FENWICK SOLAR FARM

Fenwick Solar Farm

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Environmental Statement

Volume III Appendix 8-4: Badger Report

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Prepared for:
Fenwick Solar Project Limited

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Executive Summary

ES1 This Badger Report for the Fenwick Solar Farm Scheme, prepared by AECOM Limited, assesses the ecological constraints related to badgers within the Order limits in Fenwick, Doncaster. This report forms a technical appendix to **Environmental Statement (ES) Volume I Chapter 8: Ecology [EN010152/APP/6.1]**. The primary aim is to identify the presence of any Badger setts within the Order limits, identify any mitigation requirements and ensure compliance with relevant guidelines.

ES2 Field surveys were undertaken within the Order Limits (Solar PV Site and Grid Connection Corridor) and up to 50 m outside of the Solar PV Site, where access allowed). Field surveys were supported by a desk study of existing records of Badger within a 2 kilometre (km) radius of the edge of the Order Limits.

ES3 Badgers and their setts are afforded protection under the Protection of Badgers Act 1992 (Ref. 1).

ES4 To determine whether Badgers are present within the Survey Area, Badger surveys were undertaken in February/March 2023 and April/May 2024. Any additional observations made during ongoing surveillance of the Order limits are also reported.

ES5 The results of the bager survey are presented in **Volume III Appendix 8-4: Badger Report – Annex A (Confidential) [EN010152/APP/6.3]**, which is provided separately to key stakeholders.

1. Introduction

1.1 Background

1.1.1 This report has been prepared by AECOM on behalf of Fenwick Solar Project Limited (hereafter referred to as the 'Applicant'), to assess the ecological constraints in connection with Fenwick Solar Farm (hereafter referred to as 'the Scheme'), located in Fenwick, Doncaster, as shown by the Order limits on Figure 8-2-1 in **Volume III Appendix 8-4: Badger Report – Annex A (Confidential) [EN010152/APP/6.3]**. This report forms a technical appendix to **ES Volume I Chapter 8: Ecology [EN010152/APP/6.1]**.

1.1.2 The Preliminary Ecological Appraisal identified the need for follow-up surveys to determine the potential Impacts of the Scheme on Badger (*Meles meles*), a species protected under the Protection of Badgers Act 1992 (Ref. 1). Therefore, AECOM was instructed by the Applicant to undertake a survey for Badger within the Order limits to determine the presence or likely absence of Badger.

1.2 The Scheme

1.2.1 The proposed Scheme includes three locations (collectively referred to as the 'Order limits'):

a. The land located east of Fenwick and immediately south of the River Went (hereafter referred to as the 'Solar Photovoltaics (PV) Site');

b. The land between the Solar PV Site and the existing compound for Thorpe Marsh Substation (hereafter referred to as the 'Grid Connection Corridor'); and

c. The land located within the existing compound for Thorpe Marsh Substation (hereafter referred to as the 'Existing National Grid Thorpe Marsh Substation').

1.2.2 The Scheme comprises the installation of Solar PV Panels, On-Site Cables, Battery Energy Storage System (BESS) Area, On-Site Substation, Grid Connection Line Drop, and other supporting infrastructure including fencing, access tracks, drainage, and biodiversity and landscaping enhancements.

1.3 The Order Limits

1.3.1 In total, the Order limits comprises approximately 509 hectares (ha) of land.

1.3.2 At the closest point, the Solar PV Site Boundary is located immediately adjacent to the east of the village of Fenwick and approximately 1 km west and 1 km north of the villages of Sykehouse and Moss respectively. It is approximately 407 hectares (ha) in size.

1.3.3 The Grid Connection Corridor is approximately 95 ha in size and runs for approximately 6.3 km in length, from the Solar PV Site to the existing National Grid Thorpe Marsh Substation.

1.3.4 The Existing National Grid Thorpe Marsh Substation is approximately 6 ha in size and centred on the approximate NGR SE 60537 09736.

1.3.5 The Solar PV Site comprises arable and pasture fields, and small patches of broadleaved woodland, with the River Went delineating the northern Site Boundary, and two large drains running through the eastern part of the Order limits (Fenwick Common Drain, and Fleet Drain).

1.3.6 The Solar PV Site is bounded by further arable and pasture fields to the east, west and south, and the wider area consists of a landscape that is much the same in terms of land use. The small town of Askern is located approximately 3 km to the southwest of the Order limits and nearby rural villages Moss and Balne are present within a few kilometres to the south and north respectively.

1.3.7 The Grid Connection Corridor runs South from the Solar PV Site to the Thorpe Marsh Substation and crosses cropland, pasture, hedgerows and patches of broadleaf woodland.

1.3.8 The Order limits also includes a section of highway at the junction of the A19 and Station Road in the town of Askern to allow for abnormal indivisible load (AIL) vehicle access and escort. As the works would be limited to temporary traffic signal and banksman control for the period of AIL delivery, no impacts on Badger are anticipated, and therefore this area is not assessed further.

1.4 Scope of this Report

1.4.1 The aim of this the badger survey is to determine the presence or absence of Badger within the Order limits (see Section 3.1).

1.4.2 The objectives, therefore, are to:

a. Provide information on relevant legislation, methods for desk and field-based assessments and limitations to the survey

b. Review existing ecological data to identify any records of Badger within the Order limits (**Volume III Appendix 8-4: Badger Report – Annex A (Confidential) [EN010152/APP/6.3]**); and

c. Identify the presence of Badger and Badger setts within the Order limits (**Volume III Appendix 8-4: Badger Report – Annex A (Confidential) [EN010152/APP/6.3]**).

1.4.3 Combined this is being used to:

a. Determine the nature conservation value of the Order limits for Badger; and

1.4.4 The potential impacts of the Scheme on Badger and Badger setts and any required mitigation.

1.4.5 Owing to the confidentiality surrounding the reporting of locations of badger, the survey results, evaluation and conclusions have been redacted from this report and are included as a confidential annex (**Volume III Appendix 8-4: Badger Report – Annex A (Confidential) [EN010152/APP/6.3]**). This annex will be provided separately to specific stakeholders only (i.e., local authority, county ecologists and Natural England).

2. Relevant Legislation, Policy and Guidance

2.1 Legislation

2.1.1 Badgers and their setts are protected under various legislation, drawn together under the Protection of Badgers Act 1992 (Ref. 1), which protects Badgers from deliberate harm and injury. Restrictions under this Act, which apply to development, make it an offence to:

a. Wilfully kill, injure, possess or cruelly ill-treat a Badger, or attempt to do so;

b. Interfere with a sett by damaging or destroying it;

c. Obstruct access to, or an entrance of, a sett; and

d. Disturb a Badger when it is occupying a sett.

2.1.2 This legislation prevents development on a site occupied by Badgers without any mitigation being agreed and undertaken prior to development commencing. In most cases it should be possible to avoid the offences listed, such as avoiding disturbance to badgers or damage or blockage of their sett. If an offence is likely to occur, then a licence to close a sett would be required from Natural England. It would also be necessary to undertake appropriate mitigation that comprises construction of artificial sett(s).

2.1.3 The Protection of Badgers Act 1992 was introduced to combat the cruel ill-treatment and persecution to which Badgers are sometimes subjected. This report identifies the location of a number of Badger setts and therefore to safeguard these animals, the report should be treated as confidential and not released into the public domain.

2.2 Licensing Requirements

2.2.1 Licences to permit otherwise prohibited actions under the Protection of Badgers Act (Ref. 1) may be granted by Natural England in order to close down setts, or parts of setts, prior to development or to permit activities close to a Badger sett that might result in disturbance. A licence will be required if a sett is likely to be damaged or destroyed in the course of development or if the Badger(s) occupying the sett will be disturbed.

2.2.2 Whilst a licence can be applied for at any time of year, any closure of a Badger sett must be undertaken between 1 July and 30 November and can only be undertaken under a licence issued by Natural England, prior to the onset of works.

2.2.3 Any licence application must include a method statement that clearly describes how the proposed works will interfere with the Badger sett and also demonstrates how any mitigation work will be carried out.

2.2.4 All licence applications must contain the following information:

a. The likely status of the setts (whether main, subsidiary, annexe or outliers) and whether they are active or not. The number of entrance holes at each sett should be provided;

b. Indicate and specify which sett(s) are to be disturbed, damaged, destroyed or obstructed. Specify any setts that will be reopened at the end of the works;

c. Show the location of any mitigation work e.g. artificial setts, new foraging habitat, water sources etc.;

d. A detailed schedule for all proposed sett interference, stating how and when each Badger sett will be affected and indicating the type of machinery or tools to be used and the distance from the sett(s). Explain the rationale for the necessary Badger interference. The dates of any proposed mitigation work must also be included (if applicable);

e. Maintenance and monitoring procedures should also be clearly defined to ensure that Badgers do not regain access to excluded setts before and during site clearance and sett destruction; and

f. The mechanisms for monitoring whether the proposed work has ensured that all licence conditions are met.

2.3 Local Biodiversity Action Plan

2.3.1 The Scheme is located within the county of South Yorkshire. Formerly, the Doncaster Biodiversity Action Plan (BAP) (Ref. 2) provided context to inform identification of threatened or uncommon species of local relevance, alongside priorities for conservation and enhancement targeted at a local level in South Yorkshire. However, under the Environment Act 2021 (Ref. 3), these are being replaced by Local Nature Recovery Strategies (LNRS), which are a system of spatial strategies for nature which will support delivery of Biodiversity Net Gain (BNG) and provide more focussed action for nature recovery. Whilst this is still being developed for South Yorkshire and with no specific habitat or species plans currently in place, this report references the Doncaster BAP, for which Badger is listed as a protected species, but with no specific action plans in place (Ref. 2).

3. Methods

3.1 Characterising the Baseline

3.1.1 Within this report, the following terminology is used when referring to the geographic areas within which the assessments were made:

a. Study Area – the area within the Order limits and a 2 km radius from the edge of the Order Limits which was subject to collection of background information e.g. desk study records for Badger to supplement the findings of the survey work;

b. Zone of Influence (ZoI) – the area over which Badger may be affected by the Scheme which, using professional judgement, this is likely to be no greater than 50 metres (m) from the Order Limits. Through review of likely impacts of the Scheme and results of the desk study, the scope of field surveys was then defined; and

c. Survey Area – this is the area within which survey work was undertaken (the Solar PV Site, Grid Connection Corridor and up to 50 m outside of the Solar PV Site, where access allowed).

3.2 Desk Study

3.2.1 A desk study was undertaken in February 2023 and in November 2023 (following Scheme changes) through the North and East Yorkshire Ecological Data Centre (NEYEDC) to obtain any historic records of Badger within the Study Area, within the preceding ten years. South Yorkshire Badger Group was also contacted to provide additional historic Badger data for the Study Area.

3.3 Field Survey

3.3.1 A Badger survey of the Survey Area was undertaken by two suitably experienced AECOM ecologists on 24, 25 February and 2, 3 March 2023 and 3 April and 8 May 2024. The survey was based on standard survey methodology for surveying Badger, as described in the Mammal Society publication: Surveying Badgers (Ref. 4); and with reference to Surveying for Badgers: Good Practice Guidelines, Version 1 (Ref. 5). In addition to these targeted surveys, ongoing surveillance of the Order limits for Badger presence and changes in distribution was undertaken during other site investigations and ecological surveys. Any additional observations have also been included in this report.

3.3.2 The survey involved searching for Badger field signs within areas of arable and pasture farmland, woodland, grassland, hedgerows and scrub. These habitats were the focus of the surveys as they are the most typical locations for setts to be located.

3.3.3 The field signs searched for were:

a. Setts – Comprising of a number of excavated tunnels and chambers. The main sett often has an average five entrance holes although it is not unusual in optimal habitat to find more e.g. 80 entrances. Outside each hole there are large quantities of excavated material (spoil heaps), which

may also contain old bedding and fur. If the sett is in use, fresh bedding materials may often be found at the entrances to the setts;

b. Paths – Badger use the same routes within their territory, so the paths are usually well worn and obvious, being at least 20 centimetres (cm) in width. The paths will often link feeding grounds with the Badger sett;

c. Push-unders – Badgers will often excavate shallow depressions under fencing and often push the fencing up to enable them to slide underneath;

d. Hair – Badger hair is often left behind when the Badger slides underneath fencing and can also be found at sett entrances. The hair is long and coarse and distinctively black and white;

e. Footprints – These are usually distinctive and easily recognisable, being broader than they are long. Badger have five toes and long claws on each foot, the footprints left behind have a distinctive kidney shaped heel and five toes, although many tracks are left with only four toe impressions;

f. Dung pits (latrines) – Found along territory boundaries and near to inhabited setts. The pits are on average 15 cm across and 15 cm deep (Ref. 6). Where dung pits are grouped together, they are termed latrines;

g. Scratching posts – These are trees situated near to the entrance, usually Elder (*Sambucus nigra*). The bark on these trees is scored, shredded or completely removed up to a height of 1 m;

h. Feeding evidence – These include snuffle holes, where the Badger is chasing retreating worms, excavated depressions ‘snuffle holes’ where the Badger has been searching for insects, and remains of arable crops;

i. Bedding trails – Often left when Badgers are dragging bedding from the gathering area to the sett. The gathering area can be over 100 m away from the sett and comprises bracken, dead leaves, straw and dry grass; and

j. Rocks bearing claw marks – Sometimes rocks can be found on spoil heaps which have been scored by the claws of the Badger as they were scratched away at underground to loosen them and pull them out.

3.3.4 Badger setts were recorded and classified in accordance with standard published methodology (Ref. 7) and described as either main, annex, subsidiary or outlier setts (where it was possible to do so based on the evidence available) using the definitions in Table 1.

Table 1: Sett Definitions

Sett Type	Definition
Main sett	Large setts with multiple entrances (used and disused) and copious amounts of spoil heaps around the sett. There will be well used paths to and from sett entrances and

Sett Type	Definition
	they are usually in continuous use. A main sett is most likely to be where cubs are born and there is only one main sett per Badger clan.
Annex sett	Often close to main setts and are linked to main setts through well-worn paths (50 to 150 m away). There are usually several entrances holes but may not be in use all the time.
Subsidiary sett	Smaller setts with a variable number of entrances (usually three to five holes) and often >50 m from a main sett, with no paths to other setts.
Outlier sett	Usually one to three entrances with small spoil heaps outside the hole. They have no defined paths to other setts and are often used sporadically. When not in use by Badger, they may be taken over by other ground-dwelling mammals.

3.3.5 Once a sett was identified, entrance holes were classified further as being one of the following:

a. **Well-used**: The entrance hole is clear of debris and vegetation and is in regular use. It may not have been recently excavated;

b. **Partially used**: A hole not in regular use, with minimal clearance when in use. Debris, including leaves and moss may be present in the entrance hole; or

c. **Disused**: Holes have obviously not been in use and are partially or completely blocked. They cannot be used without considerable clearance. Where a hole has not been used in some time, the hole may be just visible as a depression in the ground and former spoil heap.

3.3.6 Additionally, a subjective assessment of the habitat quality within the survey area was used to determine ‘foraging potential’ for Badgers. This assessment was based on the number of available food sources and included:

a. ‘**Good’ foraging potential**: where habitat was considered to provide Badgers with a variety of foraging opportunity throughout the year;

b. **'Moderate' foraging potential**: where foraging opportunities are seasonal and limited; and

c. **'Poor' foraging potential**: areas with no food value for Badger.

3.4 Limitations

Desk Study

3.4.1 The aim of the desk study was to help characterise the baseline context of the Scheme and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of the desk study was dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for Badger does not necessarily mean that Badger does not occur in the Study Area. Likewise, the presence of records for Badger does not automatically mean that these still occurred within the area of interest or were relevant in the context of the Scheme.

3.4.2 South Yorkshire Badger Group declined the Applicant's request for historic Badger records within the Solar PV Site. This is not a significant limitation as surveys within the Order limits have been carried out to address this data gap.

Field Survey

3.4.3 Ecological surveys may be limited by factors that affect the presence of animals such as the time of year, migration patterns, and behaviour. Therefore, absence of evidence is not always conclusive proof that the species is not present or that it will not be present in the future.

3.4.4 Badger activity can vary greatly between groups and individuals, affected by changes in weather, season, disturbance, foraging availability, and breeding status. This can sometimes affect the reliability of the identification of field signs and other evidence of Badgers.

3.4.5 A small area of land on the western extent of the Solar PV Site was not surveyed for Badger due to access restrictions. It was not possible to access all areas of suitable habitat within the Grid Connection Corridor. The areas that were inaccessible for survey can be found on Figure 8-4-1 in **Volume III Appendix 8-4: Badger Report – Annex A (Confidential) [EN010152/APP/6.3]**).

3.4.6 There were no other limitations to the Badger surveys with all available areas accessed and surveyed.

4. Results and Evaluation

4.1.1 The results of the badger survey are presented in **Volume III Appendix 8-4: Badger Report – Annex A (Confidential) [EN010152/APP/6.3]** which will be provided separately to specific stakeholders (i.e. local authority, county ecologists and Natural England).

5. References

Ref. 1 HMSO (1992) The Protection of Badgers Act 1992. Available at: https://www.legislation.gov.uk/ukpga/1992/51/contents [Accessed 1 February 2024].

Ref. 2 City of Doncaster Council (2007) Doncaster Local Biodiversity Action Plan 2007. Available at: https://www.doncaster.gov.uk/services/environmental/doncaster-biodiversity-action-plan [Accessed 1 February 2024].

Ref. 3 HMSO (2021) The Environment Act 2021. Available at: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted [Accessed 1 February 2024].

Ref. 4 Harris, S., Cresswell, P. and Jefferies, D. (1989). Surveying Badgers. London: The Mammal Society.

Ref. 5 Scottish Badgers. (2018). Surveying for Badgers: Good Practice Guidelines, Version 1.

Ref. 6 Woods, M. (1995). The Badger. London: The Mammal Society.

Ref. 7 Cresswell, P., Harris, S. and Jefferies, D.J. (1990). The history, distribution, status and habitat requirements of the badger in Britain. Peterborough: Nature Conservancy Council.

Annex A Badger Survey Results (Confidential)

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