspector's approach to valued landscape. During the hearing between Stroud District Council and the Secretary of State for Communities and Local Government & Gladman Developments Limited, the Council suggested that the Inspector equated valued landscape with designated landscape. In his judgement (dated February 2015) Mr Justice Ouseley stated that if the Inspector had concluded that designation was the same as valued landscape he would have been wrong because in the NPPF, 'the word "designation" is used when designation is meant and "valued" is used when valued is meant and the two words are not the same'. Mr Justice Ouseley then considered whether the Inspector really meant that he equated designation with valued landscape and concluded that he did not. He judged that the Inspector knew that designation was not the start and finish of the debate. He concluded that '. . . in the end I am satisfied that the Inspector did not make that error. In particular, the key passage is in the third sentence of paragraph 18, in which he said that the site to be valued had to show some demonstrable physical attribute rather than just popularity' (Paragraph 14).

A5.1.5 In Paragraph 16 of the judgment he explains the Inspector's reasoning: 'It is not difficult to see that the sort of demonstrable physical attributes which would take this site beyond mere countryside, if I can put it that way but into something below that which was designated had not been made out in the Inspector's mind'.

Demonstrable physical attributes

A5.1.6 Following this judgment a number of Inspectors have considered the issue of what constitutes a valued landscape by reference to 'demonstrable physical attributes' that take the landscape beyond ordinary countryside and this phrase was taken as a general principle by many. However, in a later judgement (CEG Land Promotions II Lts v SoS HCLG 2018 EWHC 1799), Mr Justice Ousley made it clear that he was not laying down any general principles when he concluded that it was reasonable for an Inspector to look for such demonstrable physical attributes in reaching a conclusion on valued landscape (Paragraph 58).

The role of the site in the wider landscape

A5.1.7 When assessing landscape value, there has been a growing consensus regarding the importance of looking at the role that a site plays in the wider landscape and not limiting the assessment to the site itself. The Inspector for APP/Z1510/W/16/3160474 (West Street, Coggeshall, July 2017) concluded at Paragraph 30 of her decision as follows:

> 'Whilst the Framework paragraph 109 test based on the Stroud case (which I shall consider later) refers to "this site" I consider that it would be too narrow to just consider the appeal site. A site might have a variety of characteristics but, taken in isolation, for some sites it would be difficult to assess whether those characteristics have any particular value or importance. Moreover, a site might be important because of its position in the landscape as part of it rather than being important in its own right, rather like the pieces of a jigsaw puzzle. Further, as my colleague in the Nanpanton Road appeal sets out, the interactions between people and place are important in the perceptions of landscape and people will perceive the site in a wider context'.[45]

A5.1.8 While this decision pre-dates the amendment of the NPPF, its approach to assessing landscape value remains relevant.

Does a lack of local landscape designation preclude the presence of a valued landscape?

A5.1.9 An Inspector in his report for Appeal 3197293 (Pods Brook Road, Braintree, Essex) concluded that 'A straightforward reading of paragraph 170(a) does not lead to the view that there are other categories of valued landscape (which are not statutorily designated or identified in a development plan)'[46] and he equated this with some form of protection in the development plan. This interpretation was accepted by the Secretary of State, although the acceptance was implicit not explicit. However, this interpretation has not been adopted by other inspectors as set out in the following paragraphs.

A5.1.10 An inspector in a decision letter for APP 3200335 (Watlington Road, Lewknor) made clear that he considered the lack of a local landscape designation should not preclude the presence of a valued landscape: 'It would be wrong in my view to conclude that a landscape cannot be considered as valued simply because it was not identified in a development plan formulated at a time when no such requirement existed'.[47]

A5.1.11 In this instance the inspector was not persuaded that the landscape in question was a 'valued landscape' but this judgement was based on the evidence the parties had put to him about the value of the landscape rather than lack of a local designation.

A5.1.12 In relation to App 3207509 (Land off Colchester Road, Bures Hamlet) the Inspector concluded 'Neither, having regard to Paragraph 127, do I consider that the exhortation to protect and enhance "valued" landscapes is necessarily limited to landscapes that have either a statutory designation or a local designation in the development plan' (Paragraph 21). In this case an evaluation for potential

[45] APP 3160470 West Street Coggeshall Inspector Hill Paragraph 30 2017

[46] Appeal 3197293 Pods Brook Road, Braintree, Essex Inspector Clegg Paragraph 185 June 2019

[47] APP 3200335 Watlington Road, Lewknor Inspector Baugh-Jones Paragraph 40 January 2019

extension of the Dedham Vale AONB to include the land in question had been undertaken and so there was a detailed evidence base to demonstrate landscape value despite the lack of designation.

A5.1.13 In relation to App 3214324 (Poplar Hill, Stowmarket, August 2019) the inspector concluded that the development would harm a valued landscape even though the site was not located within a nationally or locally designated area. Additionally, it was in a district that still had local landscape designations. The inspector was concerned with the harm that would arise to features in the landscape surrounding the appeal site as a consequence of development on the appeal site, stating:

> 'Although the site is not recognised in published documents as an exemplary or outstanding component of the Suffolk landscape and its development would in some ways be consistent with characteristic patterns of development along valley sides, the appeal proposal would compromise the appreciation of sufficiently impressive examples of other characteristic features of the landscape as to cause an unacceptable effect on the landscape character and appearance of the area. These characteristic features are Combs Wood and St Mary's Church both of which have statutory status and so would qualify the landscape to be regarded as valued, to be protected and enhanced in terms of NPPF paragraph 170(a)'.[48]

Implication of the NPPF wording for local landscape designations?

A5.1.14 There has been some speculation as to whether the addition of the qualifying phrase 'in a manner commensurate with their statutory status or identified quality in the development plan' to the 2018 version of the NPPF (and carried forward to the February 2019 version) will result in a resurgence of local landscape designations. In his decision letter, the Inspector for App 3207509 (Land off Colchester Road, Bures Hamlet) concluded:

> '22. The Framework does not provide a definition of a valued landscape. However, *I consider it improbable that the addition of the words in brackets to paragraph 170(a) which occurred in July 2018 was intended to encourage policy makers to revive the practice of creating local "Special Landscape Areas" or similar designations in development plans* as a means of identifying a valued landscape. Previous advice had sought to discourage such designations in favour of landscape character assessment which would identify the distinctive and valued qualities of landscapes'[49] (emphasis added).

A5.1.15 Other inspectors suggest the local plan process is the proper forum for landscape value to be considered and for designations to be made. For example, the inspector for App 3200409 (Old Street, Stubbington, January 2019) concluded:

> '30 a . . . the landscape is not specifically recognised for its quality in the current development plan. This is because local landscape designations fell from favour in national planning policy. Previously, the Lower Meon Valley had been identified as an Area of Special Landscape Character.
>
> 31. *In view of para 170 the matter of landscape value will no doubt be considered through the emerging Local Plan process. That is the proper forum for any designation to be made.* However, until that time it is difficult to understand why there would be a change in terms of intrinsic value'[50] (emphasis added).

If a landscape is not a 'valued landscape' can it still have value?

A5.1.16 At the appeal in relation to Bayley Gate Farm, College Road, Cranfield Appeal 3190779 neither the council's nor the appellant's landscape architect considered that the site was a valued landscape. Nevertheless, the inspector concluded that this did not mean it had no value, stating:

> 27. 'The site does not form a valued landscape for the purposes of paragraph 109 of the National Planning Policy Framework (the Framework), a position accepted by both parties. *That however does not mean that it has no value* and although it may not be rare or have significant conservation interest or have any known associations it is very representative of the wider landscape, has a pleasant and attractive scenic quality and is in good condition. Its arable

[48] App 3214324 Poplar Hill, Stowmarket Inspector Clark Paragraph 81, August 2019.
[49] App 3207509 Land off Colchester Road, Bures Hamlet, Inspector Mellor, Paragraph 22, March 2019.
[50] App 3200409 Land west of Old Street, Stubbington, Hampshire, January 2019.

nature, strong boundary hedge and tree treatment ensure that it, along with the surrounding fields, narrow country lanes, bridleway and public rights of way create a strong rural character'[51] (emphasis added).

[51] App 3190779 Bayley Gate Farm, College Road, Cranfield Inspector Stone Paragraph 27, July 2018.

Appendix F – Horse Racing Industry

1. Refer also to SNTS Written Representation on vulnerability in **REP2-240f** Appendix 1, paragraphs 2.4, 5.1 – 5.18, 10.10 and 11.7 – 11.9.

2. Newmarket's HRI is vulnerable because:

    a. Of its pre-eminence (it should be noted that this is the current state but has not always been so). Contrary to Sunnica's assertion that this makes it robust and resilient, Newmarket HRI's pre-eminence means it is in the crosshairs of every other global horseracing centre. Further, its current pre-eminence means it has a reputation as the best in the world, so owners and investors expect the best from it. Even small losses in the quality of its offer are likely to lead to dissatisfaction on the part of owners and investors. Costs of racehorse training in Newmarket are comparatively high (globally), prize money in British racing is comparatively low (globally) – there must be a reason for investors to stay in Newmarket and to pay the premium. Loss of quality, appeal and aesthetics will matter to owners and investors and will reduce any incentive to pay the premium.
    b. There is limited awareness and understanding of the Newmarket HRI, its significance, and its value among those outside the industry (this applies locally, regionally and nationally). This leads to it, and impacts on it, being overlooked or being given insufficient weight in decisions that affect it.
    c. Development in and around the town has the potential to harm the industry by negatively impacting the function and operation of horseracing sites including by making them (and the Newmarket HRI as a whole) less meaningful, less attractive, and less appealing to those with an interest in the sport.
    d. The nature of international sport and the type of investment it attracts means that Newmarket is having to compete with an ever-larger number of locations and sports for the footloose and often capricious investment it relies upon to survive.
    e. There are several feasible alternatives to Newmarket (both in the UK and abroad), most with their own particular strengths, to which owners and investors could shift their interests (or with which they could split their interests with Newmarket).
    f. The recent success of the industry is only 25 – 30 years old. This has been built on international investment in stud farms in the area. This has strengthened the Newmarket HRI's bloodstock position which has had a knock-on effect on the industry more generally. However, this need

not be the case. All that is required for the industry to stagnate, or contract is for individual owners to choose to have their horses trained elsewhere. Where this happens, the income of training yards drops and as soon as profit margins drop below the necessary level of return, they are prone to closure. Both the individual owners making these decisions, and larger investors, are likely to be sensitive to changes in Newmarket's surroundings, especially where these will be visible from principal HRI sites, namely the Limekilns, Water Hall and Railway Land gallops.

3. A significant proportion of the time allocated to discussing the HRI at ISH3 was spent on the Lichfields report (8.10 Horse Racing Industry Impact Assessment [REP2-039]). The issue of the report in November 2022 was a major distraction to the proper consideration of the impact of the proposed development on the HRI and should be considered as such because:

    a. Rather than being evidence that the proposed development will not impact on the Newmarket HRI, the report is clear evidence that the applicant had not considered the impact of its proposed development on the HRI until November 2022.
    b. The applicant should have considered the full effects and impacts of their development at the outset (not a year after submission of the application):

        I. NPS-EN1 paragraph 4.4.2: "applicants are obliged to include in their ES, as a matter of fact, information about the main alternatives they have studied. This should include an indication of the main reasons for the applicant's choice, taking into account the environmental, social and economic effects" – this exercise cannot have been properly conducted without an assessment of the impact of the proposed development on the HRI.

        II. NPS-EN1 paragraph 5.12.2: "the applicant should undertake and include in their application an assessment of these impacts as part of the ES" and paragraph 5.12.3: "this assessment should consider all relevant socio-economic impacts". No assessment of impact on the HRI had been undertaken at the time the ES was prepared and therefore was not included.

        III. It is also relevant to note NPS-EN1 paragraph 5.12.5 as it refers to interaction of different effects (as occurs in this case between the proposed development's landscape and visual effects, cultural heritage effects and its effects on the HRI):

"*Socio-economic impacts may be linked to other impacts, for example the visual impact of a development*".

c. Had the applicant assessed the impacts of the development on the HRI properly and at the outset as NPS-EN1 and the EIA Regulations require, it would have established the nature and extent of those impacts and could have amended the scheme accordingly. Either through the consideration of alternatives (including omitting certain parts of the site/proposals - e.g. Sunnica West Site A in view of its impact on the Limekilns and the accepted position that this impact cannot be mitigated.) or mitigation.

d. In view of the fact that the applicant's HRI assessment was conducted in November 2022, a full year after the application was submitted, it is necessarily a retrospective justification of the proposed development in terms of its impact on the HRI. It brushes off the possibility of effects on the HRI without proper and effective assessment.

4. The evidence and methodologies used to assess the proposed development's impact are misrepresented, inadequate and/or irrelevant:

a. Much of the report is spent asserting Newmarket's pre-eminence in the horseracing world. Newmarket's pre-eminence is not in dispute. However, its pre-eminence contributes to its vulnerability, as set out above, not the opposite as the report suggests.

b. Paragraph 3.29: The report quotes Sheikh Fahad of Qatar Racing talking about the attraction of British Racing on the international stage. However, it should be noted that Qatar Racing's UK operation is headquartered in Gloucestershire, not Newmarket, and that it sold its only investment in Newmarket (Longholes Stud) in 2020. This is clear evidence that large and wealthy investors come and go, do not necessarily prefer Newmarket to other locations, and that decisions to invest in Newmarket, no matter how large, can be and are reversed.

c. Paragraphs 3.33 & 6.13 quote Hugh Anderson, Managing Director of Godolphin and representative of the NHG referring to the unrivalled nature of Newmarket's offer in relation to the Hatchfield Farm proceedings. This is presented as evidence of the Newmarket HRI's strength and resilience. However, not only are these comments a number of years old, they were also made long before any Sunnica Energy Farm proposals had been tabled. In response to questions asked of him in the preparation of the Rapleys "Assessment of Impact of Proposed Energy Farm on the Horseracing Industry in Newmarket and the Surrounding Area" report (REP2-240f Appendix 1 to Appendix 1), Hugh Anderson stated:

- The moment one major owner, breeder or trainer pulls out there is a risk that others will follow suit and that all will start to feel that Newmarket's unique offer has been diminished

- If the town were to lose even a quarter of its owners, breeders and/or trainers the industry in Newmarket would be irreparably damaged

- In the case of Godolphin, the decision about whether to stay in Newmarket would depend on a number of factors; the accumulation or convergence of a number of negative impacts or factors, of which the approval of the Sunnica scheme could be one, could result in a decision to move its Newmarket operation elsewhere

d. It should also be noted that Mr Anderson runs a commercial racing operation and has to make business-driven and sometimes difficult decisions (REP2-240f Appendix 1, paragraphs 10.18 & 10.19). In 2014 Mr Anderson had to take the decision to close one of Godolphin's yards because of a drop in the number of horses they had to train. This is clear evidence of the marginal viability of Newmarket's HRI at even the very highest level and the ease with which contraction of the industry can occur.
e. The report presents selected evidence (Figure 3.8 – "Training Location of Top 250 Ranked Horses on Flat Turf – 2014, 2018 and 2022" – a considerable amount of time was spent discussing this at the hearing) to suggest that "*Great Britain has held its own on the international stage in recent years*" (note that is shows Britain is ranked 3rd in the world, not 1st) and is not under threat from other global horseracing nations. This very selective piece of evidence actually shows a slow decline in Great Britain's training activities over the 8 year study period, and a meteoric rise in Ireland's training activities. This one piece of evidence is not sufficient to draw the conclusions the report deduces from it and, in any event, the conclusions reached do not reflect what it shows.
f. The assessment of solar farms near existing HRIs as a means of determining the impacts of the proposed development on the Newmarket HRI is flawed because:

    - None of *the* solar farms *considered* are of anything like the scale of the proposed development;

- None of the *solar* farms considered are anything like as close to key HRI assets as the proposed development is to the Limekilns (one of Newmarket's key HRI assets) and some of Newmarket's other HRI assets; and

- As far as we have *been* able to establish, none of the solar farms considered are visible from key HRI assets, unlike the proposed development, whose extensive visibility from the Limekilns in particular, and the fact it cannot be mitigated, is not in dispute.

g. Section 5: The "*Assessed* Impact *of the Sunnica Scheme on factors relevant to the HRI*" is simply a trawl of the very limited examples of the applicant's previous environmental assessment work that do make reference the HRI. This assessment work was not undertaken with reference to the HRI specifically and is sketchy at best. The report does not present any new evidence in this regard, it simply rehashes that already in existence, which SNTS has already shown to be inadequate.

5. The proposed development would materially weaken the best, most notable and most widely recognised remaining visual representation of the historic link between Newmarket and the wider heath (which was the single most important factor in it becoming the home of horseracing).

6. As requested by the ExA, the relevance of Hatchfield Farm decision is to be considered in a separate statement (a joint statement with the applicant if possible) to follow for **Deadline 5**.

Appendix G – Agriculture

Sunnica Energy Farm (EN010106) Deadline 4

15 December 2022

Peter Danks – Reading Agricultural Consultants:

Responses to the Examining Authority's questions to experts with respect to land quality and irrigation (EN010106/APP/8.8)

Introduction

1. Reading Agricultural Consultants Ltd (RAC) is instructed by Say No To Sunnica Action Group Ltd (SNTS) to provide expert support with regard to the agricultural elements of Sunnica Ltd's (the Developer) application for a Development Consent Order (DCO) for the construction, operation and decommissioning of Sunnica Energy Farm.
2. In the Agenda for Issue Specific Hearing 3 (ISH3), the ExA identified the following matters for discussion:

   Agricultural land classification:

   - Adequacy of agricultural land classification surveys, relevance of irrigation needs; and
   - Whether assessment of best and most versatile (BMV) agricultural land accords with planning policy.
3. In the course ISH3, held on 8th December 2022 into agricultural and soils aspects of the application, the Lead Examiner asked for written clarification of responses to questions put to experts by him.
4. This additional response has been prepared by Peter W Danks, Senior Director of RAC and has been reviewed and agreed by Sam Franklin and Patrick Stephenson, whose credentials are attached to the original RAC report [REP2-240d pdf pp66-72], who are also instructed by SNTS.

SNTS' Responses to Questions of ExA

5. The report produced by Daniel Baird Soils Consultancy (DBSC) [APP115] is unreliable and insofar as it is (a) unsupported by any evidence other than basic data produced in the

baseline assessment [APP-115 pdf pp91-145 of 148]; (b) does not follow standard practice; and (c) does not adhere to published guidance in the following respects:

- It fails to acknowledge in the following respects indicators that the vast majority of the development area is Best and Most Versatile (BMV) land:
    i. published soil survey information;
    ii. published ALC information;
    iii. crop production; and
    iv. the results of surveys on adjacent land.
- It fails to produce robust evidence in line with normal practice:
    i. The calculation of ALC grades is inconsistent and opaque;
    ii. Soil auger observations are on a rigid 100m grid resulting in a reduced density of observations; and
    iii. Insufficient soil observation pits have been excavated at unrepresentative sites.
- It fails to follow the relevant 1988 MAFF and associated planning guidance for relating to the determination of ALC and its role in the planning system in that:
    i. It fails to take into account irrigation

6. Consequently, the baseline survey produced by DBSC and the conclusions drawn from observations made in the course of that survey differ significantly from what might reasonably be expected to occur in the proposed development area given extensive information published by authoritative sources including the Soil Survey, MAFF and successor bodies and Natural England and predecessor bodies (Appendices 1 & 2). This variation from expectations is not supported by any evidence other than basic data produced in the baseline assessment
7. The justification for these statements is set out in the text below.

What are the reasons for the differences between the parties in the grading of ALC?

Soil and ALC mapping

8. The ALC grade of land is based on long term physical and climatic limitations on its agricultural use. The parties' experts differ in their assessment of available evidence and its interpretation in terms of ALC grading of the development area, specifically of the soils of the area.

9. The Soils and Agricultural Baseline Report informing the EIA [APP-115] includes observations made during a soil survey of the area carried out by DBSC and used to inform mapping of ALC at 1:17,500 scale [APP238 & APP239]. DBSC concluded that only 3.8% of the site was Best and Most Versatile (BMV) [APP115 table 5-2 p.12B-9. pdf p.12 of 148].

10. RAC has used available mapping and other soil survey publications to inform its conclusion that the vast majority of the land in the area is more likely than not to be Best and Most Versatile (BMV) [REP2-240d para. 7.8 et seq. pdf pp. 21-27 of 298, and Appendix 3 pdf pp.128-162].

11. DBSC identified soil droughtiness as the primary factor limiting the land to Grades 3b and 4 (non-BMV) [APP-115 paragraph 5.4.2 (p11 of pdf)], this being due to the volume of large stones in, and restricted depth of the soil profile [APP-115 paragraph 5.3.5 (p10 of pdf)].

12. These limitations are identified in the DBSC survey across a substantial proportion of the development area. Those limiting features are not evident in published soils information.

13. In the Hearing [Pt2 of Recording of ISH3 1:23:45-1:25:55], Mr Baird stated that no information at a suitable scale was available to inform soil descriptions or aid the prediction of likely ALC grades at less than strategic scale. This is not the case.

14. One inch to one mile (1:63,360) scale detailed mapping of soil series is available in two publications[1] and on the Landis website[2], a scale adequate to identify soil types on a field-by-field basis, and from those sources predict ALC grades. Relevant extracts from mapping and text relating to soils within the development area are attached at Appendix 1.

[1] C. A. H. Hodge and R. S. Seale *The Soils of the District around Cambridge* (Sheet 188) Soil Survey (1966)
R. S. Seale and C. A. H. Hodge *Soils of the Cambridge and Ely District* (*Special Survey N$^{o.}$10*) Soil Survey (1976)
[2] [redacted]

15. Further, Mr Baird stated that published information was not reliable for the purpose of predicting ALC on a field-by-field basis in a desk top assessment as done by RAC, being at a mapped scale of 1:250,000 and limited to information relating to soil associations, not soil series' [Pt2 of Recording of ISH3 1:26:25-1:27:30].

16. This is not correct. RAC used appropriate sources of information published by the Soil Survey. The soils of the area were surveyed in detail in the 1950s at soil series level and mapped at a scale of 1:10,560 (six inches to one mile). Published mapping at 1:63,360 scale (one inch to one mile), referred to at paragraph 6.2 of the MAFF Report appended to the DBSC Baseline Report [APP-115 pdf p.46], can be used reliably to identify the distribution of soil series', rather than broader associations, within and between individual fields in the area. This has been carried over into the LANDIS website used by DBSC but not referred to in detail in its report.

17. Descriptions of the soils of that part of the development area identified as Lee Farm, taken from published Soil Survey data and LANDIS, are laid out in the RAC Report [REP2-240d para 7.14 et seq. pdf pp. 22-23 of 298] and attached at Appendix 1.

18. These descriptions, from the Soil Survey, which concur with auger and pit observations made outside the site boundary by qualified soil scientists instructed by SNTS and made immediately adjacent to the proposed development site [REP2-240d, Appendix 2 (p.192/298 of pdf)][3], conflict with the observations made in the DBSC survey, specifically at point LF164 [APP115 pdf p147 of 148] described at line 12 in Table 1 of Annex E to the Soils Baseline [pdf p100 of 148]. SNTS has been denied access by landowners for RAC and its colleagues[4] to undertake investigations in the proposed development area and Sunnica has not obtained permission from the landowners for Sunnica to do this.

19. The failure of DBSC to resolve satisfactorily the inconsistency between authoritative published sources and its own observations renders any conclusions drawn from those observations unreliable.

[3] Observations made on Cambridgeshire CC owned land with permission
[4] Sam Franklin and Patrick Stephenson

Calculation of ALC Grades

20. In order to identify the reason for this significant difference, aspects of the DBSC survey were selected in order that the observation data and its interpretation could be understood.

21. The DBSC survey found large areas of shallow sandy soils over chalk with high stone content [APP-115 pdf pp91-145 of 148] placing droughtiness limitations on grading for land quality as described in the 1988 guidelines for the Agricultural Land Classification of England and Wales [Rep2-240n pdf p40 of 60 et seq.]. This conclusion is not supported by evidence obtained in accordance with the definitive 1988 Guidelines.

22. The ALC system uses winter wheat and potatoes as reference crops for droughtiness, assessing water capacity of soil to a depth of 120cm, the rooting depth for wheat. Crop available water is calculated taking into account stoniness and the texture of rootable layers in the profile, including chalk to a depth of 120cm [Rep2-240n pdf p41 of 60 & Table 15 pdf p47 of 60].

23. Whilst the data used to calculate limitations to ALC grades are included in the tables, calculations set out in Appendix 3 of the RAC report [REP2-240d pdf pp129-162] indicate that factors other than those in the table were used to calculate MB values [APP-115 Tables 1-7 of Annex F columns 18 & 19] that determine limitations.

24. The failure of the report to include clear interpretation of the calculation of ALC grade renders the process opaque and thus it should not be relied upon.

25. The baseline assessment of DBSC did not include any detailed description of soils likely to be encountered in the course of its survey. Such a primary assessment is considered good practice amongst practitioners and is not intended to inform observations made in the field or grading of land. The background is used to inform survey needs and the volume and type of evidence that should be collected to support conclusions drawn from observations.

26. Where there is a significant difference between the expected and observed soils and ALC grades, as is the case here, it is standard practice to produce adequate evidence to support the conclusion of an assessment that differs from published data. Such evidence would include photographs of soil cores and pits to demonstrate stoniness and soil depth, and results of laboratory analyses to confirm soil texture.

27. It is considered normal practice when surveying areas where marginal ALC grading may be an issue in EIA or determining a planning application to include the following evidence to support grading estimates:

    - photographs of soil cores and soil pits showing soil structure, colour change, stoniness and limitations to depth of observation/profile;
    - laboratory analysis to support hand texturing at up to 100% of observation points;

28. No such evidence has been produced by DBSC. The absence of evidence to support incongruous observations renders them unreliable.

Soil survey observations

29. The DBSC survey comprises 730 auger observations [APP-115 Tables 1-7 of Annex F pdf pp91-145 of 148], supported only by manual texturing [Column 10]. 314 observations stopped at 400mm or less. 331 observations stopped for stone and a further 363 for chalk. Out of 1,401 observations for texture, 1,251 recorded more than 50% sand, which generally indicates a relatively poor water holding capacity [Rep2-240n Table 14 pdf p46 of 60].

30. Whilst the Soil Baseline report includes pictures of two trenches [APP115 pdf pp82-83 of 148] excavated for archaeological purposes it does not include pictures of the six soil inspection pits [APP-115 pdf pp 84-86 of 148] dug after completion of the ALC surveys and used to examine soil structure, stoniness and depth of profiles.

31. It is standard practice to dig observation pits that are representative of soil type and take samples for analysis of stoniness and texture at the same time as the auger survey in order to inform interpretation of soil structure and stoniness in the auger survey and to take and retain pictures of the soil profiles.

32. Mr Baird confirmed in evidence to the Hearing [Pt2 of Recording of ISH3 1:01:55-1:27:30] that the photographs identified above [APP115 pdf pp82-83 of 148] are of archaeological excavations and not of any of his trial pits.

33. Thus, the location of the photographs and the claimed representative profiles they show are unknown.

34. The locations of the six trial pits, excavated between two and six years after the auger surveys and weeks before the publication of the ES, are given as OS grid references in the header to the pit descriptions [APP-115 pdf pp 84-86 of 148] but are not identified on any map in the baseline.

35. It is notable that six trial pits were dug to inform the MAFF ALC survey of 189ha of land at Kennet [APP-115 pdf p54 of 148] compared with 981ha of land surveyed in this case.

36. The locations of the pits dug by Mr Baird are shown in the map of anticipated ALC grades at Appendix 1 of this submission.

37. It is normal practice that observation pits are located in order to provide representations of soil types likely to be encountered during an auger survey. In this case, pits (red crosses in circles) appear to have been located close to access tracks and in areas that would be expected to be of non-BMV grades. The reasoning behind the location of the pits is unclear, but it is evident that no pits have been located in areas that might be expected to be of higher ALC grades in the Sunnica East A and Sunnica West A sites as suggested by the mapping.

38. The lack of pits in areas where BMV land might be anticipated and lack of images of pits that were dug to support incongruous grading is a significant omission from the Soils Baseline Report.

What is the relevance of irrigation to the grading of land?

39. This question seeks to deal with the historical reference to irrigation in ALC guidance and the impact of irrigation in planning decisions.

40. It is not disputed that the 1988 MAFF Revised guidelines and criteria for grading the quality of agricultural land [REP2-240n] provide the only guidance on the application of Agricultural Land Classification in England and Wales.

41. The difference between the parties is whether the availability of a reliable water supply and irrigation infrastructure should upgrade land, specifically to become classified as Best and Most Versatile (BMV), which would have implications in relation to the planning system and its use for solar energy production. There is a general presumption against BMV land being used for this purpose.

42. The 1988 revised guidelines clearly state under the heading ‘Irrigation’ at page 27 that:

"…because irrigation is likely to benefit only part if the full range of crops which could be grown, it will usually upgrade land by no more than one grade or subgrade."

This clearly indicates that there may be (undefined) circumstances where the presence of irrigation may result in a greater upgrading.

43. The historical role of irrigation in ALC and its interaction with the planning system is discussed in detail at Appendix 7 of the RAC Report [REP2-240d pdf pp232-239 of 298].

44. It is clear from available evidence that in 1998 it was clearly the intention of employees of MAFF and the Farm and Rural Conservation Agency [Email correspondence with Natural England @ APP-115 pdf p66 0f 148] that irrigation be removed from newly revised guidelines intended to bring ALC into line with the revised 1997 version of PPG7, which states at B11 of Annex B [REP2-240o pdf p28 of 56] that:

"*When irrigation is practised and water supplies are adequate and reliable, the productive capacity of agricultural land and its importance relative to non-irrigated land of the same grade will often be significantly increased.*"

This makes no mention of anticipated changes in guidelines to discount irrigation in ALC, although the PPG does state that the main changes in that policy guidance are, *inter alia*, to "*restate and clarify policy on protecting the best agricultural land*".

45. This guidance clearly recognises the importance of irrigation in agriculture and the planning balance.

46. With the withdrawal of PPG7 and lack of any mention of irrigation from the NPPF, it is clearly critical to maintain the position of irrigation in the ALC grading system to ensure that increased flexibility in cropping and productivity afforded by its practise continue to be recognised formally in the planning arena.

47. Thus, in the absence of any consideration of agricultural productivity and the role of irrigation in agricultural outputs in the EIA, it is right that the unmodified 1988 guidance is applied in full and land with a sustainable supply of water and existing irrigation infrastructure is upgraded.

48. In the absence of such consideration the assessment of ALC grade is incorrect and the EIA unreliable.

Conclusions

49. In the light of the evident incongruities between the Sunnica soil baseline, published work and recent expert surveys, it is imperative that the parties liaise in the field to identify the cause of

the disagreement regarding the soils of the development area, as suggested by the Lead Examiner at 1:04:30 of the recording of ISH3.

50. This is emphasised by the outcome of completing the British Society of Soil Science's validation checklist at p11 of Appendix 3 of the RAC report of November 2022 [REP2-240d pdf pp141 & 142 of 298](Appendix 3). Informed by the rest of the Appendix to the original report, the checklist found that there were concerns with regard to the:

    - observation and description of soil types with regard to droughtiness;
    - lack of clarity in reasoning and calculation of ALC grades;
    - uncertainty regarding the description of soils in line with the techniques set out in the Soil Survey Field handbook (Hodgson 1997), particularly with regard to soil pits;
    - no comprehensive map of auger boring and pit locations has been provided and there are apparent gaps in the availability of auger boring observations;
    - there are only six laboratory-supported confirmations of topsoil particle size distribution;
    - only one soil pit out of six clearly indicates a droughtiness limitation;

    and fails on three counts:

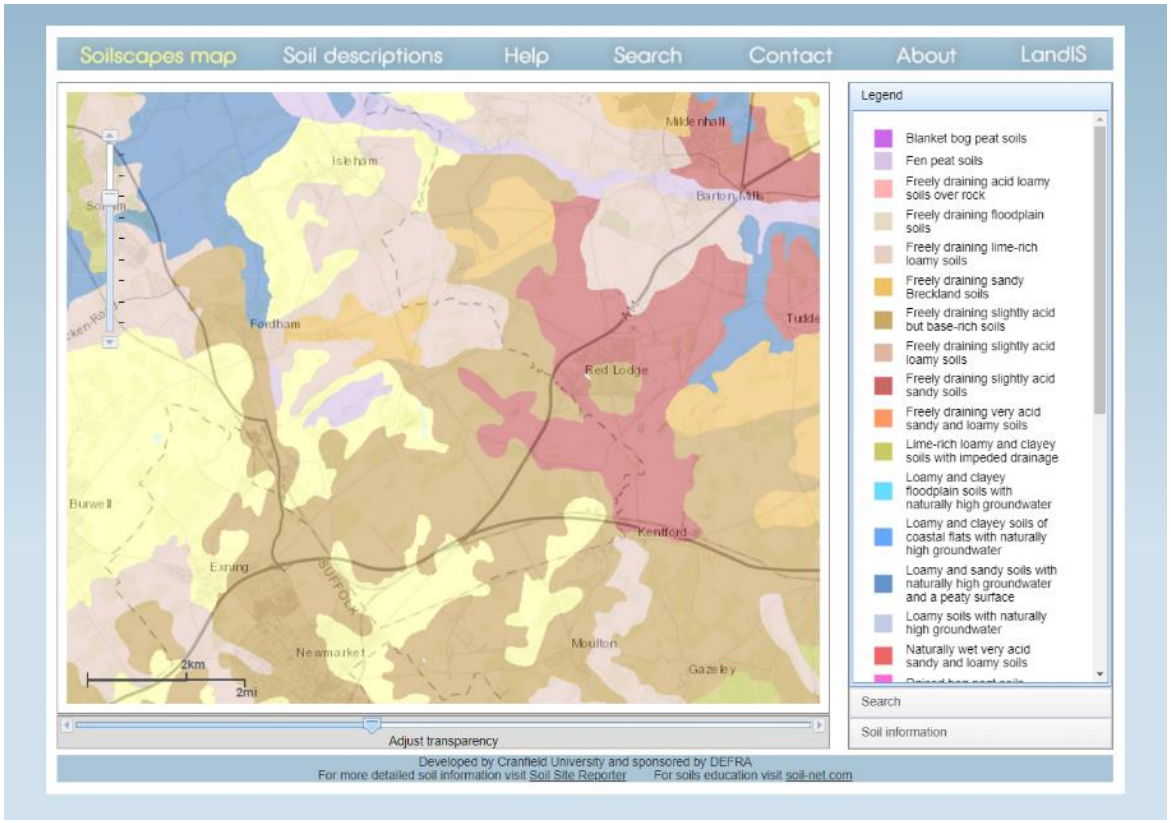
    - limitations have not been justified when concluding the ALC Grades on site;
    - calculations made using available auger boring records do not clearly reflect moisture balance (MB) assumptions for drought in wheat and potatoes; and
    - evidence available from soil pits does not clearly show soil wetness class.

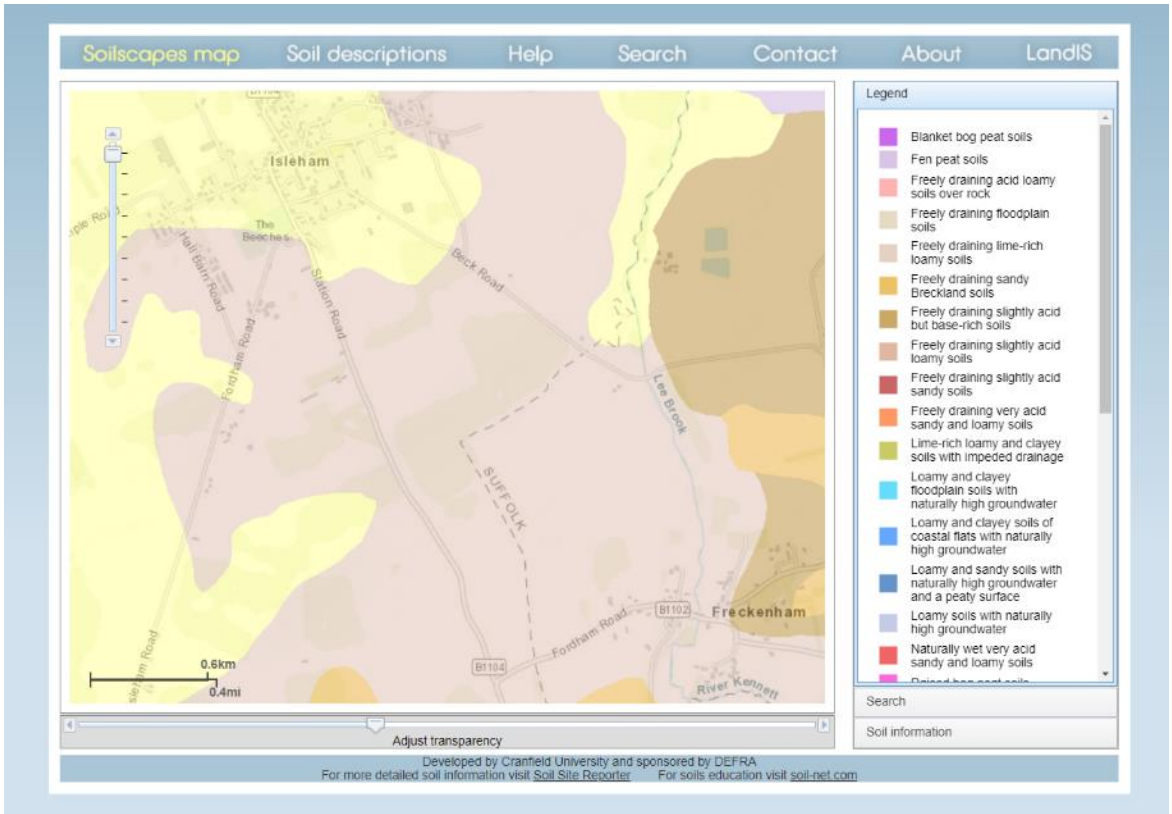
51. Mr Baird is a member of the British Society of Soil Science and as such should accept the conclusions of the assessment and recommendations of the Society that where elements that would normally be expected in a good report raise multiple concerns or where the lack of elements or omissions are a significant issue then the report should not be accepted without referral to specialists.

52. Natural England as a statutory consultee has not addressed any of these omissions specifically in its submissions to the ExA and the import of this information in the planning balance requires that they are addressed before any robust conclusion in this regard can be made.

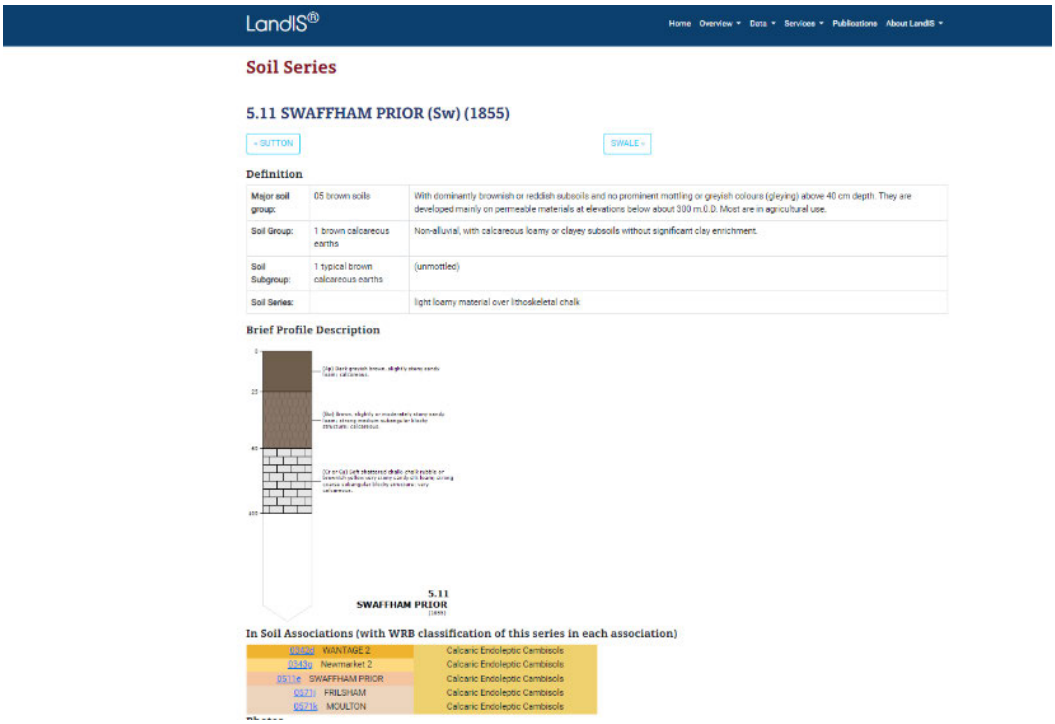
Appendix 1

Extracts from soils mapping and published text relating to the proposed development area





Extracts from LANDIS Soils map at strategic and field levels



LandIS®

Home Overview Data Services Publications About LandIS

Soil Series

5.11 SWAFFHAM PRIOR (Sw) (1855)

« SUTTON SWALE »

Definition

Major soil group:	05 brown soils	With dominantly brownish or reddish subsoils and no prominent mottling or greyish colours (gleying) above 40 cm depth. They are developed mainly on permeable materials at elevations below about 300 m.O.D. Most are in agricultural use.
Soil Group:	1 brown calcareous earths	Non-alluvial, with calcareous loamy or clayey subsoils without significant clay enrichment.
Soil Subgroup:	1 typical brown calcareous earths	(unmottled)
Soil Series:		light loamy material over lithoskeletal chalk

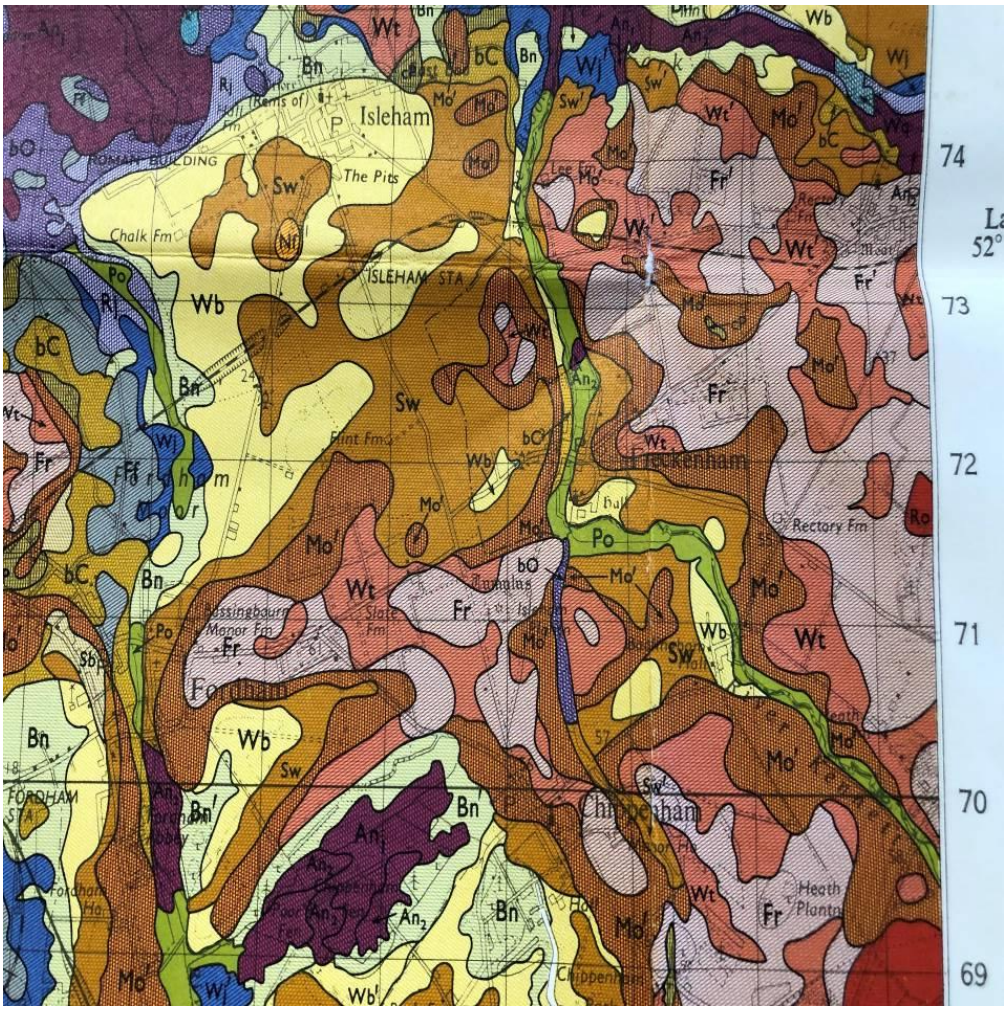
Brief Profile Description

5.11
SWAFFHAM PRIOR

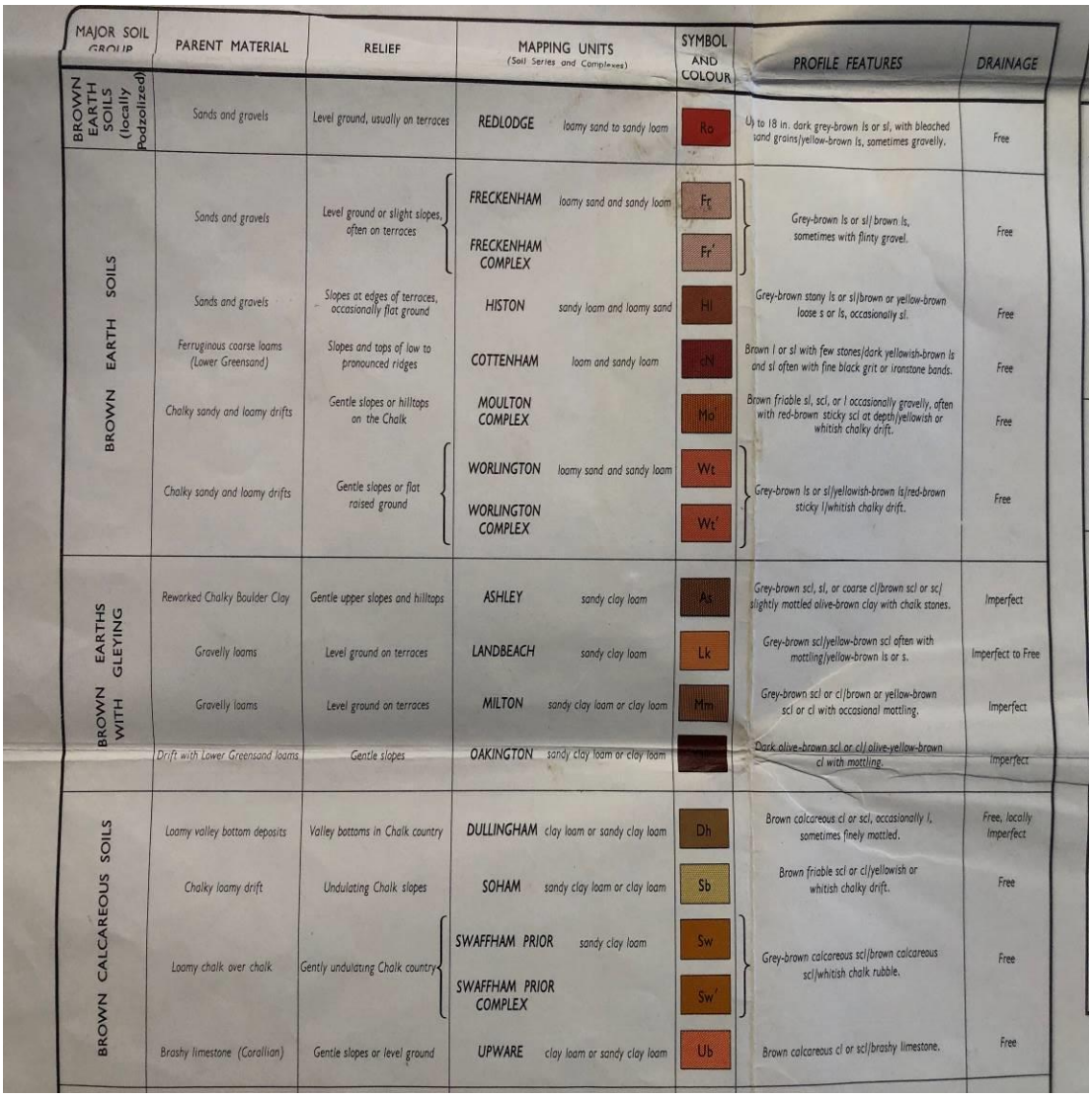
In Soil Associations (with WRB classification of this series in each association)

03826	WANTAGE 2	Calcaric Endoleptic Cambisols
0343g	Newmarket 2	Calcaric Endoleptic Cambisols
0571e	SWAFFHAM PRIOR	Calcaric Endoleptic Cambisols
0571f	FRILSHAM	Calcaric Endoleptic Cambisols
0571k	MOULTON	Calcaric Endoleptic Cambisols

Extract from soil series description on LANDIS website



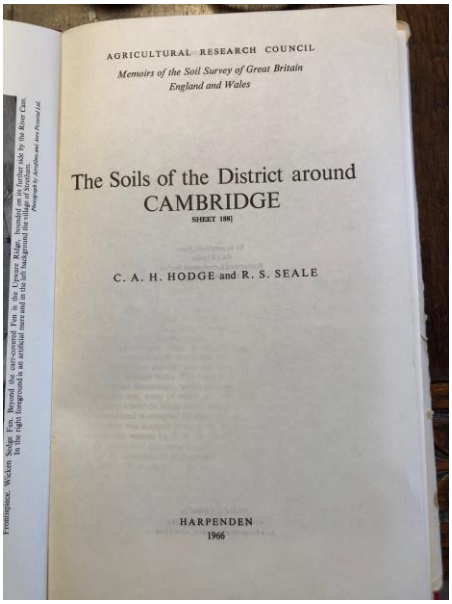
Extract from 1:63,360 soils mapping. Soils of the District around Cambridge



MAJOR SOIL GROUP	PARENT MATERIAL	RELIEF	MAPPING UNITS (Soil Series and Complexes)	SYMBOL AND COLOUR	PROFILE FEATURES	DRAINAGE
BROWN EARTH SOILS (locally Podzolized)	Sands and gravels	Level ground, usually on terraces	REDLODGE loamy sand to sandy loam	Ro	Up to 18 in. dark grey-brown ls or sl, with bleached sand grains/yellow-brown ls, sometimes gravelly.	Free
BROWN EARTH SOILS	Sands and gravels	Level ground or slight slopes, often on terraces	FRECKENHAM loamy sand and sandy loam	Fr	Grey-brown ls or sl/ brown ls, sometimes with flinty gravel.	Free
			FRECKENHAM COMPLEX	Fr′		
	Sands and gravels	Slopes at edges of terraces, occasionally flat ground	HISTON sandy loam and loamy sand	Hl	Grey-brown stony ls or sl/brown or yellow-brown loose s or ls, occasionally sl.	Free
	Ferruginous coarse loams (Lower Greensand)	Slopes and tops of low to pronounced ridges	COTTENHAM loam and sandy loam	cN	Brown l or sl with few stones/dark yellowish-brown ls and sl often with fine black grit or ironstone bands.	Free
	Chalky sandy and loamy drifts	Gentle slopes or hilltops on the Chalk	MOULTON COMPLEX	Mo′	Brown friable sl, scl, or l occasionally gravelly, often with red-brown sticky scl at depth/yellowish or whitish chalky drift.	Free
	Chalky sandy and loamy drifts	Gentle slopes or flat raised ground	WORLINGTON loamy sand and sandy loam	Wt	Grey-brown ls or sl/yellowish-brown ls/red-brown sticky l/whitish chalky drift.	Free
			WORLINGTON COMPLEX	Wt′		
BROWN EARTHS WITH GLEYING	Reworked Chalky Boulder Clay	Gentle upper slopes and hilltops	ASHLEY sandy clay loam	As	Grey-brown scl, sl, or coarse cl/brown scl or sc/ slightly mottled olive-brown clay with chalk stones.	Imperfect
	Gravelly loams	Level ground on terraces	LANDBEACH sandy clay loam	Lk	Grey-brown scl/yellow-brown scl often with mottling/yellow-brown ls or s.	Imperfect to Free
	Gravelly loams	Level ground on terraces	MILTON sandy clay loam or clay loam	Mm	Grey-brown scl or cl/brown or yellow-brown scl or cl with occasional mottling.	Imperfect
	Drift with Lower Greensand loams	Gentle slopes	OAKINGTON sandy clay loam or clay loam		Dark olive-brown scl or cl/olive-yellow-brown cl with mottling.	Imperfect
BROWN CALCAREOUS SOILS	Loamy valley bottom deposits	Valley bottoms in Chalk country	DULLINGHAM clay loam or sandy clay loam	Dh	Brown calcareous cl or scl, occasionally l, sometimes finely mottled.	Free, locally Imperfect
	Chalky loamy drift	Undulating Chalk slopes	SOHAM sandy clay loam or clay loam	Sb	Brown friable scl or cl/yellowish or whitish chalky drift.	Free
	Loamy chalk over chalk	Gently undulating Chalk country	SWAFFHAM PRIOR sandy clay loam	Sw	Grey-brown calcareous scl/brown calcareous scl/whitish chalk rubble.	Free
			SWAFFHAM PRIOR COMPLEX	Sw′		
	Brashy limestone (Corallian)	Gentle slopes or level ground	UPWARE clay loam or sandy clay loam	Ub	Brown calcareous cl or scl/brashy limestone.	Free

Key to 1:63,360 soils mapping. Soils of the District around Cambridge

Extracts from The Soils of the District around Cambridge. Sheet 188. Memoirs of te hSoil Survey of Great Britain. Harpenden (1966)



AGRICULTURAL RESEARCH COUNCIL

Memoirs of the Soil Survey of Great Britain
England and Wales

The Soils of the District around
CAMBRIDGE
SHEET 188

C. A. H. HODGE and R. S. SEALE

HARPENDEN
1966

Frontispiece: Wicken Sedge Fen. Beyond the cart-covered Fen is the Upware Ridge, bounded on the distance side by the River Cam. On the right foreground is an artificial mere and to the left background the village of Stretham.
Photograph by Aerofilms and Aero Pictorial Ltd.

Title Page

Horizons:

ins.	
1–0 L	Litter mainly of beech with some oak leaves and larch cones; numerous fine roots.
0–3 A	Very dark greyish brown (10 YR 3/2) friable loamy sand, paler in places; occasional flints; structureless (single-grain); both fibrous and medium-sized roots common; merging boundary with tongues extending into the next horizon to a depth of 10 in.
3–11 B1	Dark brown (10 YR 4/3), merging to brown (7·5 YR 4/4), friable sand containing some angular flints; structureless (single-grain); roots common; narrow, slightly undulating boundary.
11–15 IIB2	Brown (7·5 YR 4/4) friable sand, very stony with rounded and angular flints; structureless (single-grain); roots common; narrow even boundary.
15–23 IIB3	Strong brown to yellowish brown (rather darker than 7·5 YR 5/6) friable sand with much angular gravel; structureless (single-grain); roots common; merging boundary.
23–28 IIB4	Strong brown (7·5 YR 5/8) very friable sand, gravelly, especially at the base of horizon; structureless (single-grain); roots absent; narrow, even boundary.
28–35+ IIIB/C	Strong brown to reddish yellow (7·5 YR 5/6–6/6), very friable sand with little gravel; structureless (single-grain); no roots.

MOULTON COMPLEX

(Moulton and Soham series)

These freely drained, medium-textured soils cover some 14,420 acres or over 10 per cent. of the sheet. They occur on the flat-topped hills and gentle slopes in the belt of rolling chalk land which extends from Little Wilbraham and Six Mile Bottom north-eastward through Newmarket and Exning to Moulton and Chippenham, with outlying patches near Soham and Freckenham. They are formed in drift composed of fragmentary and powdered chalk, flints and non-calcareous sandy or loamy material in varying proportions, resting on Middle or Lower Chalk. Certain of the deposits resemble the Gipping Till of Breckland, but the greater part probably originated by solifluction or melt-water action under periglacial conditions and may incorporate wind-borne material. The land is almost entirely under arable cultivation.

Two main types of profile are represented in the complex, both having a dark greyish brown to brown Ap horizon about 8 in. thick, with sandy loam, sandy clay loam, or occasionally loam texture.

In one type of profile exemplified below by profile Sfw12, the Ap horizon is underlain by an Eb horizon of brown or strong brown sandy loam or sandy clay loam, which passes into a thin Bt horizon of reddish brown sandy clay loam or sandy clay with a waxy consistency that rests directly on chalky drift or rubbly chalk. The Bt horizon is often sinuous or convoluted and extends down pipes into the chalky C horizon. The A, Eb and Bt horizons normally contain only 1 or 2 per cent. calcium carbonate and were probably non-calcareous and acid in the natural state. In most instances the profile is now base-saturated throughout as a result of liming, cultivations and earthworm activity, but the upper horizon of one profile examined on waste ground was only 80 per cent. saturated. Formation of the Bt horizon, which contains clay-sized particles transported from the upper horizons, is apparently accentuated following decalcification of the soil. Soils with this kind of profile are classed as the Moulton series (Plate V).

In the other type of profile exemplified by profile C 8 below, which may be equated with the Soham series, there is no clearly developed Bt horizon, the Ap horizon overlying up to 18 in. of strong brown, sandy loam or sandy clay loam, designated a B horizon, which rests on whitish or yellow chalky drift. The profile commonly contains 5 to 10 per cent. calcium carbonate in the Ap and B horizons and belongs to the brown calcareous soil group.

These two kinds of profile and intergrades between them occur, often close together, in each area mapped, the Soham type of profile tending to be finer in texture than those conforming to the Moulton series.

The soils are generally only slightly stony, but on the hilltops capped by "high-level gravels" the profiles are often deeper than normal and the subsoils are particularly variable in composition, ranging from pale yellow silt to reddish brown sandy loam, sandy clay or sand within a few feet. These gravel patches contain more surface stones and in some places there are sufficient large flints to hinder cultivation.

Within the complex, Swaffham Prior soils may also be found locally on the steeper parts of the slopes, where the soil has remained in a shallow and calcareous state, but such areas are too small in extent to be shown on the one-inch map.

The Moulton complex forms part of the "Red lands" of the Cambridgeshire farmer. Because of their loamy texture and good depth the soils are easy to work and give a free root run, and their water-holding capacity is sufficient to prevent serious drought damage in most summers. They are therefore suitable for sugar beet which, together with barley and wheat, forms the basis of the cropping system. In former days turnips were widely grown for consumption by folded sheep, but few flocks remain today. On the stud farms around Newmarket and on Newmarket Heath the soils are locally under permanent grass.

Descriptions of representative profiles

PROFILE NO.: Sfw12, Moulton series; (*analysis* p. 138).
Location: ½ mile west of Moulton (grid ref. TL 691642).
Relief: near bottom of shallow chalk valley; SSE. aspect. *Altitude:* 160 ft. O.D.
Land use: arable; ley.
Horizons:

ins.	
0–9 Ap	Dark greyish brown to brown (10 YR 4/2–4/3), friable, coarse sandy loam; a few black flints; weak medium and coarse crumb structure; abundant fine fibrous roots; earthworms present; narrow even boundary.
9–26 Eb	Uniform strong brown (7·5 YR 4/4–4/5), friable to slightly compact, coarse sandy loam; abundant black flints up to 6 in. across; structureless to very weak medium blocky structure; clusters of fine fibrous roots; occasional patches of Bt horizon material; merging, undulating boundary.
26–32 Bt	Uniform reddish brown (5 YR 4/4), slightly tenacious sandy clay loam; stones as above; weak to moderate fine angular blocky structure with shiny structural faces fracturing with sharp edges near stones; few roots; earthworm channels; layer is of uniform thickness forming an undulating band above the uneven surface of the C horizon; sharp undulating boundary.
32–72+ C	Off-white, sandy chalky drift; some fine horizontal banding; many flints and white chalk stones; compact; layer irregular in composition.

PROFILE NO.: C 8, Soham series; (*analyses* pp. 139 and 153).
Location: 2 miles south of Burwell (grid ref. TL 592627).

Description of the Moulton (Moulton and Soham series')

blocks, south of Soham and east of Cambridge, occupy gently undulating land at 25 to 60 ft. O.D. Other smaller areas are found adjoining the Boulder Clay Plateau around Stechworth astride the 250 ft. contour-line.

The parent materials are yellowish loamy deposits containing abundant chalk fragments and resemble those giving rise to the Moulton series, but the soils have not been decalcified and commonly contain about 10 per cent. calcium carbonate at the surface. Typical profiles have an Ap horizon of dark greyish brown clay loam or sandy clay loam 6 to 8 in. thick, overlying a B horizon of dull yellowish brown, sandy clay loam or clay loam. The B horizon rests more or less directly on the C horizon of yellowish chalky drift at depths ranging from 12 to 30 in., the average depth being about 24 in. Having a loamy texture and a porous chalky substratum, the soil is free draining and normally shows no signs of gleying. A small area of soil, near Newmarket, showing slight gleying has, however, been included in the series. Near Dullingham a subsoil of reddish brown clay loam or clay immediately overlies the chalky substratum.

The soils show no textural B horizon and are generally somewhat finer in texture than the Soham profiles included in the Moulton complex. They are less calcareous than those of the Swaffham Prior series, the soils of which contain sufficient calcium carbonate to give the whole profile a noticeably pale colour.

As on other free draining loamy soils on the Cambridgeshire Chalk, the chief crop is barley, which is grown in rotation with sugar beet.

Description of a representative profile

PROFILE NO.: C 23, Soham series; (*analysis* p. 139).
Location: 1 mile south of Soham, near railway bridge (grid ref. TL 596712).
Relief: low ridge, gentle WNW. slope. *Altitude:* 25 ft. O.D.
Land use: arable.
Horizons:

ins.	
0-6 Ap	Dark greyish brown (10 YR 4/2), moderately friable, calcareous sandy clay loam with some flints and quartzite pebbles; weak cloddy structure; very few roots; earthworms present; merging boundary.
6-12 B1	Slightly variegated, brown to dark brown (10 YR 4/3), moderately compact, calcareous sandy clay loam with some flints; weak medium blocky structure; few roots; earthworm burrows present; merging boundary.
12-22½ B2	Dark brown (7·5 YR 4/4), compact, calcareous sandy clay loam with slightly sandier strong brown (7·5 YR 5/6) patches; some flints; weak medium blocky structure; very few roots; merging irregular boundary.
22½-30 C1	Light yellowish brown (10 YR 6/4), compact, calcareous sandy clay loam (mixture of soil and chalk) containing a few flints; structureless; roots rare; some wormholes.
30+ IIC2	Marly chalk.

SWAFFHAM PRIOR SERIES

Although nowhere occupying large blocks, this soil is among the most extensive on the sheet (Table 9), covering about 6,500 acres. A further 110 acres are mapped as Swaffham Prior complex. The soils are freely drained, moderately deep and calcareous overlying chalk and chalky drift and typically occupy flat or gently undulating land between 25 and 100 ft. O.D. There are patches between

Teversham and Stow-cum-Quy and around Wilbraham, and a continuous strip between Bottisham and Exning. North of Newmarket the series is found around Snailwell and Chippenham Fen; larger areas occur between Freckenham and Isleham and north of Worlington.

The profile is underlain by, and is probably developed from, a drift of chalk stones and occasional flints in a matrix of finely divided chalk, mixed with small amounts of non-calcareous loamy material. Although there are few exposures within the areas covered by the Swaffham Prior series, it appears that the drift is generally thin and commonly passes, at 3 ft. or less, into more or less disturbed and rubbly chalk. In some places the soil horizons lie directly on chalk.

The soil is intermediate, both geographically and in development, between the shallower and more calcareous rendzinas represented by the Wantage series, and the less calcareous Soham or Moulton soils. The horizons contain on average between 20 and 40 per cent. calcium carbonate and are therefore noticeably pale coloured, yet the profile is deep enough and contains sufficient ferric oxide for the formation of a distinctly coloured B horizon.

The soil is invariably cultivated and the profile normally has an Ap horizon of greyish brown or dark greyish brown, sandy clay loam or loam about 8 in. thick, overlying a brown to light yellowish brown B horizon of similar texture, which passes into chalky drift at depths ranging from 12 to 30 in. (Plate V). The soils may be of clay loam texture where the underlying chalk is marly.

The Swaffham Prior series, together with the Moulton and Soham soils, constitutes the "Red lands" of the Cambridgeshire farmer, and like these soils is devoted to arable crops, principally barley and sugar beet.

Swaffham Prior Complex

Within the region of hummock-and-hollow topography east of Isleham, are areas where soils of the Swaffham Prior series are dominant. These are mapped as Swaffham Prior complex to distinguish them from the larger areas in which Worlington or Freckenham soils predominate. Besides soils of the dominant series, shallow rendzinas of the Newmarket series occur on the tops of the hummocks, while Chippenham soils showing slight gleying or, more rarely, mottled sand overlying peat are found in the deeper hollows influenced by the local water-table.

Description of a representative profile

PROFILE NO.: C 3, Swaffham Prior series; (*analyses* pp. 139 and 153).
Location: 1 mile south of Burwell (grid ref. TL 587643).
Relief: level ground in undulating country. *Altitude:* 80 ft. O.D.
Land use: arable; stubble.
Horizons:

ins.	
0–6½ Ap	Dark brown (7·5 YR 4·5/2), friable, very calcareous sandy clay loam containing a few small flints; weak granular structure; some fine roots; sharp even boundary.
6½–15½ B	Brown (10 YR 5/3), friable, very calcareous, sandy clay loam, becoming light yellowish brown (10 YR 6/4) towards the base; granular structure; a few fine roots; worm holes; sharp undulating boundary.
15½+ IIC	Hard white chalk rubble with a greyish or yellowish tinge in places, the interstices filled with powdered chalk or soil similar to the layer above.

Description of the Swaffham Prior series

Appendix 2

Sunnica Energy Farm

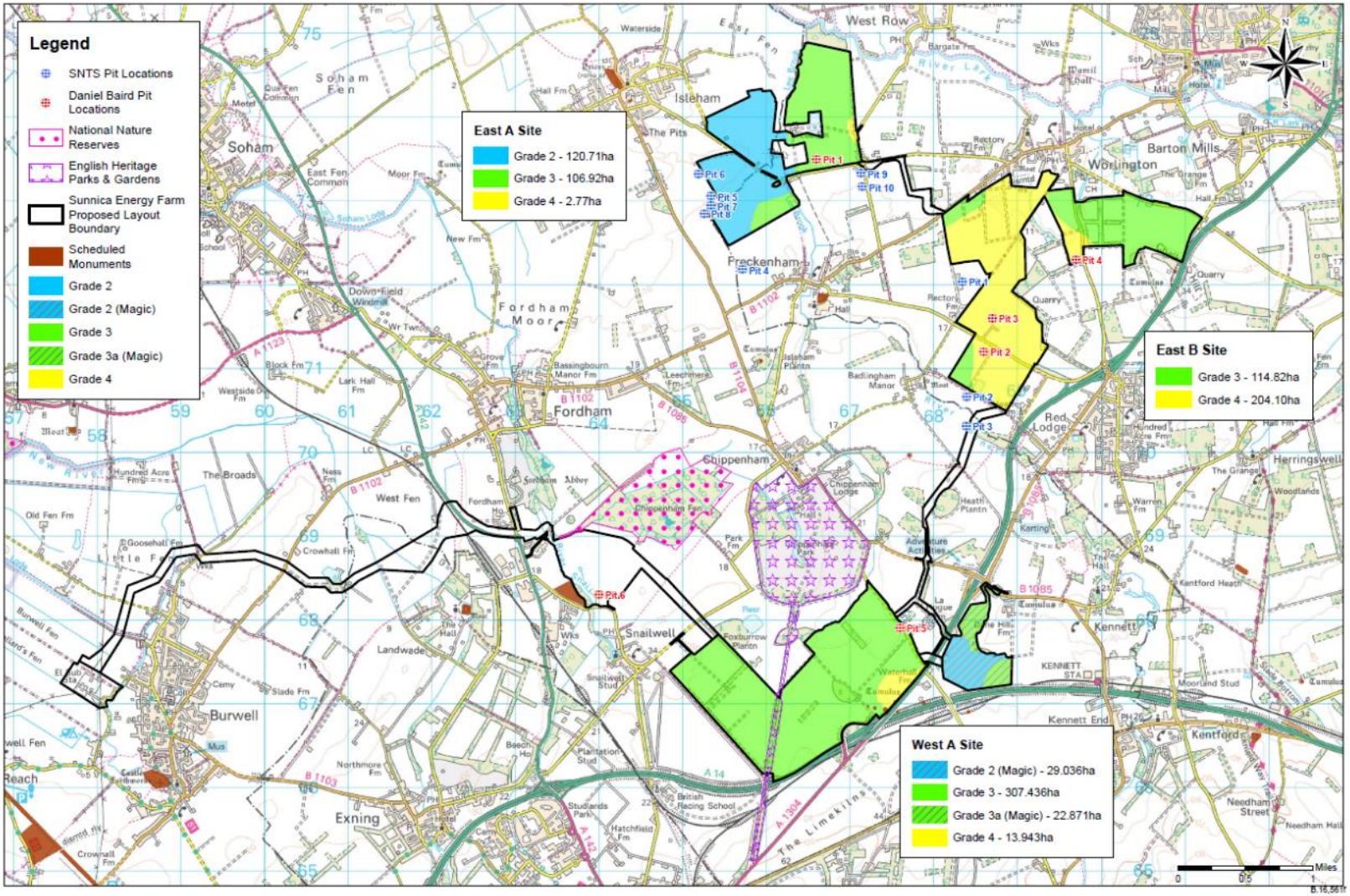
Maps of anticipated ALC Grades (Strategic) showing locations of soil pits

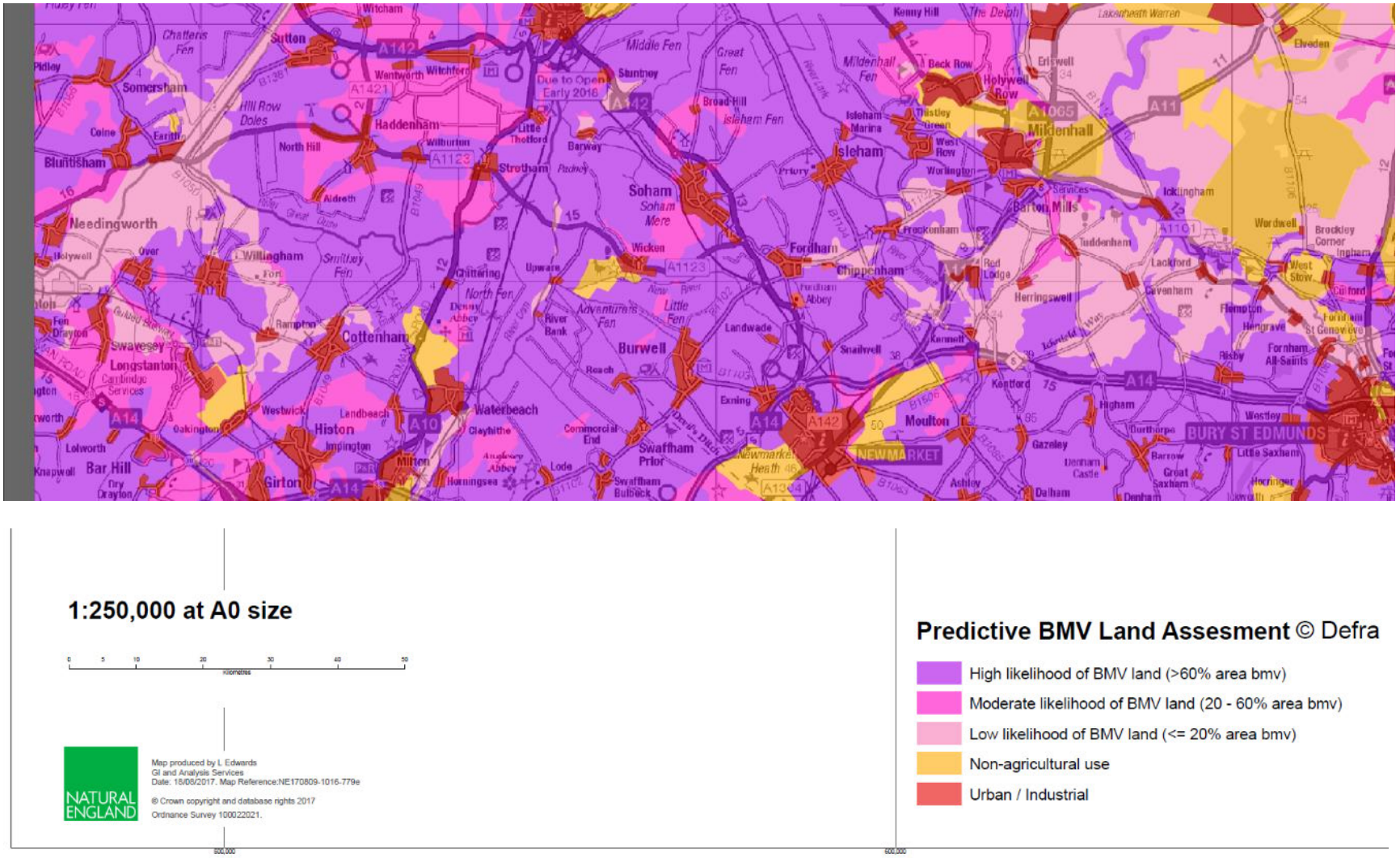
Appendix 2

Sunnica Energy Farm

Maps of anticipated ALC Grades (Strategic) showing locations of soil pits

Sunnica Energy Farm Proposed Layout





Extract from strategic Defra Predictive BMV Land Assessment

Appendix 3

British Society of Soil Science Verification Checklist

Background			
	Is the company / author a specialist in ALC?	Pass	
	Have published soil maps been mentioned[5]?	Pass	
Climate data			
	Is *interpolated*[6] climate data included for the site (esp. Field Capacity Days (FCD), Moisture Deficits (MD) and Maximum grade on climate)?	Pass	
	Is the data consistent with that expected for the area?	Pass	
Site and standalone limitations			
	Have gradients, micro-relief and flooding been considered / acknowledged?	Pass	
Soils and interactive limitations			
	Have topsoils and subsoils been field surveyed? References to soil pits, auger samples & lab samples should be included.	Pass	
	Are the soil types clearly described, including reference to gleying, slowly permeable layers (SPL), soil wetness class (SWC) and drought?	Concern	Very brief description
	Have the reasons for ALC grading been clearly described?	Concern	
	Have soil structure and porosity been described?	Pass	In pit descriptions only
	Have soils been described using Soil Survey Field Handbook (Hodgson 1997[7])?	Concern	Not stated
	Have soils been described using Munsell[8] soil colour notations?	Pass	
Conclusions and references			
	Is there a table clearly showing areas of ALC grades?	Pass	
	Is there a list of references (normally including Soil Survey of England and Wales mapping, the MAFF 1988 ALC guidelines, Munsell soil colour charts and the Soil Survey Field Handbook – Hodgson 1997)?	Pass	
	Have the limitations been justified when concluding the ALC grade(s) on the site?	Fail	
Schedule of auger borings and soil pits			
	Has a map of auger boring & soil pit locations been included?	Concern	Pit locations not shown
	Have laboratory analyses been included to confirm topsoil particle size distribution?	Pass	But only six total
	Has a schedule of auger boring information been provided?	Pass	
	Do the auger borings show horizon depths, colours and textures?	Pass	
	Do the auger boring records clearly show soil wetness class?	Pass	
	Do the auger boring records clearly show topsoil stone content?	Pass	
	Do the auger boring records clearly show depth to gleying and depth to slowly permeable layer (SPL)?	Pass	
	Do the auger boring records clearly show moisture balance (MB) values for drought (Wheat & Potatoes)?	Fail	Values are given but are shown to be unreliable
	Has detailed soil pit information been provided in the report and do the pit descriptions show horizon depths, colours and textures?	Pass	
	Do the soil pits / pit clearly show soil wetness class (WC)?	Fail	
	Do the soil pits / pit clearly show moisture balance (MB) values for drought?	Concern	Only in one of six pits
	Do the soil pit / pits clearly show soil structure and porosity in the subsoil?	Pass	

Appendix H – Battery Safety

Paul Christensen
LITHIUM ION SAFETY

Report on the revised Sunnica Energy Farm Application

By Dr. Paul Christensen, Lithiumionsafety Ltd, 3 December 2022

1. Introduction

I am an academic electrochemist with over 35 years experience in research. I have over 180 papers in international, peer reviewed journals and an H-index of 53. I am an Editorial Board member of Nature Special Reports. I am Senior Advisor to the National Fire Chiefs Council (NFCC), Special advisor to Tyne and Wear Fire and Rescue Service and I am a Subject Matter Expert to DSTL. I serve on the Cross-government Technical Steering Group for EV fire safety, the Department of Business Energy and Industrial Strategy (BEIS) Energy Storage Health and Safety Governance Group, the BEIS Storage Safety - Fire Service Working Group, the British Standards Institute (BSI) PAS 63100 (domestic energy storage systems) Steering Group, the BSI Review Group in the development of the BSI base document for Lithium-ion battery cells, modules and packs – Physical storage – Guide and the BSI FSH/2/-/20 – Working Group (lithium-ion battery extinguishers), the Australian Building Codes Board working group on EV safety and the Tyne & Wear FRS and Envision-AESC Gigafactory fire safety working group. I am the recipient of the 2022 Motorola Foundation-funded AFAC Knowledge Event Series lecture tour of Australia, New Zealand and Tasmania (Oct 2022, presenting to first responders, government officials etc).

I advised Nissan for 3 years on all aspects of lithium-ion battery safety during the construction and commissioning of the battery plant in Tyne & Wear. I am routinely asked for input and advice by OZEV and the Department for Transport. I have conducted tests and experiments to research thermal runaway at module, pack and vehicle levels. I have assessed a number of LiBESS planning applications in the UK and abroad.

2. Executive Summary

I have reviewed 7.6 Outline Battery Fire Safety Management Plan [REP2-033], Chapter 16: Other Environmental Topics [REP2-025] and Appendix 16D: Unplanned Atmospheric Emissions from Battery Energy Storage Systems (BESS) [REP2-265]. I have not reviewed sections not relevant to safety or outside my expertise.

I have already reviewed the initial Outline Battery Fire Safety Management Plan and my comments from this, where unchanged in this latest revision, still stand. This report should be considered along with my previous report.

The revised Outline Battery Fire Safety Management Plan (OBFSMP) is an improvement over the original OBFSMP and includes some examples of Good Practice. However, some significant areas of concern remain.

There is still a lack of essential detail including: the vapour cloud explosion hazard is not considered. This is a major omission. Neither is cyber security, and no indication is given of the formulation of the Emergency Response Plan despite there now being many templates and examples available from reputable sources.

The c.a. 65 fires and explosions to date involving lithium-ion BESS are not discussed or analysed for lessons learned. The choice of cell chemistry, cabinet or container is still not made: these have a direct impact on the energy density of the units and the free volume- both of which determine the detection and suppression systems required, or indeed if suppression is possible. These also have a direct impact on appropriate safety features and on realistic fire and emergency service operational procedures.

Mention is also not made of assembly areas for first responders including Fire and Rescue Services (FRS).

It is encouraging to note that the applicants intend to be guided by internationally-recognised standards including UL 9540A & NFPA 855: however no mention is made of retaining an independent expert to assess the test results from UL 9540A as required under NFPA 855 (2023) section 9.1.5.2.2. This is important to prevent “game playing” e.g. showing only the “best” test result out of e.g. 4 tests, and claiming compliance when in reality only UL 9540A tests have been carried out BUT improvements to the design on the basis of the test results have not been made. In addition, no mention is made of testing the Ingress Protection (IP) of the containers/cabinets which is also required under UL 9540A.

The sections on fire detection, suppression and deflagration prevention/amelioration are particularly confusing and make it impossible to review to any suitable extent.

Finally, given the wealth of data routinely logged in BESS and the potential to employ data analytics to provide advance warning of maintenance or even failure, it is disappointing to note that the applicants do not seem to have considered this as an option.

Overall, given that the eventual Battery Fire Safety Management Plan must be "substantially in accordance with the OBFSMP" (as indicated in the draft Development Consent Order) I do not consider that this OBFSMP can be used as a basis for this.

Detailed review

3. Outline Battery Fire Safety Management Plan

Section 2.5.2 - 2.5.4

The indicative layout designs for the two different technology types under consideration (Appendices A & B) do not make reference to an assembly area for fire and rescue services (FRS) which should ideally be placed near the entrance to the site to ensure that FRS do not have to drive through toxic and/or explosive fumes, or near to flames or containers liable to explode (see, for example, [1][2]).

Table 3: BESS Design Parameters

Module.

Mention is made of a liquid cooling system, but there is no mention of leak detection capability, an important consideration arising from learning from previous events. Coolant leaks can cause short circuit.

Such systems have been responsible for fires involving EVs (see, for example, the Chevy Volt fire[3][4]) and BESS (see, for example, the Moorabool fire[5]).

Cell.

The chemistry to be employed remains under discussion and this renders assessment of the safety aspects impossible. The two chemistries under consideration, LFP (Lithium iron phosphate) and NMC (Nickel Manganese Cobalt), present markedly different hazards. I would expect to see safety considerations and data for both options. Thus NMC cells are likely to have a higher fire hazard whilst LFP poses more of an explosion hazard [6] (the only fatal BESS explosion to date involved LFP cells[7]). This is an important consideration due to the potential risks of explosion and the hazards these present to first responders as well as to nearby homes etc.

One of the key reactions that occur before thermal run away is the exothermic structural collapse of the cathode which produces oxygen and is believed to initiate ignition: this collapse occurs at a much higher temperature in LFP cells (310°C [D. Ren et al., “Investigating the relationship between internal short circuit and thermal runaway of lithium-ion batteries under thermal abuse condition”, Energy Storage Mat., 34 (2021) 563 – 573]) hence LFP cells are considered “safer” than for example NMC.

However, this can just delay ignition and hence LFP cells are perceived to have a higher risk of vapour cloud explosion. Further, recent work has shown that the vapour cloud from LFP cells has a lower explosion limit, larger explosion overpressure, higher explosion index and the ignited vent gas has a higher laminar flame speed [H. Wang et al., eTransportation 13 (2022) 100190.]

BESS container/enclosure.

The applicant states that, **“**The construction will be in the form of modified 20-foot / 40-foot ISO shipping containers OR factory built modular cabinets / units”

Cabinets have a far higher energy density than containers and little free volume: this renders any form of suppression extremely challenging as water (which is still the best of the bad options when it comes to dealing with thermal runaway) will not be able to reach the cells in thermal runaway to prevent thermal propagation.
Recognising this, Tesla recommends that their cabinets be allowed to burn out [5].

Hence, safety measures, the FRS operational procedure, impact on those in close proximity, etc will all depend upon the container topography in addition to the cell chemistry.

The cell chemistry and the container topography need to be disclosed at this stage in order to build in suitable safety measures.

BESS compound.
It is noted that the examples shown here are of considerably smaller BESS compounds compared to those being proposed.

Section 2.6.4
Consultation
The consultation with local FRS should be in the spirit of Dame Maria Miller's draft Bill for lithium ion battery storage: *"The Bill would ensure that industrial lithium-ion battery storage facilities are correctly categorised as hazardous, so that the Environment Agency, the Health and Safety Executive and the fire and rescue services would be statutory consultees when planning applications are considered"*

Given the significant size and scale of the proposed BESS I consider it essential that the HSE, EA and the FRS are all fully consulted during the DCO application.

Section 2.9 – Safety Standards

Table 4:
Automatic Fire Protection
This section is not relevant if the high energy-density cabinet design is chosen.

3rd party fire and explosion testing is mentioned in Table 4, subsection Automatic Fire Protection.
No mention is made of the *independent validation* of the test results as stipulated in NFPA 855 9.1.5.2.2.
This is important for the reasons set out in the Executive Summary (with regard to "game playing").

It is noted that cyber security is not covered at all in the plan despite, for example, the 2021 DarkSide ransomware attack on the Colonial Pipeline and the warnings of similar threats to BESS[8][9]. This is a serious omission. For example, scientists in TŰV Rheinland have shown that BESS are vulnerable to hacking and could be used to dump energy onto the Grid or turn the BESS into a "bomb" [9].

Serious concerns over the lack of cybersecurity in BESS were recently raised by DNV[8]. Given the size of the BESS being proposed in this application, a cyber attack could have significant consequences.

Section 2.10 – Guidelines and Recommendations

2.10.1. It is stated that "Experience from other projects of a similar nature for property protection purposes":

The applicant should provide details about the analyses undertaken and any changes that have been made to their proposal to address the learning points from investigations into previous incidents. This would help to inform and assist the overall assessment of the OBFSMP.

Table 5.
The Australian Country Fire Authority guidelines have not been included, which are a useful resource [2].

Section 2.11- Contributors and consultees
It is correct to state that "Effective stakeholder engagement and consultation is a key requirement of the PA 2008"

The comments made by the FRS and HSE should be given in detail at this stage as it is currently unclear what suggestions have been made and how these have been acted upon.

Section 3 – Purpose and Scope

3.1.1 It is stated that "The scope of this Outline Battery Fire Safety Management Plan covers the life safety, welfare and property protection fire safety requirements of the BESS at Sunnica East Site A, Sunnica East Site B and Sunnica West Site A."

I do not agree that this is the case.

3.1.2 It is stated that
"The purpose of the Outline Battery Fire Safety Management Plan is to demonstrate that the location of BESS within the Scheme does not give rise to a significant increase in fire risk and that any risk that does exist can be addressed by ensuring that the Scheme is constructed, operated and decommissioned in accordance with the approved Outline Battery Fire Safety Management Plan."

I do not consider that this purpose has been achieved with this OBFSMP.

Table 6

Item 2. Emergency Response Plan (ERP).
There are a wealth of templates and guidelines for ERPs available, for example from the NFPA and CFA[2], so it is disappointing that an outline ERP has not been included in the OBFSMP plan. It is essential to protect those attending/ in close proximity to the site that an outline ERP is prepared alongside the OBFSMP. These documents would support each other and ensure that appropriate safety features are designed into the BESS compounds.

Item 3. Location away from residential areas.
There is insufficient evidence presented by the applicants to justify the statement regarding the Unplanned Atmospheric Emissions report that:

"…in the unlikely event that a fire were to break out in a single cell or module, it is considered very unlikely given the control measures that the fire would spread to the rest of the BESS".

Nor that

"the resultant hydrogen fluoride concentration at the closest receptors would be below the level that Public Health England has identified as resulting in notable discomfort to members of the general population" (see later notes on the applicants Unplanned Emissions chapter.

More evidence is required in order to justify the suitability of the BESS location, ideally including the results of actual UL 9540A tests

Regarding the UL 9540A testing, independent review of the results of UL 9540A tests is essential for reasons set out previously (regarding interpretation of test results and the consequent actions that arise from them).

Item 7. Fire detection and suppression.
This will critically depend upon the topography of the battery enclosure, whether container or cabinet. This has not been declared. The FRS response will also be affected by this choice. Cabinets are not explicitly dealt with, which is a major oversight at this planning stage, given that this will determine appropriate safety measures, including water requirements etc.

Items 12 & 13. These sections are confusing. It is not clear if the applicant will employ both gas and smoke detection. No allowance is made for vapour cloud production in the absence of fire as per the McMicken BESS thermal runaway incident in Surprise, Arizona (2019) and Carnegie Road, Liverpool BESS explosion (2020), or of the fact that both heavier than air and lighter than air vapour clouds could be produced[10-12].

This requires clarification before any assessment of the proposals can be made.

Item 15. Water resources.
As with the previous version of the OBFSMP, the significant volumes of water required to deal with a thermal runaway incident have not been given sufficient consideration and this has clearly not been addressed in this latest version. The applicants do not appear to have carried out research into past incidents and in particular about the water requirements used in these situations. This is essential to factor in at the planning stage as it will have consequences on the design and equipment needed for the BESS compounds.

Item 18. Inclusion of Hazard Identification Study (HazID) and Hazard and Operability Study (HAZOP) are examples of Good Practice.

Item 19. Details of the BESS technology.
It is stated "Details of the BESS technology has been provided in Table 3 for each element of the Scheme including cell, module, rack, BESS container enclosure and BESS compound"

This is not correct. The essential details of cell chemistry and form factor, container type (ISO container, cabinet etc), gas sensing system, location of sensors, type of suppression system and the layout of suppression systems etc are not given. These are all essential to know when considering suitable safety measures.

There are no *details* in Table 3 – options only are presented. For this OBFSMP plan to have any validity it should address ALL issues for ALL the options provided in Table 3. In other words, all issues for the two cell chemistries proposed, all issues for container versus cabinet, etc. Only then can an accurate assessment of the suitability of the OBFSMP be made.

Item 25. The removal of contaminated water is an example of Good Practice. It remains the case that the applicant has underestimated the possible water volumes needed.

Item 26. In addition to comments in my initial report I also note that water releasing coatings on containers are suggested.

The Ingress Protection , IP, of containers is not detailed and should be provided. (This is standard nomenclature - IP65 means dust prevention to level 6, water to level 5, as per industry specifications: [redacted].

Item 30. Residual charge. The applicant has not explained how cells would be discharged and how long this would take (and thus how soon a site could be made safe).

It is stated that "there will be a requirement for first/second responders to analyse the system data".

I consider it unlikely that first/second responders will have the knowledge and experience to analyse system data. This would require a subject matter expert.

Section 4.6.1. Decommissioning.

There is limited information regarding decommissioning. It is not clear on what basis the cells/modules would be assigned for decommissioning. For example, whether this is decided by State-of-Health (SoH i.e. how much maximum capacity remains compared to maximum capacity at the beginning of life) or State-of-Safety.

This is an important consideration as the same risks are present during decommissioning and during installation. Further, the Sunnica scheme would operate for at least 40 years, during which time decommissioning of batteries would be necessary since the batteries do not have such long lifetimes. Decommissioning during the operational lifetime of the scheme also needs to be considered.

It is also surprising that data analytics are not considered at all in the plan.

Section 5.1.2 Mitigation and Control

Table 13

RMM10. It is not clear what trigger temperature(s) would be employed and on what basis. Breaking connection to the external circuit will not stop thermal runaway.

RMM11. Insufficient detail is provided here. The level of cell monitoring, the cell configuration (XS, YP), how this provides effective monitoring, etc., needs to be presented to be able to assess the suitability of the proposals. There are important lessons that can be learned from the 2019 McMicken BESS explosion [10][11].

RMM17. As indicted in my report of the initial OBFSMP, this section is confusing. The term “coincidence detection” requires explanation.
If this refers to the detection of smoke and carbon monoxide to activate an alarm, this needs further consideration.
The positioning of the detectors will be critical given the production of heavier and lighter than air vapour clouds.
In addition, on activation of the alarm: *“The EMS for the BESS container enclosure will engage the first stage alarm and will close access doors, louvres, shut down ventilation system and BESS electrical installation.”*
This would allow the build-up of a potentially explosive vapour cloud should ignition not have occurred and is in conflict with the principles of NFPA 855 (2023).
The vapour cloud hazard does not appear to have been considered in the OBFSMP plan, which is a serious omission (especially considering that such occurrences have resulted in death and serious injury to first responders).

RMM20. The IP rating needs to be specified (see previous comment about this in item 26).

RMM21. Further details about the parameters that will be monitored is required here before any assessments of the suitability of these systems can be made. This is essential to allow early warning of failure.

RMM22 & 23. Further to previous comments (such as those relating to RMM17) this section needs clarification before any assessment can be made

Review of Revised Chapter 16: Other Environmental Topics

Section 16.7.19
Landfill of BESS equipment including batteries.

The applicant has not duly considered waste disposal arising out of the batteries either during the operational lifetime or during decommissioning Landfill of lithium-ion batteries is prohibited in the UK[13].

Review of Revised Appendix 16D: Unplanned Atmospheric Emissions from Battery Energy Storage Systems (BESS)

Overall the applicant's assessment of Unplanned Emissions fails to provide any assurances regarding the potential hazards arising from a likely thermal runaway incident. It fails to consider explosion risk, as a result of the formation vapour clouds. It fails to assess potential emissions arising from the different cell types (NMC and LFP). It fails to account for other toxic emissions that are likely to arise out of thermal runaway events.

Section 2.1.2
The application in general focusses only on the emissions from fire: the documents do not consider the large volumes of vapour cloud that can, and have been, produced. In the Arizona 2019 incident, a heavier-than-air vapour cloud rolling across the prairie in Surprise Arizona an hour after the alarm and deployment of Novec 1230 caused locals to alert the fire service to a prairie fire[10][11].

Despite the fact that only the cells in a single rack went into thermal runaway (c.a. 90 kWh), the vapour cloud was produced for 3 hours and leaked from the container, but sufficient remained to cause a major deflagration with a 75 foot long, 20 foot high fireball when the door was opened. This explosion potential must be factored into the safety features.

Whilst the academic literature also focusses primarily on the fumes from lithium-ion batteries on fire, there are some papers on incidents where ignition has been prevented or simply did not occur, and these provide data on the volume and composition of the vapour cloud.

In addition, Hydrogen Fluoride is not the only hazardous chemical: for example, Hydrogen Cyanide has been detected in vapour clouds. This will burn in fire but is a potential additional hazard regarding the vapour cloud, as are other toxic and combustible compounds.

Section 3.2.1
It is unclear on what basis the emission rate of 1 ug m^{-3} s^{-1} was selected for the modelling calculations. This needs to be explained in order to assess the validity of this.

Section 3.2.2
The emission of vapour cloud rather than smoke has not been considered, which is a major oversight (as per my previous comments).

Section 4.1.4
As stated above – there are too many unknowns at present for this modelling to provide any degree of assurance. For example, this assessment would likely change with a high energy-density cabinet. It would also change as a function of the cell chemistry. All of this needs to be considered to provide valid emission assessments.

Paul Christensen
LITHIUM ION SAFETY

Signed: [redacted]

Dated: 7 Dec 2022

References

1. [redacted]
2. M. Allen and J. Blyth, Design Guidelines and Model Requirements Renewable Energy Facilities, CFA, V3 March 2022.
3. [redacted]
4. [redacted]
5. A. Blum, Victorian Big Battery Fire: Report of Technical Findings, July 30, 2021.
6. [redacted]
7. Y. Jin, Z. Zhao, S. Miao, Q. Wang, L. Sun and H. Lu, "Explosion hazards study of grid-scale lithium-ion battery energy storage station", J. Energy Storage, 42 (2021) 102987.
8. Accident analysis of Beijing Jimei Dahongmen 25 MWh DC solarstorage-charging integrated station project, April 2021.
9. The Cyber Priority, DNV, 2022. [redacted]
10. [redacted]
11. McMicken Battery Energy Storage System Event Technical Analysis and Recommendations, Arizona Public Service, 18 July 2020. [redacted]
12. APS McMicken Progress Report, Exponent, 30 July 2020.
13. P. A. Christensen, et al., "Thermal and mechanical abuse of electric vehicle pouch cell modules", Applied Thermal Engineering, 189 (2021) 116623.

[redacted]

Appendix I – Newmarket Horseman's Group

Post Hearing submission on behalf of the Newmarket Horsemans Group

John Steel QC

1. The harm to the HRI is set out in the documentation already submitted, are supported and are not repeated here –
    - [REP2-240f] Rapleys Impact Assessment.
    - [REP3A–070] Reply by Popham Planning Consultants to Sunnica/Lichfields Report [REP2-039].
    - Submission by Christian Wall.
2. This submission considers cumulative impact.
3. Cumulative impact is a crucial aspect of understanding the Sunnica scheme. It is only when we consider cumulative impact that it is possible to understand the quantity and quality of the harm that arises as a consequence of the proposals. These include the following harms which are of material concern to the NHG:
    - The impact on the Limekilns, the showpiece of the HRI (see the documents referred to above) which is an open space highly valued by those who live and work in Newmarket including the members of the NHG who train racehorses on the world-famous Limekilns Gallops – their place of work. This is harm (a) to its use as a showpiece, (b) to cultural heritage as it is a non-designated heritage asset, (c) to its open space character, (d) to its landscape character and (d) visual intrusion harm.

- Landscape and visual intrusion harm to the area – the expert evidence of Michelle Bolger and John Jeffcock.
- Harm to the PROWs and their enjoyment by members of the NHG.
- Social harm to the communities within the villages including members and employees of the NHG, in terms of their enjoyment of the area in which they live, their consequential perceived isolation and severance due to the scheme, fragmenting the area and cutting down the cohesion as distinct but interrelated communities with social cohesion, relying on their geography, their proximity and physical and visual linkage, which has lasted for centuries and is seen as valuable by them. You will have seen that demonstrated during these hearings and it should be recognised to be of substantial weight worthy of protection by planning decision making.
- Harm to agriculture and BMV.
- The fact that there is precious little local benefit and substantial local harm, nothing to offset against harm to the communities, is particularly irksome.

4. A proper understanding and application of cumulative impact is crucial. This includes the proper understanding and application of planning policy. Sunnica[1] has, it seems, concluded that Overarching National Policy Statement for energy NPS EN-1 policy is to the effect that local values and impacts, such as landscape impact and visual intrusion, or impact on agriculture and BMV, or the impact on the HRI, can be picked

[1] Richard Turney, counsel for Sunnica submissions on Thursday 08 December 2022 at ISH3

off and dismissed one by one, and whatever the harm caused by them, none of them should prevent the Order being confirmed.

5. On landscape impact we are directed to paras 5.9.13 and 5.9.14 of EN-1[2], for example, that one or more local designations should not '*in itself*' or '*in themselves*' be a reason for refusing consent.

6. This interpretation of NPS policy is wrong and it can lead to irrational conclusions.

7. The important point to note when applying policy is to consider a scheme '*as a whole',* with all its impacts being considered. No impact should be considered in isolation, and dismissed one by one, without considering the impacts cumulatively against the benefits, including the need for the scheme.

8. The harms in the instant case are extensive, particularly due to their fragmentation over a wide area (so far unique in the realm of consented schemes). They must not merely be considered on their own. NPS EN-1 guides an ExA what to do (and, indeed, so does NPPF as the two are here in harmony) and this is to consider the cumulative impact. It is essential to understand schemes of this nature by understanding the totality of the impact and the harm of any scheme. Para 4.1.3 of NPS EN-1[3], which is of general application to all policies in the document under the heading "General Policies and Considerations" states:

> *4.1.3 In considering any proposed development, and in particular when weighing its adverse impacts against its benefits, the IPC should take into account:*
>
> - *Its potential benefits ….[followed by a list]*

[2] Draft EN-1 paras 5.10.15 and 5.10.16
[3] Same ref in the draft EN-1

- *Its potential adverse impacts, <u>including any long-term and cumulative adverse impacts</u>, as well as any measures to avoid, reduce or compensate for any adverse impacts* [emphasis added].

9. So how must this be applied? Let us take the Limekilns as an example.
10. Hearings this week have considered the landscape impact on the Limekilns. We say that is a major harm which all accept cannot be mitigated to a lower level.
11. The heritage impact on the Limekilns has also been considered. We say that harm is medium. Its significance as an undesignated heritage asset in large part comes from the history of and relationship to the HRI.
12. And then we have heard about the harm that the HRI sees attributable to the impact on the Limekilns. The degrading of its principal showcase; harm to the setting of that showcase through the industrialization of a rural setting. A rural setting that is integral with and supportive of horseracing. The industrialisation caused would be incongruous with that use and its function to the HRI as a showcase. That showcase does not require to be designated for it to be relevant, important and of weight in planning terms. The evidence is clear – the Limekilns is of world importance to horseracing for all the reasons given including significant cultural reasons.
13. There are others too; the agricultural aspect of the land north of the Limekilns; its colours and vegetation changing with the seasons as the crops change, providing a highly relevant and contextual setting to the Limekilns with its views to the north of and over the hills opposite towards Ely and its Cathedral.
14. All on their own we say these are significant and substantial harms. But the crucial point is this: how do those harms tie together? Its is understanding the quality and

quantity of the in-combination harm to the Limekilns which must be assessed in order to properly apply policy in NPS EN-1.

15. When a prospective investor stands on the Limekilns they take in that landscape. When we talk about that major landscape harm, we do not consider that in the abstract. Who appreciates that harm? It is the horseracing industry; the prospective investor; the trainer and riders, the dog walker. It is they who are the receptors that experiences that harm (or, at least, the consequence of that harm). And they see a landscape character which the rural setting is materially diminished as a rural setting and becomes quasi-industrial. They see a landscape character at odds with the rural and outdoor pursuit of horse racing. The visual impact includes incongruity – seeing something that should clearly not be there in this landscape, which industrialises a valued landscape.
16. The prospective investor when introduced to the Limekilns appreciates that value and takes in the heritage. That heritage – connection to the past – sells horses. So when we talk about moderate harm, it is significant and again that investor who experiences this. The heritage is lost (for one, maybe two generations) because the past is no longer there; the present has intruded. Industrialisation has taken away that connection to the past. You can no longer see yourself as those in the past have stood; the location is not those from the paintings in the museums.
17. The A14 and railway has intruded in this landscape, but not anything like to the extent that the cumulative harm that Sunnica would do. Indeed, Sunnica will draw attention to and exacerbate the intrusion caused by this infrastructure. That will be cumulative harm.

18. So when we think about in-combination harm we have to quantify that harm. The harms stack. But also their quality when they stack is fundamentally different. When that prospective buyer stands on the Limekilns looking at the scheme, they don't just think the view is poor or that the side across is not like they saw in the paintings. The experience of these world famous gallops as a valued and historic landscape, the showpiece of the HRI, is damaged severely. You lose more *because* of the in-combination effects: the totality measures far greater than the sum of its parts. And the harm is one which you do not experience if you go to the great racecourses of France, Ireland, the USA; as John Gosden made clear.

19. A key feature of Newmarket's pre-eminence, a unique selling point when compared to its competitors. Is its history; you come because this is where the Queen stood; this is where the King stood in the 18th Century. You are living historical context of a rural location within the countryside. This is not just a case of other locations becoming better and competition with Newmarket; this is a degrading of the quality of Newmarket; a key quality substantially diminished by this cumulative effect and harmful impact, which must be considered and taken into account along with the other harms.