Preliminary Environmental Information Report Volume 2

Appendix 8.8 Baseline Report – Badger Survey [Redacted]

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Contents

1 Introduction

1.1 Project description

1.1.1 LionLink is a proposed electricity interconnector between Great Britain and the Netherlands that would supply up to 2 gigawatts (GW) of electricity and would connect to Dutch offshore wind via an offshore converter platform in Dutch waters (hereafter the Project).

1.1.2 The Proposed Scheme (defined as the part of the Project within the British jurisdiction) would involve the construction of the proposed Converter Station and the installation of offshore and onshore proposed Underground High Voltage Direct Current Cables (HVDC) to the proposed Converter Station and the proposed Underground High Voltage Alternating Current Cables (HVAC) between the proposed Converter Station and the Kiln Lane Substation.

1.2 Overview of survey approach

1.2.1 An Ecology Survey Strategy (ESS) was produced in March 2023, which explained the approach for ecological surveys to inform the baseline for the Proposed Onshore Scheme. The ESS set out the rationale and methods for how and when relevant ecological features would be identified to inform the design process. The aim of the ESS was to ensure that sufficient baseline data would be available to embed the mitigation hierarchy within the design, i.e. to avoid adverse impacts to valuable ecological features wherever possible, and to minimise any unavoidable adverse impacts.

1.2.2 Initial baseline ecological surveys commenced in 2023 on the basis of the Proposed Onshore Scheme Scoping Boundary (shown in Figure 1-2 of the EIA Scoping Report (Ref 1)), which included the proposed Landfall Site at Walberswick and the Landfall Site at Southwold. Subsequently, the Draft Order Limits (DOL) has been fixed in late 2024, reflecting design development and representing a substantial reduction on the Proposed Onshore Scheme Scoping Boundary, including the discounting of the Landfall Site at Southwold and the associated proposed Underground Cable Corridor (refer to **Chapter 3 Alternatives and Design Evolution**).

1.2.3 The initial stage of the ESS was to undertake Preliminary Ecological Appraisal (PEA) of all accessible areas within the Proposed Onshore Scheme Scoping Boundary, comprising a desk study for existing biological records and a field survey. PEA of most of the boundary was completed in 2023, with additional PEA surveys in 2024 to fill data gaps for previously inaccessible land. PEA field survey comprised:

a. Mapping of the habitat types present following a published and recognised habitat classification that is appropriate for the site's location;

b. Scoring the condition of habitat types present in accordance with Defra Metric criteria to inform the Biodiversity Net Gain (BNG) assessment;
c. An assessment of the possible presence of protected or priority species, and (where relevant) an assessment of the likely importance of habitat features present for such species;
d. Mapping of any stands of non-native invasive plant species; and
e. Recording of any incidental sightings of priority or protected species, or field signs of such species.

1.2.4 In relation to badger (*Meles meles*), PEA surveys included the mapping of any potential setts or field signs encountered.

1.2.5 Desk study records and field sign results from the PEA were reviewed at the end of the 2023 survey season to identify locations that were known or likely to support badger.

1.2.6 Siting and routeing appraisals and other design development work was progressed in parallel with the PEA surveys in 2023, guided by emerging survey results. This design work refined the likely boundaries of the proposed Landfall Site, the proposed Underground HVDC and HVAC Cable Corridors and associated temporary works.

1.2.7 The scope of badger surveys for 2024 was determined on the basis of the results of the PEA compared with the emerging refined corridor for the Proposed Onshore Scheme in late 2023, which still included the discounted Landfall Site at Southwold and the proposed Landfall Site at Walberswick. Potential main setts were scoped in for further detailed survey in 2024 where there remained a risk of potential impacts to these features once embedded avoidance measures and likely boundary refinement were taken into account. This means that the spatial scope of these surveys responded to the evolving design to minimise unnecessary further survey of ecological features where it was clear that significant adverse impacts would be avoided, in accordance with the principles of the ESS.

1.3 Purpose and scope of this document

1.3.1 The purpose of this report is to present the results of badger surveys undertaken for the Proposed Onshore Scheme. The objectives of this report are to:

a. Determine the location of badger setts and field signs (such as latrines, dung pits, faeces, above ground nests, footprints, foraging signs and hairs) within the Proposed Onshore Scheme Scoping Boundary.
b. Classify the ecological function and current level of use of any potential badger setts which may be impacted.
c. Provide sufficient information to inform an assessment of potential impacts to badger as a result of the Proposed Onshore Scheme and design appropriate mitigation measures (where required).

1.4 Legislation

1.4.1 A framework of international, national and local legislation and planning policy guidance exists to protect and conserve wildlife and habitats. Legislation relevant to and discussed within this report are:

a. The Protection of Badgers Act 1992 (Ref 2). This makes it an offence to kill, injure or take a badger; attempt to kill, injure or take a badger; or to damage or interfere with a sett. The Act defines a badger sett as 'any structure or place which displays signs indicating current use by a badger'.

1.5 Conservation status

1.5.1 Badgers are widespread in England, being most common in the south-west and rarer to the north and east. Badger crimes (baiting, shooting, poisoning), badger culling and increasing rates of housing and road development pose threats to badger populations (Ref 3).

1.6 Species-specific ecology

1.6.1 Badgers generally live in groups of three to ten individuals that occupy their own territories and defend them from other neighbouring badger groups. Each social group occupies a main sett used all year round and which has a number of 'satellite' setts that are used intermittently, sometimes remaining in a state of disuse for extended periods before being reoccupied. These are used as emergency shelter from threats such as predators or rival badger groups or are used for periods where a badger may wish to be away from the rest of the social group, such as if they are ill, or giving birth to young (Ref 3).

1.6.2 Badgers create latrines which are shallow pits where faeces and other excretions that carry the badgers' scent are deposited. These may be created anywhere within the badgers' territory but are usually concentrated on their territory boundaries. Latrines in these locations provide an opportunity for information exchange between neighbouring badger groups and these latrines tend to be more regularly visited. Latrines are usually found near conspicuous landmarks, field and woodland margins and at fence lines, and often occur on well-used paths that may represent the boundary between two territories (Ref 3).

2 Methodology

2.1 Desk study

2.1.1 A detailed biological records search was requested from the Suffolk Biodiversity Information Services (SBIS) in January 2023 to inform the design and assessment of the Proposed Onshore Scheme. This included a search for records of badger from within a 2km radius of the Proposed Onshore Scheme Scoping Boundary. An updated data search was conducted in April 2025 for a 2km search area of the Proposed Onshore Scheme Scoping Boundary, limited to the Walberswick option only (i.e. excluding the discounted Landfall Site at Southwold).

2.2 Field study

2.2.1 Badger surveys were undertaken between 14 June 2024 and 31 July 2024, in two defined areas where potential main badger setts had been recorded as part of the PEA surveys, and which remained at risk of impacts from the Proposed Onshore Scheme at this stage of design development. These areas are hereby referred to as Survey Area 1 which comprises agricultural fields to the north of Reydon at the north of the Proposed Onshore Scheme, and Survey Area 2 which comprises a woodland to the west of Knodishall at the south of the Proposed Onshore Scheme. Survey Area 1 covers the setts within Sheet 1 of **Annex A: Badger Evidence Location Plan** and Survey Area 2 covers the setts within Sheet 2.

2.2.2 The surveys were led by a suitably experienced and qualified ecologist.

2.2.3 The surveys were undertaken in accordance with current best practice guidance (Ref 4), and involved a detailed investigation of the two survey areas to identify evidence of badger residence, foraging or territorial activity. Particular emphasis was placed on locating badger setts, paths and signs of territorial activity, such as latrine sites. Evidence of badgers, which can include setts, latrines, dung pits, faeces, above ground nests, footprints, foraging signs, hairs and scratching, was recorded using a handheld, GPS-enabled device and ESRI Field Maps software. Individual entrances to setts were mapped in order to provide detail on the extent and activity of the full sett.

2.2.4 Where setts were identified, they have been classified in accordance with definitions set out in best practice guidance (Ref 4). **Table 2.1** summarises these definitions.

Table 2.1: Classification of badger setts.

Sett classification	Definition
Main sett	These are in continuous use. They are large, well-established, often extensive and may have large spoil heaps outside the entrances. There are likely to be well-worn paths leading to the sett. It is where the cubs are most likely to be born. There is generally only one main sett per social group of badgers. Main setts are usually built in very specific positions, where there is the right combination of soil (to facilitate drainage and ease of digging), aspect, slope and cover. Since suitable sett sites are at a premium, main setts are usually long-established, and may have been in use for decades or even centuries.
Annexe sett	These occur in close association with the main sett (usually within 150m) and are linked to the main sett by clear well-used paths. Annexe setts consist of six holes on average, but they are not necessarily in use all the time, even if the main sett is very active. If a second litter of cubs are born, this may be where they are reared.
Subsidiary sett	These comprise five holes on average but are not in continuous use and are usually some distance from the main sett (50m or more). There is no obvious path connecting them to the main sett and their ownership can often only be determined by bait marking. For the purpose of this assessment, a sett with more than two entrances was classified as a subsidiary sett, if it also met other relevant criteria.
Outlying sett	These consist of generally only one or two holes. They can be found anywhere within the territory and usually have small spoil heaps, indicating that they are not very extensive underground. There are no obvious paths connecting them to other setts, they are only used sporadically and are often used by foxes or rabbits when not occupied by badgers. For the purpose of this assessment, a sett with one or two entrances was classified as an outlier sett, if it also met other relevant criteria

2.2.5 The level of activity for individual sett entrances was recorded, based on the definitions set out in best practice guidance (Ref 4). **Table 2.2** summarises these definitions.

Table 2.2: Defined levels of activity for sett entrances.

Sett classification	Definition
Well-used holes	These are clear of any debris or vegetation, are obviously in regular use and may or may not have been excavated recently.
Partially-used holes	These are not in regular use and have debris such as leaves and twigs in the entrance or have moss and/or other plants growing in or around the entrance. They could be in regular use after a minimal amount of clearance.

Sett classification	Definition
Disused holes	These have not been in use for some time, are partially or completely blocked and could not be used without a considerable amount of clearance. If the hole has been disused for some time, all that may be visible is a depression in the ground where the hole used to be and the remains of the spoil heap, which may be covered in moss or plants.

2.2.6 The overall level of activity for each sett was recorded based on the definitions set out in **Table 2.3**.

Table 2.3: Defined levels of activity for sett entrances.

Sett classification	Definition
Active sett	The sett is in continuous use, with at least some well-used holes.
Partially-active sett	The sett is in infrequent use, with no well-used holes but some partially-used holes.
Disused sett	The sett is not in current use, with no well-used holes or partially-used holes.

2.3 Assumptions and limitations

2.3.1 Sett A and sett D were difficult to access due to the density of vegetation, therefore some field signs may be obscured, however active setts remained visible, allowing surveyors to have confidence in their classification of the sett type. Sett E and Sett F was difficult to access due to the density of vegetation and difficult terrain obscuring the sett entrances, therefore number of entrances and field signs may have been underestimated. The location of these setts is shown within **Annex A: Badger Evidence Location Plan.**

3 Results

3.1 Desk study

3.1.1 Data returned from SBIS indicated the presence of badger within the 2km study area, with 76 records for badger dated within the last 10 years. This includes 10 records for locations within or directly adjacent to the Proposed Onshore Scheme Scoping Boundary, which included at least two active setts near Friston, although they were not noted to be main setts. The remaining records were from Friston, South Cove, Middleton, Benhall, Westleton, Leiston, Yoxford, Kelsale-cum-Carlton, Saxmundham and Frostenden.

3.1.2 Data included two records of main setts, including one with 27 holes which was very active at the time it was noted in 2018. This sett is approximately 1.97km south-west from the Proposed Onshore Scheme Scoping Boundary. The other main sett was recorded in 2021 near Saxmundham, at 1.01 km north-west from the Onshore Scheme Scoping Boundary. An additional sett where a female and cubs were observed was identified in 2020 near Mill Common, Wenhaston, which is located 680m west from the Onshore Scheme Scoping Boundary.

3.2 Field study

3.2.1 The field surveys recorded a total of seven badger setts within the two survey areas. These are described within the two tables below (**Table 3.1** and **Table 3.2**) and shown within **Annex A: Badger Evidence Location Plan**.

Table 3.1: Classification of setts within Survey Area 1

Sett ref	OS Grid Reference	Sett Type	Number of entrances	Level of activity	Justification for classification and level of activity
Sett A	[redacted]	Outlying sett	1	Partially active	1 partially-used hole. Cobwebs were present across the entrance. No clear connectivity between this sett and another.
Sett B	[redacted]	Outlying sett	2	Active	1 well-used hole and 1 disused hole with twigs blocking the entrance. No clear connectivity between this sett and another.
Sett C	[redacted]	Outlying sett	1	Partially active	1 partially-used hole with cobwebs and leaves across the entrance. Badger faeces was observed outside the entrance to the sett. No clear connectivity between this sett and another.
Sett D	[redacted]	Subsidiary sett	4	Partially active	3 partially-used holes and one disused hole with cobwebs and

Sett ref	OS Grid Reference	Sett Type	Number of entrances	Level of activity	Justification for classification and level of activity
					vegetation covering the entrances. One additional hole was noted that is likely to be too small to be used by badger. Sett appeared to have been in use relatively recently. No clear connectivity between this sett and another.

Table 3.2: Classification of setts within Survey Area 2

Sett ref	OS Grid Reference	Sett Type	Number of entrances	Level of activity	Justification for classification and level of activity
Sett E	[redacted]	Main sett	17	Active	16 well-used holes and 1 partially-used hole. Clear connectivity between holes, the majority of which have smooth soil around the entrances indicating regular usage. Spoil was also noted around several holes.
Sett F	[redacted]	Annexe sett	1+	Partially Active	Present to the south-west of main sett. The sett was unable to be fully surveyed and was observed from a distance as access was not possible. Clear connectivity between this sett and main sett.

3.2.2 [redacted]

3.2.3 [redacted]

3.2.4 [redacted]

3.2.5 [redacted]

3.2.6 [redacted]

3.2.7 [redacted]

4 Conclusions

4.1.1 In each of the two areas subject to detailed badger survey in 2024, extensive badger activity including setts was identified.

4.1.2 Within Survey Area 1 north of Reydon, several outlying setts and a subsidiary sett were identified, corresponding to the location of a potential main sett recorded during the PEA survey. Detailed inspection determined that the size and activity level of these setts did not constitute a main sett.

4.1.3 Within Survey Area 2 west of Knodishall, a main sett was confirmed, with numerous active holes identified. An associated annexe sett was also identified with direct connectivity to the main sett.

Annex A: Badger Evidence Location Plan

Glossary and Abbreviations

Term	Definition
BNG	Biodiversity Net Gain
ESS	Ecology Survey Strategy
GW	Gigawatts
HVAC	Station and Underground High Voltage Alternating Current Cables
HVDC	High Voltage Direct Current Cables
PEA	Preliminary Ecological Appraisal
The Proposed Scheme	The term Proposed Scheme will be used when referring to the GB scheme components as a whole and will not include the Dutch components.
The Proposed Onshore Scheme	The term used when referring to the onshore components of the Proposed Scheme.
SBIS	Suffolk Biodiversity Information Services (SBIS)

References

Ref 1 National Grid (2024) LionLink Environmental Impact Assessment Scoping Report Volume 1 Main Text. Available at: https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN020033/documents (Accessed May 2025).

Ref 2 "The Protection of Badgers Act," 1992. (Online). Available: https://www.legislation.gov.uk/ukpga/1992/51/contents (Accessed October 2024).

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Ref 4 P. C. a. D. J. S. Harris, Surveying Badger, London: Mammal Society, 1989.

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