Heckington Fen Solar Park

EN010123

Interrelationship with other Nationally Significant Infrastructure Projects

Applicant: Ecotricity (Heck Fen Solar) Limited

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Pursuant to: APFP Regulation 5(2)(q)

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December 2023

Planning Act 2008

INTERRELATIONSHIP WITH OTHER NATIONALLY SIGNIFICANT INFRASTRUCTURE PROJECTS

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Interrelationship with other Nationally Significant Infrastructure Projects

Heckington Fen Solar Park

Development Consent Order Application for Ground Mounted Solar Panels, Energy Storage Facility, below ground grid connection to Bicker Fen Substation and all Associated Infrastructure Works.

Land at Six Hundred Farm, Six Hundreds Drove, East Heckington, Sleaford, Lincolnshire.

On behalf of Ecotricity (Heck Fen Solar) Limited.

Date: December 2023 | Pegasus Ref: P20-2370 PINS Ref: EN010123 |

Contents.

1. Introduction

1.1. The Heckington Fen Solar Park Development Consent Order (DCO) application is for the construction, operation (including maintenance), and decommissioning of a ground mounted solar photovoltaic (PV) electricity generation and energy storage facility (hereafter referred to as "the Energy Park"), cable route to, and above and below ground works at, the National Grid Bicker Fen Substation (hereafter referred to as "the Proposed Development" (inclusive of Energy Park)) on land at Six Hundreds Farm, Six Hundreds Drove, East Heckington, Sleaford, Lincolnshire.

1.2. The purpose of this document is to provide information on the interrelationships between the Heckington Fen Solar Park and Nationally Significant Infrastructure Projects (NSIPs) within close proximity of the Proposed Development. This report will be a live document during Heckington Fen Solar Park's Examination and will be updated at each Deadline (as required), or confirmation provided there is no change to the previous version.

1.3. Whilst recognising that the focus of the Rule 6 brief, at Annex C and G (PD-009), is targeted towards solar NSIP projects, for completeness, the Applicant has also considered two large-scale Town and Country Planning Application (TCPA) solar farm schemes within close proximity to the Proposed Development as agreed at Issue Specific Hearing 2 on the 20th September 2023.

1.4. This document has been prepared in response to the Rule 6 Letter issued by the Examining Authority on the 21st July 2023, to aid in the Examination of the DCO application for the Proposed Development. Annex C of the Rule 6 letter identified six proposed solar energy NSIP schemes within the region including:

- Cottam Solar Project,
- Gate Burton Energy Park,
- West Burton Solar Project,
- Mallard Pass Solar Project (these four projects aforementioned have been submitted for Examination),
- Tillbridge Solar Project (yet to be submitted for Examination and expected to be submitted in Q1 2024), and
- Beacon Fen Energy Park (yet to be submitted for Examination and expected to be submitted in Q2/Q3 2024).

1.5. The Rule 8 letter, published on 26 September 2023, identified two further schemes:

- Springwell Solar Farm (yet to be submitted for Examination and expected to be submitted in Q2 2024); and
- Fosse Green Energy (yet to be submitted for Examination and expected to be submitted in Q4 2024).

1.6. The two TCPA solar farm schemes identified to include in this document at Issue Specific Hearing 2 are outlined in Section 2.

1.7. This document is supported by:

- **Figure 1.1 – Other proposed projects with potential cumulative interrelationship effects in Lincolnshire**
- **Figure 1.2 – Heckington Fen Solar Park and Beacon Fen Energy Park interrelationship layout plan**
- **Figure 1.3- Cumulative screened zone of theoretical visibility- Heckington Fen Solar Park and Beacon Fen Energy Park**
- **Appendix 1 - Initial assessment of other projects with potential cumulative effects, including details of consenting, construction and operation timetables**
- **Appendix 2 - Cumulative Land and Agricultural Land Note.**

1.8. This document forms part of a suite of documents supporting a DCO application under Section 37 of the Planning Act 2008 to the Secretary of State for Department for Energy Security and Net Zero (DESNZ) for the Proposed Development on behalf of Ecotricity (Heck Fen Solar) Ltd (hereafter referred to as the "Applicant"). If made, the DCO would grant consent for the Applicant to develop the Proposed Development.

1.9. At Deadline 3, this document was updated to ensure it is in alignment with the relevant findings of Revision 2 of **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D3.V2) submitted at Deadline 3. Additionally, the status of the list of projects included in Table 1.1 of this document was reviewed and updated where further public information is available. This also included a review of whether any new projects should be included in the assessment in this document. At the time of updating this document (Revision 2, December 2023), no further projects are identified to include in this document. The RPAs agreed with this position at ISH4 Item 8 when it was raised by the Examining Authority.

2. Initial Cumulative Impact Assessment

2.1. An Environmental Statement (ES) was prepared for the Proposed Development's DCO application and accordingly assessed cumulative effects as per the requirements within the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 as amended (hereafter referred to as the "EIA Regulations"). Additionally, the Planning Inspectorate Advice Note 17 (Planning Inspectorate, 2019) provides a clear and systematic approach to identify projects with potential cumulative effects which formed the basis of the cumulative effects assessment for the Proposed Development. A detailed description of the Cumulative Assessment methodology is found in **Chapter 2: EIA Methodology and Consultation** (document reference 6.1.2/ PS-051) of the ES.

2.2. A long list of cumulative schemes was established using guidance from the Planning Inspectorate Advice Note 17 (Planning Inspectorate, 2019) and the four-stage approach. The long list was further refined to the potential cumulative effect project shortlist, presented and assessed in **Chapters 6 to 18** (document reference 6.1.6-6.1.18/PS-059, PS-061, PS-063, PS-065, APP-063, PS-067, PS-069, PS-071, PS-073, PS-075, APP-069, APP-070 and PS-076) of the ES.

2.3. **Table 1.2** of **Appendix 2.3 - Cumulative Sites Long List and Shortlist** (document reference 6.3.2.3/APP-175) presents the long list and **Table 1.3** of **Appendix 2.3 - Cumulative Sites Long List and Shortlist** (document reference 6.3.2.3/APP-175) presents the shortlist of the potential cumulative effect projects. The identification and collation of the cumulative long list and shortlist was finalised prior to the finalisation of the ES chapters and was up to date as of 31st December 2022.

2.4. Since the submission of the DCO Application and acceptance for Examination on the 13th March 2023, the status of some of the identified projects in the cumulative long list and shortlist has subsequently changed. Additionally, there are new applications which have been identified and submitted to the Relevant Planning Authority and PINS subsequent to the submission of the Heckington Fen Solar Park DCO Application. A standalone ES cumulative impact assessment has been produced during Examination of Heckington Fen Solar Park, **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1)

2.5. The **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050) submitted at Deadline 2 supersedes the cumulative assessment presented in the original technical ES **Chapters 6-18** (document reference 6.1.6-6.1.18/PS-059, PS-061, PS-063, PS-065, APP-063, PS-067, PS-069, PS-071, PS-073, PS-075, APP-069, APP-070 and PS-076). **Appendix 2.3 - Cumulative Sites Long List and Shortlist** (document reference 6.3.2.3/APP-175) is superseded with an updated version presented in the **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050). At Deadline 3, a Revision 2 of the **ES Technical Note- Updated Information on Cumulative Projects** has been submitted to align the cumulative project information with the most up to date publicly available information, correct as of December 2023. This Revision 2 of the Interrelationship of other Nationally Significant Interrelationship Report is aligned, where relevant, with Revision 2 of the **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D3.V2).

2.6. The purpose of this document is to consider the interrelationship of NSIP solar schemes within close proximity to the Proposed Development, and to update this report at each Deadline if information in the original version submitted at Deadline 1 has changed or new information has become available. The intention within this document is not to provide a full cumulative assessment of all projects identified in the shortlist of the ES, nor is it the purpose of the document to focus on the interrelationship of the Proposed Development with TCPA solar applications.

2.7. However, to ensure a robust assessment, the Applicant has considered it worthwhile to additionally include Lincolnshire Reservoir (WA010003), One Earth Solar Farm (EN010159) and two large (49.9MW) TCPA solar farm schemes, Vicarage Drove (B/21/0443) and Land West of Cowbridge Road (B/22/0356 and H04-0849-22), close to the Order Limits of the Proposed Development within the initial assessment at **Table 1.1** of this document.

2.8. It was also agreed during Issue Specific Hearing 2 on the 20th September 2023 that One Earth Solar Farm (EN010159) and the two large (49.9MW) TCPA solar schemes listed at paragraph 2.6 of this document should be included following a request from two of the Relevant Planning Authorities (namely Lincolnshire County Council and North Kesteven District Council).

2.9. **Table 1.1** of this document sets out an initial assessment including details of each of these projects, distances from the Proposed Development[1], justification of whether the other project is deemed to have / or not have potential cumulative effects that would require further assessment in this report and clear identification of whether the other project will be further assessed[2]. The details of the other projects are correct as of December 2023. It should be noted that the Order Limits for all projects not yet submitted are evolving and may change over time.

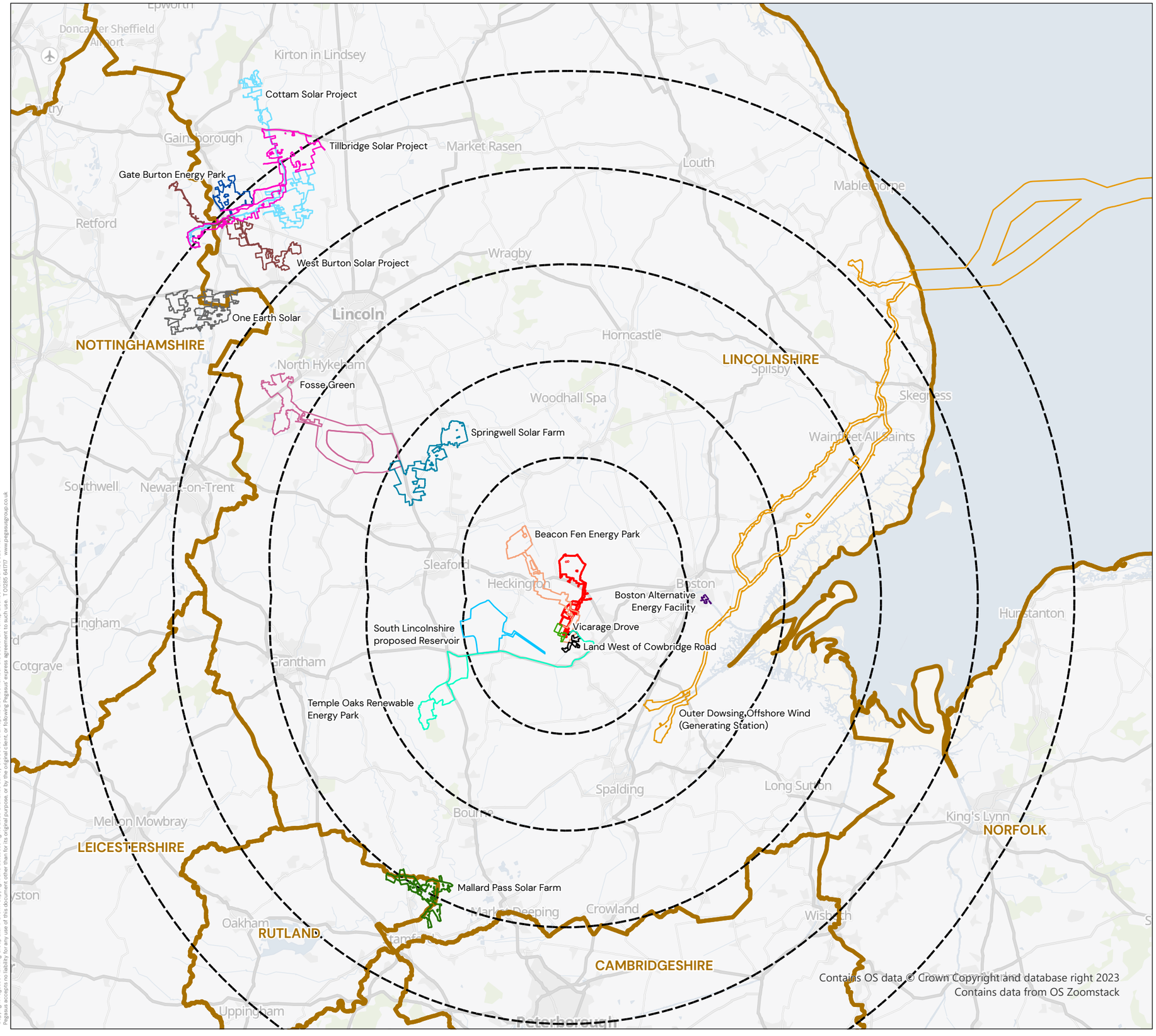
2.10. **Appendix 2 - Cumulative Land and Agricultural Land Note** is included within this report to provide additional information on agricultural land impacts within Lincolnshire and support justification for not progressing some of these projects past the initial assessment.

2.11. **Figure 1.1 –Other proposed projects with potential cumulative interrelationship effects in Lincolnshire** is set out below to enable visual identification of the projects set out in **Table 1.1** with the respective Order Limits and Red Line Boundaries[3].

[1] Measurement taken from closest point between Energy Park area of Heckington Fen Solar Park and the other projects solar panel/energy storage area where possible. Where cable route corridors overlap this measurement is also listed.

[2] The identification of the Proposed Development to have potential for cumulative effects with other projects has been completed by a competent expert and specialist in the Environmental Impact Assessment (EIA) of Pegasus Group. The document has been reviewed by a Chartered Environmentalist (CEnv) and a Full Member of the Institute of Environmental Management and Assessment (MIEMA).

[3] Order Limits and Red Line Boundaries (TCPA) correct as of September 2023



KEY

- County Boundary
- Radii Rings 10km-50km
- Heckington Fen Solar Park (EN010123)
- Cottam Solar Project (EN010133)
- Tillbridge Solar Project (EN10142)
- Gate Burton Energy Park (EN010131)
- West Burton Solar Project (EN010132)
- One Earth Solar (EN010159)
- Fosse Green (EN010154)
- Springwell Solar Farm (EN010149)
- Beacon Fen Energy Park (EN010152)
- Temple Oaks Renewable Energy Park (EN010126)
- Mallard Pass Solar Farm (EN010127)
- Lincolnshire Reservoir (WA010003)
- Vicarage Drove - Approved B/21/0443
- Land West of Cowbridge Road, Bicker Fen, Boston - Approved [H04-0849-22 - South Holland District Council] [B/22/0356 – Boston Borough Council]
- Boston Alternative Energy Facility (EN010095)
- Outer Dowsing Offshore Wind (Generating Station) (EN010130)

FIGURE 1.1 OTHER PROPOSED PROJECTS WITH POTENTIAL CUMULATIVE INTERRELATIONSHIP EFFECTS IN LINCOLNSHIRE

DATE	SCALE	SHEET	REVISION
02/10/2023	1:400,000@A3	-	C

DRAWING NUMBER
P20-2370_102

0 10 km

ecotricity

PEGASUS GROUP

Table 1.1 – Initial assessment of other projects with potential cumulative effects

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
1	Boston Alternative Energy Facility (EN010095)	Boston Borough Council	Yes	Development Consent Granted (6th July 2023)	Circa (c.) 12.5km east of the Energy Park Site at its closest point to the main site of Boston Alternative Energy Facility.	No	Boston Alternative Energy Facility is of significant physical distance and separation to the Proposed Development. Boston Alternative Energy Facility received development consent on 5 July 2023, and the expected operation date is 2026 (see **Appendix 1**). The construction and operation timescales for Boston Alternative Energy Facility are unlikely to be in conflict with the Proposed Development's timescales. The ES documentation for Boston Alternative Energy Facility predicted construction in 2022, however, the application was granted consent in 2023. Therefore, the delay in timeline could result in an overlap of construction timelines, however the significant distance between the sites will not result in a cumulative construction haulage impact. Therefore, the Applicant considers no further assessment is necessary of this project within this report.
2	Mallard Pass Solar Farm (EN010127)	Rutland County Council/ South Kesteven District Council	Yes	Examination	c.33.2km south-west of the Energy Park Site at its closest point to the main site of Mallard Pass Solar Farm.	No	Mallard Pass Solar Farm is of significant physical distance and separation to the Proposed Development. There would be no significant in combination effects relating to landscape and visual, ecology, hydrology, transport (construction timescales are similar, but construction haulage routes will not interact- see **Appendix 1**), noise and vibration, air quality, socio-economic or cultural

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
							heritage matters. Collectively, if Mallard Pass Solar Farm and the Proposed Development was granted development consent it would be of beneficial effect in its contribution towards meeting the UK's net zero target. Additionally, as set out in **Appendix 2** of this document the temporary cumulative change of use of BMV land at Mallard Pass Solar Farm in combination with the ten other NSIP solar sites in Lincolnshire (if all were granted Development Consent) would not be considered significant. Therefore, the Applicant considers no further assessment is necessary of this project within this report.
3	Cottam Solar Project (EN010133)	West Lindsey District Council / Bassetlaw District Council	Yes	Examination	c.43.4km north-west of the Energy Park Site at its closest point to the main site of Cottam Solar Project.	No	Cottam Solar Project is of significant physical distance and separation to the Proposed Development. There would be no significant in combination effects relating to landscape and visual, ecology, hydrology, transport (construction timescales will not interact- see **Appendix 1**), noise and vibration, air quality, socio-economic or cultural heritage matters. Collectively, if Cottam Solar Project and the Proposed Development was granted Development Consent it would be of beneficial effect in its contribution towards meeting the UK's net zero target. Additionally, as set out in **Appendix 2** of this document, the temporary cumulative change of use of BMV land at Cottam

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
							Solar Project in combination with the ten other NSIP solar sites in Lincolnshire (if all were granted Development Consent) would not be considered significant. Therefore, the Applicant considers no further assessment is necessary of this project within this report.
4	Gate Burton Energy Park (EN010131)	Bassetlaw District Council and West Lindsey District Council	Yes	Examination	c.48.5km north-west of the Energy Park Site at its closest point to the main site of Gate Burton Energy Park.	No	Gate Burton Energy Park is of significant physical distance and separation to the Proposed Development. There would be no significant in combination effects relating to landscape and visual, ecology, hydrology, transport (construction timescales will not interact- see **Appendix 1**), noise and vibration, air quality, socio-economic or cultural heritage matters. Collectively, if Gate Burton Energy Project and the Proposed Development was granted Development Consent it would be of beneficial effect in its contribution towards meeting the UK's net zero target. Additionally, as set out in **Appendix 2** of this document the temporary cumulative change of use of BMV land at Gate Burton Energy Park in combination with the ten other NSIP solar sites in Lincolnshire (if all were granted Development Consent) would not be considered significant. Therefore, the Applicant considers no further assessment is necessary of this project within this report.

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
5	West Burton Solar Project (EN010132)	West Lindsey/ Bassetlaw District Council	Yes	Examination	c.41.1km north-west of the Energy Park Site at its closest point to the main site of West Burton Solar Project.	No	West Burton Solar Project is of significant physical distance and separation to the Proposed Development. There would be no significant in combination effects relating to landscape and visual, ecology, hydrology, transport (construction timescales will not interact- see **Appendix 1**), noise and vibration, air quality, socio-economic or cultural heritage matters. Collectively, if West Burton Solar Project and the Proposed Development was granted Development Consent it would be of beneficial effect in its contribution towards meeting the UK's net zero target. Additionally, as set out in **Appendix 2** of this document the temporary cumulative change of use of BMV land at West Burton Solar Project in combination with the ten other NSIP solar sites in Lincolnshire (if all were granted Development Consent) would not be considered significant. Therefore, the Applicant considers no further assessment is necessary of this project within this report.
6	Beacon Fen Energy Park (EN010152)	North Kesteven District Council / Boston	Yes	Pre-Application (Scoping Report stage)	c.3.3km north-west of the Energy Park Site at its closest point to the main site of Beacon Fen Energy Park.	Yes	Potential for cumulative effects due to the close proximity between Beacon Fen Energy Park and the Proposed Development and crossing of the Offsite Cable Route Corridor. Beacon Fen Energy Park project is assessed in further detail in this report.

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
		Borough Council			The Offsite Cable Route Corridor of both projects are set to intersect. The area of possible crossing is on land south of the South Forty Foot Drain.		
7	Outer Dowsing Offshore Wind (Generating Station) (EN010130)	Wind farm 54km off coast of Lincolnshire. Cable Route corridor to Weston Marsh (north of Spalding).	Yes	Pre-Application (Statutory Consultation stage)	c.14km east of the Energy Park Site at its closest point to the Offsite Cable Route Corridor and point of connection of Outer Dowsing Offshore Wind.	No	Outer Dowsing Offshore Wind is of significant physical distance and separation to the Proposed Development. The main site (i.e., the wind farm) is proposed to be 54km off the coast of Lincolnshire. The cable route corridor has been further refined within the PEIR documentation of the project website, with a new National Grid onshore substation proposed to be built within Weston Marsh, north-east of Spalding[4]. If Outer Dowsing Offshore Wind Facility is granted development consent, the expected operation date is 2026 (see **Appendix 1**). The construction timescales for Outer Dowsing Offshore Wind Facility coincide with the Proposed Development, however there is expected

[4] Information taken from 6.1.3 Project Description chapter of PEIR of the Outer Dowsing Applicant project website . An update was provided under 'News' section of the project website on the 10/08/23 that only the Weston Marsh options (Weston Marsh South and Weston Marsh North) would be pursued, and the Lincolnshire Node option within the PEIR would no longer be pursued.

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
							to be no overlap or interaction due to the distance and the fact that the two sites do not share a common Point of Connection (POC) into the National Grid System. There would be no significant in combination effects relating to landscape and visual, ecology, hydrology, transport, noise and vibration, air quality, socio-economic or cultural heritage matters. Therefore, the Applicant considers no further assessment is necessary of this project within this report.
8	Temple Oaks Renewable Energy Park (EN010126)	South Kesteven District Council	Yes	Pre-Application (Scoping Report stage)	c.18.1 km southwest of the Energy Park Site at its closest point to the main site of Temple Oaks Renewable Energy Park To note, the Offsite Cable Route Corridors of both projects connect into Bicker Fen Substation and are of close proximity (less than 1km).	No	Temple Oaks Renewable Energy Park is of significant physical distance and separation to the Proposed Development. However, the Offsite Cable Route Corridors for both projects connect into Bicker Fen Substation and are therefore of close proximity. The Order Limits of both projects currently do not overlap as the proposed POC for Temple Oaks Renewable Energy Park is located at the northeast area of Bicker Fen Substation. There would be no significant in combination effects relating to landscape and visual, ecology, hydrology, transport, noise and vibration, air quality, socio-economic or cultural heritage matters. Construction timescales have potential to interact - see **Appendix 1,** however, construction haulage routes are expected to not overlap for the main solar array sites. There is potential for overlap in construction haulage routes

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
							for Bicker Fen Substation extension works (yet to be confirmed in the Temple Oaks Renewable Energy Park application if this is required). However, paragraph 3.16 of this report confirms traffic associated with construction at Bicker Fen Substation for multiple connection customers can be accommodated and not cause significant effects. Collectively, if Temple Oaks Renewable Energy Park and the Proposed Development was granted Development Consent it would be of beneficial effect in its contribution towards meeting the UK's net zero target. Additionally, as set out in **Appendix 2** of this document the temporary cumulative change of use of BMV land at Temple Oaks Renewable Energy Park in combination with the ten other NSIP solar sites in Lincolnshire (if all were granted Development Consent) would not be considered significant. Therefore, the Applicant considers no further assessment is necessary of this project within this report.
9	Springwell Solar Farm (EN010149)	North Kesteven District Council	Yes	Pre-Application (Scoping Report stage)	c.15.5km northwest of the Energy Park Site at its closest point to the main site of Springwell Solar Farm	No	Springwell Solar Farm is of significant physical distance and separation to the Proposed Development. There would be no significant in combination effects relating to landscape and visual, ecology, hydrology, transport (construction timescales have potential to interact- see **Appendix 1,** however, construction haulage routes

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
							will not overlap), noise and vibration, air quality, socio-economic or cultural heritage matters. Collectively, if Springwell Solar Farm and the Proposed Development was granted Development Consent it would be of beneficial effect in its contribution towards meeting the UK's net zero target. Additionally, as set out in **Appendix 2** of this document the temporary cumulative change of use of BMV land at Springwell Solar Farm in combination with the ten other NSIP solar sites in Lincolnshire (if all were granted Development Consent) would not be considered significant. Therefore, the Applicant considers no further assessment is necessary of this project within this report.
10	Fosse Green Energy (EN010154)	North Kesteven District Council	Yes	Pre- Application (Scoping Report stage)	c.28.3km northwest of the Energy Park Site at its closest point to the main site of Fosse Green Energy.	No	Fosse Green Energy is of significant physical distance and separation to the Proposed Development. There would be no significant in combination effects relating to landscape and visual, ecology, hydrology, transport (construction timescales will not overlap- see **Appendix 1**), noise and vibration, air quality, socio-economic or cultural heritage matters. Collectively, if Fosse Green Energy and the Proposed Development was granted Development Consent it would be of beneficial effect in its contribution towards meeting the UK's net zero target. Additionally, as set out in **Appendix 2** of this document the temporary

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
							cumulative change of use of BMV land at Fosse Green Energy in combination with the ten other NSIP solar sites in Lincolnshire (if all were granted Development Consent) would not be considered significant. Therefore, the Applicant considers no further assessment is necessary of this project within this report.
11	Tillbridge Solar Project (EN10142)	West Lindsey District Council / Bassetlaw District Council	Yes	Pre-Application (Statutory Consultation stage)	c. 47.7km northwest of the Energy Park Site at its closest point to the main site of Tillbridge Solar Project	No	Tillbridge Solar Project is of significant physical distance and separation to the Proposed Development. There would be no significant in combination effects relating to landscape and visual, ecology, hydrology, transport (construction timescales have potential to interact- see **Appendix 1,** however, construction haulage routes will not overlap), noise and vibration, air quality, socio-economic or cultural heritage matters. Collectively, if Tillbridge Solar Project and the Proposed Development was granted Development Consent it would be of beneficial effect in its contribution towards meeting the UK's net zero target. Additionally, as set out in **Appendix 2** of this document the temporary cumulative change of use of BMV land at Tillbridge Solar Project in combination with the ten other NSIP solar sites in Lincolnshire (if all were granted Development Consent) would not be considered significant. Therefore, the Applicant considers no further

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
							assessment is necessary of this project within this report.
12	One Earth Solar Farm (EN010159)	Bassetlaw District Council and Newark and Sherwood District Council	Yes	Pre-Application (Scoping Report Stage)	c. 42.4km northwest of the Energy Park Site at its closest point to the main site of One Earth Solar Farm	No	One Earth Solar Farm is of significant physical distance and separation to the Proposed Development. One Earth Solar Farm is at the very early stages of pre-application, with a non-statutory consultation starting on the 27th September 2023, and Scoping Report submitted on the 13th November 2023 to the Planning Inspectorate. There would be no significant in combination effects relating to landscape and visual, ecology, hydrology, transport (construction timescales will not overlap- see **Appendix 1**), noise and vibration, air quality, socio-economic or cultural heritage matters. Collectively, if One Earth Solar Farm and the Proposed Development was granted Development Consent it would be of beneficial effect in its contribution towards meeting the UK's net zero target. Additionally, as set out in **Appendix 2** of this document the temporary cumulative change of use of BMV land at One Earth Solar Farm in combination with the ten other NSIP solar sites in Lincolnshire (if all were granted Development Consent) would not be considered significant. Therefore, the Applicant considers no further assessment is necessary of this project within this report.

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
13	Lincolnshire Reservoir (WA010003)	North Kesteven District Council	Yes	Pre-Application (No Scoping Report)	c. 6.9km west of the Energy Park Site at its closest point to the main reservoir site	No	Lincolnshire Reservoir is currently at the pre-application stage with the Planning Inspectorate. Phase 1 consultation was undertaken from the 12th October -21st December 2022, a second and third consultation phase is expected in 2024 and 2025, with a DCO application submission expected in Q3 2025. Construction is expected to begin in 2029 (see **Appendix 1**) and will therefore not conflict with Heckington Fen Solar Park as the site is expected to be operational. It is expected there would be no significant in combination effects relating to landscape and visual, ecology, hydrology, transport, noise and vibration, air quality, socio-economic or cultural heritage matters. Additionally, as set out in **Appendix 2** of this document the cumulative permanent loss of BMV land at Lincolnshire Reservoir in combination with the ten other NSIP solar sites in Lincolnshire (if all were granted Development Consent) would not be considered significant. Therefore, the Applicant considers no further assessment is necessary of this project within this report.
14	Vicarage Drove (B/21/0443)	Boston Borough Council	No (TCPA scheme)	Approved (17th February 2022)	c. 4.4km south of the Energy Park Site at its closest point to the main	Yes	Vicarage Drove Solar Farm is an approved TCPA scheme of 49.9MW. It was granted approval in February 2022- see **Appendix 1**. Screening of this Proposed Development determined that an EIA was not required for this solar farm development. The

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
					site at Vicarage Drove. To note, Offsite Cable Route Corridor of the Proposed Development overlaps with cable route for Vicarage Drove, at the closest point (0km)		submitted planning application documentation does not outline a construction timescale, but it is deemed the construction timescales will not conflict as the planning permission requires building work to have started within 3 years of the permission being granted (i.e., by February 2025), and to date no final design of the solar farm has been submitted to Boston Borough Council. A full assessment of the cumulative impacts of Vicarage Drove and Heckington Fen Solar Park is found within **Chapters 6 to 18** (document reference 6.1.6-6.1.18/ APP-059- APP-071) of the Heckington Fen Solar Park ES. There would be no significant in combination effects relating to ecology, hydrology, transport, noise and vibration, air quality or cultural heritage matters. The cumulative assessment in the ES has shown that significant effects are created in regard to Landscape and Visual and the local landscape character during construction, assuming the worst-case scenario that construction timelines overlap. The landscape and visual effects would be short term and temporary – see **Chapter 19** (document reference 6.1.19/ PS-078). Vicarage Drove is circa 80ha and predominantly 3b graded land and would therefore not cause a cumulative impact of loss of BMV land with the Proposed Development. Additionally significant beneficial effects have been determined in the cumulative assessment in the ES for Socio-Economic in regard

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
							to economic contribution and business rates in the local area, and beneficial contribution towards meeting the UK's net zero targets in terms of Climate Change and reduction of GHG emissions - see **Chapter 19** (document reference 6.1.19/ PS-078). This project is not an NSIP solar project as it has a generating capacity of under 50MW; the main purpose of this report is to assess the interrelationship of NSIP solar projects within the region. Therefore, the Applicant considers no further assessment is necessary of this project within this report. This project will be updated in the ES cumulative assessment if required.
15	Land West of Cowbridge Road (B/22/0356 and H04-0849-22)	Boston Borough Council and South Holland District Council	No (TCPA scheme)	Approved (21st July 2023)	c. 5.4km south of the Energy Park Site at its closest point to main site of Cowbridge. To note, the Offsite Cable Route Corridor of the Proposed Development and Cowbridge are very close (less than 1km) as both	Yes	Land west of Cowbridge Road Solar Farm is an approved TCPA scheme of 49.9MW. It was granted approval in July 2023- see **Appendix 1**. Screening of this Proposed Development determined that an EIA was not required for this solar farm development. The accompanying planning application documentation does not outline a construction timescale, but it is deemed the construction timescales will not conflict as the planning permission requires building work to have started within 3 years of the permission being granted (i.e., July 2026). A full assessment of the cumulative impacts of Land west of Cowbridge Road Solar Farm and Heckington Fen Solar Park is found within

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
					connect into NG Bicker Fen Substation. The routing of both cable routes indicates there will be no overlapping as they are connecting into different bay locations at NG Bicker Fen Substation.		**Chapters 6 to 18** (document reference 6.1.6-6.1.18/ APP-059- APP-071) of the Heckington Fen Solar Park ES. There would be no significant in combination effects relating to ecology, hydrology, transport, noise and vibration, air quality or cultural heritage matters. The cumulative assessment in the ES has shown that significant effects are created in regard to Landscape and Visual and the local landscape character during construction, assuming worst-case scenario that construction timelines overlap. The landscape and visual effects would be short term and temporary – see **Chapter 19** (document reference 6.1.19/PS-078). Cowbridge Lane is circa 110ha in size and 100% BMV agricultural land. Additionally significant beneficial effects have been determined in the cumulative assessment in the ES for Socio-Economic in regard to economic contribution and business rates in the local area, and beneficial contribution towards meeting the UK's net zero targets in terms of Climate Change and reduction of GHG emissions - see **Chapter 19** (document reference 6.1.19/ PS-078). This project is not an NSIP solar project as it has a generating capacity of under 50MW; the main purpose of this report is to assess the interrelationship of NSIP solar projects within the region. Therefore, the Applicant considers no further assessment is necessary of this project within this report. This project will be

No.	Project Name and Reference	LPA	NSIP	Stage of Application	Approximate Distance from Proposed Development (km)	Potential for cumulative effects	Justification to progress to further assessment or not.
							updated in the ES cumulative assessment if required.

2.12. Therefore, this document focuses on the following NSIP solar project which is within close proximity (less than 5km) and is deemed to have potential for cumulative effects requiring further assessment:

- Beacon Fen Energy Park (EN010152).

2.13. The Applicant has not considered the other projects listed in **Table 1.1** further as they are identified to have no potential for cumulative effects with the Proposed Development due to the reasons as stated in column 7 of **Table 1.1.** These projects have primarily been discounted due to extensive physical distance from the Proposed Development and do not share any common features. Or, if potential cumulative effects, such as Climate Change and Socio Economic, has been identified such as with the two TCPA solar farm applications (Vicarage Drove and Land West of Cowbridge Road), a cumulative assessment has already been provided in the **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050) and can be referred to for this information and therefore has not been replicated within this report.

2.14. It is noted, loss of agricultural land cumulatively from solar farms (NSIP & TCPA) within Lincolnshire was assessed in the Proposed Development's ES to potentially cause a significant effect (document reference 6.1.16/ APP-069). This conclusion was based on a worst-case scenario due to lack of data on BMV breakdown and lack of confirmation of permanent or temporary loss of agricultural land or the options for ongoing agricultural practices for all projects. Therefore, it is expected in reality as these design mitigation strategies are implemented the effects would be greatly reduced. However, in light of the information provided in **Appendix 2**, the cumulative assessment has been updated at Deadline 2 in the **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050).

Report Structure

2.15. In line with the requirements in Annex G of the Rule 6 letter, this document addresses the following sections:

- Section 3 provides an overview of the Proposed Development and the Beacon Fen Energy Park scheme, including details on timings, construction phasing, grid connection and start of operation where possible. This is accompanied by **Figure 1.1 and Figure 1.2** integrated into the main text (as required by the first bullet point in Annex G of the Rule 6 letter) showing the Order Limits for the Proposed Development and the other projects identified for further assessment. The plans show the locations of the main features of each project, including solar arrays, energy storage facilities, substations, electrical cable routes, grid connections, environmental mitigation areas, temporary construction and decommissioning areas, and construction haulage routes;

- Section 4 outlines the approach taken by the Applicant to coordinate the Proposed Development with the other projects, including during Examination;

- Section 5 outlines the DCO provisions required for the Proposed Development to be implemented satisfactorily in relation to other projects;

- Section 6 outlines the mitigation measures to be shared with the other projects and how they are secured;

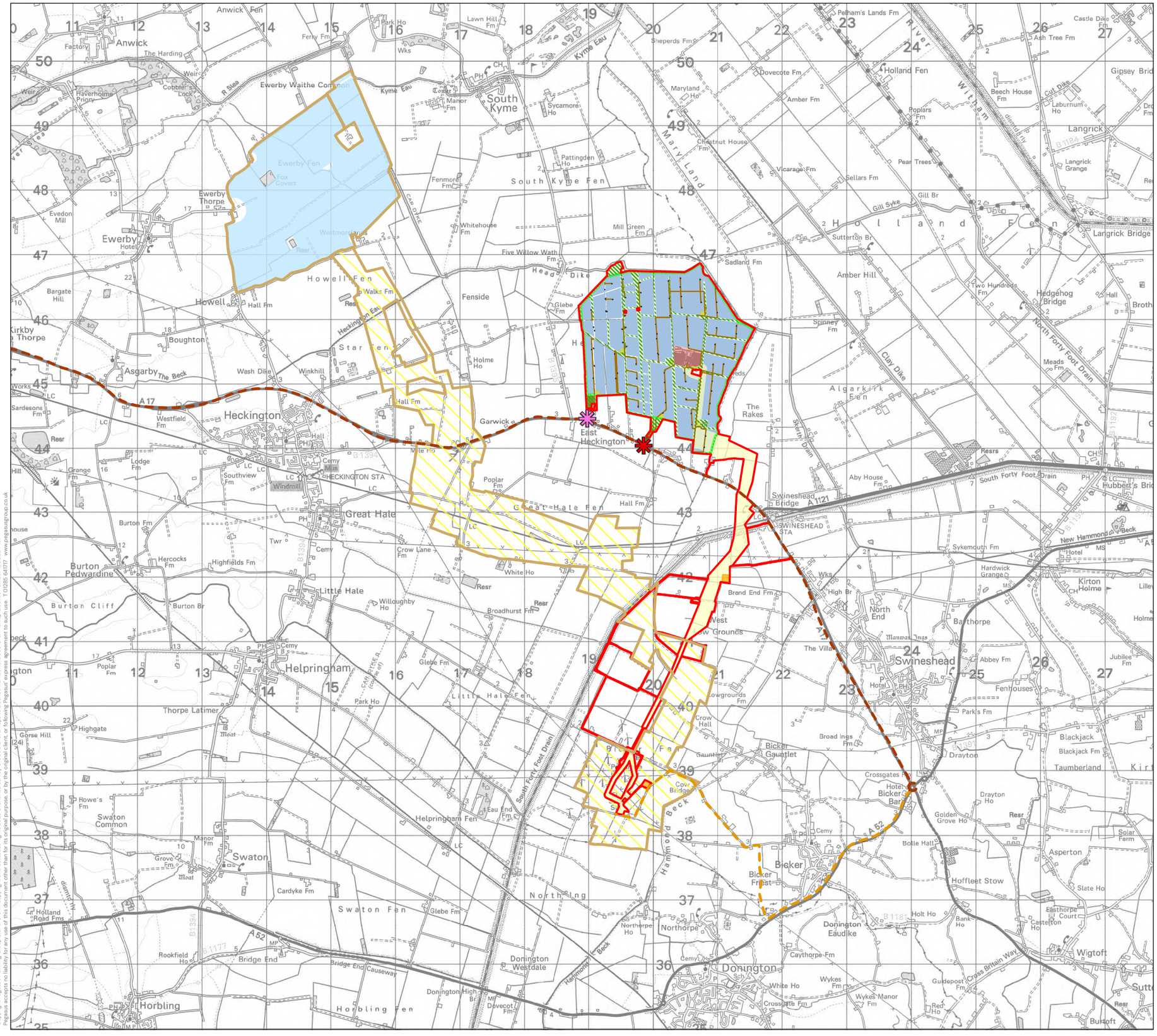
- Section 7 sets out information on the other projects relied upon for the cumulative impact assessment, the level of detail, and any other changes since the application for the Proposed Development was submitted; and

- Section 8 provides a summary setting out the matters that have been agreed, any inconsistencies or outstanding matters, and the next steps to be taken to resolve them.

3. Overview of the Proposed Development and other projects

3.1. This section of the document provides an overview of the Proposed Development and the Beacon Energy Park project. This includes details covering timings, construction phasing, grid connection and start of operation. This section is accompanied by **Figure 1.2** which shows, where possible, the locations of the main features of each project, including solar arrays, energy storage facilities, substations, electrical cable routes, grid connections, environmental mitigation areas, temporary construction and decommissioning areas, and construction haulage routes[5].

[5] At the time of writing this report, Beacon Fen Energy Park has not submitted a DCO application. The only available documentation on the National Infrastructure Planning website for Beacon Fen Energy Park is the Scoping Report. A Beacon Fen Energy Park project website has been set up by Low Carbon with non-statutory consultation material available (May- June 2023) providing the most up to date design evolution information included in **Figure 1.2** Due to the early stages of design evolution for Beacon Fen Energy Park, not all available information set out in the first bullet point of Annex G4 of the Rule 6 Letter is available to be included. Information included in **Figure 1.2** is correct as of September 2023.



KEY

Heckington Fen Solar Park Development

- Heckington Fen Solar Park (EN010123)
- Solar Park Zone
- Offsite Cable Route Corridor
- Community Orchard
- Construction and Operational Compounds
- Inverters and Transformer Station
- Access Tracks
- Site Main Substation / Energy Storage Compound
- Construction Compounds
- Habitat Enhancement (Environmental Mitigation Areas)
- Proposed Hedge (Environmental Mitigation Areas)
- Energy Park Construction Haulage Route
- National Grid Bicker Fen Substation Extension Works Construction Haulage Route
- Proposed Site Entrance (construction and operational access)
- Temporary Construction Access

Beacon Fen Energy Park Development

- Beacon Fen Energy Park (EN010152)
- Potential Solar / BESS Area
- Offsite Cable Route Corridor

FIGURE 1.2 HECKINGTON FEN SOLAR PARK AND BEACON FEN ENERGY PARK INTERRELATIONSHIP LAYOUT PLAN

DATE	SCALE	SHEET	REVISION
29/09/2023	1:60,000@A3	-	B

DRAWING NUMBER
P20-2370_103

0 2.5 km

ecotricity

PEGASUS GROUP

Overview of the Proposed Development and Beacon Fen Energy Park

Heckington Fen Solar Park

3.2. Heckington Fen Solar Park is promoted by Ecotricity (Heck Fen Solar) Ltd. The Proposed Development is located within the county of Lincolnshire, with the main Energy Park of approximately 524ha sited in North Kesteven. The Energy Park is approximately 3.7km east of the village of Heckington. The Energy Park will consist of primarily solar PV infrastructure and an Energy Storage System (ESS), as well as associated infrastructure accommodated in one land parcel at the main site. Electricity generated will be transferred by an underground 400kV cable. The connecting Offsite Cable Route Corridor extends approximately 8.5km in length south from the Energy Park onsite substation to the connection point at the National Grid Bicker Fen Substation. The Offsite Cable Route Corridor spans across Boston Borough and North Kesteven.

3.3. The DCO application was accepted for Examination by the Planning Inspectorate (PINS) on 13th March 2023. Examination commenced on 19th September 2023 and is due to close no later than 19 March 2024.

3.4. If granted, Heckington Fen Solar Park will anticipate peak construction in 2026/2027, with the main commencement of construction in 2026 built over a maximum 30-month period. The extension works at Bicker Fen Substation are estimated to have a construction timescale of 60 weeks. Site preparation works could take place in 2025 on-site.

3.5. The Applicant entered into a Connection Agreement with National Grid Electricity System Operator (NGESO) Ltd on 19th July 2022 with a grid connection for 2027. Commissioning of the Proposed Development is estimated for Autumn 2027 and assumes the Proposed Development will be operational and supply electricity to the national electricity transmission network. The Proposed Development will be operational for 40 years and it is estimated the Proposed Development will be decommissioned in 2067/2068.

Beacon Fen Energy Park

3.6. Beacon Fen Energy Park is being promoted by Beacon Fen Energy Park Ltd, owned by Low Carbon Limited. The proposal is located north of Heckington adjacent to Ewerby Thorpe in the county of Lincolnshire. The Scoping Report identified solar PV panel arrays to spread over two land parcels identified as 'Beacon Fen North' and 'Beacon Fen South'. A Summer 2023 newsletter published on Beacon Fen Energy Park's project website [6] confirmed the withdrawal of the Beacon Fen South site following non-statutory consultation in May-June 2023. The Beacon Fen North site being brought forward will contain primarily solar PV infrastructure and a Battery Energy Storage System (BESS) as well as associated infrastructure accommodated in one land parcel. The Beacon Fen North site of approximately 517ha is located in North Kesteven with the Cable Route Corridor spanning across North Kesteven and Boston Borough.

[6] https://www.beaconfenenergypark.co.uk/about-low-carbon/

3.7. At the time of writing this report, the application is at pre-application stage. A Scoping Report was submitted to PINS on the 19th April 2023. A DCO application is expected to be submitted to PINS in Q2 /Q3 2024.

3.8. If granted Development Consent, Beacon Fen Energy Park will anticipate construction to begin in 2026 for an estimated construction duration of 24–36-month period. Opening year is estimated between 2028 and Beacon Fen Energy Park is proposed to be operational for 60 years. It is estimated Beacon Fen Energy Park will be decommissioned in 2088/2089.

3.9. It has not been disclosed in the public domain if the Beacon Fen Energy Park has a connection agreement in place with National Grid, and if so, the grid connection date to supply electricity to the national electricity transmission network.

Comparison of Heckington Fen Solar Park and Beacon Fen Energy Park

3.10. **Figure 1.2** details where possible based on the current information available for both Heckington Fen Solar Park and Beacon Fen Energy Park the locations of the main solar and energy storage areas, substations, cable route corridors, environmental mitigation areas, construction compounds and construction haulage routes.

3.11. The two projects are both solar energy parks with either a DCO application made, or forthcoming, to the Secretary of State (SoS) for the Department for Energy Security and Net Zero (DESNZ). By virtue of their potential generating capacity, which stands at over 50MW for each project, both proposals are classified as an NSIP.

3.12. The two projects are on differing timelines. Heckington Fen Solar Park has been accepted for Examination that commenced on the 19th September 2023 with an estimated decision date by the SoS in Q2/Q3 2024. Beacon Fen Energy Park is at the pre-application stage with a DCO application expected to be submitted to PINS in Q2/ Q3 2024. If accepted, Examination is likely to begin in Q4 2024 and a decision expected Q4 2025. Heckington Fen Solar Park will likely be determined by, or around, the time when Beacon Fen Energy Park's Examination is likely to begin.

3.13. The two projects involve the construction, operation (including maintenance), and decommissioning of a ground mounted solar photovoltaic (PV) electricity generation and energy storage facilities, together with associated grid connection infrastructure. The main components of both proposals include: solar PV panel arrays on mounting structures, inverters, transformers, switchgear, onsite and offsite cabling (both include a 400kV cable connecting the sites to National Grid Bicker Fen Substation), Energy Storage System (ESS), fencing, access tracks, construction compounds, security measures, and landscaping proposals. This list is not exhaustive of all potential components for each proposal.

3.14. Both projects' cable route connection will link into National Grid Bicker Fen Substation to deliver electricity to the national electricity transmission network. Heckington Fen Solar Park requires extension works at National Grid Bicker Fen Substation to accommodate the connection and these works are included in the Order Limits. Beacon Fen Energy Park does not reference within the Scoping Report the need for extension works at National Grid Bicker Fen Substation, however it is likely that, as a minimum, a generation bay will need to be accommodated. The two projects are separate and promoted through different Applicants.

3.15. The two projects have the main solar and energy storage sites within North Kesteven, and the Cable Route Corridors span across North Kesteven and Boston Borough. The two main solar and energy storage sites are approximately 3.3km apart, with the Cable Route Corridors overlapping each other in part – see **Figure 1.2**. It should be noted that the Cable Route Corridor for Beacon Fen Energy is likely to be further refined to a smaller search area as the design of the site progresses and is prepared for submission as a DCO application. Therefore, the potential area of overlap for the two cable routes could significantly reduce.

3.16. The construction timelines of both projects have the potential to interact with both projects expected to be under construction throughout 2026 (site preparation works for the Proposed Development could take place in 2025). Heckington Fen Solar Park construction will be for an estimated 30-month period, and Beacon Fen Energy Park will be for an estimated 24–36 month period. Given that no project yet has consent, all timescales are indicative.

3.17. The construction haulage route to the Heckington Fen Energy Park, as part of the Proposed Development, will utilise the A17, a single carriageway principal road routed between Newark-on-Trent to the north and Kings Lynn to the south, and enter into a new priority junction access point for the Energy Park- see **Figure 1.2**. The construction haulage route to National Grid Bicker Fen Substation for the extension works associated with the Proposed Development will also follow the same construction route to the A52 and A17 roundabout where it will turn onto the A52 towards Bicker. It is anticipated that the majority of construction traffic will use the existing National Grid Bicker Fen Substation access road and access and egress the site via Cowbridge Road, Bicker Drove and Vicarage Drove – see **Figure 1.2**.

3.18. Beacon Fen Energy Park issued a press-release on their project website on the 27th October 2023 entitled "*New access road proposed for Beacon Fen Energy Park*". Beacon Fen Energy Park Ltd are considering whether to widen their proposed Order Limits to include a new haul road for construction access from Heckington Road, linking to the A17. Beacon Fen Energy Park Ltd are currently writing to landowners to confirm viability of the haul road. As of December 2023, Beacon Fen Energy Park Ltd have not confirmed their Order Limits will be widened and therefore **Figure 1.1** and **Figure 1.2** of this document have not been updated from Revision 1 versions. It is confirmed in the Transport and Access cumulative update in **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050) that if construction timelines were to overlap and both developments were to utilise the A17 for construction haulage routes that traffic flow volumes would not be of significant effect.

3.19. As noted in paragraph 3.9 of this document, Beacon Fen Energy Park's Scoping Report does not identify the need for extension works at National Grid Bicker Fen Substation, however, in the event works are required at the Bicker Fen substation, the potential construction haulage route would likely follow the same routing as that of the Proposed Development.

3.20. The assessment of traffic flows in **Chapter 14: Transport and Access** (document reference 6.1.14/ PS-073) of the ES for the Proposed Development has assessed that 100% of trips for the National Grid Bicker Fen Substation extension works are associated with the Heckington Fen generation bay (Work no. 6A of the **Works Plan** (document reference 2.2/PS-014)). In reality, it is likely that only 20% of the overall substation construction traffic will be attributed to the Applicant's generation bay (Work No.6A), and the other 80% is for the NGET extension (Work No.6B and 6C), of which some of this infrastructure will become integral to other

connection bay users, such as Beacon Fen Energy Park. The assessment showed for 100% of trips that the increase in traffic flows was not significant.

4. Approach taken by the Applicant to coordinate the Proposed Development with other projects

4.1. This section of the document provides an overview of the approach taken by the Applicant to coordinate the Proposed Development with Beacon Fen Energy Park, including during Examination.

4.2. The Proposed Development and Beacon Fen Energy Park are on differing timelines. A Scoping Report for Beacon Fen Energy Park was submitted to the SoS on the 19th April 2023. At the point in which the Beacon Fen Energy Park Scoping Report was submitted, the Heckington Fen Solar Park DCO application had been submitted and accepted for Examination (13th March 2023), with registration of Interested Parties taking place between 14th April 2023 and 9th June 2023. As the Heckington Fen Solar Park has now commenced Examination and is at a more progressed stage in the development consent process and the timelines of the design evolution of the two projects did not overlap, there was limited interaction between individual applicants to coordinate the projects.

4.3. The main site locations inclusive of the solar PV panelled areas and Energy Storage Systems (ESS) for each project are located on distinct and separate sites, approximately 3.3km apart. As the Scoping Report for Beacon Fen Energy Park was submitted after the Heckington Fen Solar Park DCO application, the Beacon Fen Energy Park site was not cumulatively assessed in the ES. Subsequent to Issue Specific Hearing 2 on the 20th September 2023 for the Proposed Development's Examination, it was confirmed the ES cumulative assessment will be updated at Deadline 2 during Examination to take into account any updates to applications on the long list and shortlist, and re-evaluate any new, relevant applications (NSIP and TCPA) to be included within the cumulative assessment. The Beacon Fen Energy Park DCO application will be included.

4.4. Based on the most recent design stage of Beacon Fen Energy Park, the Cable Route Corridor of both projects has the potential to overlap and interact. In general, the Cable Route Corridors are mostly distinct and sperate, however, they overlap in an area between Loverose Lane and Timms Drove, and then again further south between Lowgrounds Farm off Tilebarn Lane and Hammond Beck where the grid connection location for both projects is at National Grid Bicker Fen Substation.

4.5. With this in mind and despite the difference in stages, both applicants for Heckington Fen Solar Park and Beacon Fen Energy Park are open and willing to collaboratively work together to understand project interactions and explore the potential for sharing a cable route connection and reduce impacts. This was confirmed in an email exchange between applicants subsequent to the targeted consultation response from Beacon Fen Energy Park Ltd on the 11th August 2023 as part of Heckington Fen Solar Park's Change Notification Consultation. Subsequent email exchange has taken place between both parties regarding the interaction of the Cable Route Corridors. Once Beacon Fen Energy Park Ltd confirm the Order Limits for the DCO application, if required, the Applicant is content to review the ability to share survey data for areas of overlap along the Offsite Cable Route Corridor to avoid repetition of survey work.

4.6. At the time of writing this report, there is not considered to be enough detail on the areas of overlap or project certainty to be able to draft a Cooperation Agreement between both parties. This will, however, remain under review and will be updated upon at future deadlines within the Proposed Development's Examination.

4.7. The Applicant expects to engage with the Beacon Fen Energy Park Examination and, if necessary, to propose Protective Provisions in due course. Given the early stage of the Beacon Fen Energy Park proposals, and that there are no apparatus or assets in situ, the Applicant does not consider it necessary to include bespoke Protective Provisions for the benefit of Beacon Fen Energy Park within its DCO. In any event, Beacon Fen Energy Park Ltd would be covered by the general Protective Provisions under Part 1 of Schedule 13 to the Applicant's DCO.

4.8. Given that Beacon Fen Energy Park have not yet submitted a DCO Application, they have not produced a similar Interrelationship Report; this chapter therefore presents the view of the Heckington Fen Solar Park team only.

5. Shared Development Consent Order Provisions with other projects

5.1. This section sets out the DCO provisions required for the Proposed Development to be implemented satisfactorily in relation to Beacon Fen Energy Park.

5.2. As set out in Section 4, the main site locations inclusive of the solar PV panelled areas and Energy Storage Systems (ESS) for the Proposed Development and Beacon Fen Energy Park are distinct and separate sites, with no overlap. The Cable Route Corridors for both proposals are mainly distinct and separate. However, there is an area along the southern sections of the Cable Route Corridors that overlap, from the initial point of overlap to the grid connection location of both projects at National Grid Bicker Fen Substation.

5.3. The DCO application for Beacon Fen Energy Park has not yet been made and therefore no protective provisions or powers sought have been drafted in relation to Beacon Fen Energy Park at this point in time of writing this report (correct December2023).

5.4. The Applicant welcomes confirmation from Beacon Fen Energy Park in a written representation that it will include protective provisions for the benefit of the Applicant in its draft DCO regarding the area of potential overlap in the Cable Route Corridor. As the Applicant outlines above, given the early stage of the Beacon Fen proposals, and that there are no apparatus or assets in situ, the Applicant does not consider it necessary to include bespoke Protective Provisions for the benefit of Beacon Fen within its DCO. In any event, Beacon Fen Energy Park Ltd would be covered by the general Protective Provisions under Part 1 of Schedule 13 to the Applicant's DCO.

Phasing and Discharge of Requirements

5.5. Requirement 3 of the Applicant's DCO provides that the Applicant must submit a phasing plan prior to commencement of the Proposed Development. It is likely that the Offsite Cable Route works will be a standalone phase, or a set of sub-phases. The majority of the Requirements are drafted so that the final control plans must be submitted for approval prior to commencement of a phase (for example, Requirement 6, 8, 10, 11, 12(2), 13, and 14). Therefore, the only potential overlap is likely to be for the Offsite Cable Route phase(s).

5.6. Whilst the final plans submitted for discharge must be substantially in accordance with the outline plans (where relevant), there is the ability to incorporate additional measures or necessary controls at the time of submitting the final plans prior to commencement of that phase. Therefore, to the extent necessary, the Applicant can include any relevant supplementary detail or controls to govern the overlap with Beacon Fen within its final plans for discharge. It is expected that the only plans this will be relevant for is the Construction Traffic Management Plan and the Construction Environmental Management Plan.

6. Shared Mitigation Measures with other projects

6.1. This section outlines the mitigation measures to be shared with Beacon Fen Energy Park and how they are secured in the draft DCO.

6.2. At the time of writing this report (correct as of December 2023), the DCO application for Beacon Fen Energy Park has not yet been made and the project is in the early stages of pre-application. Statutory Consultation has not yet been undertaken and it is planned according to the Beacon Fen Energy Park Spring 2023 Non-Statutory Consultation Booklet for Winter 2023. At this point a PEIR will be available for the Proposed Development team to review and understand if any shared mitigation measures are applicable to incorporate. Currently there are no mitigation measures shared with Beacon Fen Energy Park.

7. Any other information on the other projects relied on for the Cumulative Impact Assessment

7.1. This section sets out information on Beacon Fen Energy Park relied upon for the cumulative impact assessment, the level of detail, and any other changes since the application for the Proposed Development was submitted.

7.2. Beacon Fen Energy Park's Scoping Report was submitted on the 19th April 2023, this was after the Heckington Fen Solar Park DCO application submission of the 15th February 2023. The cut off point of updating the cumulative long list and short list for the production of Inter-Project Cumulative Assessment in the ES for the Proposed Development was 31st December 2022 for Revision 1. Subsequently, at Deadline 2 an updated cumulative assessment was provided, superseding the cumulative assessment undertaken as part of the original ES. The **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050) encapsulates other NSIP or TCPA projects of relevance that were not included in the original Proposed Development's DCO application, and this includes a cumulative assessment between Beacon Fen Energy Park and the Proposed Development

7.3. An interim cumulative assessment was undertaken in Revision 1 of this document, with input from the Heckington Fen Solar Park ES technical chapter authors, to assess the potential cumulative effects between Beacon Fen Energy Park and Heckington Fen Solar Park. Revision 2 of this document has aligned the commentary below to the full cumulative assessment undertaken in the **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050). To avoid duplication of content between reports, the assessment below remains summarised.

7.4. The Scoping Report for Beacon Fen Energy Park has been relied upon in the **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050) . However, it was confirmed in the Summer 2023 newsletter that the 'Beacon Fen South' site has been withdrawn, and therefore only a comparison is made to the 'Beacon Fen North' site and grid connection route. The Scoping Report is limited in some information with no assessment work or only initial assessment work carried out for some topic areas. The design of the site is also subject to change and evolution. The information below has considered the cumulative impact of construction taking place of the two schemes at the same time as the longer operational impacts. Beacon Fen Energy Park currently details their estimated construction programme running from 2026-2028 with the Proposed Development's estimated construction programme running from 2025-2027, to connect in time for an accepted 2027 grid offer from National Grid. Therefore, there is the potential for the construction timeframes to overlap.

Landscape and Visual Cumulative Note

7.5. It is envisaged that there is the potential for significant cumulative visual effects to occur during the construction stage of the offsite cable routes if the two NSIP schemes were built out at the same time, as the two offsite cable route corridors overlap. Any effects, however, are expected to be highly localised, short term and temporary. It is unlikely that the users of local Public Rights of Way located within the West Low Grounds and Bicker Fen, and around the existing National Grid Bicker Fen Substation, would experience significant adverse effects, given the distance and nature of views gained.

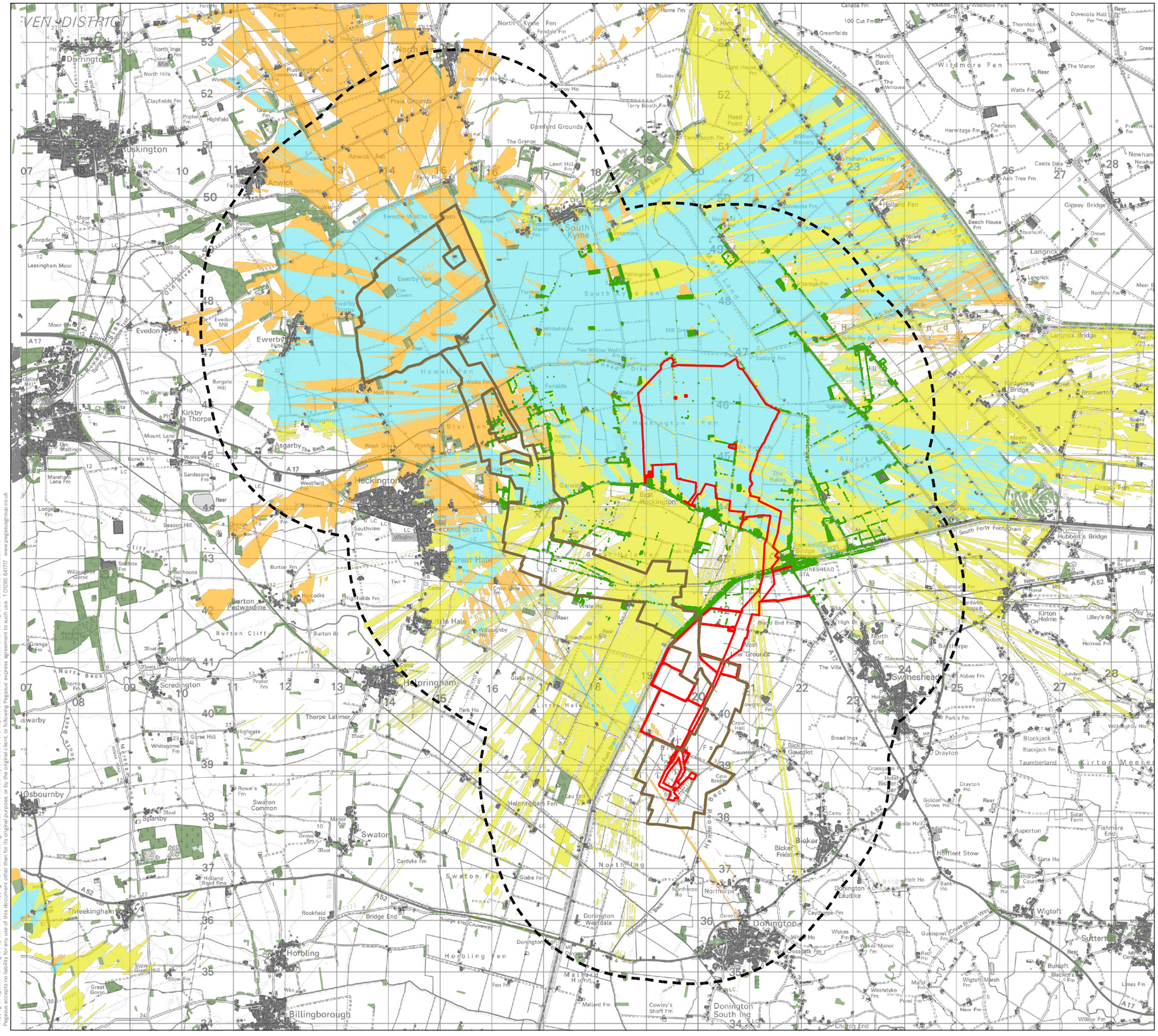
7.6. With regard to the cumulative views of the Beacon Fen Energy Park and the Energy Park Site of the Proposed Development during the construction phase, the analysis presented in **Chapter 6 - Landscape and Visual** (document reference 6.1.6/ PS-058 and PS-059) gives evidence of the very limited to no-intervisibility between the proposed Energy Park and the north western quadrant of the study area.

7.7. In terms of direct effects upon the landscape features: such as field boundary hedgerows and trees, they are not expected to be significant. A temporary change upon the character of the host landscape: NCA 46 The Fens, and The Fens Regional Landscape Character Type and its associated Fenland Landscape Character Sub-Area would occur. The very limited to no inter-visibility between the Energy Park Site and this part of the study area, coupled with the distance of c. 3.3km between the Beacon Fen Energy Park and the Energy Park Site – i.e., located just outside of the defined Zone of Influence, ensures that such temporary effects would not be significant during the construction phase. It is envisaged that the cable route for the Beacon Fen Energy Park will be detailed further in the PEIR and DCO application, similarly to the Proposed Development, thus will eventually be narrower than the currently proposed route.

7.8. With regard to the operational stage there is the potential that the landscape between the two schemes may be affected to a significant effect. **Figure 1.3** shows the cumulative Screened Zone of Theoretical Visibility (SZTV) for both projects and demonstrates the potential theoretical extent of intervisibility of solar panel infrastructure at both sites. It should be noted that **Figure 1.3** does not demonstrate absolute visibility.

7.9. It is accepted that the addition of the Proposed Development and Beacon Fen Energy Park would cause some highly localised significant effects within the site itself and immediately around it, when judged in isolation. Given the distance between the two schemes the zone of significant landscape character effects is considered to be set sufficiently apart as not to cause any significant cumulative landscape character effects. There is the potential that certain visual receptors, such as the PRoW along the Head Dike may be subject to sequential significant visual effects. The majority of the viewpoints, located in this part of the study area – between the cumulative Beacon Fen Energy Park and the Proposed Development, will not be subject to significant visual residual effects. The more distant viewpoints in the north eastern and south western quadrant of the study area will not be subject to significant visual effects. The receptors located within the south eastern quadrant and around the existing Bicker Fen Substation will not be subject to any significant visual effects as the operational stage of the grid connection will be underground.

7.10. Therefore, the Proposed Development and Beacon Fen Energy Park will not cause significant cumulative effects upon the character of the local landscape or visual receptors associated with this area.



KEY

- Heckington Fen Solar Park (EN010123)
- Beacon Fen Energy Park (EN010152)
- Study Area - 3km
- National Tree Map Data
- OS Local Woodland
- OS Local Buildings

Screened Zone of Theoretical Visibility Outputs

- Heckington Fen Solar Park Solar Elements Visible Only
- Beacon Fen Energy Park Solar Elements Visible Only
- Heckington Fen Solar Park and Beacon Fen Energy Park Solar Elements Visible

Screened ZTV Production Information –
The SZTV has been produced using multiple datasets to create a DSM (Digital Surface Model). These have been combined together accurately using ESRI GIS software. The following datasets have been used to create the DSM-

- OS Terrain 5 used as the base DTM (Digital Terrain Model) This is a 5m grid dataset.
- Bluesky's National Tree Map (NTM) This is a detailed dataset covering England and Wales. It provides a comprehensive database of location, height and canopy spread for every single tree 3m and above in height. This is created from stereo aerial photography. Heights used within the model are the MAXIMUM heights supplied with the dataset.
- OS Open Map Local Woodland - used to model vegetation not covered by the NTM and set to an indicative height of 15m
- OS Open Map Local Buildings - set to indicative 8m height.
- Viewer height set at 1.7m (in accordance with para 6.11 of GLVIA Third Edition)
- Calculations include earth curvature and light refraction

N.B. This Screened Zone of Theoretical Visibility (SZTV) image illustrates the theoretical extent of where the development may be visible from, assuming 100% atmospheric visibility, and includes the screening effect from vegetation and buildings, based on the assumptions stated above.

FIGURE 1.3 CUMULATIVE SCREENED ZONE OF THEORETICAL VISIBILITY – HECKINGTON FEN SOLAR PARK AND BEACON FEN ENERGY PARK

DATE	SCALE	SHEET	REVISION
25/09/2023	1:75,000@A3	-	A

DRAWING NUMBER
P20-2370_105

0 3 km

ecotricity

PEGASUS GROUP

Ecology and Ornithology Cumulative Note

7.11. Within the Beacon Fen Energy Park Scoping Report, it is outlined that Beacon Fen Energy Park is dominated by arable land divided by wet ditches. Less frequently there are hedgerows, with woodland blocks and copses occasionally found.

7.12. There are no internationally designated ecology sites, or non-statutory designated sites present within the Order Limits for Beacon Fen Energy Park. The Scoping Reports identifies three internationally designated sites within 20km (Wash Ramsar, Wash Spa and Wash North Norfolk Coast). These three internationally designated sites are considered and identified against Heckington Fen Solar Park.

7.13. There are three nationally designated sites identified within 10km of Beacon Fen Energy Park (Horbling Fen SSSI, Wilsford and Rauceby Warrens SSSI and Sunfleet Lows SSSI). Horbling Fen SSSI is also identified within 10km of the Heckington Fen Solar Park Order Limits.

7.14. There are 12 Local Wildlife Sites present within 2km of Beacon Fen Energy Park. Seven of these overlap with LWS's identified within 10km of Heckington Fen Solar Park (Evedon Wood, Great Hale Eua, Horbling Fen, Old Forty Foot Drain, South Forty Foot Drain, Broadhurst Drain, Willow Farm Drain).

7.15. The Beacon Fen Energy Park outlines the design of the development will be guided to avoid ecological impacts. Mitigation will focus on minimising, restoring and compensating for impacts that cannot be avoided. The expectation is that for developments yet to be granted Development Consent to achieve a minimum of 10% Biodiversity Net Gain within their site design. Sufficient mitigation and or enhancement is expected to be provided to ensure there are no significant effects.

Cultural Heritage Cumulative Note

7.16. The Beacon Fen Energy Park Scoping Report names only designated heritage assets *within* the Order Limits (specifically the cable route), and not proximate designated heritage assets that might be sensitive through change to setting. Considering **Figure 1.3** with reference to the location of the designated heritage assets scoped into the assessment of indirect development effects as part of the Proposed Development's ES Cultural Heritage Chapter, it is noted that both developments would be visible from the Scheduled Roman Settlement of Holme House, the Grade I Listed South Kyme Tower, and the non-designated Mill Green Farmhouse.

7.17. For the Proposed Development, minor harm was identified only for Mill Green Farmhouse – arising through change to landscape character of part of its historic agricultural landholding as experienced in designed views from the primary (south-facing) elevation of the asset across the northern part of the Proposed Development's Energy Park. There appears to be no historical or direct visual association between Mill Green Farmhouse and the land proposed for the Beacon Fen North site. As such, it is considered that Beacon Fen North site does not contribute through setting to the significance of Mill Green Farmhouse, and so any intervisibility of Beacon Fen North and the asset would be largely incidental. No cumulative effect is anticipated.

7.18. For the Proposed Development, it is considered that neither the Energy Park site nor the Cable Route contribute through setting to the significance of the Roman Settlement. Although no setting assessment for this asset is yet publicly available for Beacon Fen Energy Park, there are considered to be no possible cumulative effects with the Proposed Development as no harm has been anticipated from the Proposed Development.

7.19. For Heckington Fen Solar Park, some visibility of the Energy Park site is anticipated in certain views from and towards South Kyme Tower. This is considered largely coincidental of the flat, low-lying landscape context and it is considered that the Energy Park does not contribute through setting to the significance of South Kyme Tower. Although no setting assessment for this asset is yet publicly available, the Beacon Fen Energy Park Scoping Report indicates there will be intervisibility of this scheme and South Kyme Tower. Regardless of whether this does or does not equate to harm to the significance of the asset, there are considered to be no cumulative effects with the Proposed Development as no harm has been anticipated from the Proposed Development.

7.20. The Beacon Fen Energy Park Cable Route corridor could interact and cross the Proposed Developments Cable Route Corridor. The possible interacting areas have not yet been fully evaluated by the Proposed Development's own archaeological trial trenching. Requirement 12 of the draft DCO ensures a written scheme of archaeological investigation will need to be approved by Lincolnshire County Council before works can be carried out on this area (as well as those areas in which archaeological evaluation is yet to be undertaken). However, no significant archaeological remains are anticipated on the basis of the results of the desk-based assessment and a geophysical survey undertaken for the Proposed Development. The Outline Written Scheme of Investigation – Mitigation (document reference 7.14 / APP-245) makes provision for/commitment to mitigation should archaeological remains of interest be encountered by the forthcoming works. The residual effect is expected to be no more than minor harm to significance. Should archaeological remains of interest (also) be encountered by potential archaeological investigations carried out for the Beacon Fen Energy Park, mitigation would similarly be required.

Transport and Access Cumulative Note

7.21. Within the Beacon Fen Energy Park Scoping Report, no confirmed details are provided at this stage of proposed points of access or construction traffic routes. However, it was indicated in a press release entitled "*New access road proposed for Beacon Fen Energy Park*" on Beacon Fen Energy Park's project website that a new haul road for construction access from Heckington Road, linking to the A17 was being considered. On the basis that only Beacon Fen North site will come forward, it is assumed that there could be two potential access routes to this site from either the A17 in the south (as indicated) or from the A153 in the east.

7.22. The Beacon Fen Energy Park Scoping Report does not contain any anticipated vehicle movements. However, it does confirm that the size of the northern site is 517 hectares. The Energy Park site area for the Heckington Fen Solar Park is a comparable 524 hectares. Appendix 3- Cumulative Traffic Assessment of the **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050) details the forecast vehicle movements associated with Beacon Fen Energy Park.

7.23. Table 14.9 of **Chapter 14: Transport and Access** (document reference 6.1.14/PS-073) confirms the AADT and HGV trips for the busiest times during the construction period of the Energy Park, off-site cable route and Bicker Fen Substation extension. These equate to an

AADT of 104 vehicles and 39 HGVs at links one to three. Cumulative traffic flows during the construction phase for both Heckington Fen Solar Park and Beacon Fen Energy Park, should both construction phases overlap, could therefore be associated with up to 144 two-way vehicle movements, including 99 HGVs.[7]

7.24. The A17 west of Heckington Fen Solar Park has a baseline daily flow of 20,373 vehicles of which 21.4% are HGVs[8]. Should the construction phases of both sites overlap, and construction traffic associated with both sites utilises this route, this would equate to less than a one percent impact in total vehicles and a 1.6% impact in HGV flow. The cumulative number of vehicles are likely to be considered Negligible[9], and would be on a temporary basis, therefore in EIA terms is considered Not Significant[10].

Noise and Vibration Cumulative Note

7.25. Within the Beacon Fen Energy Park Scoping Report, an identified study area is established of 300m to assess potential sensitive noise receptors from the Beacon Fen North site. The Proposed Development has assessed an area up to 1.2km from the Energy Park site, and 500m from the Cable Route Corridor and National Grid Bicker Fen Substation.

7.26. The two main solar site areas at their closest point are 3.3km apart. Therefore, receptors are unlikely to be cumulatively affected by construction, operational or decommissioning works. The Proposed Development has demonstrated that beyond a distance of approximately 1km, construction and decommissioning works (within the Energy Park) and operational noise effects from the Proposed Development become negligible see Chapter 12: Noise and Vibration (document reference 6.1.12/APP-65). It is not expected that significant cumulative noise impacts will occur from both proposals.

Air Quality Cumulative Note

7.27. Within the Beacon Fen Energy Park Scoping Report, it is proposed Air Quality is scoped out of the EIA as significant effects are not expected to give rise from the development.

7.28. Due to the anticipated low vehicle movements associated with solar farms, both assessments of Beacon Fen Energy Park and Heckington Fen Solar Park have scoped out operational phase impacts as there would be minimal alteration to the existing baseline in respect of air quality.

7.29. As a worst-case scenario, if construction timelines were to overlap there could be a cumulative effect in construction traffic routing of both projects, and therefore combined road traffic impact to air quality. However, the combined traffic flow estimates provided in Appendix 3- Cumulative Traffic Assessment of the **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050) when assessing only Beacon Fen Energy Park and the Proposed Development show the EPUK/IAQM thresholds for the potential impact to air quality would not be

[7] Cumulative figures from combination of Heckington Fen Solar Park AADT figures and Beacon Fen Energy Park figures from Appendix 3 of ES Technical Note- Updated Information on Cumulative Projects (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050)
[8] Table 14.7 of ES Chapter 14: Transport and Access (document reference 6.1.14/APP-067)
[9] Table 4.1 of ES Chapter 14: Transport and Access (document reference 6.1.14/APP-067)
[10] Table 14.3 of ES Chapter 14: Transport and Access (document reference 6.1.14/APP-067)

exceeded, and therefore no significant effect is anticipated. It is also noted that no confirmed construction traffic route is provided in the Beacon Fen Energy Park Scoping Report and the assessment is provisionally based on the likely traffic flow routing.

Hydrology Cumulative Note

7.30. Within the Beacon Fen Energy Park Scoping Report, it is noted the Beacon Fen North site is within Flood Zone 3, and the Cable Route Corridor spans across Flood Zone 1 and 3. The design of the Beacon Fen Energy Park will take into account best practice guidance. This includes no built development in hydrologically sensitive areas, maintaining a minimum 10m standoff distance between any built development and watercourses, retaining hydraulic connectivity across the Site and adopting pollution prevention measures as per the Scoping Report. Mitigation measures will therefore be embedded into the design and will adhere to the implementation of standard best practice, together with bespoke measures that relate to the baseline environment. A Flood Risk Assessment as a standalone report will accompany the Flood Risk ES chapter if a DCO application comes forward for Beacon Fen Energy Park.

7.31. Beacon Fen Energy Park will also be subject to compliance with the relevant national policies and therefore be required to demonstrate that flood risk is not increased, that the surface water drainage regime and surface water quality are not adversely affected, and that groundwater aquifers are not affected. It is expected that the design of Beacon Fen Energy Park will need to comply with the 1 in 1000 year +20% breach flood event design specified by the Environment Agency that Heckington Fen Solar Park adhered to. It is assumed that if granted Development Consent, Beacon Fen Energy Park and the Proposed Development will not give rise to any cumulative significant effects within the wider catchment area.

Climate Change Cumulative Note

7.32. Within the Beacon Fen Energy Park Scoping Report, no details are provided at this stage of the quantum of greenhouse gas emissions relating to the construction, operation and decommissioning phase. However, an initial assessment is made in terms of emission reduction.

7.33. The Heckington Fen Solar Park Climate Change chapter (document reference 6.1.13/ APP-066), confirms a moderately, significant beneficial operational effect is predicted for the cumulatively planned contribution of solar projects in the local area to meeting the UK's net-zero targets. This cumulative assessment was undertaken without the inclusion of Beacon Fen Energy Park, and it was estimated at Table 13.13 of the Climate Change chapter (document reference 6.1.13/ APP-066) that 2050MW (2.05GW) of solar energy generation could be collectively produced in the local area. **Appendix 2** paragraph 8.18 of this report confirms the 10 NSIP solar projects within Lincolnshire, if granted Development Consent, could generate approximately 5.4GW. Therefore, Beacon Fen Energy Park in combination with Heckington Fen Solar Park and the other planned solar projects in the local area, if granted, will further benefit the UK in meeting its net-zero targets and reducing greenhouse gas emissions.

7.34. In terms of climate change resilience and adaption, this is a project specific consideration and the level of resilience of the developments to the changing climate is unlikely to affect other receptors in a quantifiable outlet.

Glint and Glare Cumulative Note

7.35. It is not anticipated Glint and Glare from the two projects in combination would give rise to cumulative significant effects. During construction and decommissioning, it is expected erecting and removing site components will happen in stages to minimise potential glint effects from the presence of exposed steel components in the environment. In the case of decommissioning, mitigation measures (such as landscaping proposals) will be established throughout the operational stage and will be fully mature to help provide a good level of screening, but even at the construction stage, additional planting will help provide some screening effects. These measures will be useful in helping to prevent cumulative glint effects, even though planting may not be fully established in the early stages.

7.36. During operation, the Heckington Fen Solar Park Glint and Glare chapter (documents reference 6.1.17/APP-070) concluded that, following mitigation in the form of the proposed hedgerow planting around the panel arrays, the ground receptors examined would not have visibility to the panels and therefore would not be capable of experiencing glint effects. This limiting factor precludes those receptors from experiencing cumulative glint impacts in combination with other sources. While receptors could potentially experience direct glint effects from other sources, without direct glint effects from the Proposed Development's solar arrays, there can be no cumulative glint effects. In this instance, it is also understood that the closest proposed large ground-mounted solar farm, Beacon Fen Energy Park, would be similarly well screened and therefore potential glint from that site would also be extremely limited. Cumulative glint is not considered to be an issue for ground-based receptors.

7.37. The only receptors that would potentially have visibility to both sites are aviation receptors (i.e., aircraft in skies above the sites). Aviation glint effects were scoped out of the Heckington Fen Solar Park EIA but, for completeness and in response to consultee comments, some level of analysis was carried out anyway. The closest major aviation receptor, RAF Coningsby, was assessed to not receive glint effects on final approach to either Runway 07 or Runway 25.

7.38. In order to receive glint, the sun and the receptor must be in alignment with the panels and glint effects will usually only persist for a short period until either the sun has moved position in the sky, or in the case of a plane, it has flown to a slightly different position in the sky, breaking the alignment. For cumulative effects to occur for a passing aircraft, the alignment between the sun, panel and aircraft must deliver glint whilst a simultaneous alignment of the sun, panels at the cumulative site and the aircraft also exists. Whilst this is theoretically possible with differing panel angles, in practice the separation between the sites and the similarity between panel inclinations and orientations at those differing sites means that such co-alignment is highly unlikely. Again, since no direct effects were predicted, no significant cumulative effects are anticipated.

7.39. It is also prudent to note that, since submission of the original ES, draft NPS EN-3 guidance has been replaced with the fully adopted version (March 2023). In respect of aviation glint EN-3 states at Paragraph 3.10.150, ***"Whilst there is some evidence that glint and glare from solar farms can be experienced by pilots and air traffic controllers in certain conditions, there is no evidence that glint and glare from solar farms results in significant impairment on aircraft safety. Therefore, unless a significant impairment can be demonstrated, the Secretary of State is unlikely to give any more than limited weight to claims of aviation interference because of glint and glare from solar farms."***

Soils and Agriculture Cumulative Note

7.40. The Proposed Development is a standalone proposal not connected to any other proposed developments, solar or otherwise. As such there are no direct cumulative effects on the use of agricultural land, with any temporary agricultural land losses from other developments.

7.41. Within the Beacon Fen Energy Park Scoping Report, it is estimated from post 1988 ALC data that the Beacon North site is mainly Subgrade 3b (366.8 ha, 69.7 % of Beacon Fen North), with a smaller portion of Subgrade 3a (149.88 ha, 28.3 % of Beacon Fen North). To date Beacon Fen have not released any information on the soil quality data from augers taken on their land holding,

7.42. The Proposed Development at Heckington Fen will have 20.2ha of agricultural land sealed over for the purpose of fixed equipment such as where the solar panel piles enter the ground and the operation of the Energy Storage System (ESS) as outlined in Chapter 16: **Land Use and Agriculture** (document reference 6.1.17/ APP-069). Of the 20.2ha, 17.4ha is low grade agricultural land (3b). The remaining 3ha has been assumed to be on BMV land as the final design of the panel layout has not been confirmed. However, in reality this is likely to be more of a 50/50 split between BMV and low-grade land, when considered against the ALC Results in Insert 1 within **Chapter 16: Land Use and Agriculture**.

7.43. The remaining land within the Energy Park Site and Offsite Cable Route which is a mix of BMV and lower grade land, will remain in agricultural activity for the operational lifetime of the Proposed Development. Only the land within the Energy Park area (257ha) has been considered as "lost" for the purpose of the EIA assessment. In reality this agricultural land will not be "lost", as this terminology indicates that no agricultural activity would take place on the land for the operational life of the Proposed Developments. Instead of loss, the granting of the DCO will lead to an alteration in the agricultural practice which will take place on the Energy Park site. The alteration of agricultural activity will be from arable to pastoral (sheep grazing); the Applicant secures sheep grazing through its **outline Landscape Ecological Management Plan** (document reference 7.8) under Requirement 8 of the DCO as well as in the outline **Operational Environmental Management Plan** (document reference ExA.oOEMP-D3.V2) under Requirement 19 of the DCO.

7.44. It is therefore accepted that agricultural land will temporarily change if both the Proposed Development and Beacon Fen Energy Park were granted Development Consent. Beacon Fen have so far identified in their Scoping Request that 28.3% of the Beacon Fen North site is BMV land (Grade 3a). This is equivalent to 149.88ha. Therefore, cumulatively the Proposed Development and Beacon Fen Energy Park would lead to a cumulative temporary use of 406.88ha of BMV land used.

7.45. To date the Beacon Fen Energy Park documentation has not indicated if they intend to remove this BMV land from agricultural for the operational life of the development or if they intend to alter the agricultural practice on the land. For the purpose of this assessment a worst-case scenario has been taken, which has assumed that they intend to temporarily remove it from agricultural for the operational life of the Beacon Fen development.

7.46. It is outlined in **Appendix 2,** sub section 'Cumulative Effect of the Proposed Development and other NSIP Solar Projects' of this report that cumulatively the temporary use of BMV land from Lincolnshire, if all 11 NSIP solar schemes were granted Development Consent, the effect would be not significant. The decision to view the loss of land as a temporary one was agreed to by the Secretary of State for the Little Crow Solar NSIP scheme (EN010101). This was further reinforced by the Welsh DNS decision for St Asaph solar scheme (3247619 IR 310-314) and

within the Longfield Solar Farm Order 2023 decision (EN010118). Additionally, an alternative agricultural practice (i.e., sheep grazing) will continue at the Proposed Development throughout the operational lifetime. It is currently unknown if Beacon Fen Energy Park will continue agricultural practice during the operational lifetime of the development.

Socio-Economics

7.47. Within the Beacon Fen Energy Park Scoping Report, no details are provided at this stage of the number of direct and indirect jobs expected, and the potential accommodation demand in the local area.

7.48. It is expected the PEIR to be produced for the Winter 2023 Statutory Consultation for Beacon Fen Energy Park will include socio- economic assessment figures and an assessment of the cumulative impacts with Heckington Fen Solar Park. Once this document is available, the Heckington Fen Solar Park technical team will review and consider whether the information has an impact on the Heckington Fen Solar Park ES.

7.49. The **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050) considered and scoped in 9 cumulative projects (including Beacon Fen Energy Park) in the updated cumulative assessment. The overall conclusions found there will be beneficial effects in relation to employment and economic contribution during all development stages, and business rates during the operational phase. Accommodation Demand effect during the construction and decommissioning phases is predicted to be minor to moderate adverse but is not significant- this is an absolute worst case scenario, and the realistic outlook is likely to be much more limited in comparison. Therefore, the cumulative effects of the Proposed Development and Beacon Fen Energy Park isolated from the larger cumulative comparison of the 9 other projects, will lead to effects of a lesser extent than what is presented in the Socio-Economic section of the **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050). Revision 2 of the **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D3.V2) submitted at Deadline 3 does not alter the findings of what is stated above in relation to the cumulative assessment of the Proposed Development and Beacon Fen Energy Park, and therefore the statements and conclusions remain accurate.

8. Summary

8.1. This section provides a summary setting out the matters that have been agreed, any inconsistencies or outstanding matters, and the next steps to be taken to resolve them.

8.2. It has been identified through the initial assessment of other projects with the potential for cumulative effects at **Table 1.1** that one solar NSIP scheme, Beacon Fen Energy Park, is considered further for potential cumulative effects due to the close proximity between the two projects and the shared common feature of the Cable Route Corridor in part. An update to the cumulative assessment undertaken in the Proposed Development's ES was submitted at Deadline 2 and applications on the long list and shortlist or new TCPA/NSIP submissions that have occurred since the finalisation of the assessment were updated and included. This was presented in **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050) and is subsequently further updated for Deadline 3 as a Revision 2.

8.3. The Beacon Fen Energy Park scheme was submitted on the 19th April 2023, this was after the Heckington Fen Solar Park DCO application submission of the 15th February 2023. The two projects at their closest point from main solar site areas are 3.3km apart. However, the cable route corridors have the potential to overlap. Section 7 of this report undertakes a cumulative assessment of the two projects and there are no expected significant cumulative effects that will occur.

8.4. As the Beacon Fen Energy Park and Heckington Fen Solar Park projects are on greatly differing timescales in the DCO application process there has been limited amount of collaboration on projects. The Applicant will continue dialogue and discussion of any potential interaction in the shared cable route corridor with Beacon Fen Energy Park Ltd and update accordingly in a further revision of this report during Examination

Appendix 1 – Initial assessment of other projects with potential cumulative effects, including details of consenting, construction and operation timetables

Table 1.2 – Initial assessment of other projects with potential cumulative effects, including details of consenting, construction and operation timetables

Project Name and Reference	Project Details	LPA	Application Submission	Start of Examination (actual/predicted)	Estimated deadline for Decision	Predicted start of Construction	Predicted end of Construction	Predicted Operation Date
Heckington Fen Solar Park (ENO10123)	400MW of installed solar capacity 250MW of energy storage capacity	North Kesteven District Council Boston Borough Council	13th March 2023	19th September 2023	19th September 2024	2025	2027	2027
Boston Alternative Energy Facility (ENO10095)	102MWe gross (80MWe exportable) energy from waste facility with light weight aggregates facility, wharf, waste reception and storage facility and grid connection	Boston Borough Council	23rd March 2021	20th April 2021	Granted Development Consent 6th July 2023	2022 Submitted documentation stated construction start of 2022. No new documentation has been submitted to revise this construction start date.	2026	2026

Project Name and Reference	Project Details	LPA	Application Submission	Start of Examination (actual/predicted)	Estimated deadline for Decision	Predicted start of Construction	Predicted end of Construction	Predicted Operation Date
Mallard Pass Solar Farm (EN010127)	350MW of installed solar capacity	Rutland County Council/ South Kesteven District Council	24th November 2022	16th May 2023	16th May 2024	2026	2028	2028
Cottam Solar Project (EN010133)	600MW of installed solar capacity. Two options have been assessed for battery storage capacity in the Environmental Statement: Option A: 1357MWh Option B: 2773MWh	West Lindsey District Council/ Bassetlaw District Council	12th January 2023	5th September 2023	5th September 2024	2024	2026	2026
Gate Burton Energy Park	531MW of installed solar capacity.	Bassetlaw District Council and West	27th January 2023	4th July 2023	4th July 2024	2025	2028	2028

Project Name and Reference	Project Details	LPA	Application Submission	Start of Examination (actual/predicted)	Estimated deadline for Decision	Predicted start of Construction	Predicted end of Construction	Predicted Operation Date
(EN010131)	500MWh of battery storage capacity	Lindsey District Council						
West Burton Solar Project (EN010132)	480MW of installed solar capacity. 159MWh of battery storage capacity	West Lindsey District Council/ Bassetlaw District Council	21st March 2023	8th November 2023	8th November 2024	2024	2026	2026
Beacon Fen Energy Park (EN010152)	400MW of installed solar capacity Battery storage to be decided	North Kesteven District Council/ Boston Borough Council	Q2/Q3 2024 (proposed)	Q4 2024	Q4 2025	2026	2028	2028
Outer Dowsing Offshore Wind (Generating Station) (EN010130)	1.5 GW wind farm	Windfarm 54km off coast of Lincolnshire. Cable Route corridor to Weston	Q4 2023 (proposed)	Q2 2024	Q2 2025	2026	2030	2030

Project Name and Reference	Project Details	LPA	Application Submission	Start of Examination (actual/predicted)	Estimated deadline for Decision	Predicted start of Construction	Predicted end of Construction	Predicted Operation Date
		Marsh (north of Spalding).						
Temple Oaks Renewable Energy Park (EN010126)	240MW installed solar capacity 480MWh of battery storage capacity	South Kesteven District Council	Advised by Temple Oaks Applicant 2024	2024	2025	Estimated 2026	Estimated 2028 (Scoping Report estimated 24-month construction)	Estimated 2028
Springwell Solar Farm (EN010149)	Approximately 800MW installed solar capacity Battery storage capacity unknown	North Kesteven District Council	Q2 2024 (proposed)	Q4 2024	Q4 2025	2026	2030	2030
Fosse Green (EN010154)	350MW installed solar capacity 480MWh of battery storage capacity	North Kesteven District Council	Q4 2024 (proposed)	Q2 2025	Q2 2026	2031	2033	2033

Project Name and Reference	Project Details	LPA	Application Submission	Start of Examination (actual/predicted)	Estimated deadline for Decision	Predicted start of Construction	Predicted end of Construction	Predicted Operation Date
Tillbridge Solar Project (EN10142)	500MW connection agreement Battery storage to be decided	West Lindsey District Council/ Bassetlaw District Council	Q1 2024 (proposed)	Q3 2024	Q3 2025	2025	2027	2027
One Earth Solar Farm (EN010159)	740MW connection agreement Unknown battery storage capacity	Bassetlaw District Council and Newark and Sherwood District Council	Q1 2025 (proposed)	Q3 2025	Q3 2026	Estimated 2026	Estimated 2027	Estimated 2027[11]
Lincolnshire Reservoir (WA010003)	5km^2 water surface area sized reservoir holding 55 million cubic metres of water.	North Kesteven District Council	Q3 2025	2026	2027	2029	2031	2039-2041

[11] Information taken for the connection date is from National Grid's Transmission Entry Capacity Register.

Project Name and Reference	Project Details	LPA	Application Submission	Start of Examination (actual/predicted)	Estimated deadline for Decision	Predicted start of Construction	Predicted end of Construction	Predicted Operation Date
Vicarage Drove (B/21/0443)	49.9MW installed solar capacity Battery Storage Capacity included in description of development, but no capacity offered.	Boston Borough Council	5th October 2021 (LPA)	N/A	Granted with conditions 17th February 2022 (LPA)	Anticipated the project will be built before construction of the Proposed Development	N/A	N/A
Land West of Cowbridge Road (B/22/0356 and H04-0849-22)	49.9MW installed solar capacity Battery Storage Capacity included in description of development, but no capacity offered. Detail only offers 38No. Battery Storage Containers	Boston Borough Council and South Holland District Council	25th August 2022 (LPA)	N/A	Granted with conditions 21st July 2023 (LPA)	Anticipated the project will be built before construction of the Proposed Development	N/A	N/A

Appendix 2 – Cumulative Land and Agricultural Land Note

UK Land Use from Ground Mounted Solar Panels

Introduction

8.5. In the UK there is around 14GW of solar capacity split between large scale projects to smaller scale rooftop solar[12]. According to analysis by the trade body Solar Energy UK, using Solar Media data[13], 9.7GW of this capacity of the currently 14GW installed capacity comes from ground-mounted solar panels.

Literature Discussion

8.6. Literature shows a small margin of confliction in the amount of land required to produce 1 megawatt (MW) of power as part of a ground mounted solar farm. The literature is discussed below.

- 'Blocking new solar farms could cost bill payers around £5bn a year' (September 2023) Energy and Climate Intelligence Unit states ***"between just over 40,000ha and 70,000ha of land would be needed for meet the solar target*** (based on estimates that 1.8ha of land is needed per 1 MW of solar capacity (The Natural Capital Value of Solar' (2019) Solar Trade Association)), ***or between around 0.5 and 0.7% of English farmland. By contrast, moves to further restrict solar development on grades 1 to 3a farmland effectively prevent development on nearly 4.75 million hectares of farmland. Including grade 3b land in this, as some have previously suggested, would render a further 3.75 million hectares of relatively low grade farmland out of bounds for solar energy generation."***

- Draft National Policy Statement for Renewable Energy EN-3 (March 2023) Department of Energy Security and Net Zero (DESNZ) states at paragraph 3.10.2 that the ***"government expects a five-fold increase in solar deployment by 2035 (up to 70GW)".*** At paragraph 3.10.8 it states ***" a solar farm requires between 2 to 4 acres for each MW of output. A typical 50MW solar farm will consist of around 100,000 to 150,000 panels and cover between 125 to 200 acres. However, this will vary significantly depending on the site, with some being larger and some being smaller. This is also expected to change over time as the technology continues to evolve to become more efficient."***

    - Pegasus Group have calculated from the statement provided from the Draft National Policy Statement for Renewable Energy EN-3 (March 2023) that, if an average of 3 acres is used per 1MW to reach the government's target of increasing solar capacity fivefold, ground-mounted solar could occupy 84,984 hectares of land in the UK. This is equivalent of 0.4% of total land use in the UK.

[12] Department for Energy Security and Net Zero (DESNZ) (April 2022) British Energy Security Strategy.

[13] Solar Media Market Research (July 2023) UK Ground-Mount Solar Completed Assets Report

- 'Everything under the Sun – The Facts about Solar Energy' (March 2022) Solar Energy UK Briefing states that ***"in the UK, new solar farms occupy roughly four acres of land per MW of installed capacity. All solar farms in the UK currently account for 0.08% of total land use."***

- 'Solar Farms and the British Landscape' (June 2021) National Farmers Union state, ***"solar farms actually have a relatively modest 'land take' and environmental impact compared with wind power, bioenergy or even other non-food land use such as golf courses, horse paddocks or pharmaceutical crops."***

- 'The Natural Capital Value of Solar' (2019) Solar Trade Association states that ***"1MW of PV generation capacity occupies a land area of between 4-5 acres. All large-scale ground mounted solar parks across the UK therefore collectively occupy an estimated 13,749 hectares. This is a marginal share of the total UK land area of 24.3million hectares."***

    - Pegasus Group have calculated from the statement provided from the Natural Capital Value of Solar Report, that ground mounted solar panels currently cover approximately 0.06% of total land use in the UK (based on 2019 data and estimates of 7.55GW of ground mounted solar panels present).

Summary

8.7. The literature discussion determines collectively that between 2-5 acres of land is required for a 1MW output. Subsequently, the UK land take from ground mounted solar panels by 2035, when an expected 70GW is installed, will result in approximately 0.4-0.8% of all UK land.

Lincolnshire Land Use from NSIP Solar Projects Estimation

BMV Land in Lincolnshire

8.8. Lincolnshire covers an approximate area of 591,800 hectares (ha). Of this area, agricultural land (based on 1977 MAFF Provisional Agricultural Land Classification Map) takes up 566,200 ha (inclusive of Grade 1-5 ALC land). The National Planning Policy Framework (NPPF) (2023) places Grades 1, 2 and 3a within the definition of the 'best and most versatile agricultural land' (BMV). Across Lincolnshire there is an estimated 402,900 ha (71.2%) of BMV land. This information can be found in **Chapter 16- Land Use and Agriculture** (document reference 6.1.16/ APP-069) of the Heckington Fen Solar Park ES.

Heckington Fen Solar Park and the Availability of BMV Land in Lincolnshire

8.9. The Energy Park site area for the Heckington Fen Solar Park is 524 ha. An area of 257 ha (49%) of the Energy Park is within the BMV category (see Table 16.2 of **Chapter 16- Land Use and Agriculture** (document reference 6.1.16/ REP2-028). This equates to 0.06% of the estimated 402,900 ha of BMV land in Lincolnshire. Of that 257 ha of BMV land in the Energy Park area, only c.3ha of BMV land will be sealed due to the fixed equipment and track during the operational phase and therefore continued agricultural use of the Energy Park remains available. The permanent loss of 3ha of BMV land as a result of the Proposed Development represents less than 0.001% of Lincolnshire's BMV land. The land being used as a result of the Proposed Development is well below the 20 ha threshold contained within Schedule 4 of the Town and Country Planning (Development Management Procedure (England) Order 2015

above which local authorities must consult Natural England before the grant of planning permission (the same threshold is also used by Natural England when informing their consultation on projects).

8.10. The amount of BMV land permanently lost through Heckington Fen Solar Park is determined as not significant when considered at a Lincolnshire level.

Cumulative Effect of the Proposed Development and other NSIP Solar Projects in Lincolnshire

8.11. The purpose of this report is to analyse the interrelationship with other Nationally Significant Infrastructure Projects (NSIPs), in particular solar NSIPs within the region. Below **Table A** sets out the ten other solar NSIP sites and the Proposed Development listed within **Table 1.1** of the **Interrelationship with other Nationally Significant Infrastructure Projects** (document reference ExA. IRReport-D1.V1) included as part of the initial cumulative assessment. Information was gathered from publicly available documents for each DCO application and compiled into **Table A** to show the likely impact on BMV land for each project.

8.12. The ten other NSIP solar projects are at varying levels of completion (i.e., some are at pre-application stage without a Scoping Report submitted, some have a Scoping Report submitted, some are at Statutory Consultation stage, and some are at various stages within the Examination process). Therefore, some projects have limited information available if they are in the pre-application stage.

8.13. Where an ALC detailed survey has not been conducted and subgrade information cannot be provided (i.e., Grade 3a/3b), the Applicant has assumed the land falls into subgrade 3a (i.e., BMV). In some instances, there is no information on the permanent loss of BMV land and therefore this is stated as 'unknown'. However, it is likely a minimal amount of land (less than 1%) will be lost, ranging to potentially no permanent land loss as has been shown consistently across ground mounted solar projects across the UK through the TCPA process. At Deadline 3, column 5 of **Table A** of this Appendix was updated for sites where no information of permanent loss of BMV land within the Solar PV panel area has been provided, to show a worst case of 1% permanent loss. This is consistent with the assessment made in the **ES Technical Note- Updated Information on Cumulative Projects** (document reference ExA.ESTN-Cumulative-D2.V1/ REP2-050). As the Temple Oaks public documentation states that there is no BMV land within its Energy Park site, this 1% loss has not been applied to the Temple Oaks site. It should be noted that the proposals for DCO applications are subject to change, particularly those in the early stages, and this will likely have an effect on figures estimated below. Information provided in this report is correct as of December 2023.

8.14. **Table A** indicates the total Order Limit areas and potential area of the main sites to be used (i.e., area with solar PV panels) for each project. Generally, Order Limit areas given for each project include cable route corridors. The impact on the land used for the cable route is considered temporary and will not be lost. Existing land uses such as arable agriculture is expected to continue on each project once the cable has been laid as seen with schemes local to Heckington Fen including the Triton Knoll and Viking Link projects.

Table A- Cumulative Lincolnshire Land Use from NSIP Solar Projects

Solar NSIP Projects within Lincolnshire	Area of entire Order Limits (ha)	Area of Solar PV panels (excluding cable route corridor) (ha)	Temporary change of use of BMV land within the Solar PV panel area (ha and %)	Permanent loss of BMV land within the Solar PV panel area (ha and %)
Heckington Fen [14] Solar Park	644.79ha	524ha	257ha (49%)	3ha (0.6%)
Mallard Pass Solar[15] Farm (ENO10127) This application is split over Lincolnshire and Rutland County Council's areas	852ha (327.4ha of the order limits is within Lincolnshire)	531 ha	216ha (41%) 101ha (12%) within Lincolnshire County – this figure is used within BMV Lincolnshire land calculations in Appendix 2 of this document.	4.2ha (0.8%)[16]

[14] Information taken from 6.1.16 Environmental Statement - Chapter 16 - Land Use and Agriculture (APP/ 069) of Heckington Fen Solar Park DCO application.

[15] Information taken from 6.1 Environmental Statement Volume 1 – Chapter 12: Land Use and Soils (APP/ 042) of Mallard Pass Solar Fam DCO application.

[16] Information taken from ES Chapter 12, Table 12.1 (APP-042) of Mallard Pass Solar Farm DCO application.

Solar NSIP Projects within Lincolnshire	Area of entire Order Limits (ha)	Area of Solar PV panels (excluding cable route corridor) (ha)	Temporary change of use of BMV land within the Solar PV panel area (ha and %)	Permanent loss of BMV land within the Solar PV panel area (ha and %)
Cottam Solar [17] Project (EN010133)	1451ha	1179.7ha (across Cottam sites 1,2 3a and 3b)	4ha (0.3%)	4ha (0.3%)[18]
Gate Burton Energy[19] Park (EN010131)	824ha	652ha	73.6 ha (11%)	2ha (0.3%)
West Burton Solar Project[20] (EN010132)	886ha	757.8ha (across West Burton 1, 2 and 3 sites)	199.5ha (26.4%)	2ha (0.3%)
Beacon Fen Energy Park[21] (EN010152)	Unknown[22]	505.51ha	149.88ha (28.3%)	1.5ha (0.3%)

[17] Information taken from 6.2.9 ES Chapter Soils and Agriculture (APP/ 054) of Cottam Solar Project Fam DCO application.

[18]. REP_010 in Table 19.2 and paragraph 19.7.7 states that 47.9ha of land will be used for the substation, BESS and access tracks which will not be used for the continued agricultural use during the lifetime of the Scheme. Of this 4ha is BMV which will be used for access tracks.

[19] Information taken from 3.1 Environmental Statement Volume 1 Chapter 12: Socio Economics and Land Use (APP/ 021) of Gate Burton Energy Park DCO application.7

[20] Information taken from 6.2.9 Environmental Statement Chapter 19: Soils and Agriculture (APP/057) of West Burton Solar Project DCO application.

[21] Information taken from Scoping Report of Beacon Fen Energy Park DCO application. ALC survey has been undertaken of solar area.

[22] Scoping Report estimated total areas as 1,036ha. In the summer 2023, the Applicant confirmed on the Beacon Fen project webpage withdrawal of 'Beacon Fen South' roughly 50% of the land for solar and storage. Area of solar PV panels and BMV area of solar PV panels is associated with 'Beacon Fen North' site.

Solar NSIP Projects within Lincolnshire	Area of entire Order Limits (ha)	Area of Solar PV panels (excluding cable route corridor) (ha)	Temporary change of use of BMV land within the Solar PV panel area (ha and %)	Permanent loss of BMV land within the Solar PV panel area (ha and %)
Temple Oaks Renewable Energy Park[23] (EN010126)	350ha	280ha	Oha (0%)[24]	Oha (0%)
Springwell Solar Farm[25] (EN010149)	1702ha	1702ha[26]	Estimated 1517ha (89%)[27]	15ha (0.9%)
Fosse Green Energy[28] (EN010154)	Entire Order Limits not known as cable route corridor to be determined.	1003ha	Estimated 1003ha (100%)[29]	10ha (0.1%)

[23] Information taken from Scoping Report of Temple Oaks Renewable Energy Park DCO application.

[24] Total area of Order Limits identified as Grade 3b from Detailed Site Survey (paragraph 70, page 11 of Scoping Report)

[25] Information taken from Scoping Report of Springwell Solar Farm DCO application.

[26] Scoping Report notes the 1702ha extends across the three parcels (Springwell West, Springwell Central and Springwell East). The cable route corridor does not appear to be included at this stage.

[27] Detailed ALC survey being undertaken at the time of the Scoping Report. Based on National level ALC data it is estimated 497ha (32.8%) is Grade 2 land, and 1020ha (67.2%) Grade 3 land. For the purpose, of this it is assumed the Grade 3 area is subgrade 3a.

[28] Information taken from Scoping Report of Fosse Green Energy DCO application.

[29] No detailed ALC survey provided in the Scoping Report. Based on National level Provisional ALC data it is a mixture of Grades 2 and 3 land. For the purpose, of this it is assumed the Grade 3 area is subgrade 3a.

Solar NSIP Projects within Lincolnshire	Area of entire Order Limits (ha)	Area of Solar PV panels (excluding cable route corridor) (ha)	Temporary change of use of BMV land within the Solar PV panel area (ha and %)	Permanent loss of BMV land within the Solar PV panel area (ha and %)
Tillbridge Solar Project[30] (EN10142)	Entire Order Limits not known as cable route corridor to be determined.	900 ha	68ha (7.5 %)	11ha (1.2%)
One Earth Solar Farm (EN010159) This application is split over Lincolnshire and Nottinghamshire County Council's areas	1500 ha[31]	1500ha across Lincolnshire and Nottinghamshire County Council areas 250ha [32] within Lincolnshire County	1455ha (97%) [33] across Lincolnshire and Nottinghamshire County Council areas 250ha (17%) within Lincolnshire County – this figure is used within BMV Lincolnshire land calculations in	2.5ha (0.2%)

[30]. Information taken from two sources: Chapter 14 Socio-Economics and Land Use of the Preliminary Environmental Information Report (PEIR) on the Tillbridge Solar Project Applicant website Interim detailed ALC survey report has been undertaken for the areas of predicted BMV land take. REP5-042 from the Gate Burton submitted documents to the ExA: Interrelationship Report states that total area of the Tillbridge is site 1,400ha with 900ha developable area and 500ha for ecology, landscape & heritage offsets. This Gate Burton Interrelationship Report has been drafted in collaboration with the applicant for Tillbridge Solar.

[31] Information taken from Scoping Report of One Earth Solar Farm DCO application.

[32] Information taken from Scoping Report of One Earth Solar Farm DCO application.

[33] Based on National level Provisional ALC data it is estimated 1455ha (97%) is Grade 3 land, and 45ha (3%) Grade 4 land. For the purpose, of this assessment, it is assumed the Grade 3 area is subgrade 3a.

Solar NSIP Projects within Lincolnshire	Area of entire Order Limits (ha)	Area of Solar PV panels (excluding cable route corridor) (ha)	Temporary change of use of BMV land within the Solar PV panel area (ha and %)	Permanent loss of BMV land within the Solar PV panel area (ha and %)
			Appendix 2 of this document.	

8.15. From the information provided in **Table A**, the ten other solar NSIP projects and Heckington Fen Solar Park combined main site areas equates to utilise approximately 8,081ha of land within Lincolnshire. Of the 8,081ha of cumulative land for the NSIP sites solar PV panelled areas, approximately 3,623ha has to date been identified as a worst case[34] to be BMV land in Lincolnshire. It is estimated that approximately 55.2ha of this cumulative BMV land will be permanently lost in Lincolnshire.

8.16. To equivalate, the worst-case cumulative temporary use of BMV land at a regional level in Lincolnshire, if all eleven NSIP solar sites were granted Development Consent, would be approximately 0.90% [35] of the total BMV land in Lincolnshire. The permanent loss of cumulative BMV land would be approximately 0.014%[36] of the total BMV land in Lincolnshire.

8.17. At a national level, the total cumulative land use for the eleven NSIP sites solar PV panelled areas (8,081ha) in comparison to the UK total land area (24.3million ha) is 0.03%[37].

8.18. A summary **Table B** is presented below of the key cumulative land take statistics.

Table B: Conclusions on cumulative effects on BMV land in Lincolnshire

	Change of Use of BMV Land		Permanent Loss of BMV Land	
	Solar PV panel area on BMV land (ha)	Proportion of BMV land in Lincolnshire (%)	Solar PV panel area on BMV land(ha)	Proportion of BMV land in Lincolnshire (%)
Heckington Fen Solar Park	257ha	0.06%	3ha	0.001%
All NSIP Solar project applications (11) identified in Lincolnshire	3,6237ha	0.90%	55.2ha	0.014%

8.19. It has therefore been determined that the BMV land use take of Heckington Fen Solar Park individually is not significant, and when considered on a cumulative level with the other ten NSIP solar schemes it remains as not significant when compared to the total proportion of

[34] Worst-case as no detailed site date available and so utilising the MAFF BMV land data or DEFRA 1988 data. It has also been assumed where land graded as Grade 3, this is Grade 3a (BMV) not Grade 3b (low grade).

[35] Calculation is (3,6237/402,900 x 100)

[36] Calculation is (55.2/402,900x100)

[37] Calculation is (8,081/24,300,000 x100)

BMV land available in Lincolnshire. The land use for the Energy Park at Heckington Fen Solar Park will continue to be used for agricultural production (sheep grazing) when operational, and once decommissioned the land will be restored.

8.20. Additionally, for completeness, the Lincolnshire Reservoir has been estimated to cover an area of 972ha[38] of land take. It has been estimated that this area includes 18ha of Grade 2 land and 954ha of Grade 3 land[39]. If the Lincolnshire Reservoir is considered in combination with the eleven NSIP solar schemes within Lincolnshire, this would cover a land use change of 9,053ha (1.6%[40]) within Lincolnshire. As Lincolnshire Reservoir has the potential to be 100% BMV land based on Provisional ALC mapping, this equivalates to 4,595 ha (1.14)%[41] of potential BMV land use in Lincolnshire, of which 0.25%[42] of the 1.14% would be permanent loss of BMV land in Lincolnshire.

8.21. It should be noted that due to the early pre-application stage for some of the NSIP projects listed in this **Appendix 2,** there is no Detailed ALC survey information available as of yet for some of these projects in this assessment. Therefore, for Springwell Solar Farm, Fosse Green Energy, One Earth Solar Farm and Lincolnshire Reservoir the Provisional ALC mapping has been relied upon to estimate grading of the land. To assess a worst-case scenario, where Grade 3 land has been listed this has been presumed to be subgrade 3a, i.e., BMV land. The four NSIP sites with Provisional ALC information used collectively attribute to 3,6232ha of potential BMV land used in Lincolnshire. The eleven NSIP solar sites and Lincolnshire Reservoir collectively, if granted Development Consent, could create 4,595ha of potential BMV land being used in Lincolnshire. Therefore, the four NSIP sites with BMV calculations relied upon using Provisional ALC data (e.g., 3,623ha), attributes to 79%[43] of the 4,595ha of total potential BMV land use from the eleven solar NSIP schemes and Lincolnshire Reservoir in Lincolnshire. Therefore, there is a level of uncertainty in the quantity and percentages of potential BMV land use in Lincolnshire.

8.22. The overall calculation of 0.90% of total BMV land temporarily changed from the eleven NSIP solar schemes withing Lincolnshire, and the 1.14% of total BMV land used from the eleven NSIP solar schemes and Lincolnshire Reservoir, shows a worst-case scenario, and the actual quantity could be a lot less.

Conclusion

8.23. In conclusion, this cumulative agricultural note identifies on a national level it is estimated between 0.4-0.8% of all UK land would be needed to be taken to accommodate the target of 70GW installed solar capacity by 2035. The eleven NSIP solar sites assessed in this note

[38] Pegasus Group estimation using ArcGIS Pro to measure the pink defined area of the Lincolnshire Reservoir from the 'Proposed Site Area Map (October 2022)' of Lincolnshire Reservoir project website - https://www.lincsreservoir.co.uk/assets/images/downloads/Lincolnshire-reservoir-proposed-site-detailed-map-Oct-2022.pdf

[39] Based on National level Provisional ALC data. For the purpose of this assessment, it is assumed the Grade 3 area is subgrade 3a.

[40] Calculation is (9,553/591,800 x100)

[41] Calculation is (3,6237+972/402,900 x100)

[42] Calculation is (972+55.2/ 402,900 X100)

[43] Calculation is (3,623/4,595 X100)

within Lincolnshire, if all were granted Development Consent, would cumulatively take up approximately 0.03% of the UK land area and provide approximately 5.4GW of power.

8.24. Within Lincolnshire, Heckington Fen Solar Park would temporarily change the use of 257ha of BMV land from the county with the implementation of the Energy Park. This equivalates to approximately 0.06% of Lincolnshire's BMV total land available temporarily used, and therefore is not significant. If Heckington Fen Solar Park is considered cumulatively with the other ten NSIP solar projects in Lincolnshire, this equivalates to potentially 0.91% of Lincolnshire BMV total land being used, and therefore this is not significant.

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