

**Tillbridge Solar Project  
EN010142**

**Applicant's Response to Written Submissions at  
Deadline 1**

**Document Reference: EN010142/APP/9.24**

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

**November 2024  
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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 1 of the Examination for the Tillbridge Solar Project (the Scheme).
- 1.1.2 The Development Consent Order (DCO) application (the Application) for the Scheme was submitted on 10 April 2024 and accepted for Examination on 8 May 2024. The period when IPs could submit RRs on the Application was from 13 June 2024 to 01 August 2024. Deadline 1 was on the 29 October 2024.
- 1.1.3 A total of 88 Written Submissions were submitted to the Examination at Deadline 1. Fifty-eight of these were from the Applicant, with 30 being from IP's.
- 1.1.4 Following this, six further Written Submissions were accepted at the discretion of the Examining Authority on 8 November 2024 which were all from members of the public.
- 1.1.5 To avoid repetition, the Applicant has only provided a full response to comments that make points that have not been addressed previously within the **Applicant's Responses to Relevant Representations [REP1-028]** or where the Applicant considers that further clarification may be useful. In response to matters that were raised previously in Relevant Representations or at the first hearings for the Examination, the Applicant has provided a reference to where the matter has previously been responded to in the **Applicants Response to Relevant Representations [REP1-028]**, the Written Summary of Applicant's Oral Submissions at Issue Specific Hearing 1 **[REP1-046]** or the Written Summary of Applicant's Oral Submissions at Open Floor Hearing 1 **[REP1-047]**.

## 1.2 Structure of this document

- 1.2.1 This document provides a response from the Applicant to Written Submissions received at Deadline 1, and is structured as follows:
  - **Table 2-1: Statutory Consultees:** the Applicant's responses to Written Submissions from Statutory Consultees.
  - **Table 2-2: Non-Statutory Organisations:** the Applicant's responses to Written Submissions from Non-Statutory Organisations.
  - **Table 2-3: Local Authorities, Parish Councils, Persons with an Interest in the Land and Public:** the Applicant's responses to Written Submissions from Local Authorities, 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 2. All documents are also presented in numerical order in the **Guide to the Application [EN010142/APP/1.2(Rev04)]**.

**Table 1-1. List of Interested Parties that submitted Written Submissions at Deadline 1**

Reference Number	Consultee
<b>Statutory Consultees</b>	
REP1-068	Canal and River Trust
REP1-074	Environment Agency
<b>Non-Statutory Consultees</b>	
REP1-062, REP1-063, REP1-064 and REP1-065	7000 Acres
<b>Local Authorities, Parish Councils, Persons with an Interest in the Land and the Public</b>	
REP1-059	West Lindsey District Council
REP1-075	Fillingham Parish Council
REP1-061	Upton Parish Council
REP1-076	Gillian Procter Chair of Springthorpe Parish Meeting
REP1-089	Anna Lecky
REP1-066	Andy Johnson
REP1-067	Anne Parkin
REP1-069	Carol Gilbert
REP1-070	Carol Montgomery
REP1-090	Catrin Fieldson
REP1-071	Cheryl Felix
REP1-072	David Swayne
REP1-091	Derek Carter
REP1-078	Dorne Johnson
REP1-093	Elizabeth Fox
REP1-077	Katharine McIlroy
REP1-080	Lynn Thompson
REP1-079	Miss C N O'Brien
REP1-088 and REP1-094	Nicholas Mapstone
REP1-081	Nuala May
REP1-082	P A Mitchell
REP1-083	Phil Burton
REP1-084	Robert Cort
REP1-085	Rodney May
REP1-086	Rosemary Burke
REP1-087	Simon Skelton
REP1-095	Sue Bingham

Reference Number	Consultee
REP1-060	Victoria White

- 1.2.3 For ease of reference, a table of acronyms used in this document is provided in **Table 1-2**. Abbreviations 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
CEMP	Construction Environmental Management Plan
CCTV	Closed Circuit Television
CNP	Critical National Priority
CLG	Community Liaison Group
DCO	Development Consent Order
DEMP	Decommissioning Environmental Management Plan
EIA	Environmental Impact Assessment
ES	Environmental Statement
EMF	Electro Magnetic Fields
GHG	Greenhouse Gas
GW	Gigawatt
HGCA	Home Grown Cereals Authority
IEMA	Institute of Environmental Management and Assessment
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IPs	Interested Parties
LEMP	Landscape and Ecological Management Plan
LVIA	Land and Visual Impact Assessment
MAFF	Ministry of Agriculture Fisheries and Food
MW	Megawatt
NESO	National Energy System Operator
NGET	National Grid Electricity Transmission plc
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
OEMP	Operational Environmental Management Plan
OHID	Office for Health Improvement and Disparities
PA	Planning Act 2008
PINS	Planning Inspectorate

<b>Abbreviation</b>	<b>Definition</b>
PRoW	Public Right of Way
PV	Photovoltaic
RR	Relevant Representation
SoCG	Statement of Common Ground
TCPA	Town and Country Planning Act
TPO	Tree Preservation Order

2. Applicant’s Responses to Written Submissions at Deadline 1

2.1 Statutory Consultees

Table 2-1. Applicant’s Responses to Written Submissions at Deadline 1 – Statutory Consultees

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
REP1-068	Canal and River Trust	Summary of matters raised in Relevant Representation	The Canal and River Trust provided a summary of the matters raised in their relevant representation RR-036.	The Applicant’s and Canal and River Trust’s current position on all matters raised in their relevant representation is recorded within the <b>SoCG with Canal and River Trust [REP1-030]</b> . All matters are now agreed, however, the Applicant is due to update the <b>Outline Design Principles Statement [AS-058]</b> and <b>Chapter 3: Scheme Description</b> of the ES <b>[AS-053]</b> before the SoCG can be finalised. Updated versions of these documents and the final <b>SoCG with Canal and River Trust</b> are targeted for submission at Deadline 3.
REP1-073	Environment Agency	Letter prior to Issue Specific Hearing 1	The Environment Agency provided their position prior to the Issue Specific Hearing 1 regarding protective provisions and the disapplication of the Anglian Water Authority Act 1977.	The Applicant’s and Environment Agency’s current position regarding these matters is recorded within the <b>SoCG with the Environment Agency [REP1-034]</b> . The disapplication of the Anglian Water Authority Act 1977 is now agreed, subject to final protective provisions being agreed between the parties. The Applicant awaits the receipt of the Environment Agency’s Standard Protective Provisions and continues to liaise with the Environment Agency in relation to other matters.

2.2 Non-Statutory Organisations

Table 2-2. Applicant’s Responses to Written Submissions at Deadline 1 – Non-Statutory Organisations

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
Principle of Development				
REP1-064	7000 Acres	Principle of development	Comments opposing large-scale ground mounted solar schemes and promoting the use of rooftops as an alternative to ground mounted solar.	<p>The Government has identified through its energy policy, most recently in the Overarching National Policy Statement (NPS) for Energy EN-1 (Ref 1-1) and NPS for Renewable Energy EN-3 (Ref 1-2), that there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure in the UK. As discussed in the Applicant’s <b>Statement of Need [APP-210]</b>, this includes low carbon energy generation using solar technology. Developing the Scheme at its proposed size will therefore be a significant and important contribution to meeting this need.</p> <p>As discussed in the <b>Statement of Need [APP-210]</b>, the Applicant recognises that energy alternatives such as decentralised energy generation on roof tops has an important role to play in decarbonisation. However, on their own, smaller scale solar, including rooftop solar, is not likely to deliver sufficient total capacity at the required pace and at an affordable cost to meet the Government’s targets. As set out in the <b>Statement of Need [APP-210]</b>, due to technological advances, solar facilities are already among the cheapest form of electricity generation in the UK and Government forecasts indicate that costs will continue to reduce in the future. Larger solar projects, such as the Scheme,</p>



Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
				deliver power more quickly and at a lower unit cost than multiple independent schemes which make up the same total capacity, bringing forward carbon reduction and economic benefits in line with government policy. Whilst rooftop solar is likely to contribute to decarbonisation, large-scale solar is still an essential part of the future electricity system, that must be deployed where there is the natural resource, where land is available and suitable, and in proximity to available grid connection locations, such as the area local to the Scheme.
REP1-063	7000 Acres	Energy Generation	Comments relating to the energy generating capacity of the Scheme being exaggerated and request for an Issue Specific Hearing on energy generation.	<p>The Applicant considers it has set out a thorough explanation of the Scheme’s generating capacity and principles for overplanting within <b>Section 4</b> and <b>Appendix B</b> of the <b>Written Summary of Applicant’s Oral Submissions at Issue Specific Hearing 1 [REP1-046]</b>. In addition to this, in decision-making, the Secretary of State must (in accordance with section 104 of the PA 2008 (Ref 1-3)) have regard to current national policy statements when deciding an application.</p> <p>NPS EN-3 (Ref 1-2) was designated in January 2024. Paragraph 2.10.55 confirms that over-planting is acceptable given that the efficiency of solar panels declines over time. Footnote 92 of paragraph 2.10.55 of NPS EN-3 (Ref 1-2) provides a definition of overplanting, acknowledging that developers can take into account degradation in panel efficiency over time to maximise the grid connection over the lifetime of the site and confirming that this <i>“reasonable overplanting should be considered acceptable in a planning context.”</i> NPS EN-3 (Ref 1-2) does not prevent overplanting from the beginning of a project’s operation, and wording which would have created such a restriction was deleted from the March 2023 consultation draft of the NPS EN-3 (Ref 1-2) (where a restriction was previously included in that draft at paragraph 3.10.46, footnote 84).</p> <p>Any such restriction on the Scheme would not be appropriate given the urgent need to deploy CNP infrastructure such as solar to meet net zero targets and to ensure the delivery of an efficiently designed Scheme which maximises electricity generation to meet the export capacity agreed with National Grid Electricity Transmission (NGET).</p> <p>However, should the Examining Authority consider a further issue specific hearing on this topic is required, the Applicant is willing to provide further information and engagement in this hearing, where helpful.</p>
REP1-062	7000 Acres	BESS	Comments relating to the consideration of BESS as associated development, stating that there is currently insufficient evidence for the Examining Authority to conclude that an energy trading BESS would be Associated Development or to cross-subsidise the overall development.	The Applicant’s explanation for BESS being considered associated development is set out within <b>Section 4</b> and <b>Appendix B</b> of the <b>Written Summary of Applicant’s Oral Submissions at Issue Specific Hearing 1 [REP1-046]</b> . The Applicant’s position remains that BESS is appropriately captured as associated development, in line with several made Solar DCOs to date.
Community Benefit and Liaison				
REP1-064	7000 Acres	Lack of community benefit	Comments relating to lack of community benefit from other solar schemes in the area to date.	As set out within page 204 of the <b>Applicant’s Responses to Relevant Representations [REP1-028]</b> , and paragraph 3.14 to 3.22 of the <b>Written Summary of Applicant’s Oral Submissions at Open Floor Hearing 1 [REP-047]</b> the Applicant has engaged with both the Lincolnshire and Nottinghamshire community foundations and should the Scheme receive development consent, the Applicant would provide a community benefit package.

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
				<p>The Scheme will also include a range of direct improvements to the Site which will have ancillary benefits to the local area and community, including ecological enhancements (such as tree planting or other Biodiversity Net Gain works), improvements to soil quality; improvements to the existing Public Rights of Way (PRoW) network through the provision of permissive paths and employment generation during construction.</p>
REP1-062	7000 Acres	Community Liaison Group	Comments relating to the community being involved in the agreement of the terms of reference for the community liaison group.	<p><b>Appendix E of Written Summary of Applicant's Oral Submissions at Issue Specific Hearing 1 [REP1-046]</b> provides additional clarity on the purpose and function of the community liaison group (CLG) and an example of the terms of reference that could be deployed as part of the discharge of the Requirement 4 of the <b>draft DCO [REP1-008]</b> should development consent be granted for the Scheme. This is to assist both 7000 Acres and the Examining Authority in its consideration of Requirement 4 as drafted.</p> <p><b>Appendix E of Written Summary of Applicant's Oral Submissions at Issue Specific Hearing 1 [REP1-046]</b> demonstrates that the drafting of Requirement 4 meets planning tests being precise, enforceable, necessary, relevant to the development, relevant to planning and reasonable in all other respects, as well as being consistent with recently made Orders. West Lindsey District Council and Bassetlaw District Council would approve the terms of reference to partially discharge the requirement of the <b>draft DCO [REP1-008]</b>, and in their role as elected representatives of the local area, provide the avenue to ensure the needs of local communities are being met. There are then further controls imposed by Requirement 4 which confirm that the CLG must be established prior to the commencement of development and continue to meet until the date of final commissioning of the final part of the authorised development. The terms of reference would not be static and would be broad enough to allow the members of the CLG to determine their own direction going forward once regular meetings have commenced. This would include matters such as frequency of meetings, membership, and topics to be covered. The community and its views would therefore be central to the CLG and how it would be run over the course of the construction period for the Scheme</p>
Draft DCO				
REP1-062	7000 Acres	Draft DCO	Requests the definition of ‘maintain’ within the draft DCO to be reduced in scope to remove inclusion of works which “alter, remove, refurbish, reconstruct and replace” in line with the recommended schedule of changes by the Examining Authority to the draft DCO for West Burton Solar Project, as published 19 April 2024.	<p>The Applicant does not consider the proposed amendment to the definition of maintain to be appropriate.</p> <p>This definition primarily relates to the powers captured within the Order at Article 5, which enable the undertaker to carry out maintenance works within the Order limits. That power is necessary for the undertaker to efficiently and safely operate the Scheme through its full lifetime. The removal of these terms would severely undermine the maintenance works which are necessary for the operation of the Scheme (including ensuring the effects of the Scheme are no worse than those assessed in the ES) and which have been assessed throughout the ES.</p> <p>As set out within Table 3-1 of <b>Chapter 3: Scheme Description</b> of the ES <b>[AS-053]</b> several components necessary to the function of the Scheme have an anticipated design life shorter than the proposed operational period for the Scheme (60 years). For example, the solar panels have an estimated design life of 25-40 years. Removing the ability for maintenance works to “reconstruct” or “replace” these and other components</p>

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				<p>with a design life less than 60 years would result in these elements of the project being halted in operation once they reach the end of their design life. Removing the ability for maintenance works to “remove” these components would restrict the operator from being able to remove broken or no longer functional Scheme infrastructure from the Site until the decommissioning period would commence, potentially several years later. This is considered to work against the requests by 7000 Acres and other community members for the appropriate maintenance of the Scheme such that adverse safety, landscape and visual or other effects occur (whilst generating less energy).</p> <p>In addition, removing the inclusion of maintenance works to “alter or refurbish” would prohibit necessary works required to maintain the ongoing operation of project components which do not require replacement, including works which may resolve safety risks, improve operational efficiency or replace minor malfunctioning components.</p> <p>It is considered these impacts on the Scheme would significantly reduce the Scheme’s operational efficiency and safety. This would result in an incomplete and inefficient use of the grid connection provided to the Scheme, and significantly reduce the emissions reduction benefits as presented within the ES. It would also undermine the safety measures in place to appropriately manage components like the BESS from fire risk or other potential malfunctions. This is not considered to align with the policy guidance within NPS EN-1 (Ref 1-1) or NPS EN-3 (Ref 1-2), including the CNP for the promotion of low carbon energy.</p> <p>Drafting guidance is clear that definitions should generally align with the common understanding of those terms. To exclude works to “alter, remove, refurbish, reconstruct and replace” infrastructure within the Scheme from the definition of maintenance would restrict the concept of maintenance in a way that is a significant departure from the ordinary meaning of the word.</p> <p>The power is appropriately constrained within Article 5 to exclude the “carrying out of any works which are likely to give rise to any materially new or materially different effects that have not been assessed in the environmental statement.” This is in line with the <i>Rochdale</i> assessment approach applied throughout the ES. The definition of maintenance as proposed by Tillbridge Solar in the current <b>draft DCO [REP1-008]</b> is also clear that maintenance works cannot “remove, reconstruct or replace the whole of, the authorised development”. This ensures impacts will be minor, alongside the assumptions throughout the ES that maintenance works would be appropriately scheduled so they result in effects no greater than recorded in the ES. Section 2 of the <b>Framework Operational Environmental Management Plan (OEMP) [REP1-019]</b> provides greater detail and controls on the scheduling and management of operational maintenance and replacement activities. The principles of the Framework OEMP is further secured within Requirement 13 to the <b>draft DCO [REP1-008]</b> whereby the detailed OEMP will need to be substantially in accordance with the Framework OEMP and the OEMP implemented as approved and maintained throughout the operation of the development Further discussion on the OEMP and its management of maintenance activities is included in Row 4.3 of the <b>Applicant’s Written Summary of Applicant’s</b></p>

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
				<p><b>Oral Submissions at the Issue Specific Hearing 1 [REP1-046]</b> as submitted at Deadline 1.</p> <p>It is noted that all recent made Solar DCOs have included the full definition of maintain as currently set out in the <b>draft DCO [REP1-008]</b>, including the Gate Burton Energy Park Order 2024, the Cottam Solar Project Order 2024, the Mallard Pass Solar Project Order 2024 and the Longfield Solar Farm Order 2023 (as well as extensive precedent in other types of energy DCO over many years, for example The Eggborough Gas Fired Generating Station Order 2018 and The Drax Power (Generating Stations) Order 2019). The final decision on the West Burton Solar Farm has not yet been made, however it is noted that the Applicant did not accept the proposed changes by the Examining Authority in its response to the schedule of changes and included the same definition as the Tillbridge Solar Project in its final proposed draft DCO.</p>
REP1-062	7000 Acres	Draft DCO	Comments relating to Article 36 of the draft DCO with regards to the difficulties of landowners to understand and negotiate the compulsory acquisition of land within the Cable Route Corridor where the Order limits of multiple schemes overlap. 7000 Acres agreed to pass on to any affected landowners the offer of the Examining Authority for them to participate in upcoming Compulsory Acquisition hearings.	<p>The Applicant has responded to this comment in part at page 15 of the <b>Written Summary of Applicant's Oral Submissions at the Issue Specific Hearing 1 [REP1-046]</b>, in response to the Examining Authority's questions on Article 36 of the <b>draft DCO [REP1-008]</b>. This summary explains that the Applicant is currently preparing a further cooperation agreement with the other developers sharing the Cable Route Corridor, that will put in place mechanisms for dealing with overlapping compulsory acquisition powers. Further, while the compulsory acquisition rights do overlap in places for the purposes of construction, in practice each project would only end up with permanent rights related to the easement they require for their particular cabling. The specific wording within Article 36(3)(b) – (d) of the <b>draft DCO [REP1-008]</b> enables transfer of acquisition rights to the other Lincolnshire solar schemes under the Article. This will enable areas of overlapping works to be undertaken by a single scheme (if necessary) to minimise impacts and agreed in line with the updated cooperation agreement.</p> <p>The Applicant does however understand landowners may still have questions regarding the management of acquisition for the Cable Route Corridor. The Applicant has sought to answer any questions or concerns raised by landowners swiftly and to generally engage on a proactive and positive basis. The Applicant would be happy to engage directly with any landowners with these or similar concerns, or to otherwise address these matters if raised by those landowners at the Compulsory Acquisition Hearings.</p>
REP1-062	7000 Acres	Draft DCO	Supports the amendments proposed by the Applicant to Article 39(1) of the draft DCO to remove the term 'near' the Order Limits in respect of the felling or lopping of trees and replace this with 'within' the Order Limits.	The Applicant acknowledges this support for Article 39(1) as amended.
REP1-062	7000 Acres	Draft DCO	Requests that Article 40 2(b) regarding the replacement of trees protected by tree preservation orders (TPO) is amended to remove the exclusion of replacement requirements under section 206 of the Town and Country Planning Act 1990.	The Applicant has responded to this comment at page 16 of the <b>Written Summary of Applicant's Oral Submissions at the Issue Specific Hearing 1 [REP1-046]</b> . This explains that section 206 of the 1990 Act provides that replacement of removed TPO trees must occur "in the same place" as where the original tree was removed. This cannot be committed to since the Scheme would only need to undertake works to a tree protected by a TPO, if there was conflict with the Scheme spatially (i.e. the tree was in the way of intended infrastructure). The undertaker would therefore not be able to commit to replanting a replacement tree in the same location in which it was removed. However,

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
				the Applicant has amended the <b>Framework LEMP [REP1-023]</b> at Deadline 1 to clarify that the undertaker will replace any TPO tree in a suitable location elsewhere within the Order limits if a tree protected by a TPO has to be removed.
Environmental Impacts				
REP1-063	7000 Acres	Issue Specific Hearing on Health and Wellbeing	Request for an Issue Specific Hearing on health and wellbeing.	While the issues to be covered in any Issue Specific Hearings will be determined by the Examining Authority, the Applicant considers that the assessment within <b>Chapter 11: Human Health</b> of the ES <b>[APP-042]</b> of the effects of the Scheme on human health is proportionate and robust. The Applicant will of course meaningfully engage and partake in any Issue Specific Hearing on health and wellbeing, so that the evidence for the assessment can be further examined, if required, in order to assist the Examining Authority and/or any relevant interested parties.
REP1-065	7000 Acres	Human Health and Wellbeing	<p>Comment that Chapter 11: Human Health of the ES [APP-042] has been compiled through a desk top review and request that a deep dive local review is necessary to understand the complex issues communities will face particularly around the 60-year period.</p> <p>Comment that the Applicant does not have the necessary capability to provide a balanced opinion on the subject, and that the document should have been outsourced to experts who are able to obtain data beyond a desktop review.</p> <p>Comment that the local NHS and public health have relevant data necessary to inform this examination.</p> <p>Comment that scrutiny by local Statutory Bodies did not take place.</p>	<p>The assessment of effects on human health set out in <b>Chapter 11: Human Health</b> of the ES <b>[APP-042]</b> was undertaken utilising The Institute of Environmental Management and Assessment (IEMA) guidance <i>“Determining Significance For Human Health In Environmental Impact Assessment”</i> (Ref 1-4) and supported by the NHS Healthy Urban Development Unit’s (HUDU) <i>“Rapid Health Impact Assessment Matrix Tool”</i> (2019) (Ref 1-5). This constitutes widely recognised guidance in the assessment of impacts on human health, used by both local planning authorities and developers in determining and submitting planning applications. On this basis, a Health Impact Assessment has been completed using the above guidance and was submitted within Chapter 11. The methodology of the assessment was set out within Chapter 12 of the <b>EIA Scoping Report [APP-051]</b>, with limited comments received from the Planning Inspectorate within Section 3.6 of the <b>EIA Scoping Opinion [APP-052]</b>. The Applicant considers that preparing a standalone Health Impact Assessment document would not assess additional health determinants to those considered within <b>Chapter 11: Human Health</b> of the ES <b>[APP-042]</b> and therefore, would not change the conclusions of the assessment.</p> <p><b>Chapter 11: Human Health</b> of the ES <b>[APP-042]</b> is informed by both desktop and survey information collated for <b>Chapter 6: Air Quality [APP-037]</b>, <b>Chapter 7: Climate Change [APP-038]</b>, <b>Chapter 12: Landscape and Visual Amenity [APP-043]</b>, <b>Chapter 13: Noise and Vibration [AS-006]</b>, <b>Chapter 14: Socio-economics and Land Use [APP-045]</b>, <b>Chapter 16: Transport and Access [APP-047]</b> and <b>Chapter 17: Other Environmental Topics [APP-048]</b> of the ES, as well as desk-based research on the existing human population health baseline.</p> <p>As part of statutory consultation, comments from NHS Lincolnshire Integrated Care Board (ICB), NHS Nottingham and Nottinghamshire ICB, NHS England, UK Health Security Agency, and East Midlands Ambulance Service NHS Trust, in addition to the affected local authorities, parish councils and local residents, were requested on the Preliminary Environmental Information Report, including the preliminary health and wellbeing assessment. Comments received from the statutory bodies on the human health topic are summarised within <b>Table 10-13</b> of the <b>Consultation Report [APP-021]</b>.</p>
REP1-065	7000 Acres	Equality Impact Assessment	Comment that the Equality Impact Assessment is lacking, especially around deep dive local data to inform the	With regards to the Equality Impact Assessment (EqIA), Section 6.5 of the <b>EqIA Report [APP-227]</b> summarises the Applicant’s approach to engage with seldom heard and

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
			<p>examiner on how the Scheme will impact on communities with potential issues around health inequality.</p> <p>Comment that full engagement with people with protected characteristics, inclusion health and vulnerable groups is required, and that no HEAT (Health Equity Assessment Tool) has been completed, which should form part of the process.</p>	<p>underrepresented groups, including those with protected characteristics. Table 7-1 of the <b>EqlA Report [APP-227]</b> provides a summary of where protected characteristic groups could be differently affected by the Scheme and measures proposed to mitigate these effects. It is also noted that the Scheme has incorporated specific mitigation to minimise effects on East Cottage, Northlands Road, as summarised within Table 2-3 below, as a result of the feedback received from Nicholas Mapstone and Alison Wood.</p> <p>Section 2 of the <b>EqlA Report [APP-227]</b> titled ‘Methodology’ outlines the approach adopted for conducting the assessment. The Health Equity Assessment Tool (HEAT) was not utilised to inform the EqlA and it is noted that no request for its use was made prior to the submission of the DCO Application. The HEAT methodology is intended to be applied prior to design freeze and therefore, it is not considered to be useful to apply it retrospectively. It is also noted that there is no precedent in using the HEAT methodology in EqlAs for DCO applications.</p>
REP1-063	7000 Acres	Cumulative Effects	Comments relating to cumulative effects, and request for an Issue Specific Hearing on cumulative effects.	The Applicant considers it has thoroughly considered the potential cumulative effects relevant to the Scheme within <b>Chapter 18: Cumulative Effects and Interactions</b> of the ES <b>[APP-049]</b> . However, should the Examining Authority consider a further issue specific hearing on this topic is required, the Applicant would be willing to engage and provide any further information as helpful to 7000 Acres or the Examining Authority.
REP1-062	7000 Acres	Water Quality	Concern regarding the discharge of chemicals whilst cleaning solar panels, with confirmation requested that only potable water will be used to clean the panels.	As set out within the <b>Written Summary of Applicant’s Oral Submissions at the Issue Specific Hearing 1 [REP1-046]</b> and paragraph 2.2.1 of the <b>Framework OEMP [REP1-019]</b> , clean water with no added chemicals, sourced from local potable water suppliers, will be used for the annual panel cleaning. As such, this will not lead to any pollution risk.
REP1-062	7000 Acres	Biodiversity Net Gain	Request for the Applicant to break down the calculations of net gain first by listing the existing and mature trees, hedgerows, and vegetation lost to aid understanding.	The <b>Biodiversity Net Gain Report [AS-062]</b> uses the Defra’s Statutory Metric (Ref 1-6) to calculate biodiversity net gain. The methodology of the metric is to first establish the baseline habitats and their characteristics within the Order limits and then the post-development habitats and their characteristics. The data tables for pre-and post-development habitats are included within <b>Appendix F</b> of the <b>Biodiversity Net Gain Report [AS-062]</b> . As such, the submitted information includes a break down of existing habitats and the total net unit change, thereby including the information requested. A summary of the results are set out in Table 4 on page 14 of the <b>Biodiversity Net Gain Report [AS-062]</b> .

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

Table 2-3. Applicant’s Responses to Local Authorities, Parish Councils’, Persons with an Interest in the Land and Members of the Public

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
Statement of Common Ground				

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
REP1-094	Nicholas Mapstone and Alison Wood	Mitigation	Comment from Mr Mapstone and Ms Wood that the Applicant has made no meaningful concessions to mitigate fundamental worries in discussions with them or their agents to date.	<p>As set out in Table 2-14, RR Ref No. RR-014, pages 280 to 283 of the <b>Applicant’s Responses to Relevant Representations [REP1-028]</b>, the Applicant was first made aware of the concerns set out by Mr Mapstone and Ms Wood in respect of the potential noise impacts of the Scheme in July 2023. The Applicant has sought to engage with Mr Mapstone and Ms Wood and address their concerns through updates to the Scheme design and additional assessment since that time. This has included engaging with their noise consultant and lawyer in discussions over the course of 2024.</p> <p>As part of the conversations with Mr Mapstone and Ms Wood’s noise consultant, the Applicant’s noise consultant produced an ‘Acoustics Technical Note’ in May 2024 which further assessed and set out the anticipated noise levels at the property resulting from the operation of the new infrastructure associated with the Scheme. The noise modelling reported in the technical note demonstrated that siting the BESS and Solar Stations further away from the property, would lead to lower predicted noise levels at the property compared to alternative scenarios. As such the Applicant changed its proposed site layout by making a commitment in the draft DCO to avoid BESS and Solar Stations within the field closest to the property (Field 92) and by making a commitment that operational noise will not exceed the noise levels as reported within <b>Chapter 13: Noise and Vibration</b> of the Environmental Statement <b>[AS-006]</b>. This is shown in <b>Figure 3-1: Indicative Principal Site Layout Plan</b> of the Environmental Statement <b>[AS-055]</b> and secured through the <b>Works Plans [EN010142/APP/2.3(Rev03)]</b>, which explicitly exclude the provision of Solar Stations and BESS on Field 92, and by requirement 17 of Schedule 2 of the <b>draft DCO [REP1-008]</b> which requires compliance with the operational noise rating levels set out within the Environmental Statement.</p> <p>In July 2024, the Applicant also produced a non-technical ‘Report on the Development Consent Order Process’ to support and assist discussions with the Mr Mapstone and Ms Wood to explain how the new, and existing mitigation and control measures would be secured through the made Order if development consent is granted to ensure that the Scheme does not result in significant effects with respect to noise at their property.</p> <p>The Acoustics Technical Note and the Report on the Development Consent Order Process were appended to the <b>Applicants Response to Relevant Representations [REP1-028]</b> at <b>Appendix C</b> and <b>D</b> respectively.</p> <p>Landscape proposals have also been developed in greater detail following statutory consultation to include both open grassland and belts of woodland within the fields immediately to the west and northwest of the Mr Mapstone and Ms Wood’s property, the latter to provide visual screening of any noise-generating operational plant from the property. These proposals are illustrated on <b>Figure 3-1: Indicative Principal Site Layout Plan</b> of the Environmental Statement <b>[AS-055]</b>. The <b>Framework LEMP [REP1-028]</b> forms part of the Application and provides a framework for achieving the outline design, as presented in <b>Figure 3-1: Indicative Principal Site Layout Plan</b> of the Environmental Statement <b>[AS-055]</b> and secured by Requirements 7 and 8 of the <b>draft DCO [REP1-008]</b>. Furthermore, the Change Request (granted by the Examining Authority on 24 October 2024) removes Northlands Road from the Order limits shown in <b>Figure 3-1: Indicative Principal Site Layout Plan</b> of the Environmental Statement <b>[AS-055]</b> to confirm that no construction, operational or decommissioning traffic would use a route near to East Cottage, Northlands Road.</p>

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
				<p>The Applicant considers all of the above actions reflect meaningful changes to the Scheme which have been specifically included to address concerns raised by Mr Mapstone and Ms Wood.</p>
REP1-094	Nicholas Mapstone and Alison Wood	Statement of Common Ground	<p>Concern that the Applicant has submitted a Statement of Common Ground into the application and that the Interested Parties disagree that outstanding issues are under active discussion noting that they consider there is no common ground with the Applicant and that there is no prospect of any agreement in the future.</p>	<p>The Applicant submitted an initial <b>Statement of Common Ground (SoCG)</b> at Deadline 1 <b>[REP1-039]</b>. This was to assist both the Examining Authority and Mr Mapstone and Ms Wood in demonstrating the willingness of the Applicant to enter into an SoCG, should Mr Mapstone and Ms Wood want to. It should be noted that paragraph 1.2.5 of the initial <b>SoCG</b> submitted at Deadline 1 <b>[REP1-039]</b> included bold red text explaining that the SoCG had been prepared by the Applicant at Deadline 1 to document discussions between the Parties to date and that it did not incorporate comments from Mr Mapstone and Ms Wood.</p> <p>The <b>Report on the Development Consent Order Process (Appendix D</b> of the <b>Applicants Response to Relevant Representations [REP1-028]</b>) which the Applicant shared with Mr Mapstone and Ms Wood included a section (section 2.6) explaining the purpose of an SoCG and what they would include. This explained (as also covered within the SoCG) that any SoCG would be a neutral document, which simply records the position of the parties as discussions progress through Examination, rather than necessarily requiring agreement. The Applicant acknowledges that an SoCG could include no matters of agreement, if the parties are unable to come to common ground on any issues.</p> <p>The Applicant acknowledges that Mr Mapstone and Ms Wood do not believe there to be common ground between themselves and the Applicant now or in the future, however, the Applicant remains open to entering into a SoCG at any point during the Examination should they wish to do so. As mentioned above, such a SoCG would detail all matters that are not agreed and aid the Examining Authority in identifying these matters so they can take them into consideration in their decision making.</p>
REP1-094	Nicholas Mapstone and Alison Wood	Relevant Representation	<p>Comment that the Applicant has given Mr Mapstone and Ms Wood's now former solicitor access to Ms Wood's Relevant Representation.</p> <p>Concern that the Applicant suggested to Ms Wood's solicitor that Ms Wood's position is to attempt to stop the development being built altogether rather than simply objecting to the principle of the solar farm on the planning merits and being primarily concerned with protecting their daughter's interests in relation to her noise sensitivities.</p> <p>Concern that it is inappropriate for the Applicant to use Ms Woods Relevant Representation as leverage within communications and fear that it could be used to undermine any statements and</p>	<p>At the time of circulating the initial SoCG to Mr Mapstone and Ms Wood's solicitor on the 21 October 2024, the Applicant understood that the solicitor was instructed to act on behalf of their client (which we understand to have been a correct understanding). The drafting of the initial SoCG was based upon the Relevant Representations submitted into the Examination by Ms Wood and Mr Mapstone [RR-014 and RR-215]. Like other relevant representations submitted, Ms Wood's Relevant Representation forms part of the publicly accessible Examination Library (as published on the Nationally Significant Infrastructure Project website) to be considered by the Examining Authority, the Applicant and other interested parties. The website link to this public Relevant Representation was the document which the Applicant shared with Ms Wood's solicitor.</p> <p>Given the Relevant Representation was within the public domain, was requested by Ms Wood's solicitor, and that the Applicant understood (correctly) at the time that the solicitor was instructed to act on behalf of Ms Wood as their client, the Applicant does not consider sending the website link of the Relevant Representation to that solicitor was inappropriate. There was no intention, at that time nor since, by the Applicant to utilise the Relevant Representation for "leverage" in discussions. The Applicant did not undertake any communications with Ms Wood's solicitor in respect of its understanding of Ms Wood's position, beyond that summarised within the draft SoCG. At no point has the Applicant made any comment as to the intentions nor motivation of Ms Wood. The SoCG was not prepared to force a position on Ms Wood or Mr Mapstone, but rather to seek to explore any</p>



Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
			submissions she might make to the Inspectorate in the future	matters of common ground and to assist the Examining Authority and Mr Mapstone and Ms Wood to clearly identify matters of agreement <b>and</b> disagreement.
			Comment noting that the main concern of Mr Mapstone and Ms Wood is in relation to the noise impacts of the Scheme.	The Applicant understands that Mr Mapstone and Ms Wood do not wish to agree to enter into an SoCG and are no longer retaining the services of their solicitor. The Applicant is fully cognisant that the main concern for Mr Mapstone and Ms Wood remains the noise impacts of the Scheme. The Applicant remains open to future discussions with Mr Mapstone and Ms Wood.
Need				
REP1-067	Members of the Public	Need	Request for evidence that the project is ‘urgent’	<p>Section 5 of the <b>Planning Statement [AS-029]</b> and the <b>Statement of Need [APP-210]</b> sets out in detail the reasons why large scale solar, such as the Scheme, is urgent. As set out in paragraph 4.2.4 of NPS EN-1 (Ref 1-1), there is a CNP for new nationally significant low carbon and renewable energy infrastructure, which includes solar development, due to the critical and urgent global need to provide sufficient, reliable and affordable sources of electricity, whilst meeting national climate change and carbon reduction targets and budgets.</p> <p>Without the Scheme, a significant and vital opportunity to develop a largescale low-carbon generation scheme will have been missed, increasing the risk that future Carbon Budgets and Net Zero 2050 will not be achieved.</p>
Solar Energy				
REP1-081, REP1-085, REP1-086, REP1-060, REP1-067, REP1-078, REP1-071, REP1-089, REP1-093	Members of the Public	Efficiency of solar	Comments that solar is not effective or efficient, and does not provide energy during the night or in the winter.	The Applicant has provided a response to comments relating to efficiency of solar in Table 2-22 on page 298 of the <b>Applicant’s Response to Relevant Representations [REP1-028]</b> . The Applicant has also produced a technical note on generating capacity and associated development at <b>Appendix B</b> of the <b>Written Summary of Applicant’s Oral Submissions at the Issue Specific Hearing 1 [REP1-046]</b> which explains the role of the BESS in ensuring that energy is captured and stored efficiently during periods of peak generation and can be made available for use throughout the year.
REP1-087	Members of the Public	Percentage (%) of energy and land use	Comments relating to the percentages (%) of energy produced compared to the amount of land take.	The Applicant has prepared a technical note on generating capacity and associated development at <b>Appendix B</b> of the <b>Written Summary of Applicant’s Oral Submissions at the Issue Specific Hearing 1 [REP1-046]</b> which provides a response to the points raised in this submission. The Applicant has also prepared a Report on the Cumulative Impacts of Solar Projects on Agricultural Land in Lincolnshire ( <b>Appendix B</b> of the <b>Applicant’s Response to Relevant Representations [REP1-028]</b> ) which provides further details of the amount (hectares and %) of land used by the Scheme and other solar projects within Lincolnshire.
REP1-078	Members of the Public	Details of	<p>Request that the Applicant be asked to demonstrate how this development of size and scale will provide for the needs of the country when we most use electricity.</p> <p>Request that the Applicant give statistics to the Examining Authority of what percentage solar plays in the energy mix in providing</p>	The Scheme is designed to generate clean energy during daylight hours when demand is higher. Night-time demand is approximately 20% lower than daytime demand based on 2013–2023 data from 6 PM to 6 AM. Where the Scheme generates excess energy during the daytime, the co-located BESS stores this excess electricity to supply the grid at night and during peak demand periods. The BESS can store energy for up to four hours at the full capacity of the grid connection, ensuring a reliable supply even when solar generation is low.

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
			the UK with the energy it needs at night and in the winter.	<p>The UK has an urgent need for new sources of clean energy generation. This is established by policy. It is this urgent need that the Scheme is designed to provide for. Between 2013 and 2023, the UK's reliance on imported electricity doubled, while the share of solar generation increased from 0.62% to 4.6%, however fossil fuels still accounted for 32.2% of electricity generation in 2023. The Scheme would be able to reduce fossil fuel reliance by up to 0.2% per year based on 2023 figures.</p> <p>The above data is available through the National Energy System Operator's (NESO) website (Ref 1-24).</p>
REP1-067	Members of the Public	Extent of energy generation	Request to clarify which of the 300,000 homes are to be powered by the Scheme	<p>The Applicant has calculated that over the 60-year lifetime of the Scheme, it will have a total energy generation figure of approximately 48.5 TWh. Further details of this calculation are available in <b>Appendix B</b> of the <b>Written Summary of Applicant's Oral Submissions at the Issue Specific Hearing 1 (ISH1) [REP1-046]</b>.</p> <p>Ofgem estimates that the typical household in Britain uses 2,700 kWh of electricity per annum. Therefore, the Applicant has calculated that the Scheme will generate enough electricity to power approximately 300,000 homes per annum.</p> <p>The Scheme will export energy to the national electricity transmission system. This distributes energy across Great Britain to wherever it is needed. This means that the energy from the Scheme may support the needs of local homes and businesses, but not exclusively so.</p>
REP1-067, REP1-069	Members of the Public	Extent of energy generation	Concerns relating to price of energy and request to clarify how the price of electricity will be reduced for households	<p>As set out in the <b>Written Summary of Applicant's Oral Submissions at the Open Floor Hearing 1 [REP1-047]</b> as the electricity generated from the Scheme will be exported to the National Electricity Transmission System, and provided to consumers via third party electricity companies, the Applicant cannot commit to the provision of cheaper electricity prices for the specific community surrounding the Site. However, paragraphs 8.4.13 and 8.4.14 of the <b>Statement of Need [APP-210]</b> outline the impacts that insufficient renewable generation capacity would have on the UK, compared to building large quantities of renewable generation. The latter is anticipated to keep consumer costs down by capturing and storing energy when it is abundant (therefore cheap) and releasing it when it is needed. Solar remains one of the cheapest forms of electricity generation available with current technologies.</p> <p>The Scheme, through generating electricity will make a positive contribution to the UK's energy security. It is expected that the more power that is generated from renewable and low carbon sources (and the provision of this power at periods of high demand, through the use of technology like BESS), will lower the market price of electricity so that expensive and more carbon intensive forms of generation do not need to generate as much. The <b>Statement of Need [APP-210]</b> concludes at Section 9.5 that solar power delivers national decarbonisation benefits and supports consumer affordability aims, to the benefit of electricity consumers.</p>
REP1-069	Members of the Public	Use of solar energy	Query if the main purpose of any electricity produced would be to charge the batteries, which will then be used at peak demand, the most expensive time of the day, for discharge	<p>The main purpose of the Scheme is the generation of energy from the solar PV site. Any associated development (including BESS) is to support the Scheme's solar PV generation.</p> <p>The excess electricity generated by the solar panels (above the Scheme's export capacity of 500MW) will be stored in the BESS and discharged when the grid requires it. The grid most needs energy from sources like BESS when there is an increased demand and the same or lower levels of energy generation from the range of generating types across the UK. This may mean that the</p>

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
				BESS is discharging at times where electricity prices are higher due to increased demand in the market, or at times where they are lower. The Scheme does not control that pricing and will provide energy at periods of both high and low pricing as required by the Grid.
Scale, landscape and visual impacts				
REP1-061, REP1-075, REP1-066, REP1-081, REP1-083, REP1-083, REP1-079, REP1-070, REP1-091, REP1-089, REP1-095, REP1-093, REP1-091	Upton Parish Council, Fillingham Parish Meeting, Members of the Public	Scale	Comments relating to the scale of the Scheme and its impact on the landscape, including historic landscape including industrialisation of a large area of countryside	The Applicant has provided responses to concerns relating to the scale of the Scheme and its impact on the landscape in Table 2-12, page 271 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> . The Applicants responses relating to the historic landscape are set out in Table 2-2, RR Ref No. RR-165, pages 89 to 99 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> .
REP1-061, REP1-081, REP1-083, REP1-083, REP1-070, REP1-091	Upton Parish Council, Members of the Public	Visual impacts	Comments relating to the visual impacts of the Scheme, specifically: <ul style="list-style-type: none"><li>- View from Lincolnshire Wolds across the Trent Valley to the Derbyshire Hills.</li><li>- Views from the B1398 Middle Street between Harpswell and Glentworth and along the un-named road between Harpswell and Heapham.</li><li>- Views to and from Lincoln Cliff Area of Great Landscape Value (AGLV).</li><li>- Views along the public right of way (Bridleway) between Harpswell and Glentworth, (yet to be re-instated).</li><li>- Views from the A631 and from Common Lane.</li><li>- View from Harpswell Village.</li><li>- View from the raised bank where St. Chad's Church sits.</li><li>- Views south of Harpswell Hall from Old Hall looking south-west.</li><li>- View from the Moat looking south-west within the Scheduled Monument.</li><li>- Views from Common Lane out of the village, looking to the south and south-west.</li></ul>	<p>The Applicant has provided responses to concerns relating to visual impacts in Table 2-12, page 271 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b>.</p> <p>As set out in <b>Chapter 12: Landscape and Visual Amenity</b> of the ES <b>[APP-043]</b> both the extent of the Study Area (which extends 5km from the Principal Site boundary) and the number and location of viewpoint locations were agreed with the Lincolnshire County Council Landscape Officer.</p> <p>With respect to the listed viewpoints, responses are provided in turn below.</p> <p>The boundary to the Lincolnshire Wolds National Landscape is located approximately 18 km to the east of the Scheme at the nearest point. It is not considered that there would be any appreciable visibility from the Wolds, due to distance and the intervening landform of Lincoln Cliff. For this reason, no viewpoints were included from the Wolds within <b>Chapter 12: Landscape and Visual Amenity</b> of the ES <b>[APP-043]</b>.</p> <p>Viewpoint 4 in <b>Chapter 12: Landscape and Visual Amenity</b> of the ES <b>[APP-043]</b> is located on the B1398 (Middle Street) between Harpswell and Glentworth. This private farm access is the only stopping point along this section of Middle Street and provides the most open, worst-case view.</p> <p>Viewpoints 2, 17, 18 and 29 in <b>Chapter 12: Landscape and Visual Amenity</b> of the ES <b>[APP-043]</b> are located along the unclassified road (Common Lane) between Harpswell and Heapham.</p> <p>The importance of views to and from Lincoln Cliff and the AGLV is noted throughout <b>Chapter 12: Landscape and Visual Amenity</b> of the ES <b>[APP-043]</b> and informed the selection of a substantial proportion of the viewpoints.</p>

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				<p>The claimed PRow between Harpswell and Glentworth is noted in <b>Chapter 12: Landscape and Visual Amenity</b> of the ES [APP-043]. However, no viewpoints were selected as it did not form part of the baseline and was thus not publicly accessible at the time of report preparation.</p> <p>Viewpoints 1 and 20 in <b>Chapter 12: Landscape and Visual Amenity</b> of the ES [APP-043] represent receptors using the A631. Viewpoints along Common Lane are noted in the response to the ‘un-named road between Harpswell and Heapham above.</p> <p>The surroundings of the raised bank upon which St. Chad’s Church in Harpswell is situated were visited by both Applicant’s heritage and landscape consultants. Views were observed to be subject to screening by trees, therefore Viewpoint 3 in <b>Chapter 12: Landscape and Visual Amenity</b> of the ES [APP-043], which is from a more open and ‘worst-case’ location on a PRow approximately 130 m to the west, was selected in preference.</p> <p>Viewpoint 3 in <b>Chapter 12: Landscape and Visual Amenity</b> of the ES [APP-043] is located within the Scheduled Monument of Harpswell Hall, close to the site of the former Hall.</p> <p>Viewpoint 14 in <b>Chapter 12: Landscape and Visual Amenity</b> of the ES [APP-043] is located on the moat, within the Scheduled Monument of Harpswell Hall. The extent of the view shown in the photomontages, <b>Figure 12-14</b> of the ES [APP-187], is towards the west and southwest, where the aspect is most open. Views towards the south are screened by a dense shelter belt.</p> <p>Viewpoint 2, including 2a to the east and 2b to the west in <b>Chapter 12: Landscape and Visual Amenity</b> of the ES [APP-043], is located on Common Lane approximately 1.1 km west of Harpswell. Although it is not located directly on the edge of the settlement, this location was chosen to better reflect a key view noted in the Hemswell and Harpswell Neighbourhood Plan (Ref 1-7).</p>
REP1-091	Members of the Public	Harpswell and Hemswell Landscape Character Assessment	The Applicant has been very selective in its use of information from the Character Assessment undertaken by the Harpswell and Hemswell Neighbourhood Planning Team, particularly the need to protect important views, not just from the cliff edge but also the views towards the cliff edge and across the landscape.	<p>The Applicant has considered the Hemswell and Harpswell Neighbourhood Plan (Ref 1-7) and supporting Character Assessment (Ref 1-8) as part of the baseline for <b>Chapter 12: Landscape and Visual Amenity</b> of the ES [APP-043], as well as informing the selection of representative viewpoints and photomontages provided in <b>Figures 12-13</b> and <b>12-14</b> of the ES [APP-185 to 186] and [APP-187] respectively. This selection forms part of a wider range of viewpoints which are considered to be proportionate to the Scheme; cover a range of receptors; and were agreed with Lincolnshire County Council Landscape Officer.</p> <p>With respect to views from the Cliff noted in the Character Assessment (Ref 1-8), Viewpoint 20 corresponds with Viewpoint 4 (<b>Figure 12-14</b> of the ES [APP-187]), from Middle Street. Views towards the Scheme from Viewpoint 6 further north on Middle Street were observed to be very limited by vegetation, whilst those from Viewpoint 5 (from a PRow close to Middle Street) are not expected to be available due to dense woodland. As such, Viewpoint 13 (<b>Figure 12-14</b> of the ES [APP-187]), from the PRow adjacent to Millfield, was selected as a worst-case, accessible view; and for which a significant residual visual effect is noted. The Applicant considers that Viewpoints 4 and 13 are the most appropriate and proportionate reflection of views from the Cliff within the Neighbourhood Plan area.</p> <p>With respect to views towards the Cliff, Viewpoint 10 in the Character Assessment (Ref 1-8) (from the A631) approximates to Viewpoint 1 (<b>Figure 12-13</b> of the ES [APP-185 to 186]), with the latter</p>

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
				<p>reflecting the loss of some views, but for lower sensitivity, fast-moving travellers in vehicles and where other views towards the Cliff will remain. Viewpoint 13 is located on a private track to Hemswell Grange and was not considered suitable as a representative viewpoint, but consultation with the landowner has nevertheless resulted in appropriate set-backs from panels to maintain longer-range views to the Cliff from this location. Viewpoint 19 in the Character Assessment (Ref 1-8), on Common Lane, is close to Viewpoint 2 (<b>Figure 12-14</b> of the ES <b>[APP-187]</b>); although there will be visibility of the Scheme at this point, views towards the closest section of the Cliff will not be disrupted.</p> <p>The Applicant acknowledges that there will be a loss of views towards the Cliff from other sections of the A631 and along Common Lane, the latter reflected by representative Viewpoint 29 (<b>Figure 12-13</b> of the ES <b>[APP-185 to 186]</b>). However, neither is considered to be a route that is recognised as being of higher value with respect to recreational use; and residual effects arising from the loss of views when hedgerows mature are not considered to be significant. Hedgerows are present along other east-west routes and are not an incongruous element within the landscape.</p>
REP1-091	Members of the Public	Hedgerows	Concern relating to the filling in of hedgerows which removes characteristics of the area and will create a 'tunnel' effect when travelling along Common Lane, and to a certain extent along the A631.	As noted above in the response above, the Applicant acknowledges that there will be a loss of wider, rural views (including towards the Cliff) following establishment of hedgerows. The Applicant accepts that the character of such routes, particularly Common Lane, will inevitably change. However, it is not considered that this change would be a significant visual effect, in that hedgerows are not uncharacteristic of the wider landscape and the absence of hedgerows is frequently a reflection of intensive agricultural practice and loss of more valued features.
REP1-091	Members of the Public	Landscape character	Concern that the Scheme will adversely affect the character of the landscape and remove characteristic features of the landscape.	The Applicant acknowledges that significant residual effects will arise for the landscape character area that includes the Principal Site (LLCA 3a Till Vale Open Farmland), as stated in <b>Chapter 12: Landscape and Visual Amenity [APP-043]</b> of the ES. However, these effects can be considered against the benefits of the proposed extended and enhanced green infrastructure, which includes new tree, woodland and hedge planting; the introduction of species-rich meadows and other areas of improved ecological value; and the cessation of industrial and intensive farming methods that have reduced biodiversity over time. Construction of the Scheme will not result in the loss of valued landscape features such as veteran or ancient trees or areas of high biodiversity; there will be only localised removal of short sections of hedgerow and a small number of low-value trees where this cannot be avoided for access.
REP1-089	Members of the Public	Landscape screening	Concern that trees and hedgerows will take years to screen views to the PV panels, especially considering the size of the panels are larger than other schemes	<p>The assessment assumes 15 years of vegetation growth before screening is mature. The <b>Framework LEMP [REP1-023]</b>, which is secured by a Requirement of the <b>draft DCO [REP1-008]</b>, includes measures to ensure that existing and proposed vegetation within the Principal Site is managed over the lifetime of the Scheme. These measures include monitoring and maintenance of tree and hedgerow planting, with requirements for replacement of failed plants during each planting season within the establishment period.</p> <p>The Applicant is yet to select the model of panels that are to be used for the Scheme, it is therefore not possible to compare the size of the panels to other solar projects at this time. This procurement decision will be made following the detailed design stage. This will allow the Scheme to make use of the best available technology at the time of construction. For the purpose of assessing the Scheme's effects, a Rochdale Envelope approach has been adopted (using maximum parameters that represent the 'worst case' scenario in terms of potential effects). Details of the maximum</p>

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				<p>parameters for the solar PV panels are given in Table 3-3 of the ES <b>Chapter 3: Scheme Description [AS-053]</b>. This specifies that the panels will be a maximum of 3.5m above the ground.</p> <p>A photomontage for Viewpoint 17 on Common Lane is provided in <b>Figure 12-14</b> of the ES <b>[APP-187]</b> and referenced in <b>Chapter 12: Landscape and Visual Amenity</b> of the ES <b>[APP-043]</b>. This illustrates the level of screening provided to the panels by an established hedge of between 2 and 3 m in height, including during the winter months. Subject to the management prescriptions within the Framework LEMP outlined above, new hedges may achieve these heights within five to seven years, although the 15-year assessment stage reflects a worst-case scenario.</p>
REP1-091, REP1-090	Members of the Public	Length of Scheme	Concern relating to the timescale of the Scheme, and how the proposed changes would entail that very few, if any, people currently alive would ever again be able to experience the historical development of the Harpswell and wider landscape post-decommissioning.	<p>The Applicant acknowledges the concerns regarding the duration of the impacts and has considered the operational effects of the Scheme to be long-term within <b>Chapter 8: Cultural Heritage [APP-039]</b> and <b>Chapter 12: Landscape and Visual Amenity [APP-043]</b> of the ES.</p> <p>The Scheme design was amended during the pre-application period to take account of the sensitive landscape around Harpswell, including removal of panels from fields to west of Harpswell moat and provision of areas of biodiversity mitigation to the south.</p> <p>The Applicant has acknowledged that there will be a significant residual landscape effect on the Local Landscape Character Area (LLCA 3a Till Vale Open Farmland) that covers the west of the Neighbourhood Plan area, furthest from Harpswell village and not accessible to the public outside of the A631 and Common Lane. However, for the higher sensitivity LLCA 2B Lincoln Cliff-Harpswell, which encompasses the more valued landscapes including the open spaces and moat (and associated historic views) around the site of Harpswell Hall, a non-significant (minor) residual landscape effect was assessed. Similarly, for representative viewpoints 3 (within the open space) and 14 (on the moat), as presented in <b>Figure 12-14</b> of the ES <b>[APP-187]</b>, residual visual effects at the Year 15 stage are not assessed as significant.</p>
Agricultural Land and Food Security				
REP1-061, REP1-085, REP1-060, REP1-079, REP1-077, REP1-076, REP1-071, REP1-070, REP1-095, REP1-090	Upton Parish Council, Gillian Procter Chair of Springthorpe Parish Meeting, Members of the Public	Agricultural land and food security	Comments relating to loss of agricultural land and food security, both in isolation and cumulatively with other schemes	<p>The Applicant has provided responses to concerns relating to impacts on agricultural land and food security in Table 2-16, pages 285 to 287 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b>. This sets out that the Tillbridge Solar Project, through its site selection process sought to minimise impacts upon agricultural land, specifically Best and Most Versatile (BMV) land and through design iteration of the Scheme, has further minimised impacts. The siting of the Scheme on a small amount of BMV land is justified and the loss of agricultural land and therefore potential food production would mainly be temporary and reversible allowing the majority of the Principal Site to be brought back into agricultural use following decommissioning. In addition, the Scheme in combination with all cumulative solar developments would only result in 2.2% of agricultural land in Lincolnshire being taken out of agricultural use with the majority of this being temporary and reversible, and only 0.9% of all BMV land within Lincolnshire would be potentially permanently lost to all solar projects within Lincolnshire.</p> <p>In addition, the Secretary of State for the recent Gate Burton Energy Park [EN010131] and Cottam Solar Project [EN010133] decisions determined that the cumulative loss of BMV land across these two schemes, together with West Burton and the Tillbridge Solar Project, and therefore the potential impact upon agricultural land and food production, will be minor and would not impact food security when these four solar NSIPs are considered both individually and cumulatively. In addition, it should</p>

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REP1-082, REP1-085, REP1-060, REP1-067, REP1-069	Members of the Public	Crop yield	Comments that crop yields should be collected from local farmers to allow analysis of impact to food production, rather than use of Agricultural Land Classification (ALC) grading.	be noted that Defra monitoring of UK food security does not support the assertion that land use change threatens UK food security. The most recent United Kingdom Food Security Report was published by Defra in 2021 (Ref 1-9) and can be found at Appendix E of the of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> . Page 95 notes that the UK is largely self sufficient in grain production. Page 99 notes that the UK produces a roughly equivalent volume of meat, milk and egg to our domestic consumption. Defra's 2024 UK food security index (Ref 1-10), which can be found at <b>Appendix A</b> of this document shows that for all nine indicators, the assessment is broadly stable or a reduction in risk.
			Comment that there should be corroboration of yields over the past 20 – 30 years by HGCA (Home-Grown Cereals Authority).	<p>The National Planning Policy Framework (NPPF) (Ref 1-11) is important and relevant in the determination of the Application. Footnote 62 of the NPPF clarifies that the availability of agricultural land used for food production should be considered when deciding what sites are appropriate for development in addition to using areas of poorer quality land before land of a higher quality. There is no meaningful assessment to determine lost food production and there is no policy requirement to assess the impact of the Scheme on crop yields. Crop yields are highly variable and are dependent on a wide range of factors. Some of these factors are natural and largely uncontrollable. Whilst, at the time of writing, the Application will be considered in the context of the NPPF as relevant, National Policy Statements for Energy (NPS-EN1 (Ref 1-1), NPS EN-3 (Ref 1-2) and NPS EN-5 (Ref 1-11)) under Section 104(2) of the PA 2008 (Ref 1-3) are the primary policy consideration for NSIPs. The focus of planning policy remains on the use of land with specific tests associated with the use of lower quality agricultural land before higher quality (best and most versatile). In terms of food production, pages 111 and 112 of the <b>Applicant's Responses to Relevant Representations [REP1-028]</b> confirms that the UK is self-sufficient producing as much grain, meat, dairy and egg as is consumed. Land use change does not feature among the identified risks to UK food security. Climate change is, however, highlighted as a key risk to future UK food security. This demonstrates that despite concerns raised regarding the impact on food production, this impact will not be significant. The Application demonstrates that the use of agricultural land for the Scheme is justified, that the impact on best and most versatile land has been minimised, with the Scheme taking land out of agricultural use for a temporary long-term basis mainly, with only 0.92 hectares of BMV being permanently lost to proposed woodland planting, and confirming that it will not have a material impact on the availability of land for food production, even when considered in combination with other solar NSIP projects in the area.</p> <p>Further, pages 137 and 138 of <b>Applicant's Responses to Relevant Representations [REP1-028]</b> also addresses this point through references to recent decisions on the Gate Burton Energy Park [EN010131] and Cottam Solar Project [EN010133]. The Secretary of State determined in respect of those schemes that the cumulative loss of land to food production, which includes the Scheme, would be minor and would not impact on food security.</p>
REP1-071	Members of the Public	ALC grading	Query why the proposers of solar DCO projects get to decide which land is Category 3A or 3B, stating that farmers should decide this	<p>The Agricultural Land Classification (ALC) system is used in England and Wales as a method to assess the quality of farms. Agricultural land is classified into five grades which includes two subgrades (Grade 1, 2, 3 (3a, 3b), 4 and 5). Grade 1 is the best quality and Grade 5 is the poorest.</p> <p>Natural England's Technical Information Note 049 (TIN049) (Ref 1-12) directs that to inform land use planning decisions for agricultural land, a detailed ALC assessment should be provided. The Applicant has provided a detailed ALC assessment, prepared on their behalf by a specialist ALC</p>

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				<p>assessor, peer reviewed by another specialist ALC assessor, with the report submitted to Natural England for appraisal by their own ALC specialists.</p> <p>Paragraph 2.10.33 of NPS EN-3 (Ref 1-2) confirms that the ALC system is the only approved system for grading agricultural quality in England and Wales. Agricultural land within Grades 1, 2 and 3a is defined as best and most versatile (BMV) land, as set out in Natural England's Guide to assessing development proposals on agricultural land (2021) (Ref 1-13).</p>
REP1-067	Members of the Public	Agricultural land	Request for Applicant to provide the ALC grading of each field	<p><b>Figure 15-1: Principal Site Agricultural Land Classification Distribution [APP-192]</b> shows the ALC grading across the Principal Site for all fields within the Order limits. This figure shows the boundaries of fields via the light grey lines showing the Ordnance Survey basemap.</p> <p>This Figure is based on the soil resource data collected as part of the detailed ALC field assessment presented in <b>Appendix 15-2: Agricultural Land Classification Baseline Report</b> of the Environmental Statement <b>[APP-116]</b>. As directed by TIN049 (Ref 1-12), soil characteristics for the detailed ALC survey presented in that Report were gathered at sample points at 100m intervals, covering all fields within the Order limits of the Principal Site.</p>
REP1-060, REP1-061, REP1-075, REP1-076, REP1-077	Upton Parish Council Gillian Procter Chair of Springthorpe Parish Meeting Fillingham Parish Meeting, Members of the Public	Agricultural employment	Comments relating to loss of agricultural employment, leading to a decline in the local economy	The Applicant has provided responses to concerns relating to impacts on agricultural employment and the local economy in Table 2-3, RR Ref No. RR-292 on page 136 to 139 of the <b>Applicants Response to Relevant Representations [REP1-028]</b> .
REP1-060, REP1-061, REP1-076	Upton Parish Council, Gillian Procter Chair of Springthorpe Parish Meeting, Members of the Public	Tenant famers	Concerns relating to impacts to tenant farmers losing their livelihoods and having to look elsewhere for a living	The status of agricultural tenancies is a matter for the landlord and tenant in each case. The Applicant is seeking to reach voluntary agreements with all landowners for the Scheme. It is acknowledged the change in land use by the Scheme may result in impacts on the nature of farming activities currently undertaken within the Principal Site, including those currently undertaken by tenant farmers. However, it is noted, as set out in section 15.8 of <b>Chapter 15: Soils and Agriculture</b> of the ES <b>[APP-046]</b> , that during operation, grass below and between the solar panels will need to be managed, which may include grazing by livestock where appropriate. This management stands to create job opportunities during operation. The assessment of effects on farm businesses takes this in to account alongside the beneficial effects for the majority of farm businesses within the Principal Site from the diversification of land use and income.
Historical Environment				
REP1-077, REP1-091	Members of the Public	Historical villages	Comment relating to impacts to historical villages	<p>Please refer to the following locations in the <b>Applicant's Response to Relevant Representations [REP1-028]</b> for a response to this comment:</p> <ul style="list-style-type: none"><li>• Table 2-8, page 266;</li><li>• Table 2-3 RR Ref No. RR-095, page 165; and</li><li>• Table 2-4, RR Ref No. RR-001, page 208</li></ul>



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				<p>These sections explain that the Applicant has prepared a Cultural Heritage Desk-Based Assessment (DBA) (<b>Appendix 8-2</b> of the ES <b>[APP-059]</b>) to assess the baseline cultural heritage resource and archaeological potential of the Scheme and an assessment of likely significant effects on heritage assets is provided within <b>Chapter 8: Cultural Heritage</b> of the ES <b>[APP-039]</b>. In addition, the Applicant has submitted an <b>Archaeological Mitigation Strategy [REP1-086]</b> at Deadline 1. The Applicant has had close engagement with Historic England, the historic environment officers of Lincolnshire County Council and Nottinghamshire County Council on the effects of the Scheme on heritage assets including historical villages and as part of the development of the <b>Archaeological Mitigation Strategy [REP1-086]</b>.</p>
Climate and Carbon				
REP1-060, REP1-061	Upton Parish Council, Members of the Public	Carbon footprint	Comments relating to the carbon footprint of elements of the Scheme and their supply chain	<p>The Applicant has provided responses to concerns relating to the carbon footprint of elements of the Scheme in Table 2-7 on page 265 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b>.</p> <p>The GHG impact assessment in Section 7.3 of <b>Chapter 7: Climate Change</b> of the Environmental Statement <b>[APP-038]</b> details the carbon footprint of the full lifecycle of the solar panels to be used within the Scheme. This assessment considers all potential emissions sources across the lifecycle of the Scheme, including but not limited to, material manufacture and transport during construction, replacement and maintenance of components during operation and any waste disposal resulting from decommissioned components. The whole lifecycle emissions of the Scheme have been assessed using the best available data and current emission factors in accordance with guidance published by the IEMA as described in Section 7.4 of <b>Chapter 7: Climate Change</b> of the Environmental Statement <b>[APP-038]</b>. This methodology is consistent with those accepted by the planning inspectorate for similar Nationally Significant Infrastructure Projects (NSIPs), including Gate Burton Energy Park and Sunnica Energy Farm. All assumptions and limitations of the GHG impact assessment are detailed in Section 7.3 of <b>Chapter 7: Climate Change</b> of the Environmental Statement <b>[APP-038]</b>.</p>
REP1-077, REP1-069	Members of the Public	Climate	Comment relating to impact on, and alteration of, climate in local areas	<p>The Scheme will not result in warming of the climate. Some studies have suggested a localised heating effect around solar installations (<i>Barron-Gafford, Greg A., et al. "The Photovoltaic Heat Island Effect: Larger solar power plants increase local temperatures." Scientific reports 6.1 (2016)</i>) (Ref 1-14), due to the panels being more absorbent of solar energy compared to the ground they are covering. However, this effect is slight, localised and not related to a large scale process contributing to climate change. Overall, construction of this Scheme will considerably assist the UK in achieving its net-zero commitments and significantly reduce the emissions produced by the electricity sector.</p>
REP1-069	Members of the Public	Net zero	Concern that the Scheme is an opportunity for business to offset their emissions instead of producing 'clean' energy to reduce them.	<p><b>Chapter 7: Climate Change</b> of the ES <b>[APP-038]</b> provides a lifecycle assessment of the greenhouse gas (GHG) emissions from the Scheme. This does not account for offsetting emissions from other projects. The Applicant does not intend to make any agreements with businesses to offset their GHG emissions. The Applicant is developing the Scheme to generate and store renewable electricity for supply to the National Grid.</p>

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REP1-095	Members of the Public	Lifecycle Assessment	Concern that the Scheme is not clean or green when you factor in the manufacture, transportation and construction impacts.	<b>Chapter 7: Climate Change</b> of the ES <b>[APP-038]</b> considers all GHG emissions arising over the lifecycle of the Scheme including direct GHG emissions arising from activities within the Order limits, indirect emissions from activities outside the Order limits and embodied carbon within construction materials (including but not limited to manufacture, transportation and construction emissions). As set out in section 7.8 of <b>Chapter 7: Climate Change</b> of the ES <b>[APP-038]</b> GHG emissions savings are expected to be achieved throughout the lifetime of the Scheme compared to alternative fossil fuel energy generation types. Therefore, the GHG emissions during construction, operation and decommissioning of the Scheme are considered to be ‘offset’ by the net positive impact of the Scheme on GHG emissions.
<b>Safety</b>				
REP1-061	Upton Parish Council	Impact of batteries	Comments relating to number and size of batteries and the impacts to the landscape	The Scheme has sought to avoid proximity to villages and residential properties in line with the provisions of NPS EN-3 (Ref 1-2). Buffers from residential properties of at least 250m have been incorporated into the Scheme with respect to batteries and this will be secured by both the <b>Works Plans [EN010142/APP/2.3(Rev03)]</b> and the <b>Outline Design Principles Statement [AS-058]</b> requiring that the detailed design comes forward in accordance with these principles and details. While the Applicant acknowledges that there will be localised views of some elements of the Scheme including the batteries, it notes that the Scheme has been designed to limit views where possible from sensitive receptors including residential properties and PRow. It is considered that hedges, when mature and/or managed at a height of 2 to 3m, will be sufficient to screen the majority of the Scheme. The detailed design will seek to further avoid or reduce visibility of elements and the final level of impacts.
REP1-060, REP1-061 REP1-089	Upton Parish Council, Members of the Public	Battery fire risk	Comments relating to the risks of fire from batteries	The Applicant has provided responses to concerns relating to fire risk from batteries in Table 2-25 on page 205 of the <b>Applicant’s Response to Relevant Representations [APP-028]</b> .
REP1-079	Members of the Public	Compliance with guidelines	<p>Comment querying how the Substation site near Springthorpe complies with the latest evidence (e.g. Governments guidelines on safety of Electromagnetic radiation) in terms of safety and health.</p> <p>Comment querying how Substation site near Springthorpe will comply with ICNIRP guidelines, and whether guidelines are reviewed regularly and up to date for 2024</p>	<p>As set out within Table 2-2, page 119 of the <b>Applicant’s Responses to Relevant Representations [REP1-028]</b>, the Applicant has provided a response to concerns relating to health impacts associated with electromagnetic fields (EMFs) around substations, powerlines, and cables, and how potential actual exposure to EMFs will comply with exposure limits developed by the International Commission on Non–Ionizing Radiation Protection (ICNIRP) (Ref 1-15) and National Grid’s guidance on undergrounding high voltage electricity transmission lines (Ref 1-16). Whilst other guidelines exist, the Government sets its guidelines for exposure to EMFs in the UK based on the ICNIRP's guidelines. The ICNIRP's guidelines are updated periodically based on the latest scientific research and aim to protect public health from potential harmful effects of EMFs, including both low-frequency fields (e.g., power lines, electrical appliances) and high-frequency fields (e.g., mobile phones, radio waves). Therefore, the response provided in the <b>Applicant’s Responses to Relevant Representations [REP1-028]</b> represents an assessment of the Scheme as against the most updated guidelines for limiting exposure to EMFs.</p> <p>For the Substation itself, a comprehensive summary undertaken by the Energy Networks Association (Ref 1-17) states that “<i>larger electricity transmission substations do not produce very large fields themselves (generally less than a microtesla); the fields close by are mainly produced by power lines and cables entering them. There is no restriction on EMF grounds on how close houses can be to substations</i>”. Exposure to a magnetic field of less than one microtesla is well</p>

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				below the safety limits set by the ICNIRP guidelines and other health organisations and is therefore considered safe for the general public.
Biodiversity				
REP1-060, REP1-061, REP1-067, REP1-071, REP1-070, REP1-069, REP1-093	Upton Parish Council, Members of the Public	Impacts on wildlife	Comments relating to the impact of the Scheme on biodiversity and displacing wildlife	<p>The Applicant has provided responses to concerns relating to impacts on biodiversity and wildlife in the following sections in the <b>Applicant’s Response to Relevant Representations [REP1-028]</b>:</p> <ul style="list-style-type: none"><li>• Table 2-5, RR Ref No. RR-139 and RR-276, page 242 to 243;</li><li>• Table 2-4, RR Ref No. RR-001, page 212 to 213;</li><li>• Table 2-3, RR Ref No. RR-095, page 166 to 167; and</li><li>• Table 2-3, RR Ref No. RR-292, page 141 to 142 and 149 to 150.</li></ul> <p>These sections set out details of the assessments carried out in <b>Chapter 9: Ecology and Nature Conservation</b> of the Environmental Statement <b>[APP-040]</b> and the conclusion that there will be no significant adverse effects on biodiversity, with significant beneficial effects to a variety of habitats, including broad-leaved woodland, running water, hedgerows and species, including breeding birds, particularly farmland birds associated with hedgerows and field margins. They also explain that the Scheme will deliver a minimum 10% gain for biodiversity secured by both requirements 7 (landscape and ecological management plan) and 8 (biodiversity net gain) of Schedule 2 of the <b>draft DCO [REP1-008]</b>.</p>
REP1-080, REP1-067	Members of the Public	Impact on birds	Comments relating to impact on birds, and how Scheme will mitigate impacts	<p>The Applicant has undertaken detailed bird surveys to inform the design of the Scheme. The results of these surveys are provided in <b>Appendix 9-7: Baseline Report for Breeding Birds</b> of the ES <b>[APP-087]</b>, <b>[APP-088]</b> and <b>Appendix 9-8: Baseline Report for non-breeding birds</b> of the ES <b>[APP-089]</b>.</p> <p>A detailed assessment of the impacts on birds is presented in <b>Chapter 9: Ecology and Nature Conservation</b> of the ES <b>[APP-040]</b> with embedded mitigation set out in Section 9.8 and an assessment of likely impacts and effects set out in Section 9.9. Mitigation measures embedded within the Scheme, specific to birds are discussed in Table 9-13 and include avoidance and retention of the majority of habitats of value to birds, such as hedgerows, woodlands and watercourses/waterbodies. With the inclusion of the enhancement measures set out in Section 9.10, which include the creation of extensive areas of species rich grassland, allowing hedgerows to grow tall and wide and tree planting, the assessment concludes that there will be a significant beneficial effect to breeding birds as is described in Table 9-17. These measures are also set out in the <b>Framework LEMP [REP1-023]</b> which will inform a detailed LEMP which will be secured by requirement 7 of the <b>draft DCO [REP1-008]</b>.</p>
REP1-070	Members of the Public	Migrating geese	Comment relating to impact of glare from panels on migrating geese at reservoir	<p>The Applicant has undertaken detailed bird surveys to inform the design of the Scheme. The results of these surveys are provided in <b>Appendix 9-7: Baseline Report for Breeding Birds [APP-087]</b>, <b>[APP-088]</b>, and <b>Appendix 9-8: Baseline Report for Non-breeding Birds [APP-089]</b>. A detailed assessment of the impacts on birds is presented in <b>Chapter 9: Ecology and Nature Conservation</b> of the ES <b>[APP-040]</b>.</p> <p>Waterbirds such as geese, will be able to continue to use areas outside of the Scheme, such as agricultural reservoirs. The Scheme does not sit on a migratory flyway for waterbirds, nor are there geographical or topographical features that may ‘funnel’ birds, so any birds passing over will be</p>

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				doing so on a broad front. In addition, these species can and do travel over huge distances, crossing man-made environments. The potential for any glare to resonate from the solar PV is considered negligible to migrating birds. Assessment of the Scheme impacting migratory birds has been scoped out of assessment as presented in <b>Appendix 1-1: EIA Scoping Report [APP-051]</b> of the ES and agreed within the Planning Inspectorate's Scoping Opinion, presented in <b>Appendix 1-2: EIA Scoping Opinion</b> of the ES <b>[APP-052]</b> .
Socio-economics, Health and Wellbeing				
REP1-061, REP1-066, REP1-082, REP1-085, REP1-060, REP1-079, REP1-075, REP1-076, REP1-077, REP1-067, REP1-078, REP1-093, REP1-090	Upton Parish Council, Gillian Procter Chair of Springthorpe Parish Meeting, Fillingham Parish Meeting, Members of the Public	Health and wellbeing	Comments relating to the impacts of the Scheme, and the cumulative impacts of the other solar schemes, on health and wellbeing	<p>The Applicant recognises that the potential for future environmental changes associated with the Scheme during construction, operation and decommissioning may be a source of concern for local residents. The Applicant has undertaken a comprehensive and robust EIA so that any likely significant effects of the Scheme can be identified and mitigated as far as practicable.</p> <p>The Applicant has provided responses to concerns relating to health and wellbeing as part of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> which can be found in the following locations:</p> <ul style="list-style-type: none"><li>• Table 2-11, page 269 to 271</li><li>• Table 2-4, RR Ref No. RR-001, page 199 to 200</li><li>• Table 2-3, RR Ref No. RR-095, page 160 to 161</li></ul> <p>These sections explain that the assessment undertaken as part of <b>Chapter 11: Human Health</b> of the Environmental Statement <b>[APP-042]</b> 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). No significant adverse effects are identified with regards to human health, as a result of the extensive mitigation proposals included as part of the Scheme, which is also explained within these sections.</p> <p>The Applicant has also discussed health and wellbeing within paragraph 2.12 to 2.13 of the <b>Written Summary of Applicant's Oral Submissions at Open Floor Hearing 1 [REP1-047]</b>.</p>
REP1-067	Members of the Public	Health assessment	Concern that health hasn't been addressed by experts on behalf of the Applicant. Request for details of who wrote the health assessment in the Environmental Statement and what is their background and area of special interest.	As referred to in <b>Chapter 1: Introduction</b> of the ES <b>[APP-032]</b> , the EIA was carried out by AECOM Ltd (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. <b>Appendix 1-3: EIA Statement of Competence</b> of the ES <b>[APP-053]</b> outlines the relevant expertise or qualifications of the experts at AECOM who prepared the ES, including the relevant topic assessments. The technical lead for human health holds significant experience in preparing health assessments for NSIP applications, with past project experience including Sunnica Energy Park, Longfield Solar Farm, and Gate Burton Energy Park, amongst other schemes.
REP1-066, REP1-060, REP1-089	Members of the Public	Public compensation	Comments querying how local people will be compensated by impacts of the Scheme	As set out within Table 2-3, RR Ref No. RR-292, page 143, Table 2-4, RR Ref No. RR-001, page 224 and Table 2-24, RR Ref No. RR-116, page 304 to 305 of the <b>Applicant's Responses to Relevant Representations [REP1-028]</b> , the Applicant has engaged with both the Lincolnshire and Nottinghamshire community foundations and should the Scheme receive development consent, the Applicant would provide a community benefit package secured by a fund. The Scheme will also

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				include ecological enhancements, improvements to soil quality; improvements to the existing PRow network through the provision of permissive paths and employment generation during construction.
REP1-066	Members of the Public	Tourism	Comment relating to the impact of the Scheme on tourism	The Applicant has provided responses to concerns relating to impacts on local tourism in Table 2-3, RR-292, page 136 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> .
REP1-079	Members of the Public	Health assessment	Comment that the Applicant's written representations on human health uses out of date information	<p><b>Chapter 11: Human Health</b> of the ES [APP-042] assesses potential effects of the Scheme on health and wellbeing of local residents and includes an overview of baseline conditions – see Section 11.6. This section uses a range of datasets, but primarily sources from the 2021 Census (Ref 1-20), the 2019 Indices of Multiple Deprivation (Ref 1-21) the 2022 health profiles from Office for Health Improvement and Disparities (OHID) (Ref 1-22) and the 2022 Claimant Count (Ref 1-23). These datasets represented the most up to date datasets available at the time of writing <b>Chapter 11: Human Health</b> of the ES [APP-042].</p> <p>In instances where data is reported annually, and so more up to date information becomes available as time passes, it would be usual for the level of variance in a headline number or percentage for an indicator over a 1 year time period to be small, and insufficient to materially alter any conclusions based on the previous year's headline number or percentage. Where data is published more periodically, such as some datasets within the Census of Population i.e. every 10 years, the most recent iteration of that data is considered the best and most up to date available. This is except where there is a proxy of equivalent standing which would be used depending on the duration elapsed since the preferred data was published. Datasets used in the assessment were selected taking into account their robustness in such respects.</p>
REP1-066, REP1-067, REP1-069, REP1-089, REP1-093	Members of the Public	Outsourcing	Concern relating to the sustainability and ethics in sourcing materials, including the location they are sourced from.	The Applicant has provided a response relating to the sustainability and ethics in sourcing materials in Table 2-4, RR Ref No. RR-001 on page 234 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> .
REP1-071, REP1-070	Members of the Public	House prices	Concern relating to impact on house prices and that the area will no longer be desirable to reside in	The Applicant has provided a response to comments relating to house prices in Table 2-15, page 284 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> .
<b>Transport</b>				
REP1-061, REP1-076, REP1-070	Upton Parish Council, Members of the Public Gillian Procter Chair of Springthorpe Parish Meeting	Traffic impacts	Comments relating to the traffic impacts during construction of the Scheme on local roads and the impacts to residents.	The Applicant has provided a response to comments relating to impacts of traffic on local roads in Table 2-17 on page 288 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> .
REP1-066	Members of the Public	Claimed route	Comment seeks further clarification from the Applicant regarding the recent access issues and sign removal along the long-established footpath from Glentworth to	<p>The Applicant and its team did not remove any signs along the footpath from Glentworth to Harpswell.</p> <p>The Applicant has incorporated the claimed PRow into the design of the Scheme. This is presented on <b>Figure 3-1: Indicative Principal Site Layout Plan</b> of the ES [AS-055]. This route, its design</p>

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			Harpwell, and whether this relates to the Scheme.	and its maintenance is described within the <b>Framework Landscape and Ecological Management Plan (LEMP) [REP1-023]</b> , which is secured by a Requirement of the <b>draft DCO [REP1-008]</b> .
Water Environment				
REP1-077	Members of the Public	Flooding	Concern relating to flooding	The Applicant has responded to comments relating to flood risk in Table 2-10 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> .
Cumulative impacts				
REP1-060, REP1-091, REP1-089, REP1-095	Members of the Public	Cumulative effects	Concerns of cumulative impacts of the Scheme and other solar projects.	The Applicant has provided responses relating to the cumulative impacts of the Scheme and other solar projects in Table 2-20 on page 292 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> .
REP1-087	West Lindsey District Council	Assessment of cumulative effects	Concerns about the challenges in considering the cumulative projects independently rather than collectively.	<p>The cumulative effects and inter-relationship of each project (Gate Burton Energy Park, Cottam Solar Project, West Burton Solar Project and the Scheme) has been considered within each Environmental Statement and through the <b>Joint Report on Interrelationships between Nationally Significant Infrastructure Projects [APP-215 to APP-217]</b> that was submitted as evidence into each examination of the other solar projects and this Scheme.</p> <p>In view of the above, all four projects have considered the impact of each project in combination with the other. The Secretary of State, in granting development consent for both the Gate Burton Energy Park [EN010131] and the Cottam Solar Project [EN010133] confirmed that the applicants in those projects had adequately assessed the likely significant effects of the proposed developments cumulatively with the other planned developments. In reaching a decision on the Scheme, the Secretary of State has sufficient information to consider cumulative effects of the Scheme in combination with the other solar DCOs.</p> <p>The Applicant expects the Examining Authority and Secretary of State to take the findings of the cumulative assessment into account in their decision making, along with consideration of the recent decisions (Gate Burton Energy Park [EN010131] and the Cottam Solar Project [EN010133]) as important and relevant matters in their decision making.</p>
REP1-069	Members of the Public	Community benefit	<p>Concerns that a community benefit is being offered only for this site and not the other cumulative sites. Query why other schemes do not propose a community benefit.</p> <p>Comment querying how will this benefit be secured, and will it be in the dDCO.</p>	<p>The Applicant understands the references to “community benefit” within this response relates to the community benefit fund proposed by the Applicant. The provision of a community benefit fund for other cumulative schemes is not within the remit of the Applicant.</p> <p>As noted within paragraph 3.20 of the <b>Written Summary of Applicant's Oral Submissions at the Open Floor Hearing [REP1-047]</b>, the Applicant has considered a community benefit package as part of the Scheme. It is recognised that projects like the Scheme can be disruptive to those living and working closest to it. The Applicant has engaged with both the Lincolnshire and Nottinghamshire community foundations and, should the Scheme receive development consent, the Applicant would provide a community benefit package. The scope and application of this package will be developed with local communities at the time of operation.</p> <p>The Applicant does not propose to include a mechanism to secure this community benefit package within the <b>draft DCO [REP1-008]</b>, as it is generally accepted that the inclusion of such measures is not appropriate to capture within an Order as they do not directly relate to the construction and</p>

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				<p>operation of the Scheme or the direct mitigation of its effects, and so are not considered to fall within the scope of appropriate matters to be included within an Order per section 120 of the Planning Act 2008 (Ref 1-3).</p> <p>The Applicant does however note that a range of other benefits of the Scheme that are considered to provide general community benefits (such as new permissive paths and employment prospects) are secured by the <b>draft DCO [REP1-008]</b>. Further discussion of these benefits and how they are secured is included within the <b>Written Summary of Applicant’s Oral Submissions at the Open Floor Hearing [REP1-047]</b> at paragraphs 3.15 to 3.22.</p>
REP1-069	Members of the Public	dDCO	<p>Query on the nature of the dDCO and whether it will be explicit, e.g. no additional type of generation such as turbines added to the Principal Site during its lifetime.</p>	<p>The <b>draft DCO [REP1-008]</b> has been prepared so that it only enables the carrying out of works to construct, operate and maintain the “authorised development” as specifically described within the Work Numbers listed in Schedule 1 to the <b>draft DCO [REP1-008]</b>. These Work Numbers are clear that the only kind of energy generating infrastructure permitted as part of the authorised development are Solar PV Panels (Work No 1). The other Work Numbers listed within Schedule 1 relate to the BESS or other associated development required to enable the function of the Solar PV Panels, such as the substations, transformers, inverters, landscaping and ecological mitigation works and the cable route corridor. No works other than those listed within Schedule 1 can be validly carried out under the DCO if made.</p> <p>The Applicant has no intention to amend the <b>draft DCO [REP1-008]</b> such that additional forms of generation, such as onshore wind turbines, would be enabled on the Principal Site.</p>
REP1-069	Members of the Public	Land take	<p>Comment querying the calculations reported in the Applicant’s responses relating to the percentage (%) of land used by the Scheme and other solar projects.</p> <p>Comment that four solar projects are actually 9% of the total land of West Lindsey, and that this % would be much higher if arable land only is taken into consideration, as well as smaller solar sites currently going through the planning process (Luminous energy and Barker Farm Solar).</p> <p>Comment querying what the percentage (%) of available land is taken out of production within West Lindsey.</p>	<p>The calculations of percentages (%) of land used by the Scheme, and other solar projects, set out in <b>Chapter 14: Socio-economics and Land Use</b> of the ES <b>[APP-045]</b>, <b>Chapter 18: Cumulative Effects and Interactions</b> of the ES <b>[APP-049]</b> and the Report on Cumulative Impacts of Solar Projects on Agricultural Land in Lincolnshire at <b>Appendix B</b> of the <b>Applicant’s Response to Relevant Representations [REP1-028]</b> have so far only been focused on Lincolnshire as a whole. Lincolnshire County Council’s boundary was inserted into GIS mapping, along with DEFRA’s Pre-1988 Provisional ALC Maps dataset, to calculate the % of agricultural land being used by the Scheme, and other solar projects.</p> <p>This resulted in Section 14.8 of <b>Chapter 14: Socio-economics and Land Use</b> of the ES <b>[APP-045]</b> concluding that the Scheme area forms less than 1% of agricultural land available in Lincolnshire. <b>Chapter 18: Cumulative Effects and Interactions</b> of the ES <b>[APP-049]</b> concluded that the area of agricultural land that would be taken out agricultural use across all four schemes would be 2.2% of agricultural land in Lincolnshire, the majority of which would be reversible.</p> <p>The Report on Cumulative Impacts of Solar Projects on Agricultural Land in Lincolnshire, at <b>Appendix B</b> of the <b>Applicants Response to Relevant Representations [REP1-028]</b>, provides a breakdown of the % of agricultural land, specifically Best and Most Versatile (BMV) land used by the Scheme and other solar projects within Lincolnshire. It concludes that only 0.9% of BMV land in Lincolnshire will be temporarily taken out of use by the Scheme and other solar projects, based on the Government’s Renewable Energy Planning Database July 2024 Quarterly Extract.</p> <p>The report does not currently provide calculations on the amount of agricultural land within West Lindsey District specifically, but does show that, per the Government’s Renewable Energy Planning</p>

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
				<p>Database July 2024 Quarterly Extract, the total area of solar panels relating to solar Town and Country Planning Act (TCPA) projects located within West Lindsey District is 293.5 hectares of land. It also shows that of the solar DCO projects located within Lincolnshire, only West Burton Solar Project, Gate Burton Energy Park, Cottam Solar Project and the Scheme are located within West Lindsey District, as well as a small part (250 hectares) of One Earth Solar, which amounts to a total area of solar panels of 4,195.54 hectares, within West Lindsey District.</p> <p>In response to this comment, the Applicant has undertaken a further analysis of the land within West Lindsey District Council, by looking at West Lindsey District Council's boundary on GIS mapping, over DEFRA's Pre-1988 Provisional ALC Maps dataset, and has calculated that there is 115,765.30 hectares of land within West Lindsey District Council. Of this land, 110,325.79 hectares is classed as agricultural land (Grades 1, 2, 3, 4 and 5) and 5,521.69 hectares is classed as non-agricultural or urban.</p> <p>Taking these figures into account, the % of the area of solar panels forming solar TCPA projects in West Lindsey is 0.25% of the total area of land within West Lindsey District, and 0.27% of agricultural land only within West Lindsey District.</p> <p>The percentage of solar DCO projects in West Lindsey (which includes West Burton Solar Project, Gate Burton Energy Park, Cottam Solar Project and the Scheme, as well as a small part (250 hectares) of One Earth Solar, as set out above) is 3.62% of the total area of land within West Lindsey District, and 3.80% of agricultural land only within West Lindsey District.</p> <p>This amounts to all solar projects in West Lindsey District taking up a total of 3.87% of all of the land within West Lindsey, or 4.07% of agricultural land only in West Lindsey. As noted above in relation to the % of land within Lincolnshire, the majority of land take would not be permanent, with the land to be used temporarily during the lifetime of the various projects before being reverted to agricultural use. Only 0.007% of the agricultural land in West Lindsey District Council may be potentially permanently lost as a result of those solar projects in the West Lindsey District.</p> <p>The Barker Farm Solar project and Stow Park Farm solar projects (Luminous Energy) were not considered within the Report on Cumulative Impacts of Solar Projects on Agricultural Land in Lincolnshire, at <b>Appendix B</b> of the <b>Applicants Response to Relevant Representations [REP1-028]</b> as they were not listed within the Government's Renewable Energy Planning Database July 2024 Quarterly Extract.</p> <p>The need for the Scheme is established by national policy. <b>Chapter 4: Alternatives and Design Evolution</b> of the ES <b>[APP-035]</b> sets out the site selection process that was followed to identify the Principal Site confirming its suitability for ground mounted solar. This includes consideration of previously-developed land before concluding that agricultural land was required to deliver the Scheme. In choosing the Principal Site, exclusionary criteria was used to remove land from further consideration that was sensitive from an environmental and planning perspective.</p> <p>NPS EN-3 at paragraph 2.10.29 confirms that <i>“land type should not be a predominating factor in determining the suitability of the site location”</i> and that:</p>



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				<p><i>“Where the proposed use of any agricultural land has been shown to be necessary, poorer quality land should be preferred to higher quality land avoiding the use of “Best and Most Versatile”</i></p> <p>In this case, the use of agricultural land is necessary and has been justified. The site selection process minimised impacts on BMV land, and in any case the soil resource within the Scheme remains, given the Scheme is a long term, temporary use of the land.</p> <p>Whilst the percentage of land used temporarily for solar development would be higher than the percentage set out at county level, it would not alter the fact that need is established, that the site is suitable for solar and that land take accords with the scale anticipated in national policy (being within the lower end of the 2 to 4 acres per MW set out in NPS EN-3 (Ref 1-2)).</p> <p>In planning policy terms there is not a moratorium on the use of agricultural land for solar projects. The Scheme will support existing farming enterprises through diversification of wider landholdings and will not materially impact on food production. Pages 111 and 112 of the <b>Applicant’s Responses to Relevant Representations [REP1-028]</b> confirm that the UK is self-sufficient producing as much food as is consumed. This demonstrates that despite concerns raised regarding the impact on food production that this impact will not be significant.</p> <p>Further, pages 137 and 138 of <b>Applicant’s Responses to Relevant Representations [REP1-028]</b> also address this point through references to recent decisions on the Gate Burton Energy Park [EN010131] and Cottam Solar Project [EN010133]. The Secretary of State determined that the cumulative loss of land to food production, which included the Scheme, would be minor and would not impact on food security.</p>
<b>Alternatives</b>				
REP1-061, REP1-075, REP1-081, REP1-085, REP1-086, REP1-060, REP1-071, REP1-089, REP1-095, REP1-076	Upton Parish Council Fillingham Parish Meeting, Members of the Public	Rooftop solar	Comments that solar should be located on rooftops	The Applicant has responded to comments relating to rooftop solar at Table 2-23 page 203 of the <b>Applicant’s Response to Relevant Representations [REP1-028]</b> .
REP1-076	Gillian Procter Chair of Springthorpe Parish Meeting	Wind energy	Comments supporting the use of wind energy over solar, as they would occupy less arable land and generate energy in winter and at night, also noting that the manufacturing of materials used for wind generation is available within the local area at the Humber Estuary	<p>Paragraphs 3.2 to 3.13 on pages 7 and 8 of the <b>Written Summary of the Applicant’s Oral Submission at the Open Floor Hearing 1 [REP1-047]</b> set out the consideration of alternatives in relation to the Scheme. In terms of onshore wind, this confirms that planning policy placed a moratorium on its deployment and whilst this was lifted in July 2024, the 10-year de facto ban has stalled the delivery of onshore wind within England as an alternative renewable energy to solar. As reflected in the Energy NPSs, there is a need for a multi-technology approach to deliver low carbon and renewable electricity generation, which includes both solar and wind.</p> <p>The focus of the Applicant from the beginning of the site selection process has been on finding an appropriate location for a solar PV site. The Scheme has demonstrated through its site selection</p>

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				<p>process as set out in <b>Chapter 4: Alternatives and Design Evolution</b> of the ES <b>[APP-035]</b> that the Principal Site is suitable for ground mounted solar. Detailed consideration has not been given through that process to the benefits or disbenefits of this site and region to onshore wind, given the lifting of the ban did not occur until after the Application was submitted.</p> <p>Whilst it is acknowledged that wind power can allow the co-location of turbines alongside continued agricultural use, the landscape and visual impacts of wind turbines would be different to ground mounted solar. Ground mounted solar offers significantly greater opportunities to mitigate visual effects through the use of existing and proposed vegetation as screening. Whilst solar often has a greater development footprint than wind, this offers much more extensive scope for biodiversity and green infrastructure enhancements that enhance the quality and condition of landscape elements, particularly when located within intensively farmed areas. These opportunities are far more limited for wind turbines. Given the largely open, low-lying landscape and the relationship of the Principal Site to both the Cliff and more distant high ground, the landscape and visual effects of a large-scale wind scheme in this particular location would be greater than ground mounted solar. It should be noted that West Lindsey District Council refused planning permission for a wind scheme at Hemswell Cliff in 2013 and an appeal was subsequently dismissed. Paragraph 328 of the appeal decision states that <i>“The raised skyline created by the Edge is a particularly distinctive landform and the layout of the turbines, extending back from the crest, would appear arbitrary and would not relate to it.”</i></p>
REP1-066, REP1-075, REP1-078, REP1-067	Fillingham Parish Meeting, Members of the Public	Alternative energy	Comment that alternative electricity-generating methods should have been considered, specifically wind and nuclear	<p>The Applicant has responded to comments relating to alternative electricity generating methods in the following sections of the <b>Applicants Response to Relevant Representations [REP1-028]</b>:</p> <ul style="list-style-type: none"> <li>• Table 2-4, RR Ref No. RR-303, page 192.</li> <li>• Table 2-4, RR Ref No. RR-094, page 194.</li> <li>• Paragraphs 3.2 to 3.13 on pages 7 and 8 of the <b>Written Summary of the Applicant’s Oral Submission at the Open Floor Hearing 1 [REP1-047]</b>.</li> </ul> <p>These documents set out the position as discussed in the <b>Statement of Need [APP-210]</b>, which is that the Applicant recognises that decentralised energy generation on roof tops, offshore wind, onshore wind, nuclear, combined cycle gas turbines (CCGT) and carbon capture, utilisation, storage (CCUS), hydrogen, biomass and air source heat pumps have an important role to play in decarbonisation. However, whilst these forms of energy generating methods are likely to contribute to decarbonisation, large-scale solar is still an essential part of the future electricity system, that must be deployed where there is the natural resource (i.e. solar irradiance), where land is available and suitable (i.e. of an appropriate size and topography), and in proximity to available grid connection locations, such as the area local to the Scheme.</p>
REP1-066, REP1-078, REP1-067, REP1-069	Members of the Public	Alternative sites	Comment that alternatives sites should have been considered, specifically rooftops, car parks, new buildings, brownfield and contaminated land	<p>The Applicant has responded to comments relating to the consideration of alternative sites for the Scheme in the following sections of the <b>Applicants Response to Relevant Representations [REP1-028]</b>:</p> <ul style="list-style-type: none"> <li>• Table 2-22, page 300.</li> <li>• Table 2-4, RR Ref No. RR-001, page 220, 225 and 226.</li> </ul>

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				<p>These sections confirm that the Applicant has set out its rationale for selecting the Principal Site and Cable Route Corridor in <b>Chapter 4: Alternatives and Design Evolution</b> of the Environmental Statement <b>[APP-035]</b>. This explains the stages and the main considerations which have influenced the Applicant in how it has selected the land for the Scheme. For the Principal Site this has included seeking to avoid environmental and land use constraints and taking into consideration other criteria such as network connection; topography; field pattern and arrangement; land use conflict, as well as land availability including the availability of brownfield and contaminated land. This process has continued through design evolution of the Scheme, which has sought to locate elements of the Scheme appropriately across the Principal Site to avoid impacts.</p>
REP1-078	Members of the Public	Alternative energy and land take	Request that the Examining Authority asks the Applicant to demonstrate what other forms of renewable energy infrastructure could be used, how much electricity it produces when the country needs it most, and how much land it takes in comparison.	<p>The Applicant notes that this is a request addressed to the Examining Authority but wishes to note that it has submitted an analysis of alternatives as part of its DCO application (<b>Chapter 4: Alternatives and Design Evolution</b> of the ES <b>[APP-035]</b>) which demonstrates how the Applicant considered alternatives and how these would not meet the Scheme’s objectives. The <b>Statement of Need [APP-210]</b> demonstrates why the Scheme is urgently needed at the scale proposed, why the proposed location is highly suitable for the solar PV technology proposed by the Scheme and the contribution that it stands to make to system security and the national decarbonisation effort.</p> <p>There is no general requirement in national policy to consider alternatives or to establish whether the proposed project represents the best option. There is a legislative requirement to consider reasonable alternatives in relation to the EIA Regulations (Ref 1-25), which the Application complies with in terms of <b>Chapter 4: Alternatives and Design Evolution</b> of the ES <b>[APP-035]</b>).</p> <p>NPS EN-1 (Ref 1-1) and EN-3 (Ref 1-2) establish a presumption to grant development consent for CNP infrastructure which includes solar. Need is therefore established. There is no policy requirement to consider how alternative technologies compare with solar in terms of land take. Each scheme will be considered on its own merits by the Examining Authority and Secretary of State in terms of design and potential impacts.</p> <p>The Principal Site is suitable for solar generation and associated development. The BESS is subordinate and secondary to the primary purpose of the Scheme as a generating station. It will support the export of electricity at times of peak demand and allow its storage in times of lower demand thereby supporting the provision of electricity when the country needs it most. The Scheme has been designed to maximise the efficiency of the electricity generation given the established urgent need.</p> <p>With respect to land take, paragraph 2.10.17 of NPS EN-3 (Ref 1-2) confirms that “<i>along with associated infrastructure, a solar farm requires between 2 to 4 acres for each MW output.</i>” <b>Appendix B</b> of the <b>Written Summary of the Applicant’s Oral Submissions at Issue Specific Hearing 1 [REP1-046]</b> confirms the electricity generation of the Scheme over its lifetime and clarifies that in terms of land take, it would comprise 2.45 acres for each MW output. This sits within the lower end of the range set out in NPS EN-3, demonstrating an efficient use of land.</p>
Consultation and documentation				
REP1-071, REP1-072	Members of the Public	Adequacy of consultation	Comment that residents have been ignored and their opinions are not being taken into account	The Applicant has responded to comments relating to the consultation process undertaken by the Applicant in Table 2-26 on page 309 of the <b>Applicant’s Response to Relevant Representations</b>

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				<b>[REP1-028]</b> , which explains that the Planning Inspectorate has confirmed that the Applicant has consulted adequately, by accepting the Application for examination.
REP1-075	Fillingham Parish Meeting	Consultation materials	Comments that consultation materials are misleading	The Applicant has responded to comments relating to the consultation process undertaken by the Applicant in Table 2-26 of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> , which explains that the Planning Inspectorate has confirmed that the Applicant has consulted adequately, by accepting the Application for examination.
REP1-086	Members of the Public	Documentation	Comment that the number of documents submitted as part of the application is difficult to navigate	The Applicant acknowledges that the number of documents and information required to be submitted as part of the application to comply with the Planning Act 2008 (Ref 1-3) and Governments advice pages can be difficult to navigate. In response to this and concerns raised during the Open Floor Hearing on 16 October 2024, the Applicant has subsequently ensured that responses to new comments provide full summaries of the issues raised, and where they do need to cross refer out to other documents, include the specific page and/or paragraph number for ease of navigation through those documents by Interested Parties.
REP1-086	Members of the Public	Details of equipment to be used	Request that the Applicant provides a comprehensive equipment list identifying manufacturer, model number and quantities of each so that the statistics that they are quoting can be verified and challenged if appropriate.	The Applicant has provided a Scheme Description in <b>Chapter 3: Scheme Description</b> of the ES <b>[AS-053]</b> , which outlines all the Scheme components to be used based on maximum and minimum parameters to retain necessary flexibility. Specifying exact manufacturers and models at this stage is not feasible, as the Scheme must adapt to available technology and comply with regulations at the time of construction. Instead, the ES has assessed the worst-case scenarios (for example, maximum noise levels of plant) to ensure that environmental and social impacts are not underestimated and the detailed design, should development consent be granted, will need to ensure that the Scheme does not give rise to any materially new or materially different effects from those assessed in the ES <b>[APP-031 to APP-232]</b> . Therefore, rather than focusing on specific equipment details at this point, it is more appropriate to consider the assessed and secured impacts of the Scheme as set out in the ES <b>[APP-031 to APP-232]</b> .
<b>Environmental Impact Assessment</b>				
REP1-066	Members of the Public	Due diligence	Questions the Examining Authoritys due diligence process in accepting the application and the Applicant's technical ability to satisfy the questions raised.	<p>The DCO application for the Scheme was submitted to the Planning Inspectorate on 10 April 2024. The Planning Inspectorate accepted the DCO application for Examination on 8 May 2024 and in doing so confirmed the Application documents meet the procedural requirements under the Planning Act 2008 (PA 2008 (Ref 1-3)). This confirms that the documents and submission is of an appropriate standard and accords with regulations.</p> <p>The Applicant has complied with the PA 2008 (Ref 1-3) (and other relevant statutory requirements) in carrying out Statutory Consultation, ensuring that local residents had an opportunity to comment on the Scheme. The Applicant has also consistently engaged with the community and relevant authorities throughout the consultation process as well as informally outside of consultation periods.</p> <p>The Applicant has carefully considered those comments during the Scheme's development before the Application for development consent in accordance with the obligations outlined under Section 49 of the PA 2008 (Ref 1-3). A summary of comments received, and changes made as a result of comments received, are presented in the <b>Consultation Report [APP-021]</b>. As a result, the Applicant has made several design modifications across the Scheme to address residents' specific concerns and to minimise any adverse effects on daily life, while also considering the Scheme's positive impact on the ecosystem and climate.</p>

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				<p>The Planning Inspectorate has considered the adequacy of the Applicant’s consultation when deciding whether to accept the Application for examination. The Planning Inspectorate has confirmed that the Applicant has consulted adequately, by accepting the Application.</p> <p>The <b>Environmental Statement [APP-031 to APP-209]</b> that accompanies the Application has identified all likely significant effects associated with the Scheme and cumulatively with other developments. The preliminary conclusions of the EIA were consulted on as part of the statutory consultation process and ongoing technical engagement has been undertaken with statutory bodies to refine assessment conclusions and mitigation requirements. Where potentially significant effects have been identified, the Applicant has identified measures to mitigate these impacts, as far as practicable. The Environmental Statement should be read alongside the <b>Environmental Statement Addendum [AS-057]</b> which the Applicant submitted in September 2024 in support of a request of changes to the Application. The Applicant considers the EIA undertaken for the Scheme as presented within the Environmental Statement and Environmental Statement Addendum 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 Environmental Statement provided.</p> <p>The Applicant’s technical expertise to complete the assessments is presented within <b>Appendix 1-3: EIA Statement of Competence</b> of the ES <b>[APP-053]</b>.</p>
REP1-066	Members of the Public	Impact statement	Comment seeking further specialist impact statements and risk assessments to assess the impact of the Scheme on environmental topics.	<p>The Applicant has carried out the EIA, which is presented in the <b>ES [APP-031 to APP-209]</b>. As referred to in <b>Chapter 1: Introduction</b> of the ES <b>[APP-032]</b>, 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. <b>Appendix 1-3: EIA Statement of Competence</b> of the ES <b>[APP-053]</b> outlines the relevant expertise or qualifications of the experts at AECOM who prepared the ES.</p> <p>The ES provides assessments on the potential impacts of the Scheme on a range of environmental topics, including:</p> <ul style="list-style-type: none"><li>• <b>Chapter 6: Air Quality [APP-037]</b></li><li>• <b>Chapter 7: Climate Change [APP-038]</b></li><li>• <b>Chapter 8: Cultural Heritage [APP-039]</b></li><li>• <b>Chapter 9: Ecology and Nature Conservation [APP-040]</b></li><li>• <b>Chapter 10: Water Environment [APP-041]</b></li><li>• <b>Chapter 11: Human Health [APP-042]</b></li><li>• <b>Chapter 12: Landscape and Visual Amenity [APP-043]</b></li><li>• <b>Chapter 13: Noise and Vibration [AS-006]</b></li><li>• <b>Chapter 14: Socioeconomics and Land Use [APP-045]</b></li><li>• <b>Chapter 15: Soils and Agriculture [APP-046]</b></li><li>• <b>Chapter 16: Transport and Access [APP-047]</b></li><li>• <b>Chapter 17: Other Environmental Topics [APP-048]</b></li><li>• <b>Chapter 18: Cumulative Effects and Interactions [APP-049]</b>.</li></ul>
REP1-066	Members of the Public	Due diligence	Comment that the Applicant should rely on experienced, qualified independent	The Applicant has carried out the EIA, which is presented in the <b>ES [APP-031 to APP-209]</b> . As referred to in <b>Chapter 1: Introduction</b> of the ES <b>[APP-032]</b> , the EIA was carried out by AECOM on

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
			representatives in that particular field and rather than generalist's opinions	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. <b>Appendix 1-3: EIA Statement of Competence</b> of the ES <b>[APP-053]</b> outlines the relevant expertise or qualifications of the experts at AECOM who prepared the ES. These includes a range of technical, subject-specific experts who prepared the corresponding reports and chapters to their field of expertise.
REP1-069	Members of the Public	Examination process	Comment relating to the bias and mistrust around the Examination process	<p>As set out in the Planning Inspectorate's website (Ref 1-26), careful consideration is given by the Examining Authority to all the important and relevant matters including the representations of all Interested Parties, any supporting evidence submitted and answers provided to the Examining Authority's questions set out in writing or posed at hearings.</p> <p>Further, in the Governments National Planning Practice Guidance (Ref 1-27), it states that when Examining Inspectors are appointed to an Examining Authority that the Planning Inspectorate must consider propriety issues and avoid any conflicts of interest.</p> <p>Section 87 of the Planning Act (Ref 1-3) provides that it is for the Examining Authority to decide how an application for development consent for a NSIP is to be examined, within the requirements set out in Chapter 4 of the Planning Act and the detailed framework provided by the Infrastructure Planning (Examination Procedure) Rules 2010 (as amended) (Ref 1-28).</p> <p>The Applicant remains committed to contributing to the Examination process in a fair and meaningful way, and to understanding the concerns of local communities such that it can fully consider these in the final version of the draft DCO it presents to the Examining Authority.</p>
<b>Decommissioning</b>				
REP1-061, REP1-080, REP1-093	Upton Parish Council, Members of the Public	Materials and waste	Comments relating to end of life processes for elements of the Scheme, specifically solar panels and batteries	The Applicant has provided responses to concerns relating to end of life processes for elements of the Scheme including solar panels and batteries in Table 2-18 page 290, and the Waste Topic Paper in Appendix A of the <b>Applicant's Response to Relevant Representations [REP1-028]</b> . This confirms that the Applicant is committed to maximising the recycling and reuse of the Scheme components at the end of life and applied the waste hierarchy with respect to the management of waste. This will be secured through the approval of an OEMP and DEMP, secured by requirements 13 and 20 of the <b>draft DCO [REP1-008]</b> . These will need to be substantially in accordance with the <b>Framework OEMP [REP-019]</b> and <b>Framework DEMP [REP1-053]</b> , which were updated at Deadline 1 to commit to a 70% waste recovery (diversion from landfill).
REP1-066, REP1-071, REP1-076, REP1-069	Gillian Procter Chair of Springthorpe Parish Meeting, Members of the Public	Brownfield land	Concerns that after decommissioning, the land will become brownfield and will be used for future development including housing	<p>As set out in the National Planning Policy Framework (NPPF) (Ref 1-18), previously developed land (or brownfield land), is defined as:</p> <p><i>"Land which is or was occupied by a permanent structure, including the curtilage of the developed land (although it should not be assumed that the whole of the curtilage should be developed) and any associated fixed surface infrastructure. This excludes: land that is or was last occupied by agricultural or forestry buildings; land that has been developed for minerals extraction or waste disposal by landfill, where provision for restoration has been made through development management procedures; land in built-up areas such as residential gardens, parks, recreation grounds and allotments; and land that was previously developed but where the remains of the permanent structure or fixed surface structure have blended into the landscape."</i></p>

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
				<p>The Scheme would comprise a long term, temporary use, and following its lifespan of 60 years, would be decommissioned, where all elements of the Scheme would be removed, including the solar panels, their supportive structures and the associated infrastructure across the Principal Site. The few components which may potentially be retained are the proposed woodland, the two On-site Substations, the Solar Farm Control Centre, and the cabling within the Cable Route Corridor, which have been assumed to be permanent as part of the worst-case assessment carried out in the ES. However, it is anticipated that in practice, the future of the On-Site Substations, Solar Farm Control Centre and cabling would be agreed with Local Planning Authority prior to the commencement of the decommissioning phase and the infrastructure can be removed entirely with stored topsoil replaced and the land returned to its current agricultural management options In addition, the proposed woodland areas would be handed back to the previous landowners and the actual management of the land will then be the decision of the landowner.</p> <p>A <b>Framework DEMP [REP1-053]</b> has been produced detailing how decommissioning will be carried out and sets out the monitoring and auditing activities designed to ensure that this is implemented. A detailed DEMP, which must be in substantial accordance with the Framework DEMP <b>[REP1-053]</b>, will need to be agreed with the Local Planning Authority prior to decommissioning, and this is secured by Requirement 20 within the <b>draft DCO [REP1-008]</b>.</p> <p>The Scheme, with the potential exception of the two On-Site Substations, Solar Farm Control Centre and the cabling within the Cable Route Corridor, would not contain permanent structures and the development consent, if made, requires that the Scheme is decommissioned at the end of its time limited consent. It is also noted that, the removal of the land from arable production as a result of the Scheme, will facilitate a recovery in topsoil organic matter, and this enforced fallow period will enhance the functional capacity of the soil resource for future arable production, as set out in paragraph 15.8.18 of <b>Chapter 15: Soils and Agriculture</b> of the ES <b>[APP-046]</b>. The Scheme when taken as a whole would not therefore fall within the definition of previously developed land defined by the NPPF.</p> <p>Whilst the NPPF seeks to promote an effective use of land through utilising previously-developed land for development, sites still need to demonstrate that they are suitable and sustainable for the proposed use. This means locating housing development in locations that have good access to services and facilities and transport. Generally, a development plan seeks to restrict housing development within the countryside only allowing infill development within existing villages and the provision of affordable housing and first homes on small rural exception sites to meet local need. Policy S1 of the adopted Central Lincolnshire Local Plan (Ref 1-19) sets out the spatial strategy and settlement hierarchy for the plan period up to 2040 confirming the focus of housing development in Lincoln, Sleaford and Gainsborough and reduces growth for smaller settlements. Springthorpe and Hemswell are defined as small villages with allocated sites beyond those identified within the plan being restricted by Policy S4: Housing Development in or Adjacent to Villages. Development adjacent to villages will be proportionate to the size of the village to support its role and function.</p> <p>The site would not be suitable for large-scale housing development for those reasons given above. It is unlikely that the settlement hierarchy for Central Lincolnshire will change over the next 60 years. The site would not constitute previously-developed land and would unlikely meet the tests of sustainable development in relation to housing development as a greenfield site. If the Site was</p>

Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
REP1-076, REP1-077	Gillian Procter Chair of Springthorpe Parish Meeting	Decommissioning	Concerns that solar panels will be left on fields following decommissioning	<p>pursued for housing development by a residential land promoter in the future it would have to be promoted through the development plan and succeed in being designated. Given the reasons stated, this would be very unlikely.</p>
				<p>As noted in section 4.4 (page 11 and 12) of the <b>Written Summary of Applicant's Oral Submissions at Issues Specific Hearing 1 [REP1-046]</b> As part of the decommissioning of the Scheme, all elements of the Scheme would be removed, including solar panels. The only potential elements that may remain are the proposed woodland, two On-Site Substations, Solar Farm Control Centre and cabling within the Cable Route Corridor. However, it is anticipated that in practice, the future of any infrastructure to be retained would be agreed with Local Planning Authority prior to the commencement of the decommissioning phase and the infrastructure can be removed entirely with stored topsoil replaced and the land returned to its current agricultural management options. In addition, the proposed woodland areas would be handed back to the previous landowners and the actual management of the land will then be the decision of the landowner.</p> <p>A <b>Framework DEMP [REP1-053]</b> has been produced detailing how decommissioning will be carried out and sets out the monitoring and auditing activities designed to ensure that decommissioning is carried out. A detailed DEMP, which must be in substantial accordance with the Framework DEMP, will need to be agreed with the Local Planning Authority prior to decommissioning, and this is secured by Requirement 20 within the <b>draft DCO [REP1-008]</b>.</p>
REP1-066	Members of the Public	Decommissioning	Comment relating to who will deal with the financial obligations of the land left behind post use	<p>As set out in section 4.4 (page 11 and 12) of the <b>Written Summary of Applicant's Oral Submissions at Issues Specific Hearing 1 [REP1-046]</b> the <b>Framework DEMP [REP1-053]</b> provides for how the decommissioning will take place. The Applicant has submitted a <b>Framework DEMP [REP1-053]</b> as part of the DCO application. A detailed DEMP, which must be in substantial accordance with the Framework DEMP, will need to be agreed with the Local Planning Authority prior to decommissioning, and this is secured by Requirement 20 within the <b>draft DCO [REP1-008]</b>. It is noted that the Applicant is aware of its obligations in the <b>draft DCO [REP1-008]</b> with respect to decommissioning as set out in Requirement 20, meaning it would be setting aside funds during the operation of the Scheme to meet the cost of decommissioning. The requirements of the DCO are enforceable and it is a criminal offence to fail to comply with a DCO. The Proceeds of Crime Act 2002 also acts as a further deterrent, and elements of the installed solar PV represent a valuable asset meaning it would be in Applicant's interest financially to decommission the site in order to sell or recycle the panels and other components. If the undertaker went into liquidation or receivership, its assets would be sold off to fund the decommissioning of the Scheme that is required pursuant to the legal requirement of the DCO (in this context, it is relevant that the DCO is a piece of legislation, and therefore different to a planning permission). The Applicant would also be under an obligation, pursuant to agreements with landowners, to return the land to landowners following decommissioning.</p> <p>This should give confidence that the Scheme will be decommissioned appropriately once it reaches the end of its operating life.</p>
REP1-077	Members of the Public	Management of land	Concern that land will become a weed desert that no one is responsible for	<p>The <b>Framework LEMP [REP1-023]</b> includes measures to ensure that existing and proposed vegetation within the Principal Site will be managed over the lifetime of the Scheme. This involves initially developing a detailed plan for the establishment and management of species rich grassland during the first five years to enhance habitats and biodiversity through the use of mowing and/or</p>



Ref. No.	IP Name	Theme	Written Submission / Summary of Written Submission	Applicants Response to Written Submission
				<p>grazing regimes. Following this, the long-term management of species-rich grassland will be undertaken to maintain a relatively stable grassland community in the long-term, and to avoid areas naturally progressing into tall, dense, grass-dominated spaces. This would include the following measures:</p> <ul style="list-style-type: none"><li>• Grazing or mowing, as described above, with arisings from the latter removed off-site.</li><li>• Control of undesirable species (e.g. arable weeds) and injurious weeds to prevent colonisation and domination of the grassland using a selective herbicide.</li><li>• Condition Assessments following Biodiversity Net Gain methodologies will be undertaken at years 10, 15, 20, 25 and 30. The results of these monitoring surveys will be used to adjust the management regime to maximise biodiversity and achieve the projected Biodiversity Net Gain unit values.</li></ul> <p>As set out in paragraph 6.3.10 of the <b>Framework LEMP [REP1-023]</b>, a Biosecurity Management Plan is to be developed which would set out procedures to ensure any imported building/landscaping materials are free from invasive non-native species (e.g. Schedule 9 species). In the event that any future infestations of invasive non-native species are identified during the development process, exclusion zones will be established around them and the ecology team contacted for advice as required.</p> <p>Following decommissioning of the Scheme, the land would be returned to the previous landowners and the management of the land will then be the decision of the landowners.</p>

### 3. References

- Ref 1-1 Department for Energy Security and Net Zero (2024). Overarching National Policy Statement for Energy EN-1. Accessed on 12/11/2024 at <https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1>
- Ref 1-2 Department for Energy Security and Net Zero (2024). National Policy Statement for Renewable Energy Infrastructure EN-3. Accessed on 12/11/2024 at <https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3>
- Ref 1-3 Stationary Office (2008). Planning Act 2008. Accessed on 22/10/2024 at <https://www.legislation.gov.uk/ukpga/2008/29/contents>
- Ref 1-4 IEMA (2022) Determining Significance For Human Health In Environmental Impact Assessment. Accessed on 1/11/2024 at <https://www.iema.net/resources/blogs/2022/11/17/iema-launch-of-the-eia-guidance-for-considering-impacts-on-human-health-november-2022/>
- Ref 1-5 NHS England's Healthy Urban Development Unit (2019) Rapid Health Impact Assessment (HIA) Toolkit 2019. Accessed on 11/11/2024 at <https://www.healthyrurbandevelopment.nhs.uk/wp-content/uploads/2019/10/HUDU-Rapid-HIA-Tool-October-2019.pdf>
- Ref 1-6 DEFRA (2024). Calculate biodiversity value with the statutory biodiversity metric. Accessed on 11/11 at <https://www.gov.uk/guidance/biodiversity-metric-calculate-the-biodiversity-net-gain-of-a-project-or-development>
- Ref 1-7 West Lindsey District Council (2023). Hemswell and Harpswell Neighbourhood Plan. Accessed on 12/11/2024 at <https://www.west-lindsey.gov.uk/planning-building-control/planning/neighbourhood-planning/all-neighbourhood-plans-west-lindsey/hemswell-harpswell-neighbourhood-plan>
- Ref 1-8 West Lindsey District Council (2018). Hemswell and Harpswell Character Assessment. Accessed on 12/11/2024 at <https://www.west-lindsey.gov.uk/sites/default/files/2022-02/Hemswell%20Character%20Assessment%20redacted.pdf>
- Ref 1-9 DEFRA (2021). United Kingdom Food Security Report 2021. Accessed on 12/11/2024 at <https://www.gov.uk/government/statistics/united-kingdom-food-security-report-2021>
- Ref 1-10 DEFRA (2024). UK Food Security Index 2024. Accessed on 12/11/2024 at <https://www.gov.uk/government/publications/uk-food-security-index-2024/uk-food-security-index-2024>
- Ref 1-11 Department for Energy Security and Net Zero (2024). National Policy Statement for electricity networks infrastructure (EN-5). Accessed on 12/11/2024 at <https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5>
- Ref 1-12 Natural England (2009). Agricultural Land Classification: protecting the best and most versatile agricultural land (TIN049). Accessed on 11/11/2024 at <https://publications.naturalengland.org.uk/publication/35012>
- Ref 1-13 Natural England (2021). Agricultural land: assess proposals for development. Accessed on 11/11/2024 at <https://www.gov.uk/government/publications/agricultural-land-assess-proposals-for-development>
- Ref 1-14 Barron-Gafford, Greg A., et al. (2016) The Photovoltaic Heat Island Effect: Larger solar power plants increase local temperatures. Scientific reports 6.1. Accessed on 13/11/2024 at <https://www.nature.com/articles/srep35070>
- Ref 1-15 International Commission on Non-Ionizing Radiation Protection (1998). ICNIRP Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz). Accessed on 12/11/2024 at <https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf>
- Ref 1-16 National Grid (2015). Undergrounding high voltage electricity transmission lines. Accessed on 12/11/2024 at: [https://www.nationalgrid.com/sites/default/files/documents/39111-Undergrounding high voltage electricity transmission lines The technical issues INT.pdf](https://www.nationalgrid.com/sites/default/files/documents/39111-Undergrounding%20high%20voltage%20electricity%20transmission%20lines%20The%20technical%20issues%20INT.pdf)
- Ref 1-17 Energy Networks Association (2017). Electric and Magnetic Fields. Accessed on 06/11/2024. Available at: [https://www.emfs.info/sites/g/files/atxybb296/files/2024-03/EMF\\_The\\_Facts\\_250917.pdf](https://www.emfs.info/sites/g/files/atxybb296/files/2024-03/EMF_The_Facts_250917.pdf)
- Ref 1-18 Department for Levelling Up, Housing and Communities (2023). National Planning Policy Framework. Accessed on 17/10/2024 at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>
- Ref 1-19 Central Lincolnshire Joint Strategic Planning Committee (2023). Central Lincolnshire Local Plan. Accessed on 07/11/2024 at <https://www.n-kesteven.gov.uk/central-lincolnshire/adopted-local-plan-2023>
- Ref 1-20 Office for National Statistic (2021). 2021 Census. Accessed on 12/11/2024 at <https://www.ons.gov.uk/census>
- Ref 1-21 Ministry of Housing, Communities and Local Government (2019). English indices of deprivation 2019. Accessed on 12/11/2024 at <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019>
- Ref 1-22 Office for Health Improvement and Disparity (2022). Public Health Profiles. Accessed on 11/11/2024 at <https://fingertips.phe.org.uk/profiles>
- Ref 1-23 Department for Work and Pensions (2022). Alternative Claimant Count Statistics January 2023 to August 2022. Accessed on 12/11/2024 at [https://www.gov.uk/government/statistics/alternative-claimant-count-statistics-january-2013-to-august-2022#:~:text=The%20overall%20rate%20of%20people,to%20August%202017%20\(3.0%25\).](https://www.gov.uk/government/statistics/alternative-claimant-count-statistics-january-2013-to-august-2022#:~:text=The%20overall%20rate%20of%20people,to%20August%202017%20(3.0%25).)
- Ref 1-24 National Energy System Operator (NESO) (2020). Historic generation mix and carbon intensity. Accessed on 12/11/2024 at <https://www.neso.energy/data-portal/historic-generation-mix>
- Ref 1-25 Stationary Office (2017). The Town and Country Planning (Environmental Impact Assessment) Regulations 2017. Accessed on 12/11/2024 at <https://www.legislation.gov.uk/uksi/2017/571/contents>
- Ref 1-26 The Planning Inspectorate (2024). National Infrastructure Planning. Accessed on 13/11/2024 at <https://infrastructure.planninginspectorate.gov.uk/>
- Ref 1-27 Department for Levelling Up, Housing and Communities. Planning Practice Guidance (2024). Accessed on 11/11/2024 at: <https://www.gov.uk/government/collections/planning-practice-guidance>

Ref 1-28 Stationary Office (2010). The Infrastructure Planning (Examination Procedure) Rules 2010. Accessed on 11/11/2024 at <https://www.legislation.gov.uk/uksi/2010/103/contents/made>

# Appendix A DEFRA UK Food Security Index 2024



Department  
for Environment  
Food & Rural Affairs

Research and analysis

# UK Food Security Index 2024

Updated 11 July 2024

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# Introduction

This is the first release of the new annual UK Food Security Index. The index gives an assessment of the state of UK food security 2023 to 2024, using the latest available evidence. The index is UK-wide and led by Defra, working with devolved administrations. The index is designed to complement the three-yearly [UK Food Security Report \(UKFSR\)](https://www.gov.uk/government/collections/united-kingdom-food-security-report) (<https://www.gov.uk/government/collections/united-kingdom-food-security-report>) which is a comprehensive analysis of statistical data relating to UK food security. The UKFSR 2021 was the basis for government's assessment that the UK has a high degree of food security due largely to sustained healthy production and positive trends in global output growth. The index measures year-on-year change, building on the UKFSR evidence base but also taking into account wider intelligence and forecasts, and policy developments.

The index captures key indicators that have been selected from the wider set of indicators from UKFSR 2024 (due to be published later this year) because they:

- reflect broad trends of a key food security theme
- capture key shorter-term trends that change year-on-year and are of particular interest
- rely on data that meets the standard of Official Statistics or is high quality, is UK-wide and published annually

The indicators are all drawn from existing statistics published annually. The majority of indicators relate to 2023. However, due to the rolling programme of publication of statistics, the latest available data for some indicators relates to 2022. When available, more recent data will be published via the [UK Food Statistics Pocketbook](https://www.gov.uk/government/statistics/food-statistics-pocketbook). (<https://www.gov.uk/government/statistics/food-statistics-pocketbook>) Where data is available, indicators will be shown for the last 10 years in line with the index's focus on short to medium term trends.

The index considers 9 indicators across a range of areas. This ensures that food security is not reduced to a single metric or theme. In practice it is shaped by a range of interacting factors such as supply, demand, international and domestic trends, inputs and outputs, perception of food safety and consumer confidence. The assessment of food security below is an overall qualitative assessment based on the combination of the direction of travel of each of the indicators in the index, as compared to the previous year, with the baseline in future years set by the previous index. Some consideration is given to any significant emerging trends not captured in the published data.

## Food Security Index overall assessment categories

### Broad reduction in risks

Significant reduction in risks across multiple indicators or some reduction in risks across the majority of the indicators or major reduction in risks in one or more indicators.

### Some reduction in risks

Significant reduction in risks in one or more indicators, or some reduction in risks across multiple, while the rest remain broadly stable.

### Broadly stable

No or little change across the indicators or a mix of some reduction and some increase in risks.

### Some increase in risks

Significant increase in risks in one or more indicators, or some increase in risks across multiple, while the rest remain broadly stable.

### Broad increase in risks

Significant increase in risks across multiple indicators or some increase in risks across the majority of the indicators or severe increase in risks in one or more indicators.

To see the evidence and analytical base in more detail, see the individual analysis of the indicators in the pages that follow the overall assessment.

## Overall assessment of UK food security

### Summary

Taking a holistic view across the indicators in the index shows a **broadly stable picture** as the UK comes out of a challenging period of global supply chain shocks. However, this should be seen in the context of **longer-term risk**



**from climate change:** an exceptionally wet winter and spring in 2024 poses significant challenges to some domestic production. See below the assessment across the indicators:

Indicator	Assessment
Indicator 1: Global food supply for human consumption	Broadly stable
Indicator 2: Share of global cereals and soyabeans internationally traded	Broadly stable
Indicator 3: Production-supply ratio	Broadly stable
Indicator 4: Agricultural total factor productivity	Some reduction in risks
Indicator 5: Agricultural land use	Broadly stable
Indicator 6: Energy and fertiliser prices	Some reduction in risks
Indicator 7: Business investment	Broadly stable
Indicator 8: Biosecurity risk	Broadly stable
Indicator 9: Consumer confidence in food supply chain actors	Broadly stable

## Strong production and trade

The UK's food security is built on a foundation of strong domestic production, complemented by imports from diverse sources. UK farmers produce some of the best food in the world and the UK Government will always seek to champion and protect the UK's high production standards, including in new free trade agreements, safeguarding our ability to maintain high environmental, animal welfare and food standards. For some products, such as rice, bananas, tea or cocoa, the UK's climate is unsuitable for cultivation, and it will always rely on imports. For many others, the UK may not be fully self-sufficient in all product categories or across the whole year. Therefore, a balance between domestic production, and imports that are held to our high food standards, is integral to UK food security. The UK maintains domestic

production of all food available in the UK at around 60% of consumption and indigenous food at 73% (2022 figures) and continues to see rising productivity, while there is strong global production and trade of food that the UK can access through its diverse supply chains. Imports from diverse sources make a positive contribution to UK food security as they support the UK's ability to respond flexibly to supply shocks, both domestically and internationally, such as the disruptions to global grain and oilseed markets caused by the Russian invasion of Ukraine.

Food security requires that consumers can have confidence in the food they buy, which in turn supports supply chain stability. Consumer confidence in most food supply chain actors to ensure food is safe has remained broadly stable in the UK since 2020. Where breakdowns are available, (data is only available for England, Wales, and Northern Ireland) confidence is highest in farmers, followed by shops and supermarkets.

## **Improving the short-term risk picture**

The UK Government is not complacent about the risks to our food security, particularly those posed by increased international volatility, climate change and biodiversity loss. These risks have intensified in recent years and brought shocks to the wider supply chain. Inflated energy and fertiliser prices following Russia's invasion of Ukraine drove up production costs in 2022, creating a challenging business environment for the food sector. Fertiliser prices have been falling since late 2022 and there are early signs that the rise in energy prices may be slowing, but both remain higher than they were before 2020.

In this challenging context, business investment in the food and drink manufacturing sector experienced a decline from 2020 to 2023 but has recently shown a small increase. The combination of these signs of recovery from a period of shock to the food system presents a reduction in risks to food security. Impacts on supply chains from geopolitical instability in the Middle East present risks, including some increased costs for inputs, but so far the impacts to UK food supply have been limited.

## **Longer-term trends that need to be mitigated and monitored**

While some shorter-term supply chain risks appear to be moderating, the UK continues to face risks associated with longer term trends in climate and the environment that UKFSR 2024 will consider in detail. The winter and spring of 2023 to 2024 were exceptionally wet with potentially significant impacts on the UK's domestic production of some crops in 2024 and supply of some produce. For several of the months between October 2023 and March 2024, parts of the UK had monthly rainfall totals that were [double the 1991-2020 monthly averages \(https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-actual-and-anomaly-maps\)](https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-actual-and-anomaly-maps). As climate change drives more extreme weather both in the summer and the winter, the adoption of more climate resilient farming practices will become increasingly important. Through schemes across the UK, government is supporting farmers to invest in the equipment, technology and infrastructure needed for more sustainable and resilient food production. The schemes include the UK Government's Farming Innovation Programme, the Scottish Government's Agricultural Transformation Fund, the Welsh Government's rural small grant schemes, and the Department for Agriculture, Environment and Rural Affairs' (DAERA) in-development Capital Investment Measure in Northern Ireland.

The UK's trading relations mitigate domestic supply shock risks in the short term. The food group for which the UK is most reliant on imports is fruit and vegetables, producing 17% and 55% respectively of supply. A significant proportion of UK fresh fruit and vegetable consumption is either exotic or out of season, and supply can be affected where imports are from countries vulnerable to climate change and extreme weather. With this in mind, the UK Government and devolved governments are supporting increased domestic production, particularly of UK fruit and vegetables, to strengthen our food security. There is a range of funding offers as part of the wider reform in agricultural policy open to fruit and vegetable growers across the UK. These include the UK Government's Sustainable Farming Incentive (SFI), the Scottish Government's Fruit and Vegetable Aid scheme, the Welsh Government's Horticulture Development and Start-up Schemes and DAERA's in-development Horticulture Sector Growth Support Scheme in Northern Ireland. These schemes help growers across the UK to deliver improved environmental sustainability, and to increase productivity and innovation.

Through a range of reforms, the UK Government and devolved administrations are driving the agricultural transition to deliver complementary outcomes of the regeneration of nature and food productivity. These outcomes can and must go hand in hand. Healthy soil, biodiversity, abundant pollinators and clean water are some of the foundations of food security and a thriving, resilient agriculture sector over the long term. Given the significant changes the UK is undertaking it is important that we monitor the impacts of any changes on food production. This annual index will allow us to remain agile in monitoring any trends.

Increased food security will also rely on maintaining the UK's robust and responsive biosecurity, particularly as climate and health risks interact.

The [UK's approach to biosecurity](#)

(<https://assets.publishing.service.gov.uk/media/5fe21ad5e90e07452ec36f1f/animals-plants-biosecurity-narrative.pdf>) is internationally recognised for delivering the highest standards of protection from pests, disease and invasive non-native species. In response to recent unprecedented outbreaks of Highly Pathogenic Avian Influenza (HPAI) H5N1 between October 2021 and February 2024, the UK Government stood up its well-established outbreak structures to control and eradicate disease, restore normal trade, and assist local communities' recovery. The UK has self-declared zonal freedom from HPAI for Great Britain with effect from 29 March 2024, following the UK declaring on behalf of Northern Ireland on 31 March 2023. The virus is still circulating at low levels in wild birds in Great Britain and Europe (with some continued outbreaks in poultry and other captive birds in other European countries) and all bird keepers should remain vigilant for signs of the disease. Government will continue to work to limit the impacts for the poultry sector.

## Indicator 1: Global food supply for human consumption

Figure 1: Global food supplies available for human consumption

Source: [FAO Food Balances](https://www.fao.org/faostat/en/#data/FBS) (<https://www.fao.org/faostat/en/#data/FBS>)

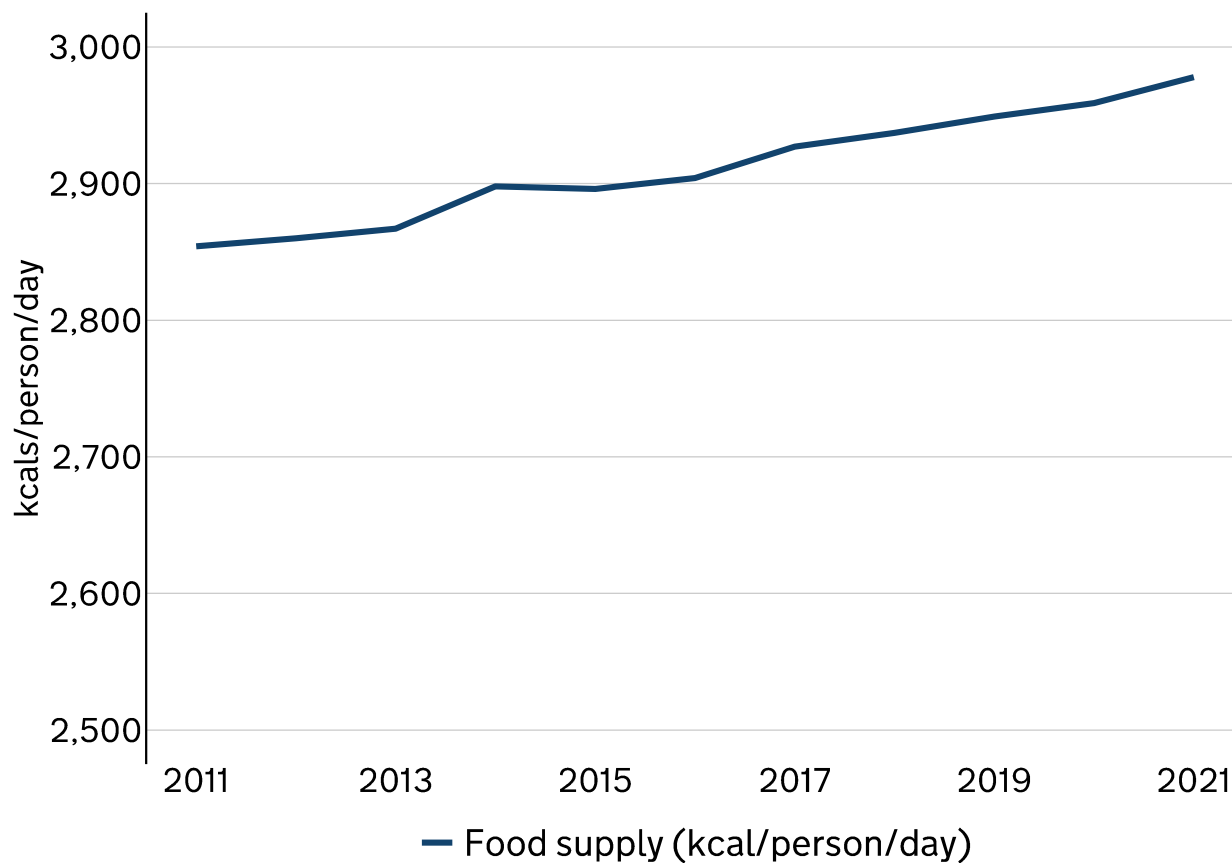
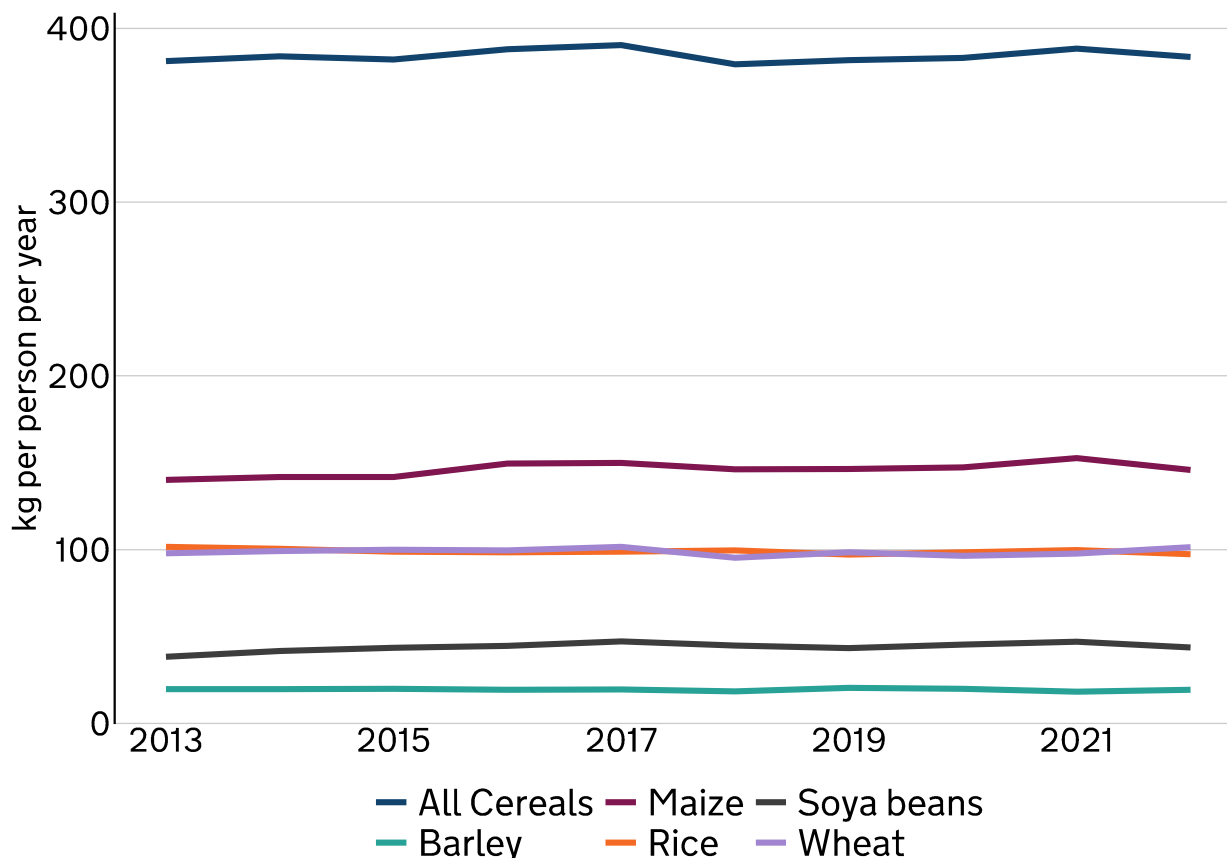


Figure 2: World cereals & soyabean production per capita

Source: [FAO Crops and Livestock Products](https://www.fao.org/faostat/en/#data/QCL)  
(<https://www.fao.org/faostat/en/#data/QCL>)

UN Population estimate used to calculate 2022 per capita production.



## Rationale

This indicator shows the global food supplies available for human consumption in calories per person per day (figure 1). It represents the amount of food produced and stocks minus food used for other purposes (such as animal feed, seed, food put to manufacture for food use and non-food uses) and losses during storage and transportation ([FAO Food Balance Sheets \(https://files-faostat.fao.org/production/FBS/New%20FBS%20methodology.pdf\)](https://files-faostat.fao.org/production/FBS/New%20FBS%20methodology.pdf)). It is therefore a useful indicator of the global availability of food on which UK food security is dependent.

## Assessment

Between 2020 and 2021 food supply (figure 1) increased by 19 calories per person per day, indicating a **broadly stable** trend of global food supply which has been increasing at a steady pace.

## Commentary

There is enough food available to feed the current global population (2978 kcals per person per day which exceeds the recommended average of 2500kcal for men and 2000kcal for women). The 2020 to 2021 trend is consistent with the trend of increases over the previous decade, which from 2012 to 2021 added up to an increase of 118 calories per person per day. However, this gradually improving picture needs to be balanced with risks to food security that will be discussed in more detail in UKFSR 2024. Sufficient supply at the global level does not translate into food security for all. It is estimated that in 2022 735 million people were undernourished and 900 million were severely food insecure, representing 9.2% and 11.3% of the world population respectively ([FAO Food Security Indicators \(https://www.fao.org/faostat/en/#data/FS\)](https://www.fao.org/faostat/en/#data/FS)).

The largest contributors to global supply are cereals at 43.3% in 2021 which is a reduction from 44.6% in 2012. Other significant contributions were from vegetable oils 10.5%, sugar and sweeteners 7.8%, meat 6.8% and milk 5.5%. Sufficient calories do not necessarily equate to availability of the right mix of calories globally; the world consumes too few wholegrains and fruit and vegetables, which can cause long term health problems [Lancet \(https://www.thelancet.com/article/S0140-6736\(19\)30041-8/fulltext\)](https://www.thelancet.com/article/S0140-6736(19)30041-8/fulltext). The calorific contribution to the rise in global food supply between 2012 and 2021 was mainly driven by foods other than cereals: milk, palm oil, groundnuts, poultry meat and soyabean oil all contributed more to the increase in calories than wheat which made the largest contribution of any cereal.

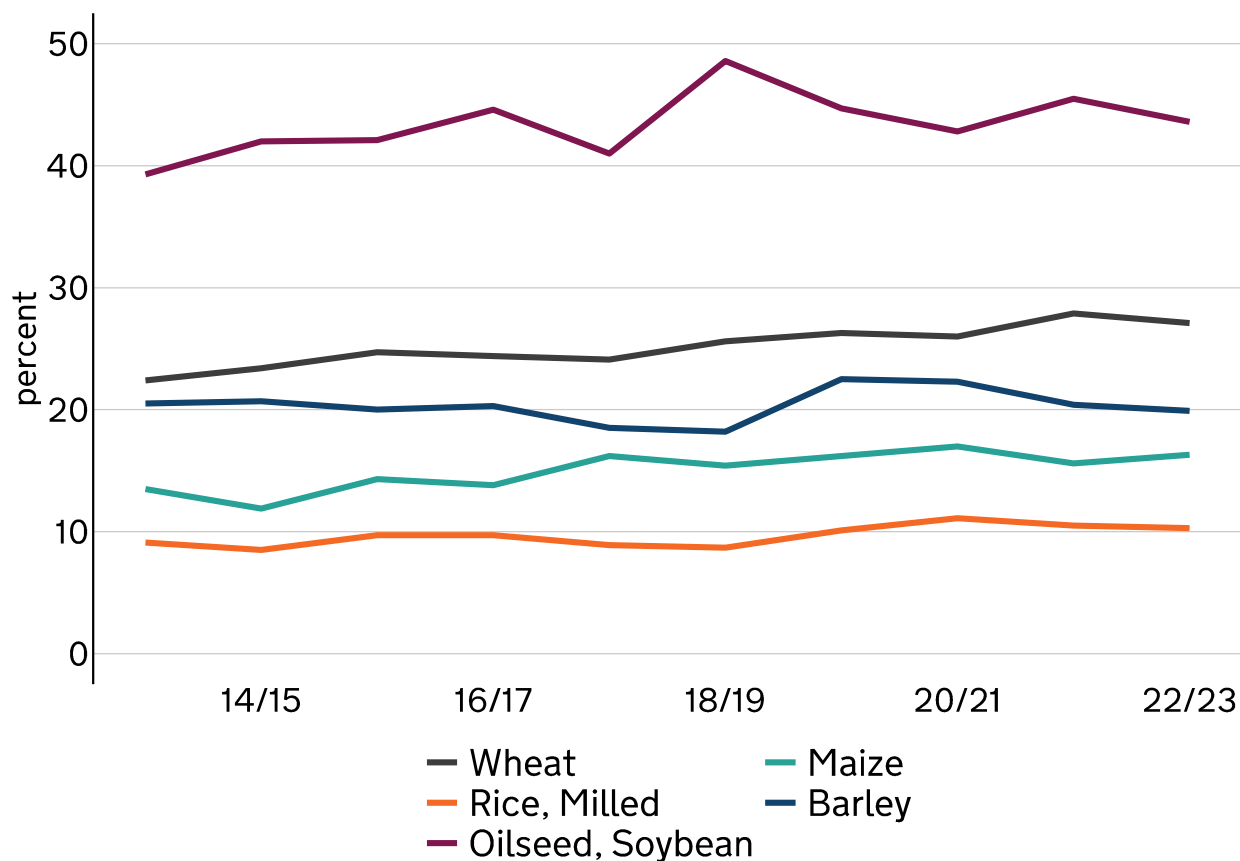
Cereals remain an important part of global diets and are also a significant component in animal feed. Cereals and meat combined contributed 57% of global protein supply. Cereals production (see figure 2 for global volumes of production per capita) remains stable although there is growing competition between agricultural production for food and use for biofuels. In 2022, biofuels accounted for 16% of global maize production, and 17% of global vegetable oil production, compared to 15% and 13% respectively in 2014 [OECD FAO Agricultural Outlook Database \(https://stats.oecd.org/Index.aspx?DataSetCode=HIGH\\_AGLINK\\_2023\)](https://stats.oecd.org/Index.aspx?DataSetCode=HIGH_AGLINK_2023). Rapid increase in meat consumption in Asia may increase the amount of production needed for animal feed, which is at 25% of global output [FAOSTAT Food Balances Database \(https://doi.org/10.1787/agr-outl-data-en\)](https://doi.org/10.1787/agr-outl-data-en) and represents a less efficient use of calories than direct human consumption.

# Indicator 2: Share of global cereals and soyabeans internationally traded

Figure 3: Percentage of global production internationally traded

Source: [USDA PSD](https://apps.fas.usda.gov/psdonline/app/index.html#/app/advQuery)

(<https://apps.fas.usda.gov/psdonline/app/index.html#/app/advQuery>)



## Rationale

This indicator measures global trade in key cereals and soyabeans. Trade supports both the distribution and affordability of food globally by moving products from surplus regions with more suitable conditions to areas with less ideal conditions or higher demand and by spreading risks of supply shortages and price spikes. Cereals are the focus due to the importance of traded cereals for world food supply and soyabeans are an important source of animal feed.



## Assessment

The percentage of global key cereals and soyabeans traded by volume remains **broadly stable**. In 2023 to 2024 there was a small average decrease of 0.1 percentage points (pp). Trends vary across globally traded commodities including key staples. In 2023 to 2024 the percentage of maize (+0.7pp) globally traded rose while the rate for rice (-0.2pp), barley (-0.5pp), wheat (-0.8pp) and soyabeans (-1.9pp) decreased between 2022 and 2023.

## Commentary

The last decade saw overall growth in international trade of wheat (+4.7pp), soyabeans (+4.3pp), maize (+2.8pp) and rice (+1.2pp). The figure for barley (-0.6pp) indicates a negligible reduction in trade. This positive trend has been complemented by stable market concentrations for most key staples which have remained diverse. Between 2023 and 2024, wheat had the most diverse export supply, followed by rice, barley and maize. Soyabeans remain the exception with the least diverse export supply ([USDA \(https://apps.fas.usda.gov/psdonline/app/index.html#/app/advQuery\)](https://apps.fas.usda.gov/psdonline/app/index.html#/app/advQuery)). A more diverse supply is generally considered more food secure as it spreads the risks to supply from supply chain disruption. Over the coming years, the overall percentage of global cereals production traded is expected to continue to increase. However, there have been shifts in the importance of different countries in global markets with implications for supply chain risks, including geopolitics and climate change. Russia's invasion of Ukraine had a considerable impact on Ukraine's agricultural exports leading to price spikes for staple commodities. Since then, prices have declined significantly due to several factors including the reopening of crucial ports and transport routes out of Ukraine and other suppliers such as the EU, Australia, and North American countries increasing wheat and corn exports.

## Indicator 3: Production-supply ratio

Figure 4: UK food production to supply ratio

Source: [Agriculture in the UK \(Defra\)](https://www.gov.uk/government/collections/agriculture-in-the-united-kingdom)  
(<https://www.gov.uk/government/collections/agriculture-in-the-united-kingdom>)

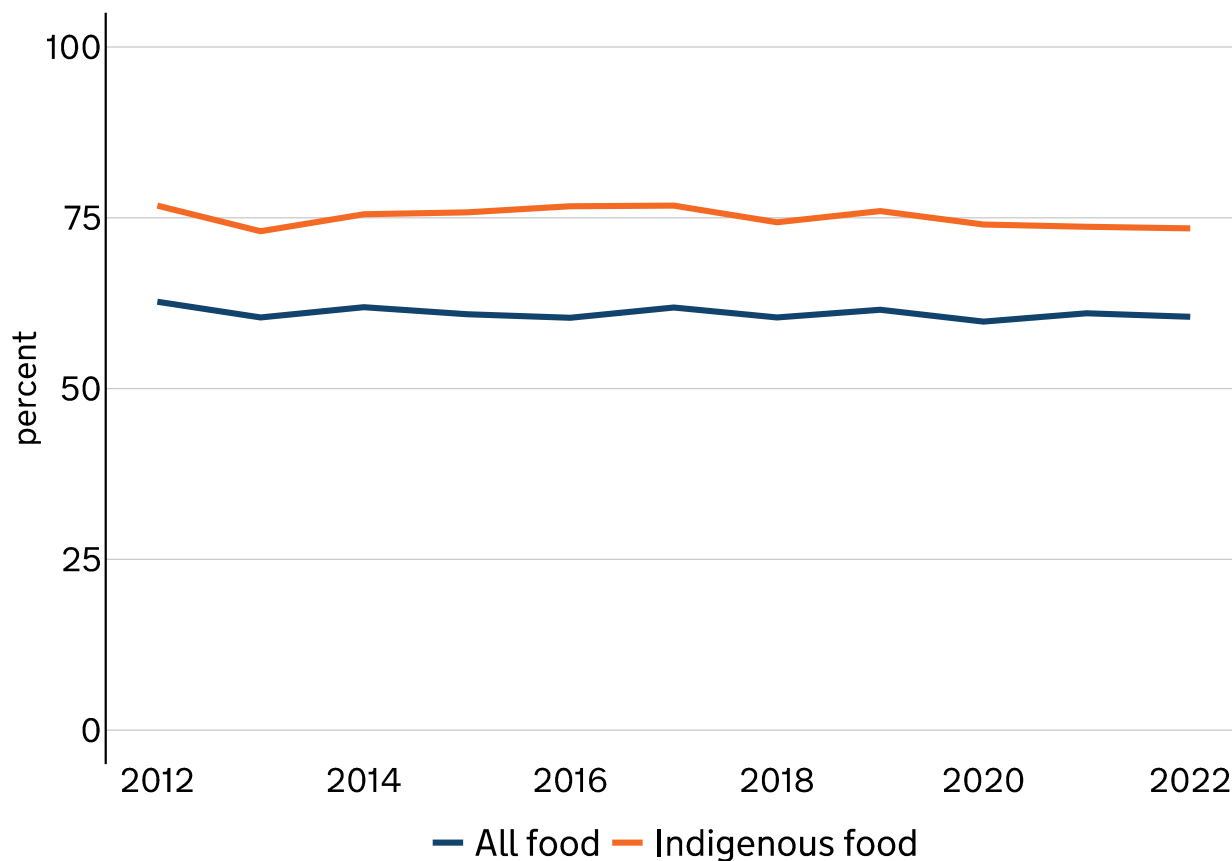


Figure 5: UK production to supply ratio by food type, 2022

Source: [Agriculture in the UK \(Defra\)](https://www.gov.uk/government/collections/agriculture-in-the-united-kingdom)

[https://www.gov.uk/government/collections/agriculture-in-the-united-kingdom\)](https://www.gov.uk/government/collections/agriculture-in-the-united-kingdom)

## Rationale

The production to supply ratio is generally understood as a broad measure of national self-sufficiency. This indicator is useful in food security terms as it represents a balance of factors: the relative contribution of UK domestic production and trade to our supply. The ratio is calculated as the farmgate value of raw food production divided by the value of raw food for human consumption. It compares the value of what is produced in the UK with what is consumed. Viewing the ratio by food type shows the varying levels of reliance on imports. At food type level the ratio does not include processed products, so actual self-sufficiency levels for some food types will be lower than stated. The 2023 data is due to be published in June 2024, so the analysis is based on 2022 data.

## Assessment

The production to supply ratio 2022 data shows a **broadly stable** trend. Production was at 60% for all food and 73% for indigenous foods (figure 4), changing from 61% and 74% in 2021. The UK relies on imports for roughly 40% of its food. Strong production mitigates international risks to supply and strong trade mitigates national risks to supply.

## Commentary

The UK produces most of the cereals, meat, dairy, and eggs that it consumes. This figure is lower for vegetables (55%) and fruit (17%) due to climate, seasonality and consumer and producer choices. The UK's ability to trade internationally supports diversified supply and stability. [Ten countries](https://www.gov.uk/government/statistics/agriculture-in-the-united-kingdom-2022/chapter-13-overseas-trade) (<https://www.gov.uk/government/statistics/agriculture-in-the-united-kingdom-2022/chapter-13-overseas-trade>) provided 69% of all UK imports in 2023, showing a diversity of sources. However, the UK is reliant on specific countries for some key products such as Spain for citrus fruit, the Netherlands for tomatoes and India and Pakistan for our rice ([HMRC Trade Data](https://www.uktradeinfo.com/trade-data/) (<https://www.uktradeinfo.com/trade-data/>)). India is a climate vulnerable country that has been subject to extreme heat and floods in recent years.

While the overall production to supply ratio has not changed significantly since the 2000s, cereals production is susceptible to year on year change due to extreme weather events. In [2020](https://assets.publishing.service.gov.uk/media/64ad4ac0c933c10012f9e10a/AUK-Chapter7-13jul23.ods) (<https://assets.publishing.service.gov.uk/media/64ad4ac0c933c10012f9e10a/AUK-Chapter7-13jul23.ods>) there was a 26% drop in production due to extreme bad weather, while [2022](https://assets.publishing.service.gov.uk/media/64ad4ac0c933c10012f9e10a/AUK-Chapter7-13jul23.ods) (<https://assets.publishing.service.gov.uk/media/64ad4ac0c933c10012f9e10a/AUK-Chapter7-13jul23.ods>) saw an 8.5% increase. Reductions in the 2024 harvest are anticipated, particularly for wheat, due to recent wet weather and flooding, with less severe impacts on wheat in Scotland ([AHDB](https://ahdb.org.uk/cereals-oilseeds/early-bird-survey) (<https://ahdb.org.uk/cereals-oilseeds/early-bird-survey>)). The medium to long term expectation is that demand and production for arable crops will increase due to [population](https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2021basedinterim) (<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2021basedinterim>), [GDP](https://obr.uk/efo/economic-and-fiscal-outlook-march-2024/) (<https://obr.uk/efo/economic-and-fiscal-outlook-march-2024/>) growth and demand for animal feed.

Domestic food production is not necessarily independent of global supply chains since production can be reliant on global inputs at the farming (for

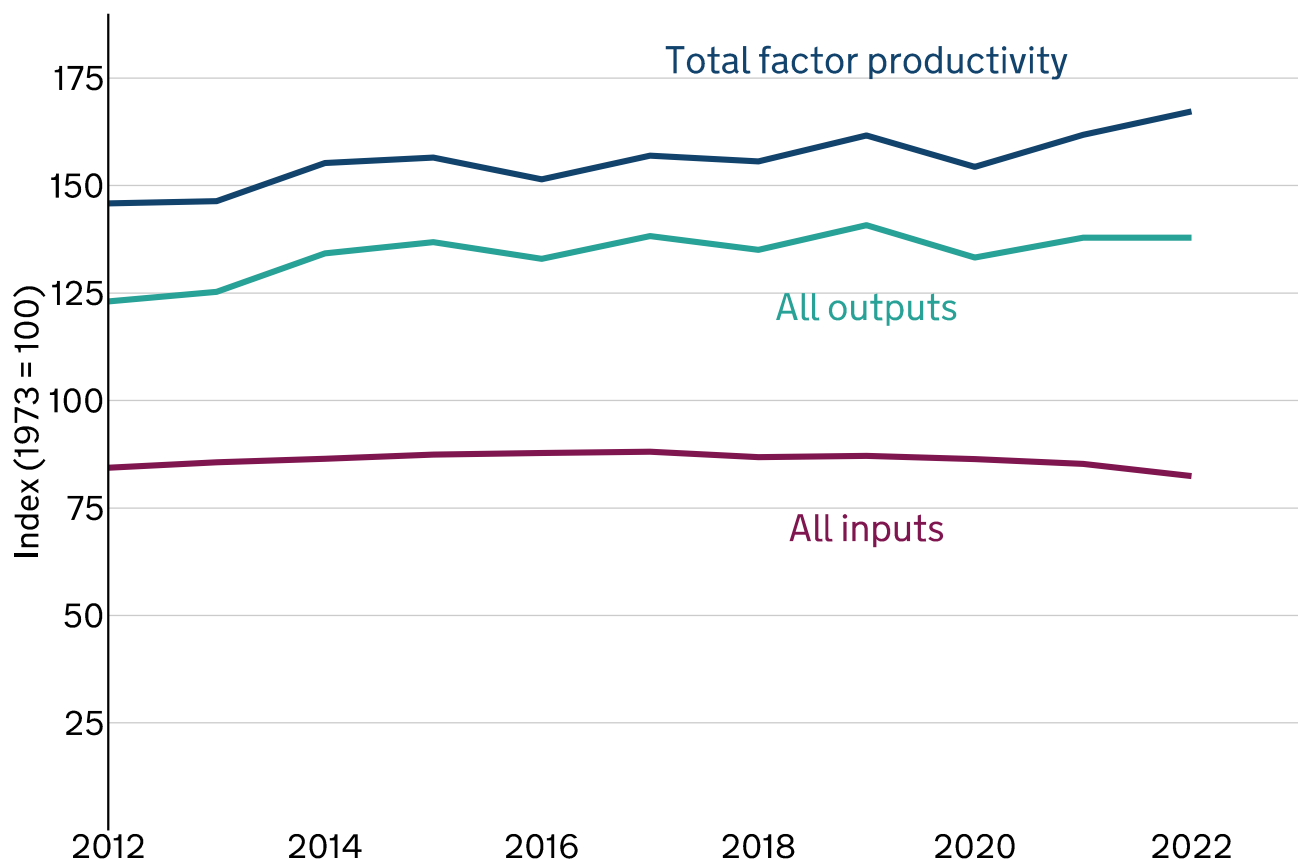
example, fertiliser) and the processing stages (for example, packaging and critical dependencies like CO<sub>2</sub>).

Strong domestic production is dependent on sustainability of the whole food system, particularly on healthy biodiversity, soil, and water, which will be explored in UKFSR 2024.

## Indicator 4: Agricultural total factor productivity

Figure 6: Total factor productivity (UK agriculture)

Source: [Total factor productivity of the agricultural industry](https://www.gov.uk/government/statistics/total-factor-productivity-of-the-agricultural-industry)  
(<https://www.gov.uk/government/statistics/total-factor-productivity-of-the-agricultural-industry>)



## Rationale

Total factor productivity (TFP) is the ratio of inputs to outputs, giving a measure of efficiency of production. More efficient production strengthens UK food security by allowing the UK to produce the same amount of food with less inputs, reducing dependencies on finite resources like land and fertiliser. Increased agricultural productivity can be either damaging or conducive to environmental sustainability depending on the nature of the change. The latter is known as sustainable productivity growth and is important to long term food security. Inputs included in agricultural TFP are seeds, energy, fertilisers, plant protection products, veterinary expenses, animal feed, total maintenance, bank charges, other goods and services, consumption of fixed capital, all labour, and land.

## Assessment

TFP in 2022 reached a high of 167.3, a 3.4% increase on the previous year, driven by a decrease in the volume of all inputs (-3.3%) which offset a very slight decrease in the volume of all outputs (-0.1%). This means production requires less of inputs such as seeds, fertiliser, labour and land, indicative of **some reduction in risks**.

## Commentary

2022 saw an increase in total crop output of 1.7% while total livestock output decreased by 1.7% from 2021 levels. A 3.3% decrease in inputs was seen across almost all input items, but most notably fertilisers and seeds. Since the series began, in 1973, agricultural TFP has increased by 67.3%, driven by an increase in the volume of all outputs (particularly in cereals and oil seeds) of 37.9% and a decrease in the volume of all inputs of 17.6%. TFP has grown at an annual average rate of 1.1% between 1973 (the start of the data series) and 2022. In the last decade, since 2012, annual growth has been higher at 1.4% on average with an increase in all outputs (by 14.3%) and a decrease in all inputs (by 2.3%). These values are averages across agriculture and sectoral variations can differ significantly. An example of increased productivity on a sector level is [dairy \(https://www.gov.uk/government/statistics/uk-milk-prices-and-composition-of-milk\)](https://www.gov.uk/government/statistics/uk-milk-prices-and-composition-of-milk) where efficiency gains in milk production are up 11% from 2000, with a 21% reduction in number of dairy cows.

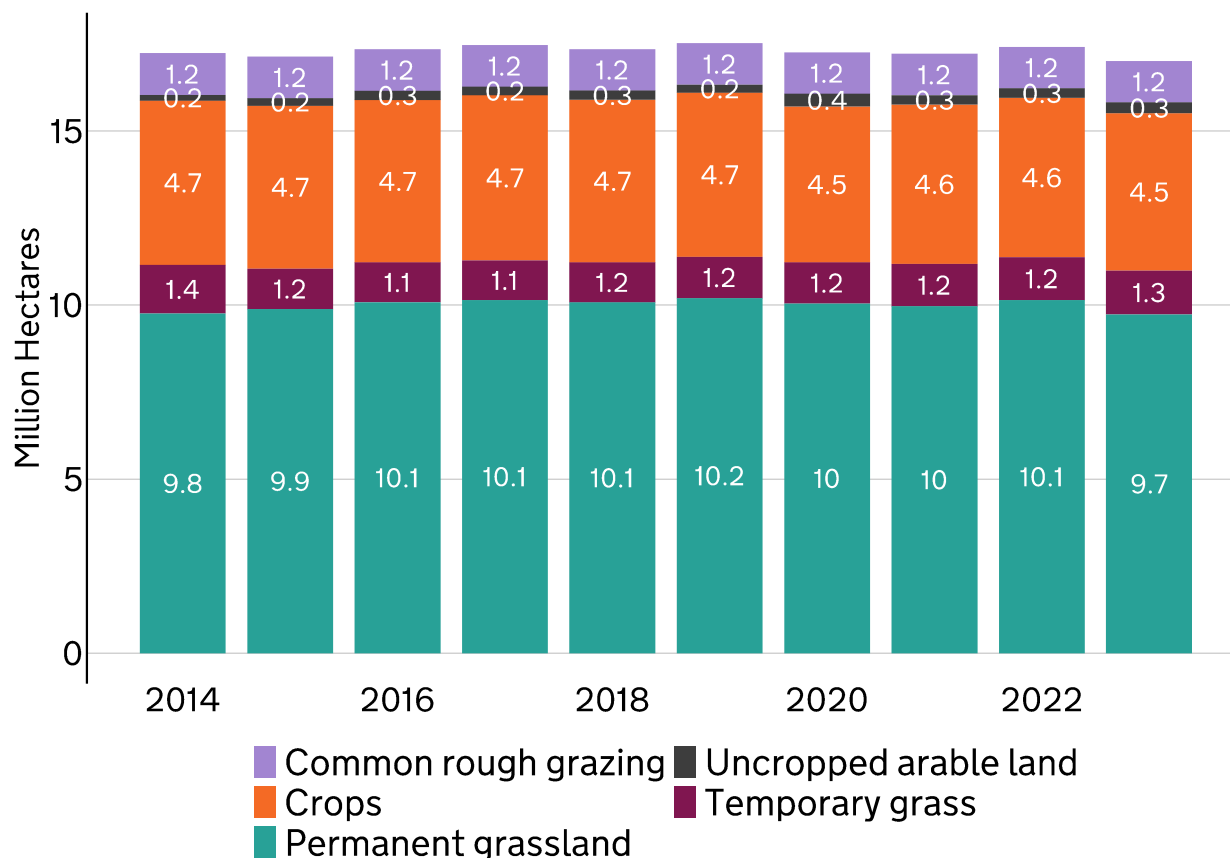
Although external factors such as prices, weather conditions or disease outbreaks may have a short-term impact on productivity, it is technological

development and innovation that improve productivity over a longer period. The sustained general upward trend in the UK is therefore an indicator of recent innovation in the sector. A specific example of innovation is where [yields of wheat increased by 5-10%](#) (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6369158/>) with the introduction of the Reduced Height genes during the Green Revolution. [Further research](#) (<https://www.agri-tech-e.co.uk/shorter-wheat-gene-offers-benefits-over-green-revolution-varieties/>) is underway helping semi-dwarf wheat grow in water-limited environments, mitigating potential impacts of climate change. Another example is the collaboration between Cranfield University and the European Space Agency in 2014 to create 'FarmingTruth' (<https://business.esa.int/projects/farmingtruth>), a precision agriculture service which combines soil data with satellite images to improve crop yields. This led to a reduction in nitrogen fertiliser.

## Indicator 5: Agricultural land use

Figure 7: Total utilised agricultural area (UAA) by type

Source: [Agriculture in the UK \(Defra\)](#)  
(<https://www.gov.uk/government/collections/agriculture-in-the-united-kingdom>)



## Rationale

Measuring utilised agricultural area (UAA) gives a high-level view of how the UK is using the agricultural land available to produce the UK's food. There is not a direct link between UAA and food production and indeed a decline in UAA with increased efficiencies can still produce an increase in food production.

## Assessment

In 2023, 69.7% of the UK's land (17 million hectares) was used for agricultural production, a 2.3% decrease in UAA from 2022. This is a **broadly stable** trend consistent with previous years.



## Commentary

The amount of UK land in production has seen a gradual but small decrease over the last 40 years. UAA has fallen by 7% between 1984 to 2023

[Agriculture in the UK \(https://www.gov.uk/government/collections/agriculture-in-the-united-kingdom\)](https://www.gov.uk/government/collections/agriculture-in-the-united-kingdom) but the total area on agricultural holdings has only fallen by 2% over the same period in part due to a rise in woodland on farms. Reduction in UAA does not mean a drop in production. TFP has continued to climb for this period (see figure 6 above) supporting similar levels of food production on less land. For example, in 2022 the cereals crop area fell by 1.7%, but the production of cereal crops increased by 8.5% to 24.3 million tonnes.

The distribution of types of agricultural land use shows that the majority of UAA (57%) was permanent grassland in 2023. 27% of UAA was used for crop production (arable and horticulture). The total area of cereal crops in the UK decreased by 2.7% between 2022 and 2023 and stands at almost 3.1 million hectares. Horticultural crops land use has decreased by 5.2% since 2022 and accounts for 145,000 hectares of UAA in 2023. This area was mostly used for outdoor vegetables (approximately 69% of horticultural land) and outdoor fruit (22%). The remaining horticultural area was used for protected crops (2%) and ornamental plants (7%).

Year-on-year land use change is typically in the range of 0.0% to 5.0%, so the scale of change seen in recent years is broadly within or close to what would be considered normal. The decrease in horticultural use is at the higher end of the range, which may reflect a response to multiple factors affecting land use planning, such as rising input costs (for example labour and fertiliser), weather and yield variability, and final market values. How the UK uses its land to produce food is complex and will be explored more fully in UKFSR 2024.

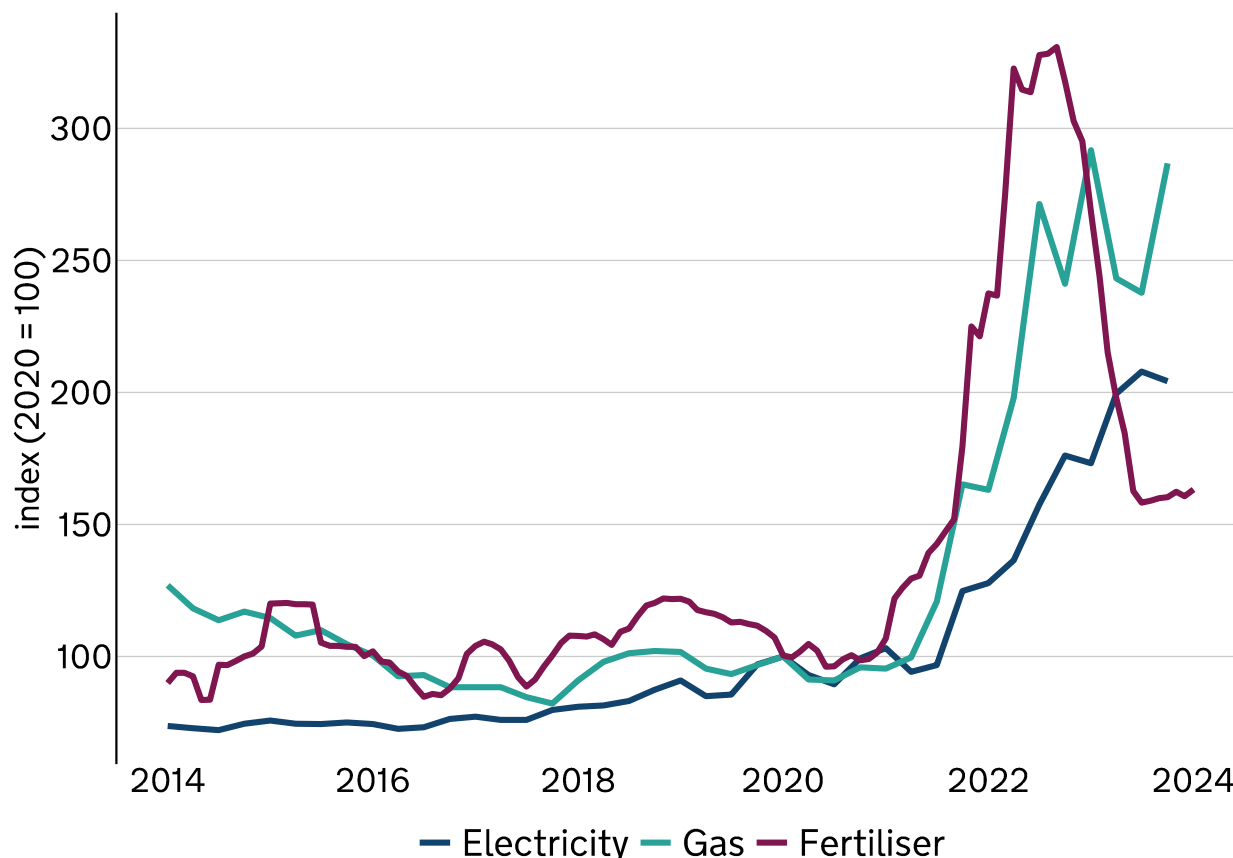
## Indicator 6: Energy and fertiliser prices

Figure 8: Non-domestic energy and fertiliser price index

Source (Energy Prices): [Non-domestic energy prices \(DESNZ\) 2004 to Q4 2023 \(https://www.gov.uk/government/statistical-data-sets/gas-and-electricity-prices-in-the-non-domestic-sector\)](https://www.gov.uk/government/statistical-data-sets/gas-and-electricity-prices-in-the-non-domestic-sector)

Source (Fertiliser Price Index): [Agriculture Price Indices \(Defra\) \(https://www.gov.uk/government/collections/agricultural-price-indices\)](https://www.gov.uk/government/collections/agricultural-price-indices)





## Rationale

Fertilisers and energy are important inputs for food production and the UK is dependent on the global supply chain for them. Their prices are also linked, with some fertilisers dependent on gas as an input for production. Non-domestic energy prices are the prices paid by businesses for electricity and gas.

## Assessment

Following a supply shock from 2020 to 2022, energy and fertiliser prices have shown **some reduction in risks** in 2023. Fertiliser prices have halved since their peak in late 2022. However, they remain 50% higher than at the start of 2022 and energy prices have sustained high levels. The data for the first

quarter of 2024 will be published in June 2024 so is not factored into this assessment.

## Commentary

Energy and fertiliser prices have reflected geopolitical shocks to energy supply, such as Russia's invasion of Ukraine. Both electricity and gas prices climbed significantly from mid-2020 onwards, doubling for electricity and nearly tripling for gas compared to the 2020 baseline (electricity +100%, gas +187%). Prices remain high for both. Fertiliser prices also surged from mid-2020, peaking in September 2022, with prices more than tripling. Recent months show a downward trend, but fertiliser prices remain significantly higher (over 60%) than levels before 2020.

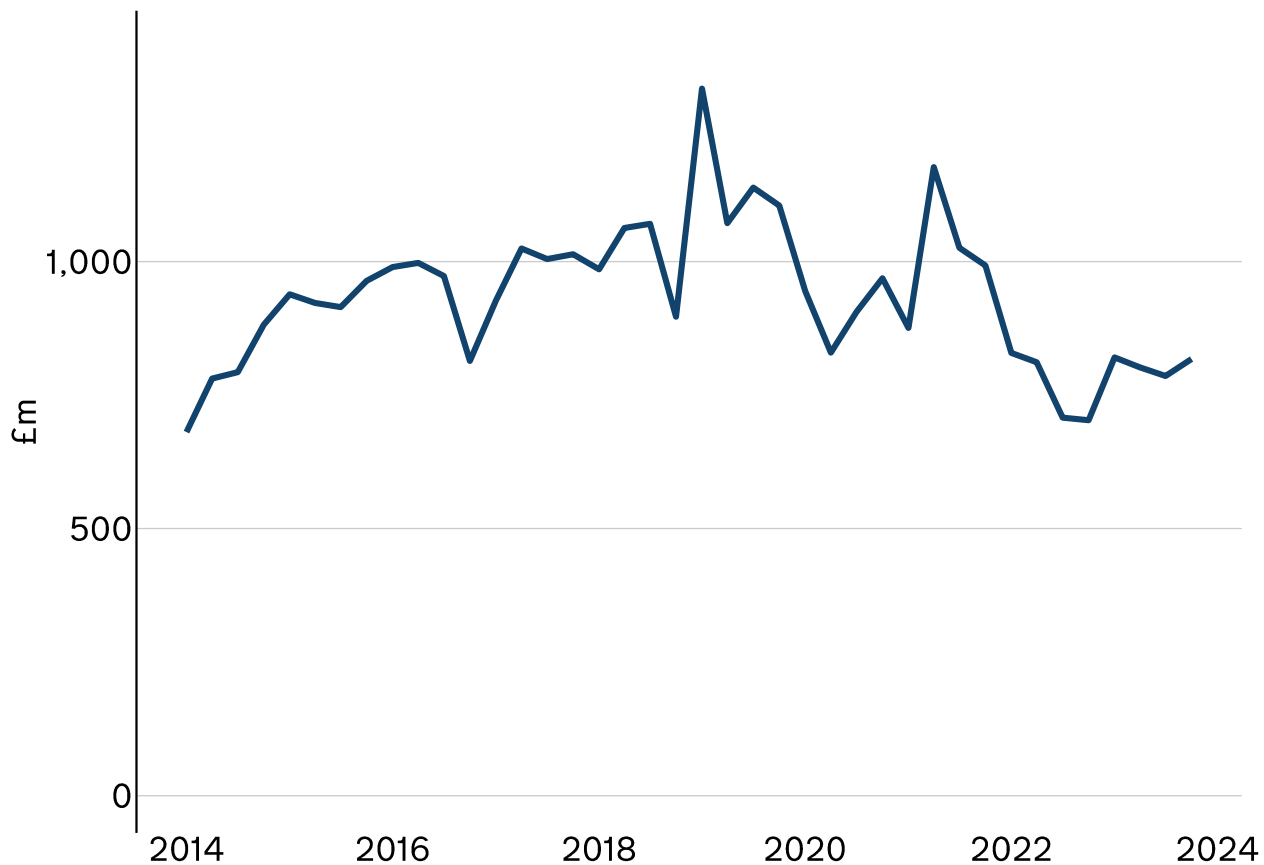
The increased prices have been drivers of higher costs for food producers in the last few years, placing pressure on the viability of businesses. This has also led to increasing food prices as costs are passed on to consumers. UK fertiliser prices have mirrored trends in international prices and decreased in 2022 and 2023. Changing farming practices, such as the use of cover crops and rotational cropping help to reduce the impact of chemical fertiliser prices on farm businesses. UK non-domestic electricity prices remain high in comparison to the rest of the world, but gas prices are relatively low compared to EU and G7 prices.

## Indicator 7: Business investment

Figure 9: Business investment quarterly figures – food, drink and tobacco. Chained Volume Measures (CVM) are used to show real terms value, removing the effect of inflation. Tobacco is minimal in graph, representing about 4% of the total.

Source: [ONS](#)

(<https://www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/ds4t/cxnv>)



## Rationale

Food and drink manufacturing plays a major part in how food gets to the consumer. It transforms farm outputs like wheat and livestock into foods that are directly consumed like bread and ham. This means it is important that the manufacturing sector is resilient. A resilient sector has the economic health to adapt through shocks and bounce back. There is no single indicator of business resilience, but business investment levels can be a useful barometer of overall trends. Business investment means net capital expenditure by businesses. It includes spending on machinery, building work, transport equipment and computer hardware. Investment reflects industry confidence and strengthens the sector's resilience to international market competition and shocks by building capacity and flexibility in manufacturing supply.

## Assessment

Business investment trends suggest a **broadly stable picture** in 2023. After a dip since 2020, they show signs of recovery and are stabilising at around £800 million per quarter. Total investment increased by 5.7% in 2023 compared to 2022.

## Commentary

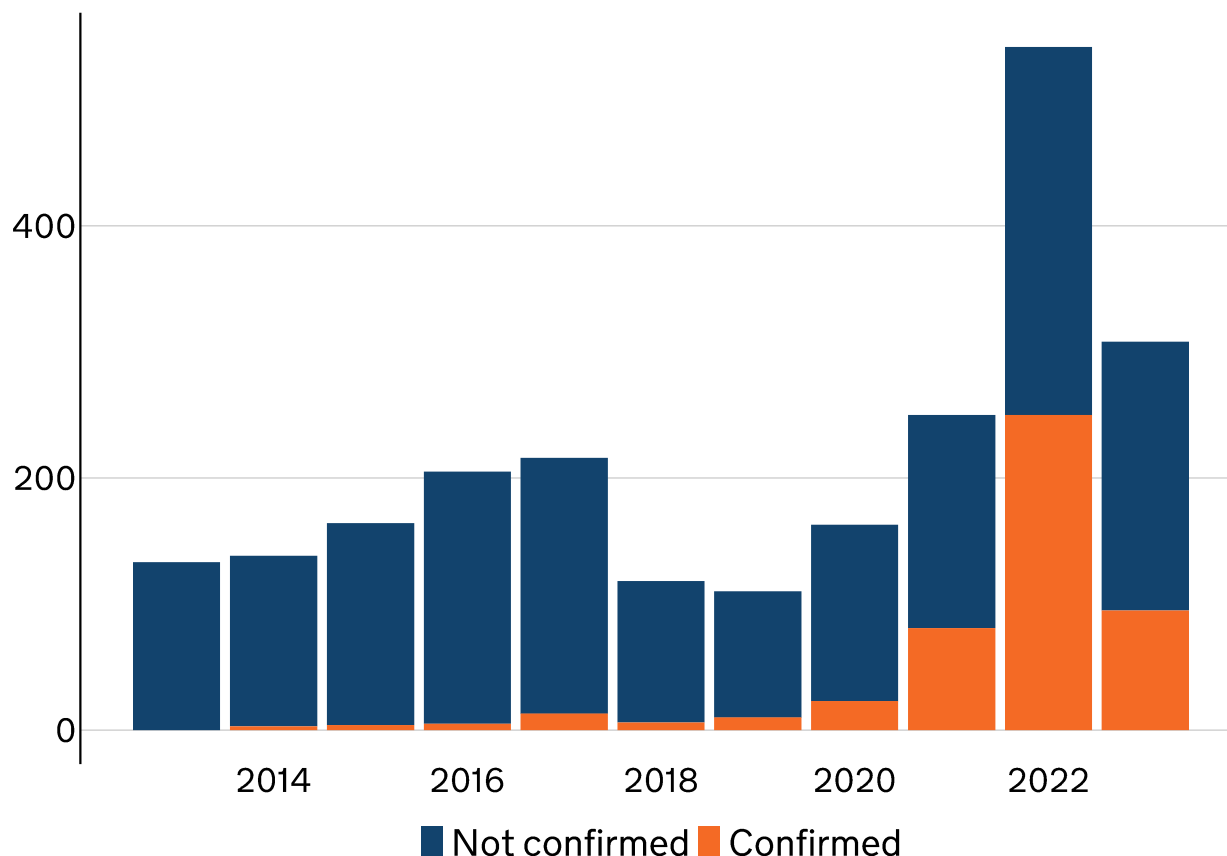
After generally increasing for several years, investment reached a peak in 2019 of over £1 billion per quarter. Since 2020 the trend was downward, dipping below total UK business and total manufacturing investment rates in 2022. The increase in investment in 2023 moves it closer to overall investment rates.

Investment trends, while varying, demonstrate that the sector has been resilient in the face of challenges such as COVID-19, Russia's invasion of Ukraine and rising input costs. The trends should be considered alongside other statistics to understand fully the complexities of business resilience. Other data sources support the picture of a resilient food and drink manufacturing sector in the UK. The business birth rate for food and drink manufacturing in 2022 was 12.8%, higher than the UK average of 11.5%, indicating sustained high levels of market competition. The business death rate was lower than average, at 10.1% compared to 11.8%. In 2022 there were 170 high-growth businesses in food and drink manufacturing, meaning they grew by more than 20% per year over a three-year period, an increase from 150 high-growth businesses in 2021 ([ONS Business Demography Statistics \(https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/bulletins/businessdemography/previousReleases\)](https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/bulletins/businessdemography/previousReleases)). Another measure is [total factor productivity \(https://www.gov.uk/government/statistics/food-chain-productivity\)](https://www.gov.uk/government/statistics/food-chain-productivity), which shows a general upward trend in the last 10 years, with a dip in 2020 likely due to COVID-19, returning to the upward trend in 2021.

## Indicator 8: Biosecurity risk

Figure 10: Notifiable disease investigations in Great Britain, APHA, 2013 to 2023

Source: APHA



## Rationale

UK food security is dependent on the UK's management of risks to animal and plant health (biosecurity) given some animal and plant diseases can cause significant production losses. This indicator captures biosecurity risk and awareness of risk to help assess the level of threat to food security. For the purposes of this index, changes in animal disease case numbers are tracked to surface trends in biosecurity risks. Plant pests and diseases will be considered more fully alongside animal diseases in UKFSR 2024.

Notifiable diseases are animal diseases that cause a significant risk to human or animal health. There is a legal obligation to report them, even if it is only a suspected case. Notifiable diseases can be either endemic, meaning they are already present in the UK, or exotic, meaning they are not normally present in the UK.

## Assessment

Levels of UK biosecurity risk are **broadly stable**. For exotic notifiable disease (figure 10) there were 308 report cases in 2023 of which 95 were confirmed. This total is lower than 2022, when there were 542 report cases of which 257 were confirmed. There were fewer Avian Influenza (AI) report cases in 2023 compared to 2022 (58 compared to 235), which reflects a reduction in risk as the UK recovered from a series of unprecedented AI outbreaks since October 2021. However, the risk of Bluetongue increased in 2023. Higher reported cases of suspected Bluetongue (48 compared to 10 in 2022) points to greater vigilance by farmers as a result. African Swine Fever risk and Foot and Mouth Disease risk have remained stable, which is reflected in the case numbers staying low, with 2 Swine Fever cases and 2 Vesicular Disease cases in 2023. This Great Britain data is broadly consistent with Northern Ireland risk

assessments ([AI \(https://www.daera-ni.gov.uk/sites/default/files/publications/daera/DAERA%20Veterinary%20Risk%20Assessment%20-%20Updated%20January%202024.pdf\)](https://www.daera-ni.gov.uk/sites/default/files/publications/daera/DAERA%20Veterinary%20Risk%20Assessment%20-%20Updated%20January%202024.pdf) , [ASF \(https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ASF%20Veterinary%20Risk%20Assessment%20-%20September%202023.pdf\)](https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ASF%20Veterinary%20Risk%20Assessment%20-%20September%202023.pdf))

## Commentary

Having a reasonable number of report cases and a high ratio of suspected to confirmed cases is a good indicator that livestock keepers are alert to the dangers of animal disease and treating biosecurity seriously. All reports of notifiable disease are investigated by the Animal and Plant Health Agency (APHA). This passive surveillance is supported by active monitoring programmes for new threats, risk assessment processes and awareness raising with livestock keepers. For animal diseases, Defra's international disease monitoring team publishes [preliminary outbreak assessments \(https://www.gov.uk/government/collections/animal-diseases-international-monitoring\)](https://www.gov.uk/government/collections/animal-diseases-international-monitoring) to cover new and emerging diseases and exotic disease outbreaks of interest such as [Bluetongue \(https://www.gov.uk/government/publications/bluetongue-virus-in-europe\)](https://www.gov.uk/government/publications/bluetongue-virus-in-europe) and [Epizootic haemorrhagic disease \(https://www.gov.uk/government/publications/epizootic-haemorrhagic-disease-in-europe\)](https://www.gov.uk/government/publications/epizootic-haemorrhagic-disease-in-europe).

Some diseases, such as Foot and Mouth Disease, can be transmitted via infected animal products. The prevalence of these diseases in the UK is used to inform border controls. The UK does not import livestock, plants or products of animal origin (POAO) from areas of the world that pose a significant disease risk. All imports of animals, plants and POAO must be certified to state that they are free from pests and diseases. To provide additional reassurance there

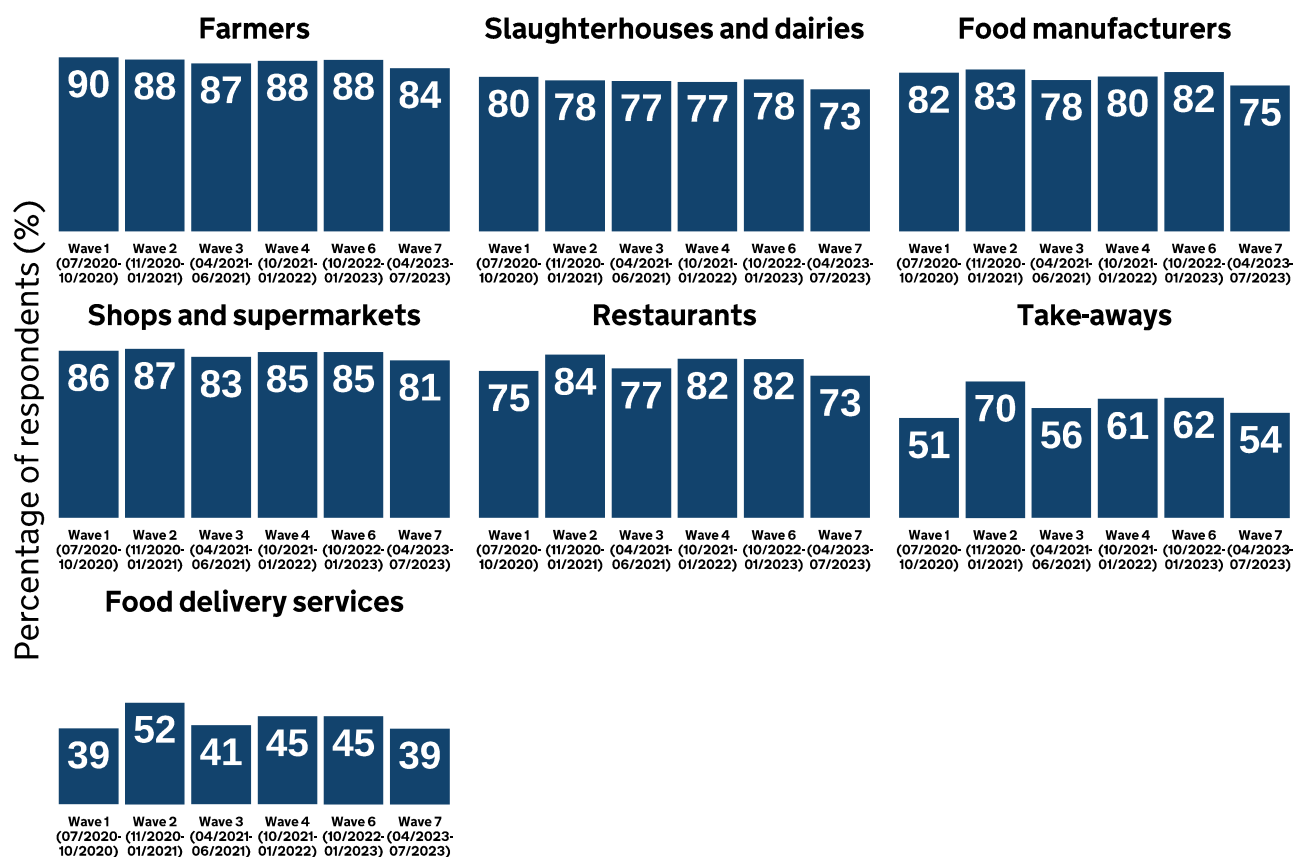
is a programme of post-import testing in place with 73,500 post-import tests performed on imported livestock in 2023.

Diseases such as AI and Bluetongue can be transmitted by other means including vectors such as midges. With changing climatic conditions, there is likely to be an increased risk from vector-borne diseases in the future. This will be explored further in UKFSR 2024.

## Indicator 9: Consumer confidence in food supply chain actors

Figure 11: Consumers' confidence that actors in the food supply chain ensure that the food they buy is safe to eat (England, Wales and Northern Ireland)

Source: [FSA Food and You 2 Survey Waves 1-7 \(England, Wales and Northern Ireland\)](https://www.food.gov.uk/research/food-and-you-2) (<https://www.food.gov.uk/research/food-and-you-2>)



The questions were not asked in Wave 5 of the survey.

Figure 12: Consumers' confidence in UK food supply chain actors to ensure that food is safe to eat, and that food is of a high quality (Scotland)

Source: [Food Standards Scotland Consumer Tracker Wave 17 \(December 2023\)](https://www.foodstandards.gov.scot/publications-and-research/publications/food-in-scotland-consumer-tracker-survey-wave-17) (<https://www.foodstandards.gov.scot/publications-and-research/publications/food-in-scotland-consumer-tracker-survey-wave-17>)

Due to a change in the FSS Consumer Tracker questionnaire, there is no comparable data for this question for the preceding years.

## Rationale

Awareness, transparency, media coverage and [other factors](https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/sp.efsa.2024.e220301) (<https://efsa.onlinelibrary.wiley.com/doi/abs/10.2903/sp.efsa.2024.e220301>) can influence [consumer trust](https://www.food.gov.uk/research/behaviour-and-perception/trust-in-a-changing-world) (<https://www.food.gov.uk/research/behaviour-and-perception/trust-in-a-changing-world>). High levels of trust [add value](https://committees.parliament.uk/writtenevidence/126950/pdf/) (<https://committees.parliament.uk/writtenevidence/126950/pdf/>) to the UK food system. Its loss can lead to reduced demand and long-term and significant economic damage. An erosion in trust can also affect how government and industry communicate risk to the public.

## Assessment

In **England, Wales and Northern Ireland**, confidence in farmers, slaughterhouses and dairies, food manufacturers and shops and supermarkets has remained **broadly stable** since July 2020, with a slight decline in the latest survey (Wave 7, April to July 2023). Confidence in restaurants, takeaways and delivery services is more variable but shows no consistent trend either up or down over the reporting period.

In **Scotland**, consumers' confidence in food supply chain actors to ensure food is safe is high, while confidence that they ensure food is of high quality is lower.

## Commentary



In **England, Wales and Northern Ireland**, confidence in food supply chain actors to ensure food is safe to eat varied by actor. Respondents were more likely to report confidence in farmers (84%) and shops and supermarkets (81%) and least likely to report confidence in takeaways (54%), and food delivery services (39%). This pattern has been consistent since tracking began in 2020.

In **Scotland**, 89% of consumers were confident that those involved in the food supply chain (farmers, manufacturers, shops and supermarkets) ensure that food is safe to eat. two-thirds (68%) had confidence in food supply chain actors to ensure food quality is high.



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