

**Tillbridge Solar Project
EN010142**

**Applicant's Response to Written Submissions at
Deadline 4**

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**Planning Act 2008
The Infrastructure Planning (Examination Procedure) Rules 2010**

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1. Introduction

1.1 Purpose of this document

- 1.1.1 The purpose of this report is to provide Tillbridge Solar Limited's (the Applicant) response to the Written Submissions submitted by Interested Parties (IP) at Deadline 4 of the Examination for the Tillbridge Solar Project (the Scheme).
- 1.1.2 A total of 125 Written Submissions were submitted to the Examination at Deadline 4. 50 of these were from the Applicant, with 75 being from IP's.
- 1.1.3 To avoid repetition, the Applicant has only provided a full response to comments that make points that have not been addressed previously within the following documents or where the Applicant considers that further clarification may be useful:
- **Applicant's Responses to Relevant Representations [REP1-028];**
 - **Applicant's Response to Written Submissions at Deadline 1 [REP2-007];**
 - **Applicant's Responses to Local Impact Reports [REP3-061];**
 - **Applicant's Response to Examining Authority's First Written Questions [REP3-062];**
 - **Applicant's Response to Written Submissions at Deadline 2 [REP3-063];**
 - **Applicant's Response to Written Submissions at Deadline 3 [REP4-044];**
 - **Written Summary of Applicant's Oral Submissions at Issue Specific Hearing 2 [REP4-045];**
 - **Written Summary of Applicant's Oral Submissions at the Open Floor Hearing 2 [REP4-046];**
 - **Written Summary of Applicant's Oral Submissions at Compulsory Acquisition Hearing [REP4-047];**
 - **Applicant's Comments on Interested Parties Submissions to the First Written Questions at Deadline 3 [REP4-048];**
 - **Written Summary of Applicant's Oral Submissions at the Issue Specific Hearing 3 [REP4-049]; and**
 - **Applicant's Response to Examining Authority's Second Written Questions [EN010142/APP/9.35].**

1.2 Structure of this document

- 1.2.1 This document provides a response from the Applicant to Written Submissions received at Deadline 4, and is structured as follows:
- **Table 2-1: Parish Councils, Persons with an Interest in the Land and Public:** the Applicant's responses to Written Submissions from Parish Councils, Persons with an Interest in the Land and the Public.

- 1.2.2 The documents submitted with the Application are also referenced in this document, using the reference number given in the Examining Authority Examination Library (e.g. **[APP-XXX]**, or **[AS-XXX]**) where a document which has previously been submitted is referenced, or the Applicant's reference number (e.g. **[EN010142/APP/XX(RevX)]**) where a new document is being submitted at Deadline 4. All documents are also presented in numerical order in the **Guide to the Application [EN010142/APP/1.2(Rev07)]**.

Table 1-1. List of Interested Parties that submitted Written Submissions at Deadline 4 which the Applicant has responded to in this document

Reference Number	Consultee
REP4-051	Lincolnshire County Council
REP4-052	West Lindsey District Council
REP4-053	West Lindsey District Council
REP4-061	7000 Acres
REP4-062	7000 Acres
REP4-074	Clare Ella
REP4-103	Mark Prior
REP4-104	Mark Prior
REP4-117	Rodney May

- 1.2.3 For ease of reference, a table of acronyms used in this document is provided in **Table 1-2** of this document.

Table 1-2. Abbreviations

Abbreviation	Definition
AGLV	Area of Great Landscape Value
ALC	Agricultural Land Classification
BESS	Battery Energy Storage System
BMV	Best and Most Versatile Land
BRE	Building Research Establishment
BSMP	Battery Safety Management Plan
CEMP	Construction Environmental Management Plan
CNP	Critical National Priority
DCO	Development Consent Order
DEMP	Decommissioning Environmental Management Plan
EIA	Environmental Impact Assessment
EqIA	Equality Impact Assessment
ES	Environmental Statement
FRA	Flood Risk Assessment
GCC	Grid Connection Capacity
GW	Gigawatt
HEAT	Health Equity Assessment Tool

Abbreviation	Definition
HIA	Health Impact Assessment
HUDU	Healthy Urban Development Unit
IEMA	Institute of Environmental Management and Assessment
IPs	Interested Parties
LCC	Lincolnshire County Council
LEMP	Landscape and Ecological Management Plan
LFR	Lincolnshire Fire & Rescue
LLFA	Lead Local Flood Authority
LIR	Local Impact Report
LPA	Local Planning Authority
LVIA	Land and Visual Impact Assessment
MW	Megawatt
NFCC	National Fire Chiefs Council
NFPA	National Fire Protection Association
NHS	National Health Service
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
OEMP	Operational Environmental Management Plan
PHRR	Peak Heat Release Rate
PINS	Planning Inspectorate
PRoW	Public Right of Way
PV	Photovoltaic
RR	Relevant Representation
SAF	Sustainable Aviation Fuel
SoCG	Statement of Common Ground
TCPA	Town and Country Planning Act
TPO	Tree Preservation Order

2. Applicant’s Responses to Written Submissions at Deadline 4

2.1 Local Authorities, Parish Councils, Persons with an Interest in the Land and Members of the Public

Table 2-1. Applicant’s Responses to Parish Councils’, Persons with an Interest in the Land and Members of the Public Written Submissions at Deadline 4

#	Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicant’s Response to Written Submission
1	REP4-051	LCC	BESS and fires	3. In relation to fire, Mr Moss confirmed that he was content that provision had been made for the fire-fighting supply of water to be separate from that used as part of the internal sprinkler system within the BESS. LCC’s expectation would be that submitted plans should outline compliance with requirements of NFPA 855 as a recognised industry standard.	The Applicant notes this comment. Paragraph 7.6.2 of the Framework Battery Safety Management Plan (FBSMP) [REP4-026] confirms commitment to NFPA 855 compliance.
				4. LCC’s expectation is that, as a minimum, there is water provision in-line with NFCC guidance- <i>“Fire Hydrants provided should achieve a flow rate of no less than 25 litres / second at any hydrant on the site. This figure is based on guidance produced by Water UK and the Local Government Association. The flow rate for transportation has been selected as the comparative value for flow rates, rather than that of a domestic housing development or an industrial setting. Where a flow of 25 litres / second cannot be achieved, it would be prudent to provide an equivalent static supply of water on site that will provide for the same flow rate for a duration of 120 minutes. This equates to approximately 180,000 litres of water.”</i>	The Applicant notes this comment and can confirm that at the detailed design stage minimum water provision will be in line with the latest NFCC guidance. The Framework BSMP [REP4-026] references original NFCC guidance (Table 4-1, paragraph 7.8.10) of 31.67 litres / second for a duration of two hours.
				5. Fire Gas Plume – Comment was made on requirements and considerations for developers in relation to fire gas plumes as a result of a fire scenario involving a BESS unit. Details in-line with the NFCC guidance – <i>“Developers may also wish to commission an analysis of fire gas plume modelling under different scenarios to help understand the impact on local communities from prevailing wind etc. Such modelling, if undertaken, should be completed by a competent person.”</i>	<p>The Applicant notes this comment. An analysis of the potential consequences of unplanned emissions to the air (via battery fires) was commissioned and submitted with the DCO application, see Appendix 17-5: Unplanned Atmospheric Emissions from Battery Energy Storage Systems of the ES [APP-123]. The conclusions and recommendations of this analysis are presented within Section 17.6, Chapter 17: Other Environmental Topics of the ES [APP-048]. This analysis was conducted by the Air Quality technical lead for the Tillbridge Solar Project, a suitably competent person, further detail on this person is presented in Table 1, Appendix 1-3: EIA Statement of Competence of the ES [APP-053].</p> <p>The Framework BSMP [REP4-026], paragraph 6.1.7 confirms that at the detailed design stage, a final package of comprehensive risk assessment and detailed consequence modelling will be conducted to provide a comprehensive site safety audit. Consequence modelling will include a plume study assessing the impact on sensitive receptors of selected BESS system and final site design layout, the emissions levels will not exceed levels established in Appendix 17-5: Unplanned Atmospheric Emissions from Battery Energy Storage Systems of the ES [APP-123].</p>
				6. LFR would expect Fire Prevention Plans to include details of prevention measures, e.g. suppression, deflagration mitigation, offering assurance that control measures are limiting the potential	The Applicant notes this comment. The Framework BSMP [REP4-026] details the Applicant’s extensive commitment to BESS failure prevention and mitigation measures in Sections 6 and 7.

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				<p>for an incident and subsequent fire gas plume. In addition, if an incident were to occur we would work with partner agencies to offer advice and support to limit exposure and manage the safety of members of public impacted.</p>	
				<p>7. Environmental Considerations- Whilst not asked directly about environmental considerations, our response would be in-line with the NFCC guidance, outlining requirements to give consideration to site location and as such minimising the impact to the local environment – <i>“Suitable environmental protection measures should be provided. This should include systems for containing and managing water runoff. System capability / capacity should be based on anticipated water application rates, including the impact of water based fixed suppression systems. Sites located in flood zones should have details of flood protection or mitigation measures.”</i></p>	<p>There are no BESS Enclosures located within Flood Zone 2 or 3; with the only permanent above ground infrastructure within Flood Zone 2 and 3 being solar PV panels. Detail of mitigation for the panels in relation to flood risk is included in Section 7 and 8 of Appendix 10-3: Flood Risk Assessment of the ES [REP4-018].</p> <p>Control measures for the prevention of operational leaks and spillages, including from firefighting water in the unlikely event of fire at a BESS Enclosure, are set out within Appendix 10-4: Outline Drainage Strategy of the ES [APP-098]. This states that swales will be lined with an impermeable membrane or similar to prevent any pollution associated with fire water runoff from entering the ground. Penstock valves will also be used in the event of a fire to prevent any pollution associated with fire water.</p>
		Agricultural Land		<p>8. LCC continues to object based upon the loss of agricultural land use. Cumulatively, Lincolnshire stands to lose a considerable amount of agricultural land which will be incapable of meaningful arable or agricultural use for a period of 60 years across a large number of TCPA and DCO solar schemes. 60 years is a considerable period in relation to a human life-span and for many adults, this will represent more than the remainder of their lives. To them, it will be a permanent land use change.</p>	<p>The Applicant has responded to the matters raised in this comment within Table 2-1, page 44 of the Applicant's Response to Local Impact Reports [REP3-061], LIR ref. 14.44-14.39. and the Applicant also addressed these matters orally at Issue Specific Hearing 2, a summary of which is presented on page 13 of Written Summary of Applicant's Oral Submissions at Issue Specific Hearing 2 [REP4-045].</p>
				<p>9. The Applicant confirmed that it did not propose any commitment to use of the land for sheep grazing. As such, little if any weight should be attached to this. Instead, the land should be seen as being entirely removed from agricultural land, and the land use changed to one of energy generation for the lifetime of the project.</p>	<p>The Written Summary of Applicant's Oral Submissions at Issue Specific Hearing 2 [REP4-045] sets out the Applicant's position on this matter on pages 9-10.</p> <p>In addition, the Scheme does consider the contribution of livestock grazing in relation to the management and monitoring of the biodiversity and ecological conservation associated the Principal Site during its operation in accordance with paragraph 2.10.130 of NPS EN-3 (Ref 1-1). The principles of this are established through the Framework Landscape and Ecological Management Plan (FLEMP) [EN010142/APP/7.17(Rev05)] and secured by requirement 7 (landscape and ecological management plan (LEMP)) of the draft DCO [EN010142/APP/3.1(Rev06)], which requires the submission, approval and implementation of a LEMP that is substantially in accordance with the FLEMP.</p> <p>The Framework LEMP [EN010142/APP/7.17(Rev05)] explains at paragraphs 8.2.21 that the semi-improved grassland forming part of the ecological enhancement areas will be suitable for grazing and that grazing could be used to support the ongoing management and maintenance of grassland (paragraph 8.3.39 and 8.3.41). However, the Framework LEMP</p>

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					<p>[EN010142/APP/7.17(Rev05)] allows flexibility with the use of traditional mowing techniques too also set out in paragraphs 8.3.39 and 8.3.41.</p> <p>The Framework LEMP [EN010142/APP/7.17(Rev05)] includes the flexibility of grassland being managed and established by either mowing or grazing. The Applicant will not discuss with third parties whether the Scheme could provide an opportunity for grazing until development consent is secured.</p>
				10. LCC is concerned to ensure that the proposed soil management plan adequately addresses land drainage. Drainage is an important component of soil quality and physical land drains can easily be pierced and damaged by the construction of solar arrays. At present, the Framework Soil Management Plan [REP1-051] contains no reference to surveying for or reinstating drainage works. Both will be required to ensure that soils can be returned to their current function post development.	The Applicant provided a response to the matters raised in this comment orally at Issue Specific Hearing 2, a summary of which (along with a post-hearing note relating to this point) is provided on pages 11 to 14 of the Written Summary of Applicant's Oral Submissions at Issue Specific Hearing 2 [REP4-045] .
		Overplanting		<p>11. The Applicant has failed to provide any robust answer as to why the scheme is required to be overplanted at a rate of 157%. The Applicant's answers to the ExA's First Written Questions noted that <i>"the proposed overplanting ratio is specifically tailored to the Scheme's DC-coupled configuration"</i> [REP3-062 p.12, Q1.1.18]. However, it transpired during ISH2 that the DC coupled configuration would have no bearing on the overplanting ratio. As such, the Applicant appears to have withdrawn their explanation as being incorrect. At the hearing, the Applicant then relied upon a comparison with Mallard Pass, however, this project had a lower overplanting ratio.</p> <p>12. As such, LCC is of the view that the particular overplanting ratio proposed has not been justified. This is of concern given the scale of landscape and visual effects and change in land use across a large area. The scale of change is required to be robustly justified.</p>	<p>The Applicant considers that it has provided a detailed response with respect to its approach to overplanting with the reasons for this being set out in the Written Summary of Oral Submissions at ISH2 [REP4-045] and expanded upon in paragraphs 8.2.16 to 8.2.18 of Appendix B of its Written Summary of Applicant's Oral Submissions at ISH1 [REP1-046].</p> <p>The Scheme adheres to NPS EN-3 (Ref 1-1), comprising an appropriate level of overplanting that is justified, and uses a reasonable amount of land (within the 2-4 acre / MW guideline outlined in NPS EN-3), which maximises the renewable energy yield for the grid connection offer. The Applicant has demonstrated that its approach to overplanting is reasonable and justified and supported by NPS EN-3.</p>
		Landscape and Visual		<p>13. By reason of its mass and scale, the Development would lead to significant adverse effects on landscape character and visual amenity. The Development has the potential to transform the local landscape by altering its character on a large scale. This landscape change also has the potential to affect wider landscape character, by replacing large areas of agricultural or rural land with solar development, affecting the current openness, tranquillity and agricultural character that are identified as defining characteristics of the area.</p> <p>14. The scale and extent of development would lead to significant adverse effects on views from receptors, by altering from views within an agricultural or rural landscape to that of a landscape with large scale solar development.</p>	The Applicant has responded to the matters raised in this comment within Table 2-1, pages 15 to 16 of the Applicant's Response to Local Impact Reports [REP3-061] , LIR ref. 8.9 and 8.10.

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				<p>15. The cumulative landscape and visual effects of the Development will also bring about significant landscape and visual effects, particularly when assessed alongside the consented West Burton, Cottam and Gate Burton schemes. The mass and scale of these projects combined would lead to adverse effects on landscape character and visual amenity over an extensive area.</p> <p>The landscape character of the local, and potentially regional area, may be completely altered over the operational period, particularly when experienced sequentially for visual receptors travelling through the landscape.</p> <p>16. LCC maintain that visual receptors travelling through the landscape along roads and public rights of way will experience frequent sequential views of solar development. This will be exacerbated when assessed cumulatively and frequent sequential views of solar development is likely from long sections of these linear routes, heightening the susceptibility of the receptor to changes in view, and therefore likely the overall sensitivity, and also increasing the likely effect.</p> <p>17. The Applicants LVIA identifies significant landscape and visual effects, aligned with LCC's position. This includes significant adverse landscape effects on areas of the Cliff AGLV within or adjacent to the site (LLCA 2B, Lincoln Cliff – Harpswell and LLCA 2C Lincoln Cliff – Open Farmland) and also directly across the majority of the site extents (LLCA 3A Till Vale – Open Farmland).</p> <p>18. The Applicants LVIA also identifies significant visual effects at the construction, operation (year 1), and operation (year 15) phases. The views and visual receptors with significant effects are typically those with close range views of the development, however views from the elevated land of the Lincoln Cliff also have significant adverse effects due to the extent of solar development within the extensive and often panoramic view. These elevated views have been assessed as still having significant residual affects at year 15 with established planting.</p>	<p>The Applicant has responded to the matters raised in this comment within Table 2-1, pages 16 to 17 of the Applicant's Response to Local Impact Reports [REP3-061], LIR ref. 8.11 and 8.12.</p>
				<p>19. LCC accept that planting can be an effective way to screen and integrate development proposals, however this needs to be carried out in a way that is sensitive to the existing landscape character or meet any aims of a published character assessment to improve or introduce new planting to an area. The local area has a relatively open character, and planting to simply screen could have detrimental impacts.</p> <p>20. The PROW and local road network in the study area enjoy an open aspect across some of the landscape, for example along the Cliff at the eastern scheme extents where there are extensive long-</p>	<p>The Applicant has acknowledged the balance to be struck in terms of intentional screening of the Scheme against loss of views and open characteristics within Chapter 12: Landscape and Visual Amenity of the ES [REP4-013]. This includes along the road network through the Principal Site, although away from these and areas around residential properties (such as the proposed woodland north of Kexby Road), the Applicant has sought to limit new hedgerows and woodland belts to the boundaries of existing field margins, such that benefits are oriented more to habitat connectivity and green infrastructure corridors.</p>

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				<p>range views south across the Site (as illustrated on VP4 within the applicants LVIA) or along the A631 (VP1 within the applicants LVIA) along the northern extents. Therefore, care needs to be taken to prevent the loss of this character through an overbearing set of mitigation proposals. It is noted that appropriate development offsets and careful design will go some way to address the matter raised. However, the establishment of hedges which are proposed to be maintained at a minimum of 2.5m and up to 3.5m in height (as outlined in the Framework Landscape and Ecological Management Plan) is a concern due to introducing large landscape elements and in places screening currently open views. VP2b within the applicants LVIA (from Common Lane west of Harpswell) is an example of where, on the submitted visualisations, the development clearly foreshortens the open view. While planting is shown to screen the development, the view is ultimately changed by the mitigation planting which could be perceived within the visualisations as not being as high as proposed. The introduction of panels into these close-range views will clearly foreshorten views resulting in adverse effects, and we maintain that by establishing planting in front of the development would not automatically reduce the significance of an adverse effect: the baseline view is still changed for the worse.</p>	<p>The effect of an existing 2 m high hedge is demonstrated in the representative viewpoint 17 (Figure 12-14 A-J: Visualisations (Photomontages) of the ES [APP-187]) (Common Lane), where this is considered sufficient to screen the solar infrastructure, even during the winter months. Hedges of a similar character are present along Willingham Road and Fillingham Lane, a parallel route to the south; as such, the Applicant considers that that there is precedent for these features along rural east-west routes. The Applicant maintains that whilst there will be a change in character for receptors along such routes, this would not be so great as to result in a significant adverse visual effect. Such changes should also be considered against the baseline context of these routes, whereby the Applicant considers that the open character is derived in part from the functional, intensive character of the farmland where more valued features such as hedges have been removed.</p> <p>Perceptual changes that may arise through the loss of openness in a more general sense are reflected in the Applicant's significant landscape effect on LLCA 3A, as described in Chapter 12: Landscape and Visual Amenity of the ES [REP4-013].</p>
				<p>21. Concerns regarding residential visual amenity were discussed. LCC consulted with the applicant regarding views from residential properties and requested these be considered fully and subsequently any layout and mitigation scheme fully consider these views, such as providing appropriate setbacks from development, locating larger more conspicuous elements away from properties and provision of adequate screen planting. While properties have been identified as having significant visual effects, it has been judged that the scheme is unlikely to trigger the Residential Visual Amenity Threshold (RVAT), with reference to Landscape Institute TGN 2/19. These would be for significant effects at the highest magnitude of significance (major), and subsequently a Residential Visual Amenity Assessment (RVAA) has not been carried out. For clarity, the three other schemes within West Lindsey in close proximity to Tillbridge (Cottam, West Burton and Gate Burton Solar), have considered likely effects on residential properties, however, have not carried out an RVAA separately to the LVIA.</p>	<p>LCC have confirmed in the Statement of Common Ground (SoCG) with Lincolnshire County Council [EN010142/APP/9.9(Rev02)] that they are comfortable with the absence of an RVAA and satisfied that significant effects have been identified as part of the assessment, noting that there are still significant residual effects on some properties.</p> <p>The Applicant acknowledges these significant visual effects for representative viewpoints 7, 9 and 13 that relate to residential receptors. The Applicant has provided a further response in relation to RVAA in Applicant's Response to Examining Authority's First Written Questions [REP3-062], ref. Q1.9.1.</p>
		Noise		<p>22. LCC is aware of other energy DCOs which include a set noise limit within the requirements (see Thurrock Flexible Generation Plant DCO Requirement 16). It is understood that the Applicant is committed to reviewing the currently drafted noise requirement with a view to strengthening controls for noise at sensitive receptors.</p>	<p>Requirement 17 of the draft DCO [EN010142/APP/3.1(Rev06)] necessitates that noise levels at residential properties be no higher than those reported in the ES, effectively ensuring specific noise limits at local properties.</p> <p>The latest version of Table 3-8 of the Framework OEMP [REP4-022], which is secured through Requirement 13, includes additional wording to</p>

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					clarify the reporting and control mechanisms for routine maintenance and noise monitoring throughout the lifetime of the Scheme. This wording, and approach to the management of noise limits has been agreed with LCC, as recorded in the SoCG with Lincolnshire County Council [EN010142/APP/9.9(Rev02)] submitted for Deadline 5, although noting that LCC still queries if this should be included directly in the requirement rather than in the Framework OEMP [REP4-022] . The Applicant's position on why it is appropriate for these controls to sit within the Framework OEMP as opposed to Requirement 17 directly is set out in detail in the Applicant's Response to Examining Authority's Second Written Questions [EN010142/APP/9.35] at ExQ2.10.3, and in the response to WLDC's similar query below on the management of cumulative operational and construction noise.
			Biodiversity	23. At present, the DCO only secures a 10% net gain, whereas the BNG Report [AS-062] suggests a total net change for area units of 64.44%, hedgerows of 17.28% and watercourse units of 22.94%. Unless secured, it is the lower percentage gain which should feed into the overall planning balance.	The Applicant responded on this point orally at ISH3 and provided a furthermore detailed response as a post-hearing note within the Written Summary of the Applicant's Oral Submissions at ISH3 [REP4-049] , at pages 27-28.
			DCO	24. LCC considers that the following amendments should be made to the DCO as presently drafted: a. Requirements 7 and 8 should specify LCC as a consultee. This has been agreed with WLDC and allows county-wide oversight of ecological harm, works and any net gains. b. Requirement 8 should specify the proposed net gain. Alternatively, only that which is secured (10%) should be fed into the overall planning balance. c. Requirement 11 should be included in the higher tier of fees in Schedule 17 paragraph 5. d. Schedule 17 should provide relevant authorities with a minimum of 10 weeks from receipt of an application to discharge a requirement in order to be in line with other solar DCOs in Lincolnshire. This time period is necessary given the likely complexity and volume of information to be received and the need for the authorities to have sufficient time in light of the resourcing pressures on authorities in Lincolnshire.	The Applicant has further discussed the drafting of the draft DCO with LCC since Deadline 4, and confirmed: a. LCC was already included as a consultee within Requirement 7 as since the draft DCO circulated for Deadline 1 [REP1-007] . The draft DCO was updated at Deadline 4 [REP4-004] to include LCC as a consultee for Requirement 8. b. The Applicant responded to the suggestion that Requirement 8 should specify the proposed net gain at Issue Specific Hearing 3 (ISH3) and refers to the Written Summary of Oral Submissions at ISH3 [REP4-049] at pages 26-28 for detailed discussion on this matter, including the appropriate consideration of any benefit for the planning balance. c. The Applicant considers the current tier of fees for Requirement 11 (Archaeology) to be appropriate. This aligns with the same tier of fees which LCC agreed on for the Cottam Solar Project, Gate Burton Energy Park and West Burton Solar Project, and is included in the made Orders for all three of those projects. LCC has not provided a justification as to why archaeology fees are anticipated to be greater for Tillbridge than for these projects. d. Further to recent discussions with LCC and WLDC, and to align with the consistent timeframes now applied to both the West Burton Solar Project Order 2025 and the Gate Burton Energy Park Order 2024, the Applicant has updated the draft DCO [EN010142/APP/3.1(Rev06)] for Deadline 5 to reflect a ten-week approval period. This time period is accepted by LCC and has been accepted by the Secretary of State in its most recent decision for the Lincolnshire schemes (i.e., West Burton).

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2	REP4-052	West Lindsey District Council	Water Environment and Flood Risk	<p>WLDC noted the discussions but raised no additional issues or views in the Hearing.</p> <p>The discussion regarding fire risk (failure rates of infrastructure) and impact from fire water was particularly noted. An uncertainty that arose for WLDC from the discussion was, whilst acknowledging the likelihood and safeguards that would be in place for Tillbridge in isolation, what the robustness of the emergency service and response mitigation would be if there were multiple 'events' cumulatively across projects.</p> <p>It was not fully understood at the hearing whether the likelihood of an event was linked to the ageing of the infrastructure (and maintenance regimes), or whether the risk was constant throughout the lifespan of a project. If the former, with four projects of over 2GW of solar infrastructure being deployed adjacent to each other with the same construction, is the risk of fire to infrastructure likely to occur at each project at a similar point in their lifecycles? And would there be any other external impacts that could increase the likelihood of fire that would apply to all projects cumulatively (e.g. increases in climate temperature)?</p> <p>If so, it appears to WLDC that the magnitude of the cumulative impacts will require careful consideration and that resources to deal with cumulative events are adequate to ensure the successful implementation of the Management Plans</p>	<p>As discussed by Mr Gregory during ISH3 (refer to Written Summary of Applicant's Oral Submissions at the Issue Specific Hearing 3 [REP4-049]), with further clarification provided in response to Q2.8.2 in the Applicant's Response to ExA's Second Written Questions [EN010142/APP/9.35], the probability of a BESS cell failure event resulting in a venting / burning thermal runaway scenario is very low. Assuming a 2GWh site such as Tillbridge would incorporate 400 x 5MWh BESS enclosures, the likelihood of a single BESS enclosure failure is approximately once every 7,700 years, which is far greater than the combined operational lifetime of the projects.</p> <p>The Scheme has a proposed operational life of 60 years. The expected BESS operating lifecycle of the generic Lithium Iron Phosphate (LFP) liquid cooled, prismatic cell BESS design discussed at ISH3 is currently 12-20 years, meaning that a minimum of 3-4 different BESS designs would likely be deployed over the lifetime of the Scheme (noting that the ES, on a conservative basis assumes replacement every 10 years, meaning 6 different BESS designs would be deployed). It is understood that similar replacement rates are being adopted by the other Lincolnshire projects.</p> <p>As clarified by the Applicant at ISH3 and clearly stated in the Framework BSMP [REP4-026], Section 6 (Risk Assessment and Emergency Response Planning), and secured through the draft DCO [EN010142/APP/3.1(Rev06)], rigorous BESS design and site specific risk assessments and consequence modelling are conducted at the detailed design stage to inform all necessary hazard and risk analysis studies and assist in the development of comprehensive Risk Management and Emergency Response Plans together with Lincolnshire Fire & Rescue (LFR). The Applicant is confident that LFR will work with relevant BESS developers and operators to draft Emergency Response Plans which consider all credible emergency response scenarios.</p> <p>New generation battery systems and BESS designs are introduced every 18-24 months and key safety / certification standards are revised on a 2-5 year cycles, so the probability of a BESS failure is likely to continue to further reduce, particularly given BESS will be replaced throughout the operational lifetime of the project at the rates described above. Detailed Risk Analysis and consequence modelling of current BESS designs are not likely to truly reflect the failure probability of improved BESS designs available at the detailed design stage.</p> <p>Section 7.5 (Early Intervention of Thermal Runaway Prevention) of the Framework BSMP [REP4-026] details the Applicant's commitment to adopting new key safety standards, which combined with the stipulated essential monitoring and control features will likely further reduce the probability of a BESS failure occurring. With this in place, and the probabilities discussed in ExQ2.8.2, the likelihood of a fire occurring across multiple BESS Schemes in the area is negligible.</p>

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					<p>Despite this, as stipulated in Section 5.3 of the Framework BSMP [REP4-026], at the detailed design stage the Applicant will select a BESS design integrated within a BESS-Solar Station Compound layout that minimises the requirement for direct LFR intervention, further reducing the risk that LFR resources would be stretched in the region.</p>
			Soils and Agriculture	<p>WLDC welcomed the discussion regarding whether land around the solar panel infrastructure would genuinely be available for grazing. It is understood that the applicant cannot provide a firm commitment that such food production will take place.</p> <p>WLDCs view therefore remains that all land upon which infrastructure will be located will be lost for the purpose of food production. With no firm commitments or mechanisms to ensure that grazing will take place, the loss agricultural land for the production of food must be weighed negatively in the planning balance.</p> <p>Whilst NPS EN-3 requires solar projects to avoid 'Best Most Versatile' land (ALC Grades 1, 2 and 3a), WLDC maintains the view that the avoidance of such land classifications still results in the loss of agricultural land to which negative weight must be applied in the planning balance. Avoidance of BMV does not in itself indicate that a project is 'acceptable' as the amount of land lost must still be viewed as a negative impact.</p> <p>The weight attributed to this impact is influenced by the amount of agricultural land lost, including the cumulative impact of the loss of land available for food production as a consequence of the four NSIP projects.</p>	<p>The Written Summary of Applicant's Oral Submissions at the ISH3 [REP4-049] includes a post hearing note setting out how the revised NPPF (December 2024) (Ref 1-3) could affect the consideration of the Scheme with the NPPF capable as being important and relevant in decision making. This is set out on pages 33 to 35. In this response, the Applicant sets out that the Secretary of State should not take into account the loss of food production with this no longer being a material consideration with respect to applying the overall planning balance. The availability of agricultural land used for food production should no longer be considered and falls firmly outside of the remit of decision making. The temporary cessation of use from agriculture, which may have included some food production, does not weigh negatively in the planning balance.</p> <p>The Applicant does not agree with WLDC that any 'loss' of BMV land should weigh negatively in the planning balance. Chapter 4: Alternatives and Design Evolution of the ES [APP-035] sets out how the Applicant identified the Principal Site for the Scheme with the application of exclusionary criteria to avoid best and most versatile land and then through embedded design measures to minimise effects during each phase of the development. The outcome of this is that there are no significant effects arising. Due to the site selection process undertaken, the Principal Site contains minimal best and most versatile agricultural land. The majority of this land will be temporarily taken out of agriculture use and will be able to revert back to active agricultural use following the decommissioning of the Scheme. Paragraph 2.10.30 of NPS EN-3 (Ref 1-1) makes it clear that the development of ground mounted solar is not prohibited on BMV land, but the impacts of it are to be considered.</p> <p>Paragraph 2.10.145 of NPS EN-3 goes on to state that:</p> <p><i>"The Secretary of State should take into account the economic and other benefits of the best and most versatile agricultural land. The Secretary of State should ensure that the applicant has put forward appropriate mitigation measures to minimise impacts on soils or soil resources."</i></p> <p>The Scheme will result in the loss of only 0.92ha of BMV land to woodland. This 'loss' needs to be balanced against the additional benefit of woodland creation, which will positively contribute to biodiversity and further support the diversification of farming. This positive benefit is not outweighed by the minimal permanent loss of BMV land for agricultural use following decommissioning and does not weigh negatively in the planning balance.</p>

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					<p>National planning policy seeks to ensure that the development of agricultural land is demonstrated to be necessary and that areas of poorer quality land should be preferred to those of a higher quality (paragraph 5.11.34 of NPS EN-1 (Ref 1-4)).</p> <p>The Applicant has demonstrated through Chapter 4: Alternatives and Design Evolution of the ES [APP-035] that the development of agricultural land is necessary, with no reasonable alternatives available and has demonstrated through the site selection processes that areas of poorer quality agricultural land were preferred to areas of higher quality through initial exclusionary criteria removing Grades 1 and 2 from consideration.</p> <p>Page 34 of the Written Summary of Applicant's Oral Submissions at the ISH3 [REP4-049] sets out how the Scheme is fully aligned and in accordance with current policy.</p> <p>For those reasons already given, the impact of the Scheme in isolation and in combination with the other solar projects with respect to food production is no longer a material consideration.</p> <p>The Secretary of State in considering the Cottam Solar Project stated that the loss of land in relation to food production as a result of the project, should be attributed little negative weight in recognition that the use of arable farmland for solar development did not accord with the NPPF, but was in line with the energy NPS (paragraph 4.74). The Secretary of State's decision on the West Burton Solar Project also refers to the previous version of the NPPF and states that the fixed-term, reversible loss of land for food production is a negative impact of the proposed development, however the impact is small when considered against the total agricultural land available for food production in Lincolnshire.</p> <p>The Cottam Solar Project decision was made on 5 September 2024 prior the publication of the revised NPPF in December 2024 (Ref 1-3). The West Burton Solar Project decision was published post the December 2024 NPPF update, however, this is not referenced in the Secretary of State's decision letter.</p> <p>The updated NPPF 2024 confirms that now footnote 65 from the NPPF (December 2024) has removed consideration of food production as a planning consideration, that the only policy tests are those set out within the energy NPS, which the Scheme accords with. The revised NPPF also means that there is no longer a need to consider the cumulative impact of the loss of land available for food production as a consequence of the four NSIP projects.</p>
			Design of the Scheme	WLDC noted the discussion on the BESS and the implications of the DC coupling electrical design adopted by the applicant. WLDC	The Applicant acknowledges the comment and directs WLDC to Appendix B: Note on generating capacity and associated development to the Written

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				has not made prior representations on this matter and did not contribute to the discussion held in the hearing. It would be welcome if the applicant was able to provide further clarity on both the benefits and disadvantages of applying DC coupling instead of an AC/DC arrangement.	<p>Summary of Applicant's Oral Submissions at Issue Specific Hearing 1 [REP1-046]. Subchapter 7.1 (DC Coupling) on pages 14 to 15 and subchapter 8.2 (Principal development – solar generating station) in paragraph 8.2.13 on page 17 sets out the differences between DC and AC coupling or referred to as AC/DC arrangement.</p> <p>Further, Chapter 4: Alternatives and Design Evolution of ES [APP-035] also considered the use of alternative solar design technologies. Paragraphs 4.9.10 to 4.9.13 also set out the differences between AC and DC coupled designs.</p>
		BESS		<p>In considering fire risk of BESS and how the mitigation proposed would be applied, WLDC noted that much of the discussion related to controlling the Tillbridge Solar Project itself. Consistent with WLDC submissions on the determination of this application, the impacts of Tillbridge must be considered alongside the impacts of the other three projects. In the specific context of fire risk, WLDC is concerned about firstly fire events being more likely for all projects around the same period (due to their parallel project lifespans) and, secondly, would an emergency response be resourced to deal with multiple events should they occur concurrently.</p> <p>WLDC is unclear as to whether the risk of fire is linked to the age of the infrastructure (from fatigue) or whether the risk is 'equal' across the lifespan of the project. If the former, the risk of fire across all four projects would increase and be highest at the same point in the lifespan in the project, increasing the likelihood of cumulative incidents. Were more than one incident to occur, WLDC seeks confirmation that the emergency response approach would be able to be carried out and that there would be sufficient resources to do so.</p> <p>WLDC noted the discussion on the implementation of a 'Resident Notification Scheme' and would support the development of this approach.</p>	<p>The Applicant has responded to concerns regarding cumulative risk of BESS fires and management of BESS fatigue in the response on page 38 of this document. This concludes there is not a credible risk that BESS fires would occur simultaneously across multiple sites, particularly given BESS will be intermittently replaced through the lifetimes of each of the projects.</p> <p>Given this, issues of Lincolnshire Fire & Rescue (LFR) resource for simultaneous fires do not apply. LFR will work with all relevant BESS developers and operators to develop site specific Emergency Response Plans (ERP) and the Applicant is confident that LFR will develop operational and emergency response protocols for all credible BESS failure scenarios.</p> <p>Comments have been provided in response to ExQ2.8.2 in the Applicant's Responses to ExA Second Written Questions [EN010142/APP/9.35] as to the requirements for warning communications already included in the Framework BSMP [REP4-026]. The Applicant considers these are sufficient to manage any community notifications should these be required (noting that the illustrative design of the Scheme mitigates offsite impacts, and so the likelihood of such communications being required is very low).</p>
3	REP4-053	West Lindsey District Council	Health and Wellbeing	<p>WLDC noted the discussion regarding fire safety and its potential implications upon human health. WLDC agree that a Battery Safety Management Plan, secured through a 'requirement' in the DCO is the appropriate mechanism to seek to control any fire related incidents.</p> <p>WLDC is also supportive of a 'Local Resilience Forum', however remain unclear how this would operate in practice. The mechanism to enable prompt notification to residents and the appropriate action for them to take requires clarification. Having clear procedures prior to the determination of the application is important to ensure that</p>	<p>The Applicant confirms that the implementation of a Battery Safety Management Plan, written in substantial accordance with the Framework BSMP [REP4-026], is secured by Requirement 6 of the draft DCO [EN010142/APP/3.1(Rev06)].</p> <p>The Framework BSMP [REP4-026], paragraph 6.2.2 defines the minimum information and incident management details that will be contained in an Emergency Response Plan (ERP) developed together with LFR. The Applicant would require the BESS operator to be responsible for coordinating with the 24-7 BESS monitoring centre, LFR, additional first / second responders, and any BESS specialist SME's that are involved in incident response.</p>

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				enforcement processes are understood, which includes the roles and responsibilities of each party that may be involved.	The Applicant expects that LCC and LFR would finalise the local community alert protocols (such as a Local Resilience Forum) when the ERP is drafted (which would be pre-operation commencing, after viewing final site specific and BESS system risk analysis and consequence modelling results), and these would be fully agreed at the time of drafting.
			Landscape and Visual Impact	<p>WLDC maintain an objection to the landscape character impacts of the Tillbridge Solar Project in solus. Its impact on The Cliff, a designated Area of Great Landscape Value (AGLV) forms the basis of this principal objections. The objection relates to the components of the projects that are located within the AGLV and immediately adjacent to it in the neighbouring Till Vale Landscape Character Area.</p> <p>The National Landscape Area (NCA) within which The Cliff AGLV is located is NCA 45 'Northern Lincolnshire Edge with Coversands'. NCA 45 comprises a ridge of Jurassic limestone spanning from Lincoln to the Humber Estuary. This scarp slope rises prominently from the adjacent low lying land, forming the Edge of Cliff. It affords panoramic outward views, especially to the west. The scarp slope is a defining characteristic.</p> <p>As set out in the West Lindsey Landscape Character Assessment (1999), there are three distinct local character areas: the Lower Till Vale, The Cliff and the Limestone Dip Slope that descends towards the Ancholme valley and the Wolds to the east. The transitional zones between all 3 LCAs occur at the top of The Cliff (the ridge). As is natural, there are no precise reference points to delineate the transition between one LCA and the adjacent one. The experience and interpretation of the changes in landscape character on the ground, is one where the characteristics are identified, but the role of one character in forming/defining the other is also recognised especially in a distinct transition from the Till Vale into The Cliff LCAs. This transition, in WLDCs view, is a sensitive one.</p> <p>WLDCs position is that the Lincolnshire Edge scarp slope, 'The Cliff', is not only an LCA protected by policy as an AGLV in its own right, but that it also has a clear influence on the character of the adjacent 'Till Vale'. The Cliff has a strong influence of the Till Vale by providing strong definition and is clearly a strong defining landscape character component of NCA 45. From large parts of the Till Vale, The Cliff forms a distinct and strongly characterising skyline feature, with striking impacts from its feature. It has an intrinsic relationship with the Till Vale.</p>	<p>The Applicant has provided responses in relation to landscape and visual impacts with respect to Lincoln Cliff and the AGLV in Applicant's Response to Local Impact Reports [REP3-061], Table 2-2 ref. 5.1 (pages 64-68), 5.10 (page 69-70) and 5.11 (pages 70-71).</p> <p>A response to WLDC's comment regarding changes to Scheme design has been provided within the Applicant's Response to Examining Authority's Second Written Questions [EN010142/APP/9.35], ref ExQ2.9.3.</p>

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				<p>The Tillbridge Solar Project extends up to, into and encroaches upwards into The Cliff LCA/AGLV. The impact of the project directly upon The Cliff and the area that bridges that LCA with the Till Vale This impact which raises the harm to landscape character considerably and is considered unacceptable. WLDC consider that this unacceptable harm could be reduced significantly through a scheme design that recognised the sensitivity and importance of The Cliff, and avoided the imposition of infrastructure in the transitional area and the designated AGLV itself. Removing infrastructure from this eastern area of the scheme would serve to significantly minimise landscape character impacts whilst maintaining an NSIP scale energy generating station project and the benefits it would bring in terms of the generation of electricity from a renewable source.</p>	
				<p>As expressed in previous submissions, WLDC consider the Tillbridge Solar Project unacceptable due to the cumulative landscape character impacts it will impose.</p> <p>As the fourth solar electricity generating station NSIP within the West Lindsey District, the application must be determined by recognising the magnitude of its impacts alongside the other projects as additions to the current baseline; that is a rural agricultural landscape.</p> <p>The three other NSIP projects now consented have all be determined against the baseline that applied at the point the respective decisions were made. As a consequence, despite there being three large scale projects with significant environmental impacts being determined within a similar timeframe, no decision maker has yet to consider the collective impact of all of the projects in considering if they are acceptable. That responsibility now falls to the decision maker in relation to this application.</p> <p>WLDCs view is clear in that the tipping point of harm to landscape character has been reached by the cumulative impacts of the three consented NSIP solar farm projects. Regardless of how Tillbridge Solar Project complies with policy in itself, the key consideration is the additional harm it adds to the consented projects.</p> <p>The landscape character change from the current baseline to that imposed by the four projects would be stark, resulting in a swift and radical change from a landscape character that defines the culture of West Lindsey to once that comprises alien modern infrastructure. The scale and speed of this landscape character change to area spanning approximately 20km x 11km (an estimates extent of solar infrastructure from all four projects) is unprecedented and unacceptable. The situation of four NSIPs adjacent to each other is</p>	<p>The Applicant has responded to the comments raised around the cumulative impacts to landscape when considering the other solar NSIPs within Table 2-2, pages 80 to 82 of the Applicant's Response to Local Impact Reports [REP3-061], LIR ref 6.33 to 6.33.4.</p> <p>With reference to cumulative sequential views, the Applicant refers to the post-hearing note provided on pages 15 and 16 of the Written Summary of Applicant's Oral Submissions at the Issue Specific Hearing 3 (ISH3) [REP4-049], which provides a summary of the Applicant's view of likely sequential cumulative views in relation to other solar DCO schemes, including the relationship and sensitivity of routes from which views will likely be available; and the significant cumulative visual effects that assessed in relation to the Scheme.</p> <p>The Applicant's Comments on Interested Parties Submissions to the First Written Questions at Deadline 3 [REP4-048] (pages 4 to14) also responds in detail on this point. The Applicant confirms that the landscape and visual effects are outweighed, including when considering cumulative impacts. This position is then further strengthened when the presumption is applied with respect to the proposed CNP infrastructure concluding that the residual harm associated with the Scheme is far from the types of effects that may be in the realm of exceptional circumstances, let alone "the most" exceptional circumstance.</p> <p>It is also noted that development consent has been granted for Gate Burton Energy Park (12 July 2024), Cottam Solar Project on (5 September 2024) and West Burton Solar Project (24 January 2025). For all of these projects, the Secretary of State concluded that the cumulative effects, in combination with each other and the Tillbridge Solar Project, lead to moderate adverse landscape effects and material harm to landscape character. The Secretary of State, in deciding to grant development consent for these projects, concluded that the benefits of these projects outweighed the harm.</p>

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				<p>unprecedented and no decision made under the Planning Act 2008 has yet to consider such impacts and approach to decision making. The situation constitutes an 'exceptional circumstance' for the purpose of NPS EN-1 (para. 4.2.15).</p> <p>In determining the application, WLDC encourages the impacts of not just the conclusions reached in the ES to be taken into account. The cumulative landscape character impacts must be considered as a kinetic and sequential basis, with an appreciation of the scale of the change across the district. This requires a careful awareness of how the projects link together to create the significant adverse impacts. Despite the discussion regarding the 'sequential' experience, WLDC notes that this matter is not addressed or considered explicitly in the ES (chapter 12 only refers to 'sequential' in response to consultation representations).</p> <p>NPS policy does not foresee a unique situation such as those before the decision maker for this project. To WLDC it is clear that the drastic erosion of the prevailing and historic landscape character of West Lindsey is unacceptable on a cumulative basis.</p>	<p>These projects were determined under s105 of The Planning Act 2008 (Ref 1-5) since the energy NPSs did not have effect at the time of submission. The Tillbridge Solar Project is in a stronger policy position requiring to be determined in accordance with s104 of The Planning Act 2008 where the energy policy statements have full effect. This stronger policy position further ensures that the presumption to grant the Scheme is firmly engaged with <i>"the most"</i> exceptional circumstances or <i>"tipping point of harm"</i> not met.</p> <p>NPS EN-1 (Ref 1-4) at paragraph 5.10.5 acknowledges that: <i>"virtually all nationally significant energy infrastructure projects will have adverse effects on the landscape."</i> and that <i>"locally valued landscapes should not be used in themselves to refuse consent, as this may unduly restrict acceptable development."</i></p> <p>The Secretary of State considered the merit of each project on its own and in combination with each other, including the Tillbridge Solar Project. All decisions were made under the Planning Act 2008, but without the full effect of the energy NPS, which has increased the weight and presumption for approval. Paragraph 4.2.15 of NPS EN-1 makes it clear that <i>"in all but the most exceptional circumstances, it is unlikely that consent will be refused"</i>.</p> <p>WLDC seem to suggest that there is now a material difference for the Secretary of State in weighing the Scheme cumulatively with the other projects since they are now consented. This is not the case. Gate Burton Energy Park, Cottam Solar Project and West Burton Solar Project were included within the Applicant's cumulative assessment at Stage 1 and given the highest tier of certainty (Tier 1) since they related to submitted applications under the Planning Act in accordance with the Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (Ref 1-6). These projects then progressed to the Applicant's short list and formed part of the cumulative assessment set out in Chapter 18: Cumulative Effects and Interactions of the ES [EN010142/APP/6.1(Rev03)].</p> <p>Each project has been assessed individually and in combination with each other on a cumulative basis, including the consideration of the interaction of the Tillbridge Solar Project with the consented projects. Whilst significant cumulative effects were confirmed in relation to each of the consented projects, this did not tip the balance or presumption.</p> <p>Section 5.9 (pages 17-18) of Chapter 5: EIA Methodology of the ES [APP-036] and Section 18.4 (pages 16 to 35) of Chapter 18: Cumulative Effects and Interactions [EN010142/APP/6.1(Rev03)] sets out the methodology for the consideration of cumulative effects. This is based the Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (Ref 1-6). The assessment of cumulative effects is therefore in</p>

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					<p>accordance with best practice and guidance and in accordance with Section 4.3 of NPS EN-1 (Ref 1-4).</p> <p>The Scheme can only be considered against the national policy statement that has effect including the methodology for considering cumulative effects. The Scheme is in accordance with NPS EN-1 (Ref 1-4) and EN-3 (Ref 1-1) with respect to cumulative impacts with cumulative effects weighing in the planning balance, including the context of critical need and substantial positive weight that should be attributed to this.</p> <p>Paragraph 3.2.3 of NPS EN-1 (Ref 1-4) makes it clear that it is “<i>not the role of the planning system to deliver specific amounts or limit any form of infrastructure covered by this NPS....</i>”. Paragraph 3.2.4 of NPS EN-1 goes on to state that:</p> <p><i>“it is not the government’s intention in presenting any of the figures or targets in this NPS to propose limits on any new infrastructure that can be consented in accordance with the energy NPSs. A large number of consented projects can help deliver an affordable electricity system...”</i></p> <p>Given the above, the proposed developments within West Lindsey and Lincolnshire overall represent a success in the delivery of national infrastructure projects for ground mounted solar informed by key locational criteria for solar development (network connection, irradiance and site topography) in full accordance with national policy statements. The number of projects consented and, in the pipeline, demonstrate the successful implementation of government policy positively driving the private market to delivering CNP infrastructure that is urgently needed whilst minimising effects and impacts as far as practicable.</p> <p>West Lindsey covers an area of 115,733 hectares (447 square miles, 1,158 square kilometres) (Ref 1-32). The combined area of solar PV for the Scheme, the other NSIP projects and ground mounted solar projects secured under The Town and Country Planning Act (Ref 1-31) or in the pipeline (EiA Screening Requests) comprises 3,148.25 hectares. This equates to 2.72% of the total area of West Lindsey. Table 1 located within Appendix A lists all projects that have been considered in this calculation and has confirmed the source of data. The extent of the land-use change is minimal within the context of the overall District with no credible planning policy reason or test to suggest that the scale of development constitutes “<i>the most</i>” exceptional circumstance to warrant the refusal of development consent.</p> <p>There is an urgent and critical need for the development, which should be afforded substantial weight in the planning balance. The projects have been designed in collaboration with each other to minimise effects and interactions. The Applicant has considered sequential views through the landscape and in particular the interaction of the Scheme with Cottam</p>

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					<p>providing landscape buffers to the south of the Principal Site from Cottam 1 and the A631 naturally severing and forming a barrier from the Principal Site and Cottam 2 located to the north. Movement through the landscape will result in glimpsed views of solar infrastructure and not a complete change in perceptual views to one of “<i>alien modern infrastructure</i>” as claimed.</p> <p>The Applicant's Comments on Interested Parties Submissions to the First Written Questions at Deadline 3 [REP4-048] (pages 4 to14) also responds in detail on this point. The Applicant confirms that the landscape and visual effects are outweighed, including when considering cumulative impacts. This position is then further strengthened when the presumption is applied with respect to the proposed CNP infrastructure concluding that the residual harm associated with the Scheme is far from the types of effects that may be in the realm of exceptional circumstances, let alone “<i>the most</i>” exceptional circumstance.</p> <p>This is also the Applicant's conclusion as set out in the Planning Statement [REP3-027], which states that in terms of the overall planning balance, the clear and substantial benefits of the Scheme clearly outweigh any adverse effects, which would be localised, short-term, temporary and/or reversible at the end of the Scheme's lifetime, in accordance with the presumption in favour of consent in NPS EN-1 (Ref 1-4). These recent decisions are material considerations in assessing the merits of the Scheme.</p>
				<p>Assessment of Visual Effects WLDC confirm that there is not criticism of the approach to the EIA, with the appropriate methodology being applied.</p> <p>WLDC noted the comments from the applicant that assessing the visual effects of the project requires an understanding of the sequential effects as one moves throughout the area. It was acknowledged that the ZTV was not particularly helpful in that regard. The applicant also confirmed the only assessment of visual effects is found in ES Chapter 12.</p> <p>WLDCs position is that there has not been an informed and balanced assessment of the actual visual effects that will be experienced, particularly on a cumulative basis. The ES is simply an assessment, based on VPs and ZTVs, to reach a conclusion based upon a methodology. The cumulative assessment turns only to the other projects and considers what Tillbridge adds to the impacts that those projects will impose (again, largely on a viewpoint by viewpoint basis). It was acknowledged by the applicant that the assessment of visual effects and judgements were only carried out by the LVIA author only.</p>	<p>The Applicant notes the comments in relation to the EIA Methodology. With reference to the use of ZTVs for informing the cumulative visual assessment, the Applicant also refers to Paragraph 18.3.5 in Chapter 18: Cumulative Effects of the ES [EN010142/APP/6.1(Rcv03)]), which states that these do not reflect screening derived from hedgerows, which will significantly limit visibility and intervisibility within the lower-lying areas of the Till Vale. The Applicant maintains that site surveys of the Principal Site and Cable Route Corridor areas provided the most suitable means of assessing cumulative visual effects, with reference to viewpoints agreed with LCC.</p> <p>The Applicant notes that the methodology presented in Chapter 18: Cumulative Effects of the ES [EN010142/APP/6.1(Rcv03)] states that where the Scheme results in a negligible effect, such receptors are not assessed as the Scheme would not significantly contribute to a cumulative effect with other developments. For this reason, receptors (or representative viewpoints) where the Scheme will not be visible, or barely visible (such that the visual effect in isolation is negligible), are not assessed. As such, viewpoints where appreciable views of only the other developments will be available are not assessed. The Applicant considers this approach, and the conclusions provided in Chapter 18: Cumulative Effects of the ES [EN010142/APP/6.1(Rcv03)] with respect to significant</p>

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				<p>To ensure that a thorough understanding of the large scale cumulative visual effects are applied to policy, WLDC consider that an assessment based upon travelling through the landscape must be carried out. To understand the impacts, consideration of how they will be experienced from traveling north at Blyton through the projects to Saxilby in the south, and Marton in the west to The Cliff in the east is required. It must also be acknowledged that the solar generating station projects will be experienced at points along all major highways in the district alongside minor roads that pass nearby/through them. There will be limited relief from experiencing the visual impacts of the projects cumulative across the West Lindsey District, which WLDC contends is an exceptional circumstance that is not foreseen as an inherent impact in NPS policy.</p> <p>WLDC expected to find a more thorough analysis such as this either in a separate document (non-EIA) or in the Planning Statement to provide an assessment that factors in all aspects to reach planning judgement against policy 'in the round'. No such assessments have been provided.</p>	<p>visual cumulative effects and likely sequential in relation to the Scheme are appropriate and proportionate.</p> <p>The Applicant re-states the response above in relation to the significant landscape cumulative effects identified and that these also reflect broader perceptual changes as well as a more general awareness of the presence of the DCO projects.</p> <p>With respect to the fourth paragraph concerning the understanding of the large-scale cumulative effects, a response has been provided within Table 10-1 of the Applicant's Response to Examining Authority's Second Written Questions [EN010142/APP/9.35], ref. ExQ2.9.5.</p>
				<p>Residential Amenity</p> <p>Similar to the comments made above, WLDC's position is that there is no assessment within the application documents of the impact of the project (individually and cumulative) in terms of impacts upon residential amenity. WLDC would expect to see a separate assessment where, typically, an LVIA professional and a planning professional would carry out a joint assessment to provide an assessment against policy. Other impacts such as noise, vibration, traffic and glint and glare would also be included to provide a rounded judgement of acceptability.</p> <p>During the hearing there was a discussion around the necessity of a Residential Impact Assessment. The applicant contended that one was not required with the ES providing the impacts required to inform a robust decision. WLDC note, however, that the Gate Burton Energy Park NSIP application did carry out a Residential Visual Amenity Survey, which was helpful in providing an assessment on a 'property-by-property' basis and applying impacts to established 'tests' of acceptability.</p> <p>WLDC also noted the discussion regarding the impact upon what is understood to be 'financially involved' properties. Regardless of whether a current property owner is to benefit from the scheme or not, the assessment of impacts upon properties remain the same and residential amenity should be considered equally in the public interest.</p>	<p>A response to this comment has been provided within Table 10-1 of the Applicant's Response to Examining Authority's Second Written Questions [EN010142/APP/9.35], ref ExQ2.9.6.</p>

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				<p>Good Design</p> <p>WLDCs position on good design relates to the impacts upon The Cliff LCA/AGLV as set out above. Based upon the applicant's methodology, WLDC consider is an oddity that the project extends upwards and onto the 'The Cliff'. It is a key influential landscape feature and the benefits of the projects do not outweigh the harm caused at this part of the site.</p>	<p>The Applicant has provided a response in relation to the baseline, Scheme design and impacts on The Cliff LCA/AGLV in the response to West Lindsey District Council's Post-Hearing Submissions [REP4-053] provided above (pages 16 to 17).</p>
			Noise	<p>WLDC's principal concern with regard to noise impacts relates to the control of the development through the DCO 'requirements' and the practical implication of resolving noise issues on a cumulative basis.</p> <p>With projects being constructed, operated and maintained in close proximity to each other, there is a likelihood that certain properties will receive noise from different sources. Should a complaint be raised to WLDC, there is no practical process within the application documents that would enable WLDC to investigate which project was the source of the noise and/or to what extent.</p> <p>It appears to WLDC that the only mechanism that would allow the noise source to be identified would be to turn off / cease construction activity at one project to allow measurements to take place of a single project to establish the cause of the complaint.</p> <p>Whilst the applicant submitted at the hearing that there is no precedent in other DCOs for such a mechanism, WLDC contend that is because the need does not typically arise for other NSIP projects. The uniqueness of the cumulative situation in West Lindsey results in matters of control between them being a key issue and it is for this application to resolve them being the last application of the four to be determined.</p> <p>The requirement to identify a clear and efficient mechanism through DCO 'requirements' to deal with noise complaints is even more important to protect residential amenity due to the provisions of Article 7 of the dDCO, which provides the applicant with defence against claims of statutory nuisance. With this mechanism removed, local residents do not have the ability to resolve matters through the Environment Protection Act 1990, and it therefore falls to the DCO 'requirements' to ensure impacts can be remedied swiftly.</p> <p>WLDC also concur with concerns raised regarding the approach to control impacts at properties. As drafted, the applicant need only apply the mitigation as identified regardless of its effectiveness. There is no requirement for the applicant to test that mitigation and, if it does not resolve the impact, there is no requirement to identify a solution that would.</p>	<p>While WLDC's submission does not distinguish between operational and construction noise in its discussion of cumulative noise impacts and their management, the Applicant considers it is important to respond on these impacts separately, given the nature of noise is different at construction and operation, and given there are discrete DCO requirements which address these separately. WLDC's submission appears to have applied the requirements which relate to operational noise as if they apply to construction noise management as well, and does not appear to have had regard to the separate construction noise mitigation and management approach presented in the application.</p> <p>Construction Noise</p> <p>Paragraphs 18.14.3 – 18.14.12 of Chapter 18: Cumulative Effects and Interactions of the ES [EN010142/APP/6.1(Rev03)] discuss the potential cumulative construction noise effects from the four Solar Schemes. Primarily, this relates to the Cable Route Corridor as the area of overlap between the four schemes, rather than the Principal Site. A worst-case scenario was applied which assumed all four projects would construct their cable route corridor in the same 24–36-month period, with all noisy works occurring at the Order limit boundaries closest to receptors. This provides a conservative basis for the assessment, which does not underassess potential construction noise in these areas.</p> <p>Despite these conservative assumptions, with the mitigation set out below in place, both cumulative construction plant and traffic noise were assessed to be not significant.</p> <p>The Framework CEMP [EN010142/APP/7.8(Rev03)], as secured by Requirement 13 of the draft DCO [EN010142/APP/3.1(Rev06)] is the mechanism securing construction noise mitigation. This includes controls for noise within section 2.5, which provides that consents would be sought under section 61 of the Control of Pollution Act 1974 (Ref 1-7) would be obtained for works outside normal working hours. These consents would apply construction noise limits for nearby noise sensitive receptors and in accordance with any other restrictions agreed with the relevant planning authorities.</p> <p>Further mitigation is also set out within Table 3-8 of the Framework CEMP [EN010142/APP/7.8(Rev03)], including requirements that "<i>Regular liaison</i></p>

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				<p>WLDC would also like to note that there are precedent in other DCOs with regard to imposing noise limits.</p> <p>The Thurrock Flexible Generation Plant DCO (made 16/02/2022) includes 'requirements' 7 (Construction Hours) and 16 (Operational Noise), both of which impose specific noise limits.</p>	<p><i>meetings will be held with other high-risk construction sites within 500m of the Scheme (or greater, if applicable), to ensure plans are co-ordinated and noise and vibration is minimised. It is important to understand the interactions of the off-site transport / deliveries which might be using the same routes."</i></p> <p>Table 3-8 also states that</p> <p><i>"Noise complaints will be monitored and reported to the Applicant for immediate investigation and action. A display board will be installed on-site, and a website will be set up. These will include contact details for the Community Liaison Officer or alternative with whom nuisance or complaints can be lodged. A logbook of complaints will be prepared and managed by the Site Manager."</i></p> <p>These provisions ensure that the Applicant manages, and immediately investigates any complaints made in respect of construction noise. Consents sought under the Control of Pollution Act would ensure noise limits are set for any particularly noisy works.</p> <p>Operational Noise</p> <p>By comparison, any cumulative operational noise between the four solar schemes is much less likely. As outlined in paragraphs 18.14.13 and 18.14.14 of Chapter 18: Cumulative Effects and Interactions of the ES [EN010142/APP/6.1(Rev03)], this is due to the significant distances between each of the four operational solar areas (and associated noise generating infrastructure such as solar stations or substations). The primary area of overlap between the projects, being the combined cable route, will be underground and therefore would not generate noise. The cumulative effects assessment found there would be only one receptor with a possibility of cumulative noise with another of the solar schemes, being R14 (Glentworth Grange / Kexby Road). However, the assessment found that any increase would be less than 3dB and therefore imperceptible to human receptors.</p> <p>With the context of any operational cumulative noise effects being unlikely, the nature of the complaint, including the location, distance to solar infrastructure, and perceived direction of the sound should clearly identify the scheme to which the complaint relates. The suggestion to include measures which require operational plant to shut down in order to assess noise is therefore unnecessary and would disproportionately impact the operation of the Scheme for no benefit.</p> <p>Despite this, the Applicant has proposed mitigation measures so as to ensure any operational noise is appropriately managed. The provisions contained within Table 3-8 of the Framework OEMP [REP4-022], such as the reporting of monitored plant noise to the relevant planning authority, will then help identify whether there is an issue to be addressed in terms of the</p>

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					<p>Scheme infrastructure. Where this review indicates plant noise levels generated by the Scheme have materially increased, the undertaker and relevant planning authority will liaise in respect of any further maintenance or mitigation required to reduce levels at receptors back to those presented in the ES.</p> <p>Requirement 17 of the draft DCO [EN010142/APP/3.1(Rev06)] is not merely concerned with mitigation but also necessitates that noise levels at residential properties be no higher than those reported in the ES, effectively ensuring specific noise limits at local properties are not significant.</p> <p>Finally, in respect of the comment about Article 7 of the draft DCO [EN010142/APP/3.1(Rev06)], it is correct that this alters the application of the Environment Protection Act where orders cannot be made if the nuisance relates to one of the listed scenarios in that article. This is a standard, model provision to manage overlap between regimes. In line with Regulation 5(2)(f) of the APFP Regulations, the Applicant submitted the Statutory Nuisance Statement [APP-218] which confirmed the threshold for statutory nuisances would not be met by any effects of the Scheme (including noise).</p>
			DCO	<p>Article 40 The Applicant's amendment to Article 40 appears to allow the Applicant to fell or lop any tree subject to a tree preservation order made after 10 April 2024. WLDC contends that the amendment is contrary to Advice Note 15, Good practice point 6 which states:</p> <p><i>22.2 Applicants may also wish to include powers allowing them to fell, lop or cut back roots of trees subject to a Tree Preservation Order (TPO). This power can extend to trees which are otherwise protected by virtue of being situated in a conservation area. To support the ExA inclusion of this power should be accompanied by a Schedule and plan to specifically identify the affected trees.</i></p> <p><i>22.3 Trees subject to TPO and/ or are otherwise protected (and likely to be affected) should be specifically identified. It is not appropriate for this power to be included on a precautionary basis. Proper identification of affected trees will enable the ExA to give full consideration to the particular characteristics that gave rise to their designation and the desirability of continuing such protection.</i></p> <p>Whilst the Applicant's intention is understood, WLDC are concerned that the amendment would undermine the tree preservation order process within the entire red line boundary for a significant period of 60 years Article 40(2) ought therefore to be removed. The presence of a tree preservation order does not necessarily prohibit works.</p>	<p>While the Applicant acknowledges the drafting in Advice Note 15, Good practice point 6 (published 1 July 2018) (Ref 1-8) as raised by WLDC, it notes that such Advice Notes are not binding on decision makers and provide only general guidance in respect of DCO drafting. The Applicant's position is that other made DCOs provide the more helpful reference point as to the latest appropriate drafting of similar articles.</p> <p>Other solar DCOs made since Advice Note 15 was published have included tree preservation articles which enable undertakers to fell, lop or cut back roots of trees subject to future Tree Preservation Orders (TPOs). Specifically such articles are included within the Cottam Solar Project Order 2024 (Article 39) and the Longfield Solar Farm Order 2023 (Article 37).</p> <p>Trees have unique impacts on the operation of solar infrastructure. The shading of solar panels by trees or the impact of tree roots on underground cabling can interfere with the operation of more solar farms. Given these impacts, it is reasonable for undertakers to have sufficient security that such impacts will be able to be managed over the lifetime of the project and not restricted by TPOs applied at a later date. It is not an infeasible scenario that TPO applications which may be brought over trees which grow in size or value in the future of the Scheme, given the lifetime of the Scheme (60 years). By comparison, removing the security for the undertaker that it will be able to properly manage trees in the future if it needs to may encourage the undertaker to more conservatively control trees onsite so as to avoid them developing characteristics which could lead to a TPO being sought in the future.</p>

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					The Applicant considers this context, and the examples from other made solar DCOs published by the Secretary of State more recently than Advice Note 15, sufficiently justifies the retention of Article 40 as drafted.
				Decommissioning Plan WLDC recorded that the OEMP will be amended to incorporate a 12 month check. Such a provision would be supported.	Paragraph 2.3.2 of the Framework OEMP [REP4-022] requires that the Applicant submits a planned maintenance schedule for the year ahead every 12 months. At Deadline 4, the Applicant further updated the Framework OEMP [REP4-022] to confirm that as part of the maintenance schedule, the Applicant will also inform the relevant planning authority when a Scheme component is no longer operational and requires decommissioning.
				Requirement 20 – Decommissioning Requirement 20(7) references ‘the decommissioning plan’. It is presumed this is it the same as the decommissioning environmental management plan. If so, WLDC considers that the drafting ought to be amended for precision.	The Applicant can confirm this is the same plan as referenced throughout the rest of Requirement 20 and has updated the draft DCO [EN010142/APP/3.1(Rev06)] for Deadline 5 to make this clear.
				Schedule 17 WLDC maintains its position that an appropriate timescale for approval is 13 weeks. WLDC notes the recent West Burton Solar Project decision includes provision for a 10 week approval, however maintains its view that, in the context of the Tillbridge Solar Project as the fourth cumulative project, additional time is required. The West Burton decision serves to establish that approval periods are justifiably increased in relation to the number of cumulative projects and this principal can fairly be applied for this application. WLDC considers that further information and consultation periods in Schedule 17, Article 47.3 ought to be increased to reflect those in both the Cottam and West Burton DCOs which provided for: 20 (2), 10, 10 and 20 (3) working days. The current dDCO provides for shorter periods of 10 (2), 5, 5, 15 (3) working days. WLDCs justification for this request is that, due to the number of projects being undertaken within its administrative area, a number of applications to discharge DCO ‘requirements’ could be received at the same or similar time. This will place a considerable resource burden, especially due to the technical nature of the details and the requirement for consultation. A 13 week period for WLDC to consider applications was deemed to strike the correct balance between the ability to fully consider such applications whilst ensuring delay is kept to a minimum by the ExA examining the Cottam Solar Project (Cottam Solar Project Examining Authority’s Recommendation (05/06/2024) para 7.4.50)	Further to recent discussions with LCC and WLDC, and to align with the consistent timeframes now applied to both the West Burton Solar Project Order 2025 and the Gate Burton Energy Park Order 2024, the Applicant has updated the draft DCO [EN010142/APP/3.1(Rev06)] for Deadline 5 to reflect a ten-week approval period. This time period is accepted by LCC and has been accepted by the Secretary of State in its most recent decision for the Lincolnshire schemes (i.e. West Burton). The Applicant does not consider the West Burton decision serves to establish that approval periods are justifiably increased in relation to the number of cumulative projects and this principal can fairly be applied for this application, given West Burton does not seek the same increased timeframe as WLDC is seeking in this case. The Applicant continues to emphasise the position previously outlined in the Written Summary of Applicant’s Oral Submissions at the Issue Specific Hearing 1 (ISH1) [REP1-046] at page 23 as to the earlier connection date for the Tillbridge Solar Project, and therefore both the need for the prompt discharge of requirements and the likelihood that Tillbridge will bring forward matters of detailed design ahead of the other schemes.

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			Other Matters	<p>NPPF</p> <p>The updated NPPF remains an ‘important and relevant’ matter for the purpose of determination under section 104 of the PA 2008. The NPPF should be given significant weight as national planning policy</p> <p>The updated draft NPPF notably removed footnote 63 that supported policy at Section 15 “Conserving and enhancing the natural environment” with regard to the availability of land for food production. To understand the context of the removal of footnote 63, WLDC have referred to the “Government response to the proposed reforms to the National Planning Policy Framework and other changes to the planning system consultation” (12/12/2024).</p> <p>The Government response to question 82 (the removal of footnote 63) stats that the reason for proposing the removal of the text was because it was unclear whether it “provided material benefit, especially as it gives no indication of how local authorities were to assess and weigh the availability of agricultural land when making planning decisions”. As many representation echoed these concerns, the footnote has been removed. The Government, however, go on to state that national policy remains clear that where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of higher quality. The removal of the text in footnote 63 does not change this commitment.</p> <p>WLDCs position is that the removal of footnote 63 does not change the policy context for the determination of the Tillbridge Solar Project. The Government remains clear in that food security is important for our national security, and where the significant development of agricultural land is necessary, poorer quality land should be preferred to those of a higher quality.</p> <p>Whilst the Tillbridge Solar Project has sought to avoid BMV, WLDCs position remains that this avoidance does not then indicate compliance with policy. The decision maker still has to consider the loss of agricultural land as a whole and apply appropriate negative weight in the planning balance to it. WLDC submits that this weight is significantly increased when considered cumulatively alongside the three other NSIP solar generating station projects. Even if it were concluded that the Tillbridge project’s benefits outweigh the loss of agricultural land in solus, WLDC contends that a tipping point has been reached on a cumulative basis with the other projects. The loss of agricultural land for the production of food will be significant and adverse, with over 3500ha / 35km2 of agricultural land being lost to solar electricity generating station infrastructure cumulatively.</p>	<p>The Written Summary of Applicant's Oral Submission at the ISH3 [REP4-049] (pages 33 to 35) contains a post hearing note. This includes a response on the weight that the Applicant attributes to the NPPF. The Applicant does not agree that the NPPF should be given significant weight in decision-making with the Scheme requiring to be determined in accordance with s104 of The Planning Act 2008 (Ref 1-5) and relevant NPS, which has effect. Paragraph 1.1.2 of NPS EN-1 (Ref 1-4) makes it clear that the NPS provides the primary policy for decisions by the Secretary of State in relation to NSIPs.</p> <p>The Applicant agrees that the NPPF can be important and relevant where there are policy tests that are not explicit within the NPS or where policy is not aligned.</p> <p>The Applicant also agrees that the amended footnote in the NPPF (December 2024) (footnote 65) with respect to agricultural land retains the policy position that areas of poorer quality land should be preferred to those of higher quality. This means that there is no longer a need to consider the Scheme against the NPPF with respect to agricultural land, as NPS EN-1 now fully aligns with the NPPF, in that both documents require applicants to demonstrate that the use of agricultural land is necessary and that poorer quality land is preferred for non-agricultural use to land of higher quality.</p> <p>The Applicant disagrees with WLDC that the Government intended for food production to continue to be included as a planning consideration within the NPPF when it deleted footnote 63. The Government’s response to question 82 (the removal of footnote 63) referred to by WLDC confirms that it was agreed that there was no reasonable methodology that could be adopted to assess the impact of proposed developments upon food production in land use planning terms thereby it was appropriate to remove this test from planning policy. The consideration of impacts on poorer vs higher quality land is a different test from that of considering a general impact on food production.</p> <p>With this context, the Applicant considers the planning context, and NPPFs commitment in respect of food production specifically, has therefore changed. The loss of food production as a material planning consideration now falls firmly outside of the remit of planning decision making with no policy having effect with respect to this matter. The relevant policy test remaining in respect of agricultural land impacts is the preference for development to locate on poorer quality land.</p> <p>Whilst the Applicant agrees that the consideration of ongoing food production is a government objective, it is not a planning consideration in the determination of the Scheme for development consent.</p>

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				<p>With regard to other policies in the updated NPPF, there remains a requirement for (summarised):</p> <ul style="list-style-type: none"> - Para 135 c) – development to be sympathetic to local character and history, including the surrounding build environment and landscape setting. - Para 187 – planning decisions should contribute to and enhance the natural and local environments by a) protecting and enhancing valued landscapes...and soils (in a manner commensurate to their statutory status or identified quality in the development plan); b) recognise the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services. 	<p>The Applicant has provided a full response with respect to the impact of the Scheme upon BMV in response to matters relating to soils and agriculture on pages 13 to 15 within this document.</p> <p>In terms of WLDC's viewpoint that paragraphs 135 c) and 187 of the NPPF (Ref 1-3) are important and relevant, the Applicant does not share this position now that NPS EN-1 (Ref 1-4) and EN-3 (Ref 1-1) have full effect. Sections 5.9 and 5.10 of NPS EN-1 set out national planning policy with respect to heritage and landscape matters in the consideration of NSIPs. NPS EN-1 aligns with the NPPF with respect to these matters and therefore there is not a need to consider an additional layer of policy given that the NPS is the primary policy for determining the Scheme.</p>
4	REP4-061	7000 Acres	Human Health and Wellbeing	<p>Comment that a full Health Impact Assessment has not been carried out.</p> <p>Comment that the assessment of health impacts has not followed IEMA guidance.</p>	<p>Chapter 11: Human Health of the ES [APP-042] presents a health impact assessment (HIA) which has been produced in accordance with IEMA guidance (Ref 1-9, Ref 1-10) and the NHS's Rapid HIA tool (Ref 1-11). Additionally, the scope of this assessment was developed through consultation during the preapplication phase with the Planning Inspectorate, UK Health Security Agency, West Lindsey District Council, Fillingham Parish Council, Brampton Parish Meeting and Bassetlaw District Council – see Tables 11-6 and 11-7 of Chapter 11: Human Health of the ES [APP-042].</p>
				<p>Comments indicating that at the beginning of the preapplication process a steering group should have been formed to include local health stakeholders as indicated by IEMA guidance</p>	<p>The IEMA guidance (Ref 1-9, Ref 1-10) suggests setting up such a group as being a means of facilitating governance of health stakeholder inputs and consensus building but does not state it as a requirement. The Applicant considers that the level of engagement provided, including targeted consultation for residents most likely to be affected by visual changes to their setting, and the level of information produced about the Scheme, the DCO process, and how members of the public can engage, indicates that it has been forthcoming in its approach to engagement in a manner consistent with the IEMA guidance.</p>
				<p>Comment that the project should have been presented and considered by the local NHS body in combination with other nearby solar NSIP Projects.</p>	<p>The scope and assessment methodology for each of the ES chapters relevant to human health was provided on 04 November 2022 within the Scoping Opinion (Appendix 1-2: EIA Scoping Opinion of the ES [APP-052]). This included input and consideration of comments and requirements from statutory bodies responsible for human health. Reference to cumulative effects was made throughout the EIA Scoping Report (Appendix 1-1: EIA Scoping Report of the ES [APP-051]) including in the Health chapter of the EIA Scoping Report. No specific concerns in relation to cumulative effects were made by these bodies. The differing timelines for the preparation of the cumulative schemes' respective applications would make such a joint presentation of effects impractical.</p>
				<p>Comment that there will be a widening of health inequalities because of the Scheme.</p>	<p>In response to concerns about the potential widening of health inequalities, Section 11.8 of Chapter 11: Human Health of the ES [APP-042] concludes that no significant adverse effects are identified with regards to human</p>

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				https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010142/EN010142-001089-7000Acres - Any further information requested by the ExA 1.pdf	<p>health, specifically including in respect of changes in landscape and visual amenity, noise, access to open space and employment, air pollution and access to healthcare facilities. The cumulative impacts of the Scheme on human health are set out in Chapter 18: Cumulative Effects and Interactions of the ES [EN010142/APP/6.1(Rev03)]. No significant effects are concluded with regard to human health, during construction, operation and decommissioning. Any effects during the construction phase are temporary and short term and will be mitigated by the measures set out in the management plans (Framework CEMP [EN010142/APP/7.8(Rev03)], Framework CTMP [EN010142/APP/7.11(Rev05)], Framework Public Rights of Way Management Plan (PRoWMP) [REP3-042]) alongside the measures taken by other projects in their own management plans, which are secured by each project's respective DCO. Overall, the impact of the Scheme on human health, on its own and cumulatively with other developments, is considered to be not significant (refer to Chapter 11: Human Health of the ES [APP-042] and Chapter 18: Cumulative Effects and Interactions of the ES [EN010142/APP/6.1(Rev03)]).</p> <p>It is important to highlight that the Scheme is designed to deliver several beneficial outcomes that can support health equity. Chapter 11: Human Health of the ES [APP-042] finds beneficial impacts on employment and income, prioritisation of walking and cycling routes (through new permissive paths) and climate change during operation, which will lead to positive effects on human health, including both physical and mental health.</p> <p>Additionally, the Applicant reaffirms its commitment to work with the Local Authorities to ensure that the local community is affected as little as possible, whether that be targeting contractors with social value commitments during construction or wider community benefit initiatives. This engagement is to enable granular, area-specific data to better inform understanding of the socio-economic and health related challenges faced in local communities, to ensure that the positive outcomes of the Scheme are equitably distributed.</p> <p>Considering the above, there is no evidence to suggest that the Scheme will contribute to widening health inequalities. Instead, the Scheme actively supports improved health and wellbeing outcomes across the local population.</p>
				<p>Comment that the Census and ONS data used covers West Lindsey district and not the area which could be affected by the Scheme.</p> <p>Comment that a qualitative survey should have been utilised within the assessment of health and wellbeing.</p> <p>https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010142/EN010142-001089-7000Acres - Any further information requested by the ExA 1.pdf</p>	<p>As stated in Chapter 11: Human Health of the ES [APP-042], the Study Areas are based on the extent and characteristics of the Scheme and the communities/wards directly and indirectly affected by the Scheme. Impacts that occur beyond this are also addressed within the assessment itself, as the Human Health assessment draws upon the findings of supporting chapters to inform its conclusions. These chapters have their own Study Areas for their own individual assessments, which vary in their extent. Each chapter also sets out mitigation measures relevant to their individual disciplines, such as environmental management plans. Each of these</p>

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					<p>chapters also includes a baseline analysis section, which includes a review of the existing surrounding area.</p> <p>Considering this methodology, the choice of Study Areas for the Human Health assessment is appropriate and in-line with best practice IEMA guidance (Ref 1-9 Ref 1-10 and the NHS's Rapid HIA tool (Ref 1-11. As such, it is considered that the Study Area, of which national data is presented at local authority level, adequately encapsulates the more granular geographies within the analysis, as while the assessment adopts a holistic spatial focus to capture wider influences, it also considers the health and wellbeing characteristics of local communities. The methodology ensures that the assessment undertaken is not prejudiced against specific areas. Rather, it applies an objective and evidence-based approach to evaluating health and wellbeing impacts across the defined Study Area, ensuring that no areas are overlooked or underrepresented.</p> <p>Beyond the ES, the Applicant is committed to work with the Local Authorities to ensure that the local community is affected as little as possible, whether that be targeting contractors with social value commitments during construction or wider community benefit initiatives. This engagement is to enable granular, area-specific insights to better inform understanding of the socio-economic and health related challenges faced in local communities. This commitment ensures that the benefits of the Scheme are equitably distributed and that the communities most directly impacted are at the forefront of considerations in both assessment and mitigation.</p> <p>In terms of the written submission regarding the qualitative survey, the Applicant notes that IEMA highlights the importance of both quantitative and qualitative approaches to assess health impacts, and while it does not mandate a standalone qualitative survey, it highlights the value of stakeholder engagement and consultation as key methods for capturing qualitative insights. Specifically, IEMA states: <i>"Engagement with health stakeholders and communities as part of this process should be considered to support determining the health scope, sensitive community groups, and local health priorities... by identifying matters that are particularly important or of concern to such communities"</i> (Ref 1-10.</p> <p>In line with this guidance, an EIA Scoping Report was submitted to the Secretary of State through the Planning Inspectorate in 2022 in order to request an EIA Scoping Opinion (refer to Appendix 1-1: EIA Scoping Report of the ES [APP-051] and Appendix 1-2: EIA Scoping Opinion of the ES [APP-052]). Further consultation in response to formal pre-application engagement was also undertaken through the Preliminary Environmental Information Report (PEI Report). Consultation responses in relation to human health were provided and Chapter 11: Human Health of the ES [APP-042] has been prepared in accordance with the Planning</p>

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					<p>Inspectorate's Scoping Opinion (Appendix 1-2: EIA Scoping Opinion of the ES [APP-052]). This process ensured that potential health and wellbeing impacts were robustly assessed, as the Applicant engaged with key stakeholders, including the Planning Inspectorate, UK Health Security Agency, West Lindsey District Council, Bassetlaw District Council, and local parish councils, through the scoping and consultation process. Matters raised were substantially considered and addressed, as summarised and defined in Chapter 11: Human Health of the ES [APP-042], which includes reference of where each matter is addressed within the assessment.</p> <p>Additionally, the Application is supported by an Equality Impact Assessment (EqIA) [APP-227], which assesses how the Scheme may impact the health and wellbeing of protected characteristic groups. This includes evaluating both direct and indirect effects under the Equality Act 2010 (Ref 1-12).</p> <p>In summary, while a standalone qualitative survey was not undertaken, the structured consultation process, comprehensive assessment methodologies, and ongoing commitment to community engagement ensure that qualitative insights are fully embedded within the health and wellbeing assessment, in line with IEMA best practice.</p>
				Comment that the Health Equity Assessment Tool (HEAT Tool) should have been completed as part of the application.	<p>The HEAT Tool is not an appropriate tool for assessing health impacts to inform a planning application for a major development scheme.</p> <p>The HEAT Tool was created to aid NHS and other public sector bodies to assess the potential health equality impacts, interactions and discrimination when preparing public sector programmes, projects or policy (Ref 1-13).</p>
5	REP4-062	7000 Acres	Water Environment and Flood Risk	Comment that the Scheme is situated on land which is not prone to flooding and is therefore removing productive farmland which would otherwise be unaffected by flooding linked to climate change.	<p>The location of the Principal Site was selected on the basis of a range of factors which are discussed in more detail in Chapter 4: Alternatives and Design Evolution of the ES [EN010142/APP/6.1]. This explains that the site selection process for the Principal Site excluded areas of flood risk as far as practicable, in accordance with NPS EN-1 and taking into account wider environmental and planning considerations such as those outlined in Section 2.3 of NPS EN-3 (Ref 3). The site selection process therefore adopted a sequential approach to the selection of the Principal Site.</p> <p>Through application of the sequential approach in relation to the proposed Scheme layout, the vast majority of the Principal Site and above ground-built infrastructure is located within Flood Zone 1. However, small areas (approximately 0.85ha in total) of the Principal Site are situated on land in which some areas are at a higher likelihood of flooding or within Flood Zone 2 and 3, as indicated on Figure 10-5: Watercourses, Flood Zones and Internal Drainage Boards of the ES [REP1-049]. These areas only contain solar PV arrays with no other permanent above ground infrastructure within them. The design of the Scheme includes mitigation for this flood risk where</p>

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					<p>appropriate, see paragraph 10.7.50 of Chapter 10: Water Environment of the ES [REP3-013].</p> <p>Regarding productive farmland, the Applicant has prepared a report setting out the cumulative effects of solar projects on BMV land within Lincolnshire, this is located at Appendix B of the Applicant's Response to Relevant Representations [REP1-028]. This report concludes that the potential permanent loss of Best and Most Versatile (BMV) land in Lincolnshire as a result of solar DCO projects would be 0.8% and would be 0.27% as a result of ground mounted solar TCPA projects. This amounts to only 0.9% of all BMV land within Lincolnshire temporarily lost to solar projects within Lincolnshire.</p> <p>The Applicant reiterates that the purpose of the Scheme is to increase renewable energy generation within the UK, reducing the reliance on carbon intensive energy production which further exacerbates climate change.</p>
				Comment that rainfall under storm conditions would result in drip lines from the solar panels and that run off will not be discharged from the land as it currently is.	The Applicant refers to the Written Summary of Applicant's Oral Submissions at Issue Specific Hearing 2 (ISH2) [REP4-045] , which discusses the research reviewed to assess rainfall runoff from solar panels. The response references studies by Cook and McCuen, the Building Research Establishment, and recent research conducted by Pennsylvania State University in 2023. These sources collectively support the view that solar panels have a minimal impact on field runoff when compared to existing conditions.
				Comment that swales are not appropriate storage for volumes of rain storm water. https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010142/EN010142-001005-7000 Acres - Post-Hearing Submissions, including written summaries of oral submissions and any documents requested by the ExA 1.pdf	<p>Within Appendix 10-4: Outline Drainage Strategy of the ES [APP-098], calculations have been undertaken, in accordance with the Environment Agency guidance on climate change allowances (Ref 1-17). The Applicant has applied the appropriate climate change allowance to ensure surface water runoff is safely attenuated within the order limits while restricting runoff rates to greenfield rates, for all return periods up to the 1 in 100 year event, inclusive of climate change. Swales are one of the most effective and sustainable methods of surface water attenuation. The calculations confirm the swales that will intercept runoff from new impermeable areas (such as BESS or the on-site Substations) are sized sufficiently, with additional volume provided to account for a concurrent rainfall event.</p> <p>Surface water runoff rates from Solar PV panel fields are effectively as existing, as there is no discernible increase in peak runoff rate, as noted in the response above relating to panel runoff. Swales along field boundaries are not required to attenuate all runoff flows, but to provide a reduction to the existing peak runoff, providing betterment in run off rates from the existing site. This approach to seek to reduce flood risk overall is in accordance with Table 1 of the Technical Guidance to the National Planning Policy Framework (Ref 1-18), through the use of sustainable drainage systems, to mimic the natural drainage as closely as possible.</p>

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					<p>Additionally, Lincolnshire County Council as Lead Local Flood Authority (LLFA) covering the Principal Site, within their Local Impact Report [REP1A-001] paragraph 11.6, provided the following response:</p> <p><i>“With the implementation of the outlined mitigation measures, the Applicant concludes that effects on the flood risk and drainage of the area would be negligible and therefore not significant. The Council as the lead local flood authority agrees with the principles of the FRA subject to a suitably worded requirement being imposed on any Consent granted, with this in place the Council concludes that the impacts in relation to flood risk and drainage will be neutral.”</i></p>
				Comment regarding the potential for extreme weather events (including hail storms) to damage the solar panels.	The potential effect of extreme weather events on the Scheme has been considered in the Climate Change Risk Assessment presented in Table 7-17 in Chapter 7: Climate Change of the ES [APP-038] . While the potential for damaging storm events exists both currently and into the future, the flood mitigation and risk management strategies are deemed sufficient mitigation to defend against this climate hazard, with all reasonable adaptation measures having been implemented into the design. More information on the Scheme's flood related measures can be found in Chapter 10: Water Environment of the ES [REP3-013] and Appendix 10-3: Flood Risk Assessment of the ES [REP4-018] .
			Soils and Agriculture	Comment that no sheep grazing could occur on the grasslands under panels.	Grazing sheep under and between solar panels is a routine activity and has been successfully undertaken locally. This was confirmed by Mr Elwess, a working farmer, at the Open Floor Hearing and within Mr Elwess's Post Hearing Submissions, including written summaries of oral submissions and any documents requested by the ExA [REP4-121] .
			Need for the Scheme	Comment regarding the difference between 'need' and 'benefit' having regard to NPS EN-1.	A response to this comment has been provided within Table 2-1 of the Applicant's Response to Examining Authority's Second Written Questions [EN010142/APP/9.35] in response to ExQ2.1.19.
			Associated Development	<p>Comment that the financial viability of the Scheme is dependant on the proposed BESS.</p> <p>Comment that the relationship between the DC-Coupled configuration and overplanting within the Scheme design remains unclear.</p> <p>https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010142/EN010142-001005-7000 Acres - Post-Hearing Submissions, including written summaries of oral submissions and any documents requested by the ExA 1.pdf</p>	<p>The Applicant's Written Summary of Oral Submissions at ISH2 [REP4-045] clarifies on pages 16 to 19 that the primary aim of the BESS is to maximise the efficiency of the solar PV with the role of BESS being compliant with associated development tests, confirming that it is not only necessary as a source of additional revenue, that it's not the main aim of the development and is subordinate to the solar generating station.</p> <p>Further, the Applicant's Responses to ExA Second Written Questions [EN010142/APP/9.35] in response to Q2.1.15 explains the relationship between the DC-coupled design and overplanting. Further clarification on this matter is also set out in the Applicant's Written Summary of Oral Submissions at ISH2 [REP4-045] on pages 21 to 27.</p>
			Overplanting	Within NPS-EN3, the only explicit reference to overplanting is in 2.10.55, which acknowledges that “generating capacity of a solar	The Applicant disagrees with the assertion that overplanting is purely for commercial advantage. The Statement of Need [APP-210] clearly outlines

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				<p>farm will decline over time in correlation with the reduction in panel array efficiency". It states that "Applicants may account for this by overplanting solar panel arrays".</p> <p>In note 92, it explains that "This allows developers to take account of degradation in panel array efficiency over time, thereby enabling the grid connection to be maximised across the lifetime of the site".</p> <p>This clearly does not amount to blanket permission to overplant for pure commercial advantage, in particular because overplanting is wasteful and inefficient as is described below. If the Applicant wishes to claim credit for the generating capacity of all the panels from day 1, then they should not use the term "overplanting", nor rely on the overplanting provisions in EN-3. Instead, they should state they are seeking a circa peak 700MW generating capacity, which they believe necessary to maximise the utilisation of the grid connection, due to the intermittency and low efficiency of solar generation.</p> <p>The Applicant has explained that it was typical to overplant to between 1.3 to 1.5 times the capacity of a "unitary" scheme. For the purposes of this discussion, a unitary scheme is described as one where the installed capacity exactly meets the capacity of the grid connection. In such an arrangement, the output of the scheme only reaches the capacity of the grid for a short period of time, only during the most sunny days in May or June, when the sun is strongest.</p> <p>For an overplanted scheme, additional panels are installed, and the Applicant seeks to use the full grid capacity for a greater proportion of the time (as opposed to overcome performance degradation over time). The unfortunate consequence of this is that the electricity that would exceed the grid connection capacity is "clipped" or curtailed and effectively lost. This means that, while the volume of energy produced over a day is increased, because of the increased installation of panels, the yield of the installed capacity falls, and the effective output per-panel is reduced.</p> <p>The Applicant has framed the topic in that a decision on overplanting is an economic trade off between the extra cost of additional land and panels, the net gain in energy output and the reduced overall yield through clipping or curtailment. Despite producing a greater volume of solar energy, an overplanted scheme will therefore consume more resources, less efficiently, by using more land and more solar panels per MWhr than a unitary scheme.</p> <p>In the UK, the yield per panel is already very low on a global scale, therefore it would seem counter-intuitive to seek to further reduce that yield by overplanting. It therefore is an indictment of the</p>	<p>that the objective is to maximise the contribution of renewable energy to the grid in alignment with national decarbonisation targets. The 500 MW grid connection agreement is the defining parameter with respect to the technical design of the Scheme and represents the maximum exportable capacity.</p> <p>The reference to paragraph 2.10.55 from NPS EN-3 (Ref 1-1) has been taken out of context and needs to be read alongside the subsequent paragraph (2.10.56) which confirms that:</p> <p><i>"AC installed export capacity should not be seen as an appropriate tool to constrain the impacts of a solar farm. Applicants should use other measurements such as panel size, total area and percentage of ground cover to set the maximum extent of development when determining the planning impacts of an application."</i></p> <p>The above clarifies that the technical design and capacity of a site is not just informed by overplanting and explains that a Scheme should not be constrained by its export capacity since this would reduce the overall benefit of the development to maximise electricity generation when there is a critical and urgent need.</p> <p>The Applicant agrees that in the context of NPS EN-3 (footnote 92) that overplanting must be reasonable and justified. The Applicant has provided significant clarification on this matter throughout Examination. Reference should be made to the Written Summary of Oral Submissions at the Issue Specific Hearing 1 (ISH1) [REP1-046] on pages 6 to 8 and within Section 5.2 of Appendix B (Note on Generating Capacity and Associated Development), the Applicant's Response to Examining Authority's First Written Questions [REP3-062] in relation to Q1.1.18, Q1.1.19 and Q1.1.20 (page 12 to 13) and the Applicant's Written Summary of Oral Submissions at ISH2 [REP4-045] on pages 21 to 27.</p> <p>The Applicant considers that the Scheme adheres to NPS EN-3, has an appropriate level of overplanting that is justified, and uses a reasonable amount of land (within the 2-4 acre / MW guideline outlined in NP EN-3), which maximises the renewable energy yield for the grid connection offer.</p> <p>The terminology of "overplanting" is well-established in the renewable energy sector, referring to the DC-to-AC ratio of installed capacity. This approach optimises energy production by ensuring that the Scheme can generate and supply electricity more consistently throughout the day and across different seasons. While some clipping may occur during peak production periods, the inclusion of a Battery Energy Storage System</p>

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				<p>imbalanced economics between energy and farming that an overplanted solar scheme can be considered financially advantageous.</p> <p>7000Acres do not have the data resources to model the overall effect of overplanting, but this is something the Applicant must have available and has used to assess the statistical range of days where curtailment will have an impact over a year. Nevertheless, the average UK yield of 10.5% for a unitary scheme would be reduced by overplanting, the logic of which is as follows:</p> <ul style="list-style-type: none">• The sunniest days, with potentially the greatest solar output will be most likely to be curtailed and therefore reduce yield. During these times, the volume of energy curtailed will significantly outstrip the additional energy overplanting delivers in the winter.• Where curtailment is unlikely in the winter months, the full benefit of overplanting is delivered. However, this is from a very low base, i.e. the full % benefit of not very much is still not very much. The yield from the installed base of solar panels remains unchanged. <p>In the examples shown in graphs and tables below, an overplanting ratio of 1.3 has been used, i.e. an example 480MW scheme has been overplanted to 624MW.</p> <p>As examples, 7000Acres have selected a particularly high solar output day, to illustrate the clipping effect of overplanting, and the likely average output of the scheme through December, where there would be no clipping. Data has been sourced from Global Solar Atlas and from a local domestic rooftop solar installation that has been used to indicate the likely output shape for a peak-output day.</p> <p>The examples show:</p> <ul style="list-style-type: none">• Load factor reduces with overplanting on high-output days in the summer (from 35% to 31%), even though the overall output increases.• Load factor remains the same during winter – although the output increases in line with the overplanted capacity.• Gains in winter are relatively modest (4MW average per day in winter) in comparison with gains and losses in the summer.• On such a summer day, the scheme produces 16% more output, but having consumed 30% more land. (A scheme overplanted at 50% is even more wasteful, producing only 22% more output, having consumed 50% more land).• During a winter day, the scheme will produce the full 30% more output, but because the winter yield is so low, the impact of that increased output is only 4MW – or 0.01% of an average mid-day national demand of around 40,000MW, and yet for that meagre benefit, 30% additional land has been used for overplanting.	<p>(BESS) mitigates this by storing excess energy for later use, rather than it being curtailed.</p> <p>The Applicant disagrees with the statement that grid capacity is only reached on the sunniest days in May or June. While peak generation may be more frequent in these months, the overplanting strategy ensures that the Scheme can maintain close to its maximum output for a greater proportion of the year. Without overplanting, grid connection capacity would only be fully utilised for a limited period, leading to an inefficient use of infrastructure and land.</p> <p>The statement that overplanting leads to inefficient land use is also incorrect. The efficiency of land use is not determined solely by the overplanting ratio but rather by the overall design of the Scheme, including panel orientation, row spacing, and technology choice. A scheme with lower overplanting but wider row spacing may require more land than a higher-overplanted, efficiently designed project.</p> <p>Further, the comment about reduced per-panel yield is misleading. While overplanting results in a higher DC-to-AC ratio, it does not reduce the effectiveness of individual panels in capturing solar energy. Instead, it enhances the overall energy production of the site by allowing a greater proportion of available grid capacity to be used throughout the year. The Applicant has undertaken a detailed assessment of the optimal overplanting ratio, considering both land use efficiency and energy generation potential, resulting in the 1.57 ratio.</p> <p>Finally, the Applicant notes that comparisons made using domestic rooftop solar installations are not applicable to a large-scale, DC-coupled solar and storage project. Domestic rooftop installations operate under entirely different conditions, both technically and economically. Rooftop systems are typically fixed-tilt at a single, suboptimal angle due to roof constraints, whereas utility-scale solar farms incorporate optimised orientations and tracking systems to maximise energy capture. Furthermore, rooftop systems often experience higher efficiency losses due to shading, suboptimal panel spacing, and inverter inefficiencies that are not present at the scale of this Scheme.</p> <p>Additionally, rooftop solar installations do not typically incorporate large-scale energy storage solutions, meaning that any excess generation is either curtailed or exported immediately, regardless of grid demand. In contrast, the DC-coupled design of this Scheme allows surplus solar generation to be efficiently stored in the BESS rather than lost, enabling energy to be supplied to the grid when demand is higher or during curtailment periods. This fundamental difference makes rooftop solar output patterns an inappropriate basis for comparison with a utility-scale, grid-integrated project.</p>

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				<p>Overplanting is therefore extremely wasteful of land resources as well as the resources required to deploy additional solar panels and associated infrastructure. Extensive areas of land potentially 30% to 50% beyond what is necessary to meet the grid connection agreement capacity are used, and only serve to reduce the yield per installed panel. While it may therefore be a commercially or technically rational decision to take, for schemes where such extensive use of land is already questionable, overplanting is not the rational choice for the environment.</p> <p>Overall, overplanting is inefficient. It is only foreseen in EN-3 to overcome degradation of panel performance over time, not for developers to significantly overplant an area to maximise output at the expense of land use.</p> <p>The Applicant is seeking to overplant the Tillbridge project, which would serve to reduce the yield per panel / per acre, and decrease the environmental credentials of the project. The potential for this reduced benefit must be considered in conjunction with the limited benefits of deploying solar in the UK.</p> <p>Counsell for WLDC sought to ask why an overplanting ratio of 1.57 would represent an efficient and effective use of land. It is clear from the above, that while the economics of such overplanting may make financial sense to the Applicant, serves to significantly reduce the land use by providing extremely limited additional energy volumes for massive additional land requirements.</p>	<p>Moreover, domestic rooftop solar operates under a distribution network framework, where electricity generation is small-scale and dispersed, often requiring additional grid management measures to prevent instability. This Scheme, however, is connected to the transmission network at a high-voltage level (400kV), where large-scale generation is efficiently managed within national grid balancing strategies.</p> <p>For these reasons, the assumptions and examples derived from domestic rooftop solar installations do not provide an accurate or meaningful comparison for evaluating the efficiency, output, or land use of a large-scale, DC-coupled solar and battery energy storage project like this Scheme.</p>
			BESS Fires	<p>Comment that water supply would not be able to be met for firefighting use in the event of a BESS fire.</p> <p>https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010142/EN010142-001005-7000 Acres - Post-Hearing Submissions, including written summaries of oral submissions and any documents requested by the ExA 1.pdf</p>	<p>The Applicant does not recognise the relevance or validity of the water supply requirement claims made by 7000 Acres. National Fire Chiefs Council (NFCC), National Fire Protection Association (NFPA), FSRI (Fire Safety Research Institute), and all BESS Original Equipment Manufacturers (OEM) advise that hose streams should not be directly discharged on BESS battery systems. Any water supply required for BESS incidents is therefore only required to cool surrounding infrastructure or vegetation.</p> <p>As stipulated in the Table 2-1 of the Framework BSMP [REP4-026], each BESS-Solar Station Compound will be designed to integrate pressure fed (pump driven) fire hydrants and/or static water tanks (tanks can be integrated above or below ground) for firefighting, depending on available water supply. Water provision will be designated for the cooling of adjacent BESS and ancillary equipment. Water tanks will be located at least 10m from the nearest BESS Enclosure. Water access points, whether hydrants or tank connections, would be located in consultation with Lincolnshire Fire & Rescue (LFR) to provide redundancy and safe operating distances for firefighters. The number of water tanks and volume of the water supply will be agreed with LFR and be validated by an Independent Fire Protection Engineer based upon BESS full scale destruction testing.</p>

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					<p>Current NFCC guidelines (as of February 2025) (Ref 1-19) stipulate tanks and/or hydrants should be capable of delivering no less than 1,900 litres per minute for at least 2 hours to each BESS-Solar Station Compound. The firefighting water requirement will be fully assessed at the detailed design stage based upon BESS fire and explosion test data by an independent Fire Protection Engineer and water storage volumes will be agreed with LFR during detailed design. They must be easily accessible to LFR vehicles, and their siting should be considered as part of a risk assessed approach that considers potential fire development / impacts.</p> <p>As stipulated in Section 5.3 of the Framework BSMP [REP4-026], at the detailed design stage the Applicant will select a BESS design integrated within a BESS-Solar Station Compound layout that minimises the requirement for direct LFR firefighting intervention.</p>
				<p>Comment that BESS should be located at Cottam Power Station to utilise mains water supplies present in this area.</p> <p>Comment that BESS should be located at Cottam Power Station to minimise risk to human health from fires.</p> <p>https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010142/EN010142-001005-7000 Acres - Post-Hearing Submissions, including written summaries of oral submissions and any documents requested by the ExA 1.pdf</p>	<p>Chapter 4: Alternatives and Design Evolution of the ES [APP-035] explains the site selection process for the solar generating station. This applied exclusionary criteria to derive a site which minimised environmental and planning conflicts. The Principal Site is suitable for the solar generating station and the design evolution of the Scheme has applied the mitigation hierarchy to protect the environment. This is demonstrated throughout the ES [APP-031-0208].</p> <p>As set out in response to 7000 Acres comments on associated development on page 35 of this document, the BESS is not an aim in itself and is integrated with the solar generation station. There is therefore a locational requirement for the BESS to be co-located with the solar generation station. It would not be feasible to locate it at the former Cottam Power Station.</p> <p>With respect to water supply this is addressed on page 56 of this document.</p>
				<p>Comment that Applicant has misquoted IP's written submission, as follows:</p> <p>IP wrote "Someone sitting at a desk, in an office many miles away, employed by a PR company, the applicant or an investor, who has never visited the area or walked down some of the local tracks or looked at the views, or driven down the single track roads etc – may be able to manipulate data and statistics to give the impression that sacrificing a few hundred fields in a sparsely populated corner of Lincolnshire is an acceptable way to pay lip service to the loudly trumpeted Net Zero aims of the UK".</p> <p>IP states that the Applicant's response misquotes this comment and 'answers' the concerns by quoting the Quality Mark of AECOM and the continuous training of its consultants, without noting whether any of the consultants have visited the area or have any knowledge of it.</p>	<p>The Applicant acknowledges that it has summarised the key points from each written representation received during each examination deadline in its response documents, due to the number and length of comments received. It is not possible or proportionate for the Applicant to respond to each individual IP's full comment within the allocated timescales given for each examination deadline.</p> <p>The Applicant has however, in summarising IP's comments, made sure that every individual point being made is responded to, and where comments raise matters that are also being raised in other IP's comments, they are provided in one response, rather than multiple times throughout the document. This ensures that the Applicants position is clear.</p> <p>In relation to the specific points raised by this IP, the Applicant understands that these relate to the Applicants Response to Written Submissions at Deadline 2 [REP3-063].</p>

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				<p>IP also wrote “I would like the applicant to provide up to date, relevant, locally researched information on the REAL potential cumulative effects of these projects on the physical and mental health of the local population. Taking into account all of the aspects of the construction process (which will span a number of years) as well as the ongoing operation of the projects.”</p> <p>IP states that the Applicant misquotes this point by removing the reference to the physical and mental health of the local population.</p> <p>IP states that overall, the applicant seeks to obfuscate rather than be open and honest.</p> <p>https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010142/EN010142-001090-ClareElla - Comments on submissions for Deadline 3.pdf</p>	<p>In relation to the first comment, the Applicant interpreted this comment within the Applicants Response to Written Submissions at Deadline 2 [REP3-063] to mean that the IP is concerned that documentation and statistics may have been manipulated to give the impression that the Scheme is suitable, which is what the Applicant wrote. The Applicant is now aware that the IP is seeking confirmation about whether those writing the environmental reports have visited or have any knowledge of the area. The majority of consultants working on the project, including those who assessed landscape and visual, ecological, noise, socio-economic and agricultural impacts undertook multiple site visits as part of their data collection and surveys. The Applicant has visited the area and undertaken numerous site walkovers, including as part of stakeholder consultation events.</p> <p>In relation to the IP’s second comment the Applicant acknowledges that it has not responded to the comment relating to physical and mental health within the response referenced by this IP’s comment on page 73 of Applicants Response to Written Submissions at Deadline 2 [REP3-063]. This is because the Applicant has split the original quote into two parts, by responding to the ‘request for up to date, relevant, locally researched information on the potential effects of the Scheme taking account of all aspect of the construction process etc’ on page 73 of Applicants Response to Written Submissions at Deadline 2 [REP3-063]. The Applicant has then taken the point relating to physical and mental health and responded to it in its responses relating to health and wellbeing (page 56 of Applicants Response to Written Submissions at Deadline 2 [REP3-063]), so as not to repeat itself, and ensure that all responses relating to health and wellbeing are in one place within this document. The Applicant has responded to the data and information used as part of the assessment of human health numerous times, and stated on page 56 of the Applicants Response to Written Submissions at Deadline 2 [REP3-063] (which this IP’s comments relate to), that multiple members of the public were concerned about the effects on mental health and wellbeing, and that health has not been addressed by experts, to which the Applicant responded that it had already responded to these comments in Table 2-2, REP1-063, page 12, and Table 2-3, page 27 of the Applicant’s Response to Written Submissions at Deadline 1 [REP2-007].</p> <p>The Applicant has provided further responses relating to the data and information used to inform the impacts, including cumulative impacts of physical and mental health, most recently in its Written Summary of Applicant's Oral Submissions at the Issue Specific Hearing 3 (ISH3) [REP4-049] which summarises that “<i>The approach to the assessment of human health impacts was identified and scoped in the Scoping Report [APP-051], which was also the subject of consultation with the relevant statutory bodies and confirmed (having regard to consultee responses) in the Scoping Opinion [APP-052]. This confirmed scoped approach is in conformity with the NHS England HUDU Rapid HIA Toolkit (2019) (Ref. 1-</i></p>

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					<p>3), IEMA guidance and Wales Health Impact Support Unit (WHIASU) guidance. The overall process followed in the assessment of effects on human health and wellbeing in Chapter 11: Human Health of the ES [APP-042] is equivalent in detail and rigour to that undertaken for the assessment of all other effects within the ES. This is on the basis of it having been through a scoping process, relevant guidance followed, with potential impacts identified and statutory consultation on findings has been undertaken.”</p> <p>Overall, the Applicant has sought to respond to every single point raised by IP’s in their written representations, and has tried to summarise these and present these positions and the Applicants responses in a clear and concise manner that can easily be understood. The Applicant has taken key points from each IP’s comment and responded to these either in one response, or split out over multiple responses if multiple topics are covered – rather than repeat itself multiple times within a document.</p>
				<p>Comment that there is a lack of transparency regarding those who have prepared the application and if they have visited the local area. https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010142/EN010142-001085-ClareElla - Post-Hearing Submissions, including written summaries of oral submissions and any documents requested by the ExA.pdf</p>	<p>The Applicant can confirm that dozens of visits have been made to the Scheme location and surrounding area over the past 3 years to understand the environment, local context and gather data relating to ecology and biodiversity, landscape and visual amenity, noise, traffic, archaeology, built heritage, arboriculture, soils, agriculture and socioeconomics, flood risk, the wider water environment and ground conditions.</p> <p>The Applicant has provided information relating to the technical experts who have prepared the Environmental Statement. This is presented in Table 1 of Appendix 1-3: EIA Statement of Competence of the ES [APP-053].</p>
7	REP4-103	Mark Prior	Water Runoff	<p>It is accepted that the total volume of rain water leaving the site will remain the same, pre and post construction of a solar scheme. However, due to the impervious solar panels channelling water into rivulets below the panels’ drip lines, the rate of water run-off will be increased and is likely to result in flooding.</p> <p>In their response to the ExA’s Question 1.14.2 the Applicant cited a paper on the Hydrologic Response of Solar Farms (Lauren M. Cook, 2013). The Paper considered smaller solar schemes, and the Applicant did not explain how the results from this one paper could be extrapolated to a 3,000-acre scheme, where even a small increase in the rate of water run-off could have a serious impact on the local watercourses. In is unfortunate that the Applicant chose to cite this paper published in 2013, rather than recent research in the UK, such as that undertaken on behalf of the Welsh Government (Welsh Government, 2023). The Welsh Government Report identifies that:</p> <p><i>“There is likely to be some instances of run-off from the solar panels, which could result in the compaction of soils at the base of the panels (Choi et al,2020). Over time rivulets can form along the</i></p>	<p>The Applicant refers to the Written Summary of Applicant’s Oral Submissions at Issue Specific Hearing 2 [REP4-045], which discusses the research reviewed to assess rainfall runoff from solar panels. The Written Summary references studies by Cook and McCuen (Ref 1-21), the Building Research Establishment (Ref 1-22), and recent research conducted by Pennsylvania State University in 2023 (Ref 1-23). These sources collectively support the view that solar panels have a minimal impact on field runoff when compared to existing conditions.</p> <p>It is important to note that the hydraulic model developed by Cook and McCuen was not specifically designed for small-scale solar farms but rather for solar panels in general. The model estimates an increase in peak runoff of approximately 0.31%, with the research concluding that this represents a non-significant impact when appropriate boundary features and vegetation management are in place. The values stated in the research provide a basis for comparing pre- and post-development conditions across any solar farm.</p> <p>With regards compaction of soil, the Welsh Government Report (Ref 1-24) identifies rivulets and compaction are, in general, due to poor soil</p>

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				<p><i>trailing edge of the panel with potential risk of soil erosion creating rills and gullies across the site."</i></p> <p>The soil erosion under the PV dripline is an important finding, as this will increase the speed of water runoff. An increased rate of water runoff was also found during other more recent research (Biamamonte, Gristina, & Palermo, 2023)</p> <p>There is no experience in the UK of solar schemes of the size of Tillbridge. Recent research indicates that a reasonable worst-case assumption is that PV driplines will lead to channels and rivulets, which will in turn increase the rate of surface water runoff. The increased rate of runoff will increase the risk of flooding.</p> <p>If flooding in the area increases, what mechanisms are available to Lincolnshire County Council to force the solar operator to modify their scheme and/or compensate local residents?</p>	<p>management. This report is not, as suggested, a recent experimental finding in the UK, but a programme of literature reviews and engagement with industry to identify research needs.</p> <p>The Choi et al 2020 paper (Ref 1-25) cited presents a study at a solar farm site in Colorado USA. No useful conclusion on UK solar farms can be inferred from this paper because, as described in the Materials and Methods section of the paper, the Colorado solar farm site preparation included stripping of topsoil, grading the surface level then deliberately compacting the surface before deployment of solar panels. This is in contrast to practice in the UK where prior to deploying solar PV, topsoil is not stripped, land is not graded level, a perennial green cover is established/maintained, and measures are taken to avoid soil compaction. This is not the process of site preparation outlined within paragraph 3.5.3 of Chapter 3: Scheme Description of the ES [REP4-016] which will be carried out for the Scheme.</p> <p>The research paper "Impact of solar panels on runoff generation process," authored by G. Biamamonte, L. Gristina, and S. Palermo, and published in 2023 (Ref 1-26) primarily examines the impacts of runoff on bare earth soil with little to no grass coverage. The study concludes that to prevent erosion and compaction, a grass cover beneath the panels and in the interspace between panels is highly recommended.</p> <p>As explained within Appendix 10-4: Outline Drainage Strategy of the ES [APP-098] and secured through the Framework LEMP [EN010142/APP/7.17(Rev05)], in order to limit potential increases in runoff, the Scheme would provide planting in the areas between, under and surrounding the solar PV panels with native grassland and wildflower mix. The planting will absorb and slow runoff from the PV fields, mimicking the existing regime. Conversely, bare soil surfaces such as seedbeds present a heightened risk of rainfall runoff and soil erosion. This is as without the plant canopy raindrop impact can disintegrate soil aggregates into a slurry that then 'caps' the surface, greatly reducing rainfall infiltration and promoting the runoff of surface water. Absence of plant stems then also remove the 'surface roughness' that slows water movement over the surface, enabling deposition of sediment and greater infiltration of water into the soil. In contrast bare soil enables the scouring of additional sediment by fast moving surface water as it cuts rills into the surface.</p> <p>Furthermore, similar soil compaction and runoff effects can also be observed in freshly ploughed fields where grass coverage is absent, leading to increased susceptibility to erosion and compaction.</p>
		BMV Land		<p>The Applicant quoted from EN-3 to defend their use of BMV land.</p> <p>3.1.1 Ministerial Statement</p>	<p>The High Court's judgement in <i>Lullington Solar Park Ltd v Secretary of State for Levelling Up, Housing and Communities and Anor (Re Statutory Review under 2s.288 Town and Country Planning Act 1990) [2024] EWHC 295 (Admin) (16 February 2024)</i> (Ref 1-27) is not applicable to the Scheme.</p>

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				<p>In addition to the Ministerial Statement, quoted during the ISH, account must be taken of a recent High Court Judgement. The High Court case was brought by the Applicant for the Lullington Solar Scheme, supported by Pinsent Mason (also lawyers for the Tillbridge Applicant), but failed as the High Court upheld the principle that any BMV land must not be used “without compelling evidence”. Importantly, the High Court case confirmed that the Written Ministerial Statement of March 25th 2015 remains extant and relevant, contrary to the Claimant’s argument that recent amendments to ‘net zero’ target and delivery budgets had reshaped the policy framework for renewable energy (Claimant Lullington Solar Park Ltd, 2024).</p> <p>As the High Court has upheld the principle that BMV land must not be used “without compelling evidence”, Tillbridge Solar must exclude all BMV land from their scheme unless “compelling evidence” is provided”.</p> <p>3.1.2 Damage to Soil</p> <p>Research conducted on behalf of the Welsh Government identified that solar schemes can lead to the permanent loss of BMV land (Welsh Government , 2023). The Report contains the following relevant text:</p> <p><i>“Research undertaken in Colorado, USA, by Choi (2020) recognised that utility scale solar PV sites are land intensive and can have negative impacts, such as ‘extensive landscape modifications that transform soil ecological functions, thereby impacting hydrologic, vegetative and carbon dynamics’. An investigation over a 7 year period reported that disturbance of the topsoil can accelerate erosion of fine soil particles and that site maintenance activities caused compaction along the panel rows.”</i></p> <p>The Welsh Government research identified that installing large solar arrays on farmland results in deep soil compaction, increased water runoff and runoff from panels can lead to rivulets, which can lead to soil loss by erosion. Additionally, good quality soil can be downgraded by compaction and damage caused by removing the solar foundation and piles. As EN-3 states that renewable schemes are consented for a temporary period, permanently downgrading BMV land will result in a permanent loss of BMV land and therefore cannot be temporary use.</p> <p>The Applicant does not appear to have taken any notice of this recent research when producing their Environmental Impact Assessment.</p> <p>3.1.3 Summary of BMV Land</p> <p>The High Court decision in 2024 upheld the principle that BMV Land must not be used without “compelling evidence” which the Applicant has failed to provide.</p>	<p>In that case, the site comprised 70 hectares of arable land of which 10.5 hectares was Grade 2 land and 23.1 hectares was Grade 3a, amounting to 48% of the site comprising BMV agricultural land. The challenge was unsuccessful on the grounds that the claimant had not justified by the most compelling evidence the use of BMV agricultural land and that:</p> <p><i>“The supporting information submitted with the application is not considered to amount to such compelling evidence in support of the proposed development at this location such that the loss of BV agricultural land is considered acceptable.”</i></p> <p>Agricultural land quality was a key consideration in the Applicant’s site selection process as set out in paragraph 4.5.13 of Chapter 4: Alternatives and Design Evolution of the ES [APP-035] and paragraph 3.5.5 of the Design and Access Statement [AS-031]. The Scheme is located primarily on lower quality agricultural land, with the majority of the Scheme being on land not classed as BMV. 95.5% of the land used is non BMV land.</p> <p>The Applicant has demonstrated through its site selection process, as set out in Chapter 4: Alternatives and Design Evolution of the ES [APP-035], that the use of agricultural land for the Scheme is necessary and that lower quality land has been used, avoiding the use of BMV where possible. The siting of the Scheme on minimal BMV land is justified. The majority of the Scheme would also be temporary and reversible, allowing the Principal Site to be brought back into agricultural use following decommissioning.</p> <p>With respect to the Choi 2020 paper (Ref 1-25) cited, the examples considered in that study provide a poor comparison to UK solar farms. Within the ‘Materials and Methods – Site Description’ section, the paper describes how the solar farm in Colorado was developed:</p> <p><i>“When the site was constructed in 2009, the topsoil was largely removed and the site was graded, levelled to < 1% slope, and compacted”</i></p> <p>This is clearly a radically different site treatment than is proposed for the Scheme or any other UK NSIP solar farm. To rely upon a US-based study where the site preparation included topsoil stripping and deliberate compaction to support assertions regarding UK solar farms, where no such intentional compaction would occur and a Soil Management Plan is secured to actively avoid soil compaction, is highly misleading.</p> <p>The UK evidence base does not support the claim that solar development can result in the permanent loss of BMV land. Natural England concur as confirmed by their response the ExA for Q1.12.5 (Responses to the ExAs First Written Questions [REP3-071]).</p>

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				Additionally, evidence shows that BMV land can be lost permanently due to the damage caused by solar panels. Permanent loss of BMV land is not consistent with EN-3.2.10.66, where it states that consent is time limited.	
			Farming	<p>3.2.1 Sheep</p> <p>The Applicant claimed that the land would remain farming land as sheep could graze it. Sheep farming is not a current feature of this region and is unlikely to be economically viable due to the current price of wool and lamb meat. As sheep grazing is not secured, a reasonable worst case assessment is that the land will be covered in rough grassland and invasive weeds. This is typical of many other schemes where photographs are shown of sheep in small solar schemes, but nothing is secured in the DCO.</p>	<p>Grazing sheep under and between solar panels is a routine activity and has been successfully undertaken locally. This was confirmed by Mr Elwess, a working farmer, at the Open Floor Hearing and within Mr Elwess's Post Hearing Submissions, including written summaries of oral submissions and any documents requested by the ExA [REP4-121].</p> <p>The Applicant has assessed a worst-case scenario. The land within the Principal Site will not be covered by rough grassland and invasive weeds as this would not be in accordance with planting and maintenance described within Section 8.2 and 8.3 of the Framework LEMP [EN010142/APP/7.17(Rev05)]. The Principal Site will not be planted with rough grassland or solely maintained by sheep grazing (although this could be carried out where appropriate). The Scheme has to be developed and maintained in substantial accordance with the Framework LEMP [EN010142/APP/7.17(Rev05)] as per Requirement 7 of the draft DCO [EN010142/APP/3.1Rev06].</p>
				<p>3.2.2 Crops</p> <p>During the hearing the Applicant's agricultural specialist was generally dismissive over the crops produced in the area. He failed to mention a number of higher value crops, such as oil seed rape. Additionally, no account has been taken of the use of cereals and other crops in the production of biofuels. Biofuels are part of the renewable energy mix and the transition to Net Zero, and so the negative impact of any loss of biofuel capacity should be taken into account in the Applicant's EIA. For example, the UK aviation industry has a mandate to use a minimum of 2% of Sustainable Aviation Fuel (SAF) from 2025, increasing to 10% by 2030. SAF is a biofuel, with a large proportion of SAF produced by Philips 66 in Hull. A reduction in crops suitable for biofuels will have an adverse impact on the transition to Net Zero.</p>	<p>As described within Chapter 15: Soils and Agriculture of the ES [APP-046], the Applicant undertook interviews with farm businesses within the Principal Site. The results of these interviews indicated that the land is predominately in standard arable rotations of cereals and break crops, with some energy crops grown for Anaerobic Digester substation and bio-ethanol production (see paragraph 15.6.13).</p> <p>In terms of the use of cereals and other crops as biofuels, Forest Research (part of the Forestry Commission) publish data on the energy production of a variety of crops expressed as MWh per hectare of land per year of production (MWh/ha.a) (Ref 1-20) The most productive crops are wood (short rotation coppice willow) and miscanthus (elephant grass) at 46 and 63MWh/ha respectively. This is an order of magnitude less power production than can be expected for an NSIP scale solar farm. Both of these crops have long establishment periods after planting before the first cropping and will remain in the ground displacing other crops for an extended period. Miscanthus for instance normally has a two-year establishment period followed by twenty years of harvesting. In terms of land use and any concern over the displacement of conventional crops, solar PV is considerably more efficient than any biofuel crop.</p>
			Need for the Scheme	The ExA questioned the 7000 Acres representatives on their understanding of the need for solar schemes, as outlined in EN-1 and EN-3. I agree that National Policy is to install utility scale solar schemes as part of the overall solar plan to meet a target for 70GW of peak solar production by 2035.	The Applicant has responded to this point in response to ExQ2.1.19 in the Applicant's Responses to ExA Second Written Questions [EN010142/APP/9.35] .

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				<p>However, the number of solar applications for grid connections currently exceeds the government target by 100%, and by even more if Government Policy on roof mounted solar (Skidmore Review) was implemented. Therefore, over 50% of schemes can be refused and the Government's target still met. Due to its scale, local impact and cumulative impact on the region, the Tillbridge scheme can be refused without threatening the Government's targets.</p>	
		Associated Development		<p>The ExA asked participants what they understood by the word "only" in the the PA (2008) Associated Development Guidance paragraph 5 (iii): <i>"Developments should not be treated as associated development if it is only necessary as a source of additional revenue for the applicant, in order to crosssubsidise the cost of the principal development"</i>.</p> <p>One of the partners of this scheme is Recurrent Energy (Canadian Solar) who was also a partner in the Mallard Pass solar NSIP. A Mallard Pass BESS could not import electricity from the grid due to technical reasons. However, the same case could have been made for a BESS at Mallard Pass as for Tillbridge, i.e. "The BESS is constructed as part of the overall Scheme to enhance the efficiency and reliability of the solar PV operation, and its co-location with the solar stations emphasises its subordinate role." Tillbridge Applicant's answer to ExA Q1.1.22.</p> <p>It is fair to assume that a BESS was not included in the Mallard Pass Application as it could not provide the "additional revenue" from energy arbitrage. The Tillbridge Applicant states in ExA Q1.1.23 that the BESS will only support the PV generation for 30% of the time. The Applicant is also coy about the revenue available from energy arbitrage. In reality, the BESS will only be capable of storing one hour of peak generation and so its role in preventing curtailment will be minimal, although the operator will still be paid under the Contract for Differences scheme when curtailment occurs. Therefore, the revenue earned by the Applicant will be the same if the solar energy is stored in the BESS or if curtailed. Due to capital and operational costs, the BESS as a standalone system will reduce the operator's profits, as it will earn no additional revenue beyond the fixed CfD price for solar generation. Thus, the purpose of the BESS can only be as an additional source of revenue to cross-subsidise the scheme (including its own installation), as a BESS that did not trade energy would reduce the operator's profitability.</p> <p>At night and in the winter when insignificant amounts of energy are being generated by PV, the scheme will trade power with the National Grid. The potential earnings from storing power at periods of low demand in winter and then selling it back to the grid is</p>	<p>The Applicant's Written Summary of Oral Submissions at ISH2 [REP4-045] clarifies on pages 16 to 19 that the primary aim of the BESS is to maximise the efficiency of the solar PV with the role of BESS being compliant with associated development tests, confirming that it is not only necessary as a source of additional revenue, that it's not the main aim of the development and is subordinate to the solar generating station.</p> <p>Turning to the specific point made regarding there being no maximum storage capacity of the BESS in the dDCO or control documents, page 6-7 of the Outline Design Principles Statement (ODPS) [REP4-020] sets out maximum design parameters in which the detailed design of the Scheme will need to adhere to. This is secured by requirement 5 of the dDCO [EN010142/APP/3.1(Rev06)] where the detailed design must accord with the ODPS. This includes the detailed design not comprising any more than 50 BESS-Solar Compounds spread across the Principal Site and setting out a maximum footprint of each BESS-Solar Station Compound. These controls will restrict the scale of the BESS. It is not appropriate to restrict the storage capacity of the BESS given evolving technologies mean the current expected capacity for the proposed scale of BESS may increase as technology improves. The appropriate control is scale, because this is what generates effects – a change in internal battery capacity will not change noticeable noise levels or landscape and visual effects. In addition, the capacity of the BESS does not relate to whether the BESS is associated development, this being the planning test required to be met in accordance with Section 115 of the PA 2008 (Ref 1-5). This point has been set out by the Applicant during Examination including Appendix B to the Written Summary of the Applicant's Written Summary Oral Submissions at Issue Specific Hearing 1 [REP1-046], the Applicant's Response to Examining Authority's First Written Questions [REP3-062] and the Applicant's Written Summary Oral Submission at Issue Specific Hearing 2 [REP4-045].</p>

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				<p>considerable. When market prices are high, as the market bids for power sources to meet peak demand, solar can do nothing to mitigate price peaks. For instance, during a December 2022 cold spell, with day-ahead prices at £675/MWhr, in the darkness of 5-6pm (peak demand), the price spiked to £2,586/MWhr (“UK power prices hit record high amid cold snap and lack of wind power”, Guardian article, 11/12/2022).</p> <p>Without the ability to trade energy with the National Grid, as demonstrated by Mallard Pass, there would not be a case to install a BESS, as it would only be used for 30% of the time, be able to store 1 hour of peak production and result in a reduction in profitability. Therefore, it is a reasonable assumption that a BESS trading energy with the National Grid is only necessary as an additional source of income.</p> <p>Note: I could not find any reference to a maximum storage capacity of the BESS either in the dDCO or the Design Documents. There is a possibility that an uncapped capacity would provide a further opportunity for “additional revenue” further weakening the Applicant’s case.</p>	
			Overplanting	<p>In the Applicant’s answer to ExA Question 1.1.18 they state that “The proposed overplanting ratio is specifically tailored to the Scheme's DC-coupled configuration, which allows for direct integration of solar generation with the Battery Energy Storage System (BESS)”. In their response to ExA Question 1.1.22 they state that “the BESS is sized to import all of the power from the solar PV”.</p> <p>So, applying the same circular argument, if the overplanting was reduced then the BESS could be smaller, both reducing the overall harm to the area.</p> <p>The Applicant states that overplanting by 50% is to increase efficiency. In reality, they will use 50% more land, which achieves the same efficiency of 2-4 acres per MW peak generation, to increase generating capacity. The efficiency will not be increased as it will remain at 2-4 acres per MW.</p>	<p>The Applicant considers that it has provided a detailed response with respect to its approach to overplanting with the reasons for this being set out in the Written Summary of Oral Submissions at ISH2 [REP4-045] and expanded upon in paragraphs 8.2.16 to 8.2.18 of Appendix B of its Written Summary of Applicant’s Oral Submissions at ISH1 [REP1-046].</p> <p>The Scheme adheres to NPS EN-3 (Ref 1-1), comprising an appropriate level of overplanting that is justified, and uses a reasonable amount of land (within the 2-4 acre / MW guideline outlined in NPS EN-3), which maximises the renewable energy yield for the grid connection offer. The Applicant has demonstrated that its approach to overplanting is reasonable and justified and supported by NPS EN-3.</p>
			Generating Capacity	<p>The Applicant has not explained why they need a larger footprint to support a 500MW grid connection than the other solar NSIPs in the area.</p>	<p>The Applicant acknowledges the question and directs to Written Summary of Applicant’s Oral Submissions at Issue Specific Hearing 1 Appendix B [REP1-046], paragraph 8.2.15, where the requested information on the rationale for the footprint of the Scheme as against its grid connection has been provided previously. Further information is also provided in subchapter 5.2 and 8.2 of Written Summary of Applicant’s Oral Submissions at Issue Specific Hearing 1 Appendix B [REP1-046].</p>

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			Overplanting	<p>The Applicant repeatedly misuses the term “over planting”. NPS-EN3 footnote 84 states:</p> <p><i>“Overplanting” refers to the situation in which the installed generating capacity or nameplate capacity of the facility is larger than the generator’s grid connection. In the case described in paragraph 2.10.46 solar generators may install but not initially use additional panels to act as a backup for when panels degrade, thereby enabling the grid connection to be maximised across the lifetime of the site. For planning purposes, the proposed development will be assessed on the impacts of the overplanted site”.</i></p> <p>The Applicant claims credit for the generating capacity of all the installed panels, even though some of the solar panels may not be initially used but held in reserve for when panels degrade. If the Applicant wishes to claim credit for the generating capacity of all the panels from day 1, then they should not use the term “overplanting”, nor rely on the overplanting provisions in EN-3. Instead, they should state they are seeking a circa peak 700MW generating capacity due to the intermittency and low efficiency of solar generation.</p>	<p>The Applicant considers that it has provided a detailed response with respect to its approach to overplanting with the reasons for this being set out in the Written Summary of Oral Submissions at ISH2 [REP4-045] and expanded upon in paragraphs 8.2.16 to 8.2.18 of Appendix B of its Written Summary of Applicant's Oral Submissions at ISH1 [REP1-046]. This written response includes confirmation that the peak generating capacity of the Scheme will be 784MWp.</p> <p>The Scheme adheres to NPS EN-3 (Ref 1-1), comprising an appropriate level of overplanting that is justified, and uses a reasonable amount of land (within the 2-4 acre / MW guideline outlined in NPS EN-3), which maximises the renewable energy yield for the grid connection offer. The Applicant has demonstrated that its approach to overplanting is reasonable and justified and supported by NPS EN-3 (Ref 1-1).</p>
			BESS Fires	<p>4.6.1 Water Supply The National Fire Chiefs Council (NFCC) BESS Guidelines are being updated. The current Guidance requires each BESS site to have the capability of providing 1,900 litres a minute of water for a minimum of 2 hours (228,000 litres). As the Tillbridge BESS is distributed around the scheme, this volume of water will need to be available at each sub-site. In reality, a much larger volume of water will be required: the West Yorkshire Fire Brigade calculated 5 million litres would be required for a BESS thermal runaway. The Liverpool BESS (20 MW scheme) fire in 2020 took 59 hours to extinguish and local fire hydrants ran dry due to the volume of water required. The currently available documentation does not explain how the Applicant will achieve this level of water supply</p> <p>4.6.2 Firewater Retention and Storage In addition to providing water to contain a BESS thermal runaway, the considerable amount of polluted water resulting will have to be retained and stored. The Applicant has not explained how the vast quantities of water required to contain a BESS thermal runaway will be retained. At the Hearing the Applicant stated that swales will be lined to prevent polluted water contaminating the land. Swales will not be capable of successfully holding back the vast volumes of water required to contain a thermal runaway.</p> <p>4.6.3 BESS Thermal Runaway Summary</p>	<p>The Applicant notes this comment and can confirm that at the detailed design stage minimum water provision will be in line with the latest NFCC guidance (Ref 1-19).</p> <p>As stipulated in the Table 2-1 of the Framework BSMP [REP4-026], each BESS-Solar Station Compound will be designed to integrate pressure fed (pump driven) fire hydrants and/or static water tanks (tanks can be integrated above or below ground) for firefighting, depending on available water supply. Water provision will be designated for the cooling of adjacent BESS and ancillary equipment. Water tanks will be located at least 10m from the nearest BESS enclosure. Water access points, whether hydrants or tank connections, would be located in consultation with the Lincolnshire Fire & Rescue (LFR) to provide redundancy and safe operating distances for firefighters. The number of water tanks and volume of the water supply will be agreed with the LFR and be validated by an Independent Fire Protection Engineer based upon BESS full scale destruction testing. Current NFCC guidelines (as of February 2025) (Ref 1-19) stipulate tanks and/or hydrants should be capable of delivering no less than 1,900 litres per minute for at least 2 hours to each BESS-Solar Station Compound. The firefighting water requirement will be fully assessed at the detailed design stage based upon BESS fire and explosion test data by an independent Fire Protection Engineer and water storage volumes will be agreed with LFR during detailed design. They must be easily accessible to LFR vehicles, and their siting should be considered as part of a risk assessed approach that considers potential fire development / impacts.</p>

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				<p>The Applicant has provided insufficient evidence to support a BESS being consented as part of the Tillbridge scheme. It is accepted that the Applicant has applied a Rochdale Envelope to this scheme but Advice Notice Nine 2.3 states:</p> <p><i>“the need for ‘flexibility’ should not be abused: “This does not give developers an excuse to provide inadequate descriptions of their projects. It will be for the authority responsible for issuing the development consent to decide whether it is satisfied, given the nature of the project in question, that it has ‘full knowledge’ of its likely significant effects on the environment. If it considers that an unnecessary degree of flexibility, and hence uncertainty as to the likely significant environmental effects, has been incorporated into the description of the development, then it can require more detail, or refuse consent”</i></p> <p>To date, the Applicant has provided insufficient evidence how they will provide cooling water for a BESS runaway and retain the resulting polluted fire water.</p>	<p>The cited West Yorkshire FRS calculation and Liverpool incident response involves utilising two ground monitor units to continually discharge water directly on BESS battery systems. This strategy is completely discredited and not endorsed by the NFCC, NFPA, FSRI, or any BESS OEM. This can significantly prolong a BESS fire event and is a huge waste of water resources and will only create environmental pollution concerns from firewater runoff.</p> <p>The Applicant clearly stipulates the drainage strategy in Section 7.8 of the Framework BSMP [REP4-026], this will be capable to capture the final fire water runoff volume requirement agreed at the detailed design stage with LFR.</p> <p>Given the evidence and analysis provided within the Framework BSMP [REP4-026], including clear alignment to provide specific water volumes and drainage capacity in line national NFCC Guidance, the Applicant firmly rebuts that insufficient evidence has been provided or there has been any reliance on flexibility for design.</p>
8	REP4-104	Mark Prior	Human Health and Wellbeing	<p>I found the evidence presented by Mr Stansfield compelling and fully support the points he made. 7000 Acres has presented evidence from experts, such as Mr Stansfield, and other health professionals with expert local knowledge. The Applicant does not appear to have used a health expert in their determination of the impact on health and so their submissions should be given minimal weight compared to the expert evidence submitted by 7000 Acres.</p> <p>In answer to the ExA's question about how the Applicant has assessed each aspect of health in isolation, I wish to make the following comments. By assessing each aspect (visual, noise, traffic etc) in individual silos, the Applicant has not taken account of the cumulative effect of the various aspects within their own scheme. Furthermore, they have not conducted a competent assessment of the cumulative impacts of all local schemes on health. As Mr Stansfield said, the loss of visual amenity will have a devastating impact on the mental health of the local population; this is a regional impact due to the 10,000+ acres of local solar NSIPs.</p>	<p>In response to queries regarding expert evidence and competency, as referred to in Chapter 1: Introduction of the ES [APP-032], the EIA was carried out by AECOM on behalf of the Applicant. AECOM is an IEMA Registered Impact Assessor and holds the IEMA EIA Quality Mark as recognition of the quality of AECOM's EIA product and continuous training of their environmental consultants. Appendix 1-3: EIA Statement of Competence of the ES [APP-053] outlines the relevant expertise or qualifications of the experts at AECOM who prepared the ES. The Applicant considers the EIA undertaken for the Scheme as presented within the ES is robust. It is worth noting that the Planning Inspectorate, in deciding to accept the Application for examination, has not raised concerns with the adequacy of the ES provided.</p> <p>Chapter 11: Human Health of the ES [APP-042], as such, has been prepared by competent personnel with experience working on a number of DCO applications including those for solar projects. The assessment brings together industry guidance and standards to assess the impacts on human health in line with national and local planning policy and guidance, and aligns with the methodology applied for other consented solar DCO applications, including Gate Burton Energy Project [EN010131] and Cottam Solar Project [EN010133].</p> <p>In response to concerns about assessing health impacts in isolation, the cumulative impacts of the Scheme on human health are set out in Chapter 18: Cumulative Effects and Interactions [EN010142/APP/6.1(Rev03)] of the ES. The Applicant has followed the methodology used in other NSIPs and has collaborated with developers of local schemes to ensure a comprehensive evaluation of cumulative effects. The inter-relationship of each project (Gate Burton Energy Park, Cottam Solar Project, West Burton Solar Project and the Tillbridge Solar Project) has been considered within</p>

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					<p>each Environmental Statement and through the Joint Report on Interrelationships between Nationally Significant Infrastructure Projects [REP3-031] that was submitted as evidence into each examination of the other solar projects. The ExA and the Secretary of State in granting development consent for the Gate Burton Energy Park [EN10131], West Burton Solar Project [EN010132] and the Cottam Solar Project [EN10133] have already examined and concluded on cumulative effects. With respect to the Gate Burton Energy Park, the SoS at paragraph 4.89 of his decision agreed with the methodology used to consider cumulative effects taking into account the worst-case scenario and agreed with paragraph 3.14.20 of the ExA's report that:</p> <p><i>“Overall and I am satisfied that the combination of both effect interactions and cumulative effects between the short list of schemes in the locality have been taken into account in reaching my conclusions. The Applicant has sought to introduce collaboration with the developers of the other solar NSIP schemes, not least through the shared GCC which also facilitates shared communication and consultation potential and has sought to embed the potential for further collaboration in the fCTMP. Whilst there may be some effect interactions that would occur, for example, landscape and visual amenity and noise and vibration, I am satisfied that there are no significant effects from effect interactions between differing effects on receptors, such that would increase the intensity and magnitude of effect. I agree with the Applicant's conclusions of the assessment of cumulative effects where two significant cumulative effects are identified on landscape and visual receptors.”</i></p> <p>In the ExA's report on West Burton Solar Project, it concluded in relation to health and wellbeing at paragraphs 5.2.60 and 5.2.61 that:</p> <p><i>“In terms of human health and wellbeing effects overall, the ExA has noted that when the Proposed Development is considered both alone and cumulatively, there would be residual moderate adverse effects in relation to long distance recreational routes for the construction phase. On this point the ExA is satisfied that, with the operation of the various management plans dealing with the maintenance of access to PRow, any adverse effects on accessibility would be temporary and mitigated. This therefore would not weigh negatively in the balance in relation to health impacts. 5.2.61. Overall, the Applicant's consideration of health impacts is consistent with the provisions of the 2011 and 2024 NPS, as well as relevant development plan policy. For these reasons, the effect of the Proposed Development in terms of health and wellbeing is weighted as neutral in the planning balance.”</i></p>

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					<p>The Cottam Solar Project Environmental Statement Chapter 23 [REP2-010] identified significant cumulative effects after embedded mitigation and mitigation measures have been applied, with the ExA concluding on cumulative matters at paragraphs 3.13.30 of the recommendation report that:</p> <p><i>“We are satisfied that the Applicant has adequately assessed the likely significant effects of the Proposed Development cumulatively with other planned development and that the Environmental Statement includes sufficient information on how the effects of the proposal would combine and interact with the effects of other development during construction, operation and decommissioning. Accordingly, we are satisfied that the requirements of the EIA Regulations, 2011 NPS EN-1 and 2024 NPS EN-1 are met.”</i></p> <p>Furthermore, the assertion that health impacts—particularly mental health—have been underestimated is not supported by evidence. As set out in Chapter 11: Human Health within the ES [APP-042], the assessment takes a holistic approach to health and considers a wide range of health determinants which are relevant to quality of life and amenity. The assessment considers elements of the Scheme which could affect mental health (for example changes in landscape and visual amenity, noise, access to open space and employment) as well as physical health (for example associated with air pollution). Section 11.8 of Chapter 11: Human Health of the ES [APP-042] concludes that no significant adverse effects are identified with regards to human health, specifically including in respect of changes in landscape and visual amenity, noise, access to open space and employment, air pollution and access to healthcare facilities.</p> <p>No significant effects are concluded on human health, during construction, operation and decommissioning. Any effects during the construction phase are temporary and short term and will be mitigated by the measures set out in the management plans detailed above, alongside the measures taken by other projects in their own management plans, which are secured by each projects DCO. Additionally, coordination with other NSIPs ensures that cumulative health impacts are addressed in a structured and evidence-based manner. Overall, the impact of the Scheme on human health, on its own and cumulatively with other developments is considered to be not significant (refer to Chapter 11: Human Health of the ES [APP-042] and Chapter 18: Cumulative Effects and Interactions of the ES [EN010142/APP/6.1(Rcv03)] of the ES). It is the Applicant's position that it has appropriately considered the cumulative and interrelated effects of the Scheme, and there is no basis to conclude that significant adverse effects on health will arise.</p>

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			BESS	<p>3.1 Accident Dataset</p> <p>Mr Gregory chose to only apply UK data during his safety summary. As the testing and certification standards applied to BESS components are international, then it is valid to use worldwide statistics, especially as the battery units will be manufactured abroad to these international standards and not unique UK requirements</p> <p>3.2 Probability of a BESS Thermal Runaway</p> <p>I wish to clarify the units of analysis Mr Gregory used in his explanation of the probability of a BESS incident. He stated that there were 548 years of BESS operations in the UK. This is from 92 sites during the period 2018 to 2023.</p> <p>One failure in 548 years is an annual failure rate of 1.82×10^{-3} ($1 \div 548$). The Applicant seeks consent for 60 years, so even using Mr Gregory's limited accident dataset, results in a probability of a BESS thermal runaway of 0.11 or 11% ($1.82 \times 10^{-3} \times 60$ years). In reality, this probability is higher as not all of the 92 BESS sites were active for the whole 6-year period and so the denominator he used in his calculations will be smaller than 92 for many of the 6 years.</p> <p>In my opinion, by quoting an hourly failure rate of 2.11×10^{-7} Mr Gregory was not helping the Inspector and might have inadvertently misled many in the Hearing as to the probability of a thermal runaway during the life of the Tillbridge Scheme. Quoting an hourly failure rate for a system designed to be in existence for 60 years is very unusual.</p> <p>Applying Mr Gregory's hourly rate of 2.11×10^{-7} over the life of the scheme still results in a probability of a thermal runaway of 0.11 or 11%. ($2.11 \times 10^{-7} \times 60$ years \times 365 days per year \times 24 hours per day). An 11% probability of a thermal runaway during the lifetime of the scheme cannot be regarded As Low As Reasonably Practical (ALARP), as he stated. Certainly, an 11% risk of an explosion and/or fire during the life time of a single system would not be acceptable in the aviation, oil, chemical or transport industries.</p> <p>Mr Gregory stated that the failure rates of individual battery cells is falling, which is accepted. However, due to the increasing number of batteries being used, the failure rate of the overall BESS system is likely to remain unacceptably high.</p>	<p>As discussed by Mr Gregory during ISH3 (refer to Written Summary of Applicant's Oral Submissions at the Issue Specific Hearing 3 [REP4-049]), with further clarification provided in response to ExQ2.8.2 in the Applicant's Response to ExA's Second Written Questions [EN010142/APP/9.35], the probability of a BESS cell failure event resulting in a venting / burning thermal runaway scenario is very low, when using appropriate recent analysis of the times of BESS technology that will be deployed at Tillbridge. The Applicant refers to those responses which explains that analysis in greater detail. Assuming a 2GWh site such as Tillbridge would incorporate 400 x 5MWh BESS enclosures, the likelihood of a single BESS enclosure failure is approximately once every 7,700 years.</p> <p>The Scheme has is a proposed operational life of 60 years. The expected BESS operating lifecycle of the generic Lithium Iron Phosphate (LFP) liquid cooled, prismatic cell BESS design discussed at ISH3 is currently 12-20 years, meaning that a minimum of 3-4 different BESS designs would likely be deployed over the lifetime cycle of the Scheme (noting that the ES, on a conservative basis assumes replacement every 10 years, meaning 6 different BESS designs would be deployed).The Applicant emphasises that the UK BESS failure rate and EPRI data (Ref 1-28) discussed at ISH3 should only be used to understand that BESS failure incidents are significantly declining in relation to the exponential increase in integration of global BESS projects. Most BESS design failures included in the EPRI database are not representative of current safety standards, certifications, testing requirements and do not integrate the latest control, detection, protection, and mitigation design features which minimise the probability and consequences of BESS failure.</p> <p>To provide an example of the issues with using UK/international failure rates as a basis for risk probability, BESS fires involving battery systems manufactured in South Korea significantly skew international failure data. The Applicant has specified that air cooled, pouch cell systems will not be considered for the Scheme, and these battery systems were involved in 31 from 91 BESS failure events listed in the EPRI database (Ref 1-28). In 31 BESS failures recorded in South Korea between 2017-21 these systems were integrated in 18 (58%) BESS failures but only accounted for 30% of total BESS systems installed. Confirmed global BESS failures listed on the EPRI database (outside of South Korea) integrating these battery systems are 12 significant failure incidents at facilities in Drogenbos (Belgium), McMicken (AZ, USA), Carnegie Road Liverpool, 3 failures at Moss Landing (CA, USA), and 2 failures at Valley Center (CA, USA).</p> <p>New generation battery systems and BESS designs are introduced every 18-24 months and key safety / certification standards are revised on a 2-5 year cycles, so the probability of a BESS failure is likely to continue to further reduce. Detailed Risk Analysis and consequence modelling of</p>

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					<p>current BESS designs are not likely to truly reflect the failure probability of improved BESS designs available at the detailed design stage.</p> <p>However, the Layer of Protection Analysis (LOPA) data discussed at ISH3 [[REP4-026] is representative of current leading LFP liquid cooled, prismatic cell BESS designs (as being deployed at Tillbridge) and is a valid method of assessing BESS failure probability. The generic design discussed reflected an energy dense 5MWh LFP BESS enclosure containing: 104 cells per module, 8 modules per battery rack (832 cells per rack), 6 racks per BESS enclosure (4,992 cells per BESS). This report is the basis for the probability provided at the start of this response. Further information on this report and its assumptions is set out in ExQ2.8.2.</p> <p>It is also noted that Section 7.5 (Early Intervention of Thermal Runaway Prevention) of the Framework BSMP [REP4-026] details the Applicant's commitment to new key safety standards, together with essential monitoring and control features which will likely further reduce the probability of a BESS failure occurring and is fully aligned with ALARP principles. With this, and the above analysis in mind, the Applicant disagrees that the failure rate of the overall BESS system is likely to remain unacceptably high.</p>
				<p>3.3 BESS Certification Standards</p> <p>The Applicant's Framework Battery Safety Management Plan quotes various international standards, such as UL 9540A. Investigations into serious accidents, such as the thermal runaway at the Victoria Big Battery Project in July 2021, note that some test criteria are weak: for example, UL 9540A only requires module to module propagation testing in wind speeds up to 12 miles per hour. In the case of the Victoria accident, the winds were blowing at 36 miles per hour and the initial thermal runaway propagated to a second unit.</p> <p>The UK Government has published Guidance in their document: Health and safety in grid scale electrical energy storage systems (Department for Energy Security and Net Zero, 2024). The Applicant does not appear to have addressed many of the recommendations in the report, and has not referenced it in APP-225.</p> <p>Mr Gregory discussed the Emergency Response Plan (ERP). As part of his explanation he stated that local wind speeds, leading to "flame tilts" would be taken into account. Bearing in mind that some standards, such as UL 9540A, do not take into account typical wind speeds, what Standards will be applied by the Applicant when developing the ERP?</p> <p>3.4 Quality Standards</p>	<p>3.3 BESS Certification Standards</p> <p>The Applicant's Framework Battery Safety Management Plan (FBSMP) [REP4-026] was drafted before the UK Government's 'Health and safety in grid scale electrical energy storage systems' (Department for Energy Security and Net Zero, 2024) was published so this is not referenced in the FBSMP, however, the document fully addresses all credible BESS failure risks and hazards.</p> <p>UL 9540A outdoor BESS testing protocols, limit permitted wind speeds to allow for a consistent BESS thermal runaway propagation risk benchmark to be applied to outdoor testing.</p> <p>Section 6.1 of the Framework BSMP [REP4-026] specifies how at the detailed design stage for the Scheme, risk assessment tools will be utilised together with detailed consequence modelling to provide a comprehensive site operations and emergency response safety audit. Consequence modelling utilising data from full scale burn testing (UL 9540A or third-party tests) integrate specific site wind data to validate safe BESS spacing i.e. maximum wind speeds recorded and the impact this will have on increasing heat flux levels and flame tilt impacts on adjacent BESS enclosures. This modelling is typically incorporated into Fire Risk Analysis and Hazard Mitigation Analysis reports and this commitment in the FBSMP is secured through the DCO.</p> <p>3.5 Quality Standards</p>

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				<p>The Clean Energy Associates (CEA, February 2024) reported that: <i>“the past several years have shown that Thermal Runaways pose a significant risk to the energy storage industry”</i>. It reported that 26% of inspected storage systems had quality issues related to the fire detection and suppression systems. Quality issues in the thermal management components were found in 18% of systems. These audits covered 30GWh of Li-ion energy storage projects, which included 64% of the Tier 1 BESS cell manufacturers worldwide, with 1,300 + manufacturing issues identified. The Report summarised their findings:</p> <p><i>“The large number of system-level issues is mainly caused by the following two contributors:</i></p> <ul style="list-style-type: none"><i>• The BESS integration process is highly manual and labor (sic) intensive, with less stringent quality control procedures.</i><i>• Systems are very complex and are vulnerable to underlying problems originating from defects in upstream components that were not caught during earlier quality checks.”</i> <p>The Applicant's Framework Battery Safety Management Plan (APP-225) is very high level. It does not currently assess dormant failures, such as thermal protection or fire suppression systems failing to operate.</p> <p>The Battery Management Safety Plan does not provide any real detail on the subsystems they intend to use. Furthermore, many of the mitigations for Thermal Runaway they cite, such as thermal management, fire detection and suppression, have a very high industry failure rate that would not be permitted in any other high risk environment.</p>	<p>Section 7.2 of the Framework BSMP [REP4-026] specifies minimum Factory Acceptance Testing and Site Acceptance Testing standards that will be adopted for the scheme minimising BESS failure risks.</p> <p>The final Battery Safety Management Plan (BSMP) drafted at the detailed design stage will include all requisite safety information as detailed in Section 7 of the Framework BSMP [REP4-026], Mitigation and Control Measures.</p> <p>The Framework BSMP [REP4-026] cannot provide detail or commit to an existing BESS system / design because new generation battery systems and BESS designs are introduced every 18-24 months and key safety / certification standards are revised on a 2-5 year cycles. This means systems currently available are very likely to have changed by the time of operation commencing in 2028, and so information provided now would be incorrect by the time of final plant installation. The FBSMP lays out the Applicant's commitment to NFCC and NFPA guidance, key safety standards, certifications, minimum testing requirements, key incident prevention and mitigation measures to minimise the probability of a BESS failure. Detailed risk analysis and consequence modelling of current BESS designs are not likely to truly reflect the failure probability of improved BESS designs available at the detailed design stage.</p>
				<p>3.5 Time Span of BESS Accidents</p> <p>Mr Gregory cited the Liverpool BESS fire in 2020. In that case, a Thermal runaway led to the total destruction of one container out of four, so 5 MWh worth of storage produced a major explosion. Once water was applied, the resulting run-off contained Hydrofluoric Acid (HF), a highly toxic substance which can dissolve concrete and whose fumes can be fatal to life. Defensive firefighting was required for 59 hours. The Merseyside Fire and Rescue Significant Incident Report (Merseyside Fire and Rescue) found that the automatic fire suppression system failed and that a significant blast occurred. The local fire hydrants were inadequate to meet the needs of the firefighting.</p> <p>Mr Gregory quoted a typical period of 4-8 hours for a BESS thermal runaway. This timespan does not seem to be consistent with many thermal runaways that have occurred world-wide.</p>	<p>The Applicant has specified that air cooled, pouch cell systems like those involved in the Liverpool BESS failure and an additional 30 from 91 BESS failure events listed in the EPRI database (Ref 1-28), will not be used for the Scheme. In 31 BESS failures recorded in South Korea between 2017-21 (Ref 1-29), 18 (58%) BESS failures integrated these battery systems but accounted for only 30% of total BESS systems installed.</p> <p>Additionally, Section 7.6 of the Framework BSMP [REP4-026] stipulates fire protection and suppression requirements for the Scheme which significantly reduces the risk of a significant deflagration occurring. The Liverpool BESS design did not integrate a gas exhaust system or deflagration panels and integrated a clean agent suppression system which significantly increases explosion risks in BESS failure scenarios. Fire crews that attended the incident took regular PH reading from firewater runoff and found no acidity i.e. Hydrofluoric Acid was not detected.</p>

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					<p>The Applicant considers this is a misunderstanding of Mr Gregory's evidence as documented in the Written Summary of Applicant's Oral Submissions at the Issue Specific Hearing 3 (ISH3) [REP4-049]: <i>'Mr Gregory noted that he did not like to generalise in relation to real world incidents as there are a number of variables for each system and battery enclosures which dictate the level of risk for these. However, he noted that there has been a range of full-scale destruction testing to see what happens in terms of the fire impacts and toxic impacts. This full-scale destruction testing has shown that:</i> <i>a) Peak fire load or Peak Heat Release Rate (PHRR) is the point at which most battery cells are in thermal runaway at the same time, producing the most significant flames during a failure incident. For typical current BESS designs with battery systems containing eight battery modules per rack and four to eight racks or bays per enclosure, this peak load (PHRR) would last roughly 1-2 hours (dependant on the state of charge, and layout within a container). The rest of the fire, typically lasts another 4-8 hours mainly involving combustible materials in the battery system and BESS enclosure (plastics, wiring, battery rack materials, control systems, etc.) burning at a lower intensity which reduces the impact of the fire.'</i></p> <p>Based on the variables that were discussed during ISH3 then the total BESS burn out times would typically be defined as 5 to 10 hours for battery systems operating at a high state of charge (SOC). Mr Gregory explained that burn out times can be longer such as the Bouldercombe, Tesla Megapack fire discussed during ISH3, where the length of the burn was probably extended due to the Megapack operating at a low state of charge when the thermal event occurred.</p>
				<p>3.6 Firefighting a BESS Thermal Runaway The Applicant has not explained how the 1,900 litres of fire water per minute for two hours, as required by the National Fire Chiefs Council Guidelines, will be provided to each BESS location.</p>	<p>Tables 2-1 (BESS design parameters) and 4-1 (Main matters raised during consultation with LFR) in the Framework BSMP [REP4-026] documents how water will potentially be provided to each BESS-Solar Station Compound.</p> <p>In summary, the BESS-Solar Station Compounds are designed to easily integrate pressure fed (pump driven) fire hydrants and / or static water tanks (tanks can be integrated above or below ground) delivering 1,900 litres of water per minute for two hours. The number of water tanks and volume of the water supply will be agreed with the LFR and be validated by an Independent Fire Protection Engineer based upon BESS full scale destruction testing. The firefighting water requirement will be fully assessed at the detailed design stage based upon BESS fire and explosion test data by an independent Fire Protection Engineer and water storage volumes will be agreed with Lincolnshire FRS (LFR) during detailed design.</p>
				<p>3.7 Summary of BESS Concerns I am concerned that the Applicant has not provided a clear and comprehensive explanation of the intended design for their BESS. I</p>	<p>The Applicant emphasises that the Framework BSMP [REP4-026] cannot provide detail or commit to an existing BESS system / design because new generation battery systems and BESS designs are introduced every 18-24 months and key safety / certification standards are revised on a 2-5 year</p>

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				<p>accept that a Rochdale Envelope may be applied to the scheme, but PA 2008 Advice Notice Nine Paragraph 2.3 states: <i>“the need for ‘flexibility’ should not be abused: “This does not give developers an excuse to provide inadequate descriptions of their projects. It will be for the authority responsible for issuing the development consent to decide whether it is satisfied, given the nature of the project in question, that it has ‘full knowledge’ of its likely significant effects on the environment. If it considers that an unnecessary degree of flexibility, and hence uncertainty as to the likely significant environmental effects, has been incorporated into the description of the development, then it can require more detail, or refuse consent”</i></p> <p>I believe the current description of the scheme is inadequate.</p> <p>Even applying the Applicant's own failure rates, it is a foreseeable event that a BESS Thermal Runaway will occur during the 60-year life time of the scheme.</p> <p>Industry audits have shown that there are a large number of quality issues with the BESS components. Some of these quality issues are associated with thermal management and fire suppression, both of which the Applicant uses to mitigate the high probability of a Thermal Runaway or fire during the life time of the project.</p> <p>As a BESS is not an essential element of a solar generation scheme, as demonstrated in the Mallard Pass DCO, it is requested that the ExA does not consent a BESS as part of the Tillbridge Solar Scheme, given the lack of evidence provided by the Applicant, and the unacceptably high failure rates of BESS.</p>	<p>cycles, and so any detail provided now would likely change by the time of operation commencing in 2028, and final plant selection. The FBSMP lays out the Applicant's commitment to NFCC and NFPA guidance, key safety standards, certifications, minimum testing requirements, key incident prevention and mitigation measures to minimise the probability of a BESS failure. Detailed risk analysis and consequence modelling of current BESS designs are not likely to truly reflect the failure probability of improved BESS designs available at the detailed design stage.</p> <p>Tillbridge Solar Project is a proposed 60 year scheme, the expected BESS operating lifecycle of the generic LFP liquid cooled, prismatic cell BESS design discussed at Written Summary of Applicant's Oral Submissions at the Issue Specific Hearing 3 [REP4-049] is currently 12-20 years, meaning that a minimum of 3-4 different BESS designs would likely be deployed over the lifecycle of the Scheme.</p> <p>The Layers of Protection Analysis (LOPA) data (Ref 1-30) discussed at ISH3 had been performed to estimate the residual risk of a current generic design i.e. 5MWh BESS enclosure integrating LFP prismatic cells in liquid cooled modules BESS failure (resulting in battery cell venting / flaming). This analysis predicted the following failure frequency of 3.3×10^{-7} per year per enclosure (approximately once every 3.1 million years). Assuming a 2GWh site would incorporate 400 x 5MWh BESS enclosures integrating 2,400 battery racks the likelihood of a single BESS enclosure failure is $3.3 \times 10^{-7} \times 400 = 1.3 \times 10^{-4}$ per year (approximately once every 7,700 years).</p> <p>Section 7.5 (Early Intervention of Thermal Runaway Prevention) of the Framework BSMP [REP4-026] details the Applicant's commitment to new key safety standards, together with essential monitoring and control features which will likely further reduce the probability of a BESS failure occurring and is fully aligned with ALARP principles.</p>
9	REP4-117	Rodney May	Traffic and safety	<p>Comments requesting that a risk assessment of injury and road safety because of increased traffic due to the Scheme.</p>	<p>Road safety is an integral consideration in the design and delivery of the Scheme. The design of the Scheme has considered highway safety from the outset. The access junctions have been located to benefit from sufficient visibility, and designed to accommodate required vehicle movements. Construction routes for HGVs and abnormal loads have been selected to use the most appropriate roads. The Framework Construction Traffic Management Plan (CTMP) [EN010142/APP/7.11(Rev05)] secures the majority of the road safety requirements of the Scheme. A Framework Public Rights of Way Management Plan [APP-228] includes management measures for the safety of PRoW users. The Framework CTMP [EN010142/APP/7.11(Rev05)] includes, but is not limited to, the following:</p> <ul style="list-style-type: none">- Provision of Road Safety Audit and Health and Safety documentation required under the CDM Regulations to the LHAs with regards highways works;

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					<div><div><div><div><div></div><div>Securing safe and suitable construction traffic routes, using the most appropriate roads;</div></div><div><div></div><div>Compliance with the requirements of the Construction Logistics and Community Safety (CLOCS) Standard. This is a national industry standard to ensure safe, efficient and environmentally friendly construction vehicle journeys;</div></div><div><div></div><div>Monitoring of road safety, with a requirement for any issues to be raised and discussed with the LHA.</div></div></div></div></div> <div><p>Furthermore, the assessment presented in Chapter 16 Transport and Access of the ES [APP-047] extensively considers road safety. This includes analysis of Personal Injury Collision (PIC) data to identify clusters or patterns which would highlight any existing highway safety issues on the local road network which could be exacerbated by the proposed Scheme. This is set out from paragraph 16.6.28, which showed one collision cluster. The location of that collision cluster was therefore assigned a medium level of sensitivity, the second highest category, for the assessment of road safety impacts. The assessment of road safety is set out from paragraph 16.8.27. This concluded that the impact of the scheme in terms of road safety would not be significant.</p></div>
				Comment asking if road closures will be implemented and if these will have a significant impact on the local economy.	<div><p>The assessment of the Scheme includes the impact of full or partial temporary road closures that may be required in some locations in order to complete the highway works. Any partial or full road closures are proposed to be for a short duration to minimise impacts on the local highway network. The impact of traffic management, and the subsequent change due to the provision of new accesses, on driver and passenger delay and severance is also considered in the assessment. The required closures are listed in Table 16-23 within Chapter 16: Transport and Access of the ES [APP-047].</p><p>Partial closures would retain two-way movement, but would introduce shuttle working. Full closures would only be required where and when necessary on narrow roads where options for retaining public access through the use of two-way traffic signals is not feasible. Full closures are only anticipated to be required on minor unclassified roads with relatively low traffic flows. The anticipated maximum duration of a full closure will be eight weeks. In addition, wherever possible access for emergency vehicles, pedestrians and cyclists will be maintained. Advance warning will be provided in line with local highway authority guidance and diversion routes will be put in place. No permanent road closures will be required. Management measures will be finalised and set out in the Detailed CTMPs.</p><p>Where a full closure is required, the works will be carefully planned to ensure that the durations of any closures are minimised, and any full closure will include consideration of the continued access of any local residents or commercial businesses that fall within the area of the closure. The exact duration of any partial or full closure would be secured as part of</p></div>

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					<p>the Detailed CTMP. It is not expected that there would be multiple closures at the same time or in close proximity to each other. The Framework CTMP [EN010142/APP/7.11(Rev05)] in paragraph 8.3.13 includes commitment to liaise with the Local Highway Authority with regards to road closures, including on programme.</p> <p>As both the partial and full temporary closures will be for very short periods within the construction phase and in all circumstances alternative routes will be provided, the effects on driver and passenger delay and severance have been assessed as not being significant in EIA terms. It therefore follows that the implementation of road closures would not have a significant effect on the local economy, for the same reasons.</p>

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Appendix A Solar Developments within West Lindsey District Council

Appendix A

Table 1: Solar developments within West Lindsey District Council

Application	Application Reference	Hectares	Development Status
Area of West Lindsey District		115,733	
Nationally Significant Infrastructure Projects			
Cottam Solar Project	EN010133	896.86	Development consent granted
Gate Burton Energy Park	EN010131	423.45	Development consent granted
West Burton Solar	EN010132	473.13	Development consent granted
Tillbridge Solar Project	EN010142	739.56	Examination
One Earth Solar	EN010159	291.09	Pre-application
Town and Country Planning Act (1990) Applications			
Danes Farm - extension	1525	18.58	Operational
Danes Farm	1578	10.1	Operational

Application	Application Reference	Hectares	Development Status
Fiskerton Airfield (Phase 1 and 2)	2369 & 5118	70	Operational
The Old Airfield Solar Photovoltaic Farm	9575	84	Planning Permission Granted
River Cottage, Scampton - Solar Panels	11360	5.9	Planning Permission Granted
Top Farm, Short Ferry Road - Solar PV Arrays	13519	1.29	Under Construction
Stow Park Farm, Stow Park - Solar Panels	14270	85	Planning Application Submitted
A Poucher & Sons, Lodge Farm - Solar Panels	147376	0.68	Planning Permission Granted
Highgate Lane, Normanby-By-Spital - Solar Photovoltaic Farm	147409	17	Screening – Not EIA Development
Padero Solaer Limited (Screening app for Solar Farm on WLDC and NLC border)	WL/2024/00796	7.49	Screening – Not EIA development
Keelby solar - IGP	WL/2024/00854	24.12	Screening – Not EIA development
Sub-Total of Solar		3148.25	

Application	Application Reference	Hectares	Development Status
Percentage of solar in relation to District		2.72%	