WHITESTONE SOLAR FARM

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6.20 Appendix 6.8: Great Crested Newt Report

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Glossary

Term	Meaning
Cable Corridor	Corridor within which the high voltage cables would be constructed.
Development Consent Order (DCO)	A statutory order made by the relevant Secretary of State pursuant to The Planning Act 2008 to authorise a Nationally Significant Infrastructure Project which provides consent for the project and means that a range of other consents, such as planning permission and listed building consent, will not be required. A DCO can also include rights of compulsory acquisition
Environment Statement (ES)	Environmental Statement which presents the preliminary environmental information relating to the Proposed Development. The ES has been prepared to present information in accordance with current EIA regulation.
Long Lane 400kV Substation	The new 400 kilovolt National Grid substation proposed on land immediately east of Long Lane, Brinsworth, S60 4JJ
Nationally Significant Infrastructure Project (NSIP)	NSIPs are large scale major development projects in England or Wales which fall into the following categories: • Energy; • Transport; • Waste; • Waste Water; and

Term	Meaning
	• Water. The primary legislation which applies to NSIPs is called the Planning Act 2008. When these types of development meet the threshold described in the Planning Act 2008, they need a Development Consent Order before they can be built.
Order Limits	Total area comprising the Site and Cable Corridor.
Study Area	This is an area which is defined for great crested newt surveys which includes the Order Limits as well as potential spatial and temporal considerations of the impacts on relevant receptors.
The Applicant	Whitestone Net Zero Ltd.
The Application	The Application to be submitted to the Secretary of State for Energy Security and Net Zero for a Development Consent Order.
The Proposed Development	The proposed Whitestone Solar Farm
The Site	The land planned to be used for solar PV array and associated infrastructure, BESS, substation, and landscaping and habitat enhancement. The Site is split into W1, W2, and W3.
Whitestone 1 (W1)	The northern parcels of the Whitestone Solar Farm.
Whitestone 2 (W2)	The middle parcels of the Whitestone Solar Farm.
Whitestone 3 (W3)	The southern parcels of the Whitestone Solar Farm.

Acronyms

Acronym	Meaning
AIL	Abnormal Indivisible Load
AoI	Area of Influence
BESS	Battery Energy Storage System
CIEEM	Chartered Institute of Ecology and Environmental Management
DCO	Development Consent Order
eDNA	Environmental DNA
ERM	Environmental Resources Limited
GCN	Great Crested Newt
HSI	Habitat Suitability Index
NSIP	Nationally Significant Infrastructure Project
PV	Photovoltaic
W1	Whitestone 1
W2	Whitestone 2
W3	Whitestone 3

Units of Measurement

Units	Meaning
Km	Kilometres
kV	Kilovolt
m	Metre
MW	Megawatt

6.8 Great Crested Newt Survey Report

Introduction

6.8.1 This Appendix has been prepared on behalf of Whitestone Net Zero Ltd ('the Applicant') to set out the survey methodology and results of the great crested newt (GCN) surveys in relation to the Development Consent Order (DCO) Application for the construction, operation, maintenance, and decommissioning of Whitestone Solar Farm (hereafter referred to as the 'Proposed Development').

6.8.2 This Appendix is supported by the following figures in **ES Volume 3, Figures [EN0110020/APP/6.19]**:

- **Figure 6.1: Land Parcel Reference**
- **Figure 6.8.1: GCN – HSI and eDNA Assessment – W1**
- **Figure 6.8.2: GCN – HSI and eDNA Assessment – W2**
- **Figure 6.8.3: GCN – HSI and eDNA Assessment – W3**; and
- **Figure 6.8.4a-c: GCN – HSI and eDNA Assessment – Cable Corridor.**

6.8.3 This Appendix is supported by the following appendix located at the end of this document:

- **Appendix 6.8A: HSI Assessment Results.**

The Order Limits

6.8.4 The extent of the Order Limits is described in **ES Volume 1, Chapter 3: The Site and Surrounding Area [EN0110020/APP/6.3]** and shown in **ES Volume 3, Figure 3.1: Order Limits**. The Proposed Development is described in **ES Volume 1, Chapter 5: The Proposed Development [EN0110020/APP/6.5]** and shown spatially on the **Works Plans [EN0110020/APP/2.3]**.

The Proposed Development

6.8.5 The Proposed Development involves the construction, operation and maintenance, and decommissioning of more than 100MW of solar photovoltaic (PV) array, Battery Energy Storage System (BESS), onsite substations and supporting infrastructure, and grid connection infrastructure. The grid connection infrastructure would connect the Proposed Development to the new National Grid substation at Brinsworth (Long Lane 400kV Substation).

6.8.6 As the Proposed Development would have a generating capacity in excess of 100MW, it is considered to be a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008.

6.8.7 The Proposed Development would be located within the Order Limits. The Order Limits encompass the total area of the Proposed Development comprising the Site and Cable Corridors. The Site is specifically the land that is planned to be used for solar PV array and associated infrastructure, BESS, substations, landscaping and habitat enhancement. The Site is split into Whitestone 1 (W1), Whitestone 2 (W2), and Whitestone 3 (W3).

6.8.8 Highway Works are sections of the highway network that will contain localised improvements, such as improvements to road edge where it is deteriorated, or temporary highway and traffic works required to safely accommodate the Abnormal Indivisible Load (AIL) deliveries. These areas will support the movement of construction vehicles on narrower sections of the local highway network within parts of the construction vehicle routes to the Site, see **Volume 2, Chapter 13: Traffic and Transport [EN0110020/APP/6.13]**.

Purpose of the Report

6.8.9 GCN surveys were undertaken to collect detailed information regarding the occurrence and distribution of GCN within the Study Area, to provide an accurate baseline on which to base an assessment to support **ES Volume 2, Chapter 6: Biodiversity and Nature Conservation [EN0110020/APP/6.6]**. The purpose of this report is to detail the methods and results of the GCN surveys.

6.8.10 Further details on the Site and the Proposed Development can be found in **ES Volume 1, Chapter 3: The Site and Surrounding Area [EN0110020/APP/6.3]** and **ES Volume 1, Chapter 5: The Proposed Development [EN0110020/APP/6.5]**.

6.8.11 Information relating to habitats, and protected species are detailed within **ES Volume 3, Appendix 6.2: UK Habitat Survey Report [EN0110020/APP/6.20]**, and protected species within **ES Volume 3, Technical Appendices 6.3 to 6.13 [EN0110020/APP/6.20]** and are not reported here.

6.8.12 GCN surveys were completed within an appropriate Study Area based on the Site Boundary at the time of surveys in June 2024 and June 2025. The GCN Study Area has since changed; however, results are presented here in full based on the Study Area used.

Survey Methods

6.8.13 GCN are a European protected species and are fully protected by law under The Conservation of Habitats and Species Regulations 2017[1]. Under this legislation it is an offence for any person to commit an action that "*damages or destroys a breeding site or resting place of such an animal*". An individual found guilty of such an offence is "*liable on summary conviction to imprisonment for a term not exceeding six months or to a fine, or to both*".

6.8.14 It is also an offence under the Wildlife and Countryside act 1981[2] to intentionally or recklessly disturb GCN "*while they occupy a structure or place used for shelter or protection" or "obstruct access to a place of shelter or protection*".

6.8.15 In accordance with Natural England's standing advice[3], Environmental Resources Management (ERM) completed GCN surveys to establish the presence or likely absence of GCN within the Study Area. The GCN surveys were undertaken by suitably experienced ecologists who are members of the Chartered Institute of Ecology and Environmental Management (CIEEM). The following section describes the methods undertaken for the GCN Surveys.

Habitat Suitability Index

6.8.16 Habitat Suitability Index (HSI)[4] assessments were undertaken on the 18 June 2024, 19 March 2025, 20 March 2025, 5 June 2025, and 17 June 2025 in accordance with best practice guidance[5].

6.8.17 The HSI assessment is a quantitative predictor of habitat suitability for GCN. Written access was sought to assess all ponds onsite and within 250m of the Proposed Order Limits (the Study Area) to determine their suitability for GCN. Access was not granted to all ponds within 250m of the Proposed Order Limits following no response from landowners after two access requests. It is presumed that access will not be granted for these ponds and so further access will not be sought (see paragraphs 6.8.31 to 6.8.35 of this report).

6.8.18 Whilst GCN may utilise suitable terrestrial habitats up to 500m from their breeding sites, research indicates that most are typically encountered approximately 100m from their breeding sites[6]; with a notable decrease in abundance beyond 200 to 250m from their breeding site. Therefore, 250m is considered an appropriate Area of Influence (AoI) for GCN.

6.8.19 The HSI provides an overall numerical index between 0 and 1, derived from an assessment of ten habitat variables, where scores closer to 0 indicate poor habitat with low probability of GCN occurrence, and scores closer to 1 represent suitable habitat with a higher probability of occurrence. The ten habitat variables include:

- Geographic location (SI_1)
- Pond area (SI_2)
- Pond permanence (SI_3)
- Water quality (SI_4)
- Shade (SI_5)
- Presence of waterfowl (SI_6)
- Presence of fish (SI_7)
- The number of ponds within 1km (SI_8)
- Terrestrial habitat (SI_9); and
- Macrophytes (SI_{10}).

6.8.20 The suitability of a pond for GCN based on the HSI score is shown in **Table 6.8.1** below.

Table 6.8.1: Categorisation of HSI Scores

HSI Score	Suitability
<0.5	Poor
0.5-0.59	Below Average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

Environmental DNA Sampling

6.8.21 The environmental DNA (eDNA) surveys involved the collection of water samples from suitable waterbodies within the Study Area to be tested for the presence of GCN DNA. GCN DNA is released into aquatic environments through shed skin cells, urine, faeces and saliva, and it can persist in water for several weeks. GCN DNA therefore indicates if the species is present in a particular waterbody. eDNA surveys were undertaken in June 2024 and June 2025 and were carried out in accordance with best practice guidance, within the recommended survey period[7].

6.8.22 Field sampling equipment was supplied as sterile kits by the Nature Metrics that was to carry out the DNA analysis (Nature Metrics). In total, 20 water samples were collected from each waterbody sampled according to Nature Metrics guidance[8]. Samples were collected from the waterbody edge (surveyors did not enter the water) to avoid collecting mud and debris and contaminating the samples. Samples were collected from multiple locations around the waterbody to increase the likelihood of collecting GCN DNA. Following completion of sampling, the water samples were stored under suitable conditions before being sent to laboratory for testing.

6.8.23 Results are reported in three categories:

- Positive results (where GCN DNA is confirmed as present)
- Indeterminate results (where eDNA sampling was inconclusive); and
- Negative results (where no great crested newt DNA is confirmed as present).

Survey Findings

6.8.24 A desk-based assessment was initially performed to identify potential ponds within the AoI requiring GCN assessment. Many of the identified ponds were later scoped out as they were deemed unsuitable for GCN due to factors such as the waterbody being a running stream, over 2500m^2, a fishery, or dry.

6.8.25 No ponds were identified within the Cable Corridor. Four ponds lie within 250m of the Cable Corridor; P4 at 100m west of Cable Corridor E, P5 at 15m north of Cable Corridor E, P6 at 45m north of Cable Corridor E and P11 at 110m south of Cable Corridor C (see **ES Volume 3, Figure 6.8.4a-c: GCN - HSI and eDNA Assessment – Cable Corridors [EN0110020/APP/6.19]**). Due to the distance from, and width of, the Cable Corridor, the core habitat of P11 to any GCN (terrestrial and aquatic) can be avoided through cable micro siting.

6.8.26 The following results refer to all ponds that were scoped in, as well as Ponds 40 and 46 which were assessed but then later scoped out.

Habitat Suitability Index

6.8.27 Ten ponds were accessed for HSI assessment, out of a total of 34 ponds initially identified within the Study Area, which were deemed potentially suitable for GCN (as shown in **ES Volume 3, Figure 6.8.1-6.8.3: GCN – HSI and eDNA Assessment – W1 to W3 [EN0110020/APP/6.19]**). All ponds remaining within the Cable Corridor were not accessed, as they were located on private land with no access permitted at the time of survey.

6.8.28 Access was only requested for ponds that were within the Study Area, There were four ponds identified within 250m of the Cable Corridor, and the remaining

unassessed ponds within the Order Limits and AoI will be assessed when there is access to do so and within the appropriate survey period.

6.8.29 A summary of results of the HSI assessment are summarised in **Table 6.8.2** below, and the full dataset is presented in **Table 6.8.4**.

Table 6.8.2: HSI Summary Results

Pond ID	Area	OS National Grid Reference	HSI Score	Classification
Pond 25	W2	SK 48260 88060	0.50	Below average
Pond 40*	W2	SK 49495 86267	0.61	Average
Pond 46*	W2	SK 49766 87191	0.50	Poor
Pond 73	W3 Buffer	SK 48502 79506	0.56	Below average
Pond 98	W2 Buffer	SK 44936 87990	0.85	Excellent
Pond 113	W1	SK 50380 96004	0.63	Average
Pond 117	W2	SK 48731 87540	0.59	Below average
Pond 118	W1	SK 50650 97096	0.46	Poor
Pond 119	W1	SK 50160 96266	0.43	Poor
Pond 120 (P7)**	W3 Buffer / Cable Corridor Buffer	SK 49578 82023	0.30	Poor

* Pond assessed but later scoped out.

** Pond within solar array buffer and cable corridor buffer - brackets contain separate cable corridor pond ID.

Environmental DNA

6.8.30 All waterbodies that had a HSI score of above 'Poor', were accessible, held water at the time of survey, and were within 250m of the Order Limits were subject to eDNA sampling. As shown in **ES Volume 3, Figure 6.8.1-6.8.3: GCN – HSI and eDNA Assessment – W1 to W3 [EN0110020/APP/6.19]**, eight ponds were sampled in total. With the exception of Pond 117 and Pond 119, all ponds sampled were Negative for GCN DNA. Pond 117 and Pond 119 had Inconclusive results, which means that although no GCN DNA was detected we cannot have confidence in classifying it as a Negative result. The explanation for this is that the inconclusive result may have been caused by the degradation of the DNA or inhibition of the reaction by chemicals contaminating the sample. The results of the eDNA analysis are shown below in **Table 6.8.3**.

Table 6.8.3: GCN eDNA Analysis Results

Pond ID	Area	Kit ID	Sampling Date	Inhibition	Degradation	GCN Score	Result
Pond 25	W2	GCN-24-03064	27/06/2024	Pass	Pass	0	Negative

Pond ID	Area	Kit ID	Sampling Date	Inhibition	Degradation	GCN Score	Result
Pond 73	W3 Buffer	GCN-24-03062	27/06/2024	Pass	Pass	0	Negative
Pond 98	W2 Buffer	GCN-24-03071	19/06/2024	Pass	Pass	0	Negative
Pond 113	W1	GCN25 4802	05/06/2025	Pass	Pass	0	Negative
Pond 117	W2	GCN-25-02017	17/06/2025	Pass	Fail	0	Inconclusive
Pond 118	W1	GCN-25-02020	17/06/2025	Pass	Pass	0	Negative
Pond 119	W1	GCN-25-02012	17/06/2025	Pass	Fail	0	Inconclusive
Pond 120 (P7)*	W3 Buffer / Cable Corridor Buffer	GCN-25-02021	17/06/2025	Pass	Pass	0	Negative

* Pond within solar PV array buffer and Cable Corridor buffer - brackets contain the cable corridor pond ID.

Survey Limitations

6.8.31 Survey efforts were limited to where access was granted, meaning many of the ponds identified for assessment could not be accessed. Additionally, some ponds featured heavily vegetated banks, which limited the visibility and accessibility for sampling, however the required number of samples were still obtained at each waterbody.

6.8.32 Access was requested for all identified offsite ponds from landowners, and a pond was only deemed not accessible if the landowner had confirmed no access, or if two written requests for access were made with no response from the landowner.

6.8.33 Whilst every effort to identify suitable ponds for assessment were made, some small ponds within garden curtilages may have been missed, as it would be difficult to identify the presence of these ponds from imagery and impractical to gain access to all residential properties.

6.8.34 Some areas of the Cable Corridor have not been assessed on the ground and therefore only ponds identified from mapping and aerial imagery on or within 250m of the cable corridor have been considered for further assessment. Within these unassessed areas, there may also be ponds that are not apparent from mapping and aerial imagery. However, this is considered to be a minor limitation as when the width of the cable corridor is taken into account, along with the low

density of ponds already identified, any newly identified ponds (and therefore potential for GCN) will be avoided in the unlikely event that they are present.

6.8.35 The inconclusive results may be explained by the water chemistry, the presence of sediment and / or other debris in the sample, or sample degradation. If the inconsistent result is a result of the water chemistry, then the eDNA sample analysis from a new sample (if repeated) would still record an inconclusive result. Samples were collected by GCN survey licenced ecologists who were able to confirm that no visible sediment or debris was present in the any of the samples. Degradation of the sample can occur if a sample is not analysed within a month following collection and refrigeration. However, for this eDNA sample batch, the analysis was completed within a month and remained refrigerated. As a result, it can only be concluded that water chemistry was a factor in the inconclusive findings.

Summary and Conclusions

6.8.36 Great Crested Newt Surveys were carried out to determine the occurrence and distribution of GCN within the Study Area. Where accessible, the identified ponds were assessed for their GCN HSI. The GCN HSI was then used to inform which ponds were to be sampled for GCN eDNA to determine their presence or absence. Nine ponds were sampled in total, of which seven had a Negative result and two were Inconclusive.

6.8.37 From aerial imagery and mapping, ponds are likely absent from the Cable Corridor. Four unassessed ponds were identified beyond the cable corridor, three of which require further assessment (P4, P5 and P6) and one can be avoided due to the width of the cable corridor (P11).

6.8.38 Further assessment of GCN can be found in **ES Volume 2, Chapter 6: Biodiversity and Nature Conservation [EN0110020/APP/6.6]**.

References

[1] UKGov (2017). The Conservation of Habitats and Species Regulations 2017 Available online at: https://www.legislation.gov.uk/uksi/2017/1012/contents (Accessed March 2026)

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[5] Amphibian and Reptile Groups of the United Kingdom (2010) ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. ARGUK

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[7] Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, R. A., Foster, J., Wiilkinson, J., Arnett, A., Williams, P., & Dunn, F. (2014). Analytical And Methodological Development For Improved Surveillance Of The Great Crested Newt Defra Project Wc1067 Appendix 5. Oxford: Freshwater Habitats Trust

[8] Nature Metrics (2025). Great Crested Newt (GCN) eDNA kit instructions. Available online at: https://www.naturemetrics.com/kit-instructions/great-crested-newt-edna-kit (Accessed March 2026)

Appendix 6.8A: HSI Assessment Results

Table 6.8.4: GCN HSI Scores

Pond ID	Location	Pond Area	Pond Drying	Water Quality	Shade	Waterfowl	Fish	Ponds	Terrestrial	Macrophytes	HSI Score
Pond 25	1.00	0.93	0.90	0.67	1.00	0.01	0.67	0.52	0.67	0.80	0.50
Pond 40	1.00	0.40	0.90	0.67	0.90	0.67	0.01	0.38	0.67	0.30	0.40
Pond 46	1.00	0.90	0.10	0.67	0.20	1.00	1.00	0.80	0.33	0.30	0.50
Pond 73	1.00	0.94	0.10	0.67	0.30	0.67	1.00	0.65	1.00	0.35	0.56
Pond 98	1.00	0.85	1.00	1.00	0.90	0.67	0.67	0.52	0.67	1.00	0.81
Pond 113	1.00	0.50	1.00	0.33	0.90	0.67	0.67	0.01	0.67	0.45	0.43
Pond 117 (Additional Pond 3)	1.00	0.40	1.00	0.33	0.40	0.67	0.67	1.00	0.67	0.35	0.59
Pond 118 (Additional Pond 4)	1.00	0.05	0.50	0.33	1.00	0.67	1.00	0.72	0.33	0.30	0.46
Pond 119 (Additional Pond 5)	1.00	0.14	0.10	0.33	0.60	0.67	1.00	0.52	0.67	0.35	0.43
Pond 120 (P7)	1.00	0.00	0.90	0.67	1.00	0.01	0.01	1.00	0.67	0.45	0.30

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