



**WHITESTONE**  
solar farm

# WHITESTONE SOLAR FARM

## Volume 6: Environmental Statement

### 6.20 Appendix 6.9: Reptile Survey Report

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**Planning Act (2008)**  
Infrastructure Planning (Applications:  
Prescribed Forms and Procedure)  
Regulations 2009  
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[whitstonesolarfarm.co.uk](http://whitstonesolarfarm.co.uk)

## ENVIRONMENTAL STATEMENT

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Appendices Number	Annex Title
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### Glossary

Term	Meaning
<i>Cable Corridors</i>	Corridors within which the high voltage cables would be constructed.
<i>Development Consent Order (DCO)</i>	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.
<i>Environment Statement (ES)</i>	Environmental Statement which presents the environmental information relating to the Proposed Development and assessment of Term Meaning potential effects. The ES has been prepared as part of the Application.
<i>Long Lane 400kV Substation</i>	The new 400 kilovolt National Grid substation proposed on land immediately east of Long Lane, Brinsworth, S60 4JJ
<i>Nationally Significant Infrastructure Project (NSIP)</i>	NSIPs are large scale major development projects in England or Wales which fall into the following categories: <ul style="list-style-type: none"> <li>• Energy;</li> <li>• Transport;</li> <li>• Waste;</li> <li>• Waste Water; and</li> <li>• Water.</li> </ul> The primary legislation which applies to NSIPs is called the Planning Act 2008. When these types of development meet the threshold

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Term	Meaning
	described in the Planning Act 2008, they need a Development Consent Order before they can be built.
<i>Order Limits</i>	Total area comprising the Site and Cable Corridors.
<i>Study Area</i>	This is an area which is defined for bat surveys which includes the Order Limits as well as potential spatial and temporal considerations of the impacts on relevant receptors.
<i>The Applicant</i>	Whitestone Net Zero Ltd
<i>The Application</i>	The Application to be submitted to the Secretary of State for Energy Security and Net Zero for a Development Consent Order.
<i>The Proposed Development</i>	The proposed Whitestone Solar Farm
<i>The Site</i>	The land planned to be used for solar PV array and associated infrastructure, BESS, substations, and landscaping and habitat enhancement. The Site is split into W1, W2, and W3.
<i>Whitestone 1 (W1)</i>	The northern parcels of the Whitestone Solar Farm.
<i>Whitestone 2 (W2)</i>	The middle parcels of the Whitestone Solar Farm.
<i>Whitestone 3 (W3)</i>	The southern parcels of the Whitestone Solar Farm.

### Acronyms

Acronym	Meaning
<i>AIL</i>	Abnormal Indivisible Load
<i>BESS</i>	Battery Energy Storage System
<i>DBRC</i>	Derbyshire Biological Records Centre
	Development Consent Order
<i>ERM</i>	Environmental Resources Management Ltd
<i>PV</i>	Photovoltaic
<i>RAMs</i>	Reasonable Avoidance Measures
<i>RBRC</i>	Rotherham Biological Records Centre
<i>SBRC</i>	Sheffield Biological Records Centre
<i>W1</i>	Whitestone 1
<i>W2</i>	Whitestone 2
<i>W3</i>	Whitestone 3

### Units of Measurement

Units	Meaning
<i>km</i>	Kilometres
<i>m</i>	Metres

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Units	Meaning
<i>MW</i>	Megawatt
<i>ha</i>	hectares

## 6.9 Interim Reptile Survey Report

### Introduction

- 6.9.1 This Appendix has been prepared on behalf of Whitestone Net Zero Ltd ('the Applicant') to set out the survey methodology and results of the reptile 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').
- 6.9.2 This Appendix is supported by the following figures in **ES Volume 3, Figures [EN0110020/APP/6.19]**:
- **Figure 6.1: Land Parcel Reference**
  - **Figure 6.9.1: Reptile Mat Locations;** and
  - **Figure 6.9.2: Reptile Sighting Locations.**
- 6.9.3 This Appendix is supported by the following annex located at the end of this document:
- **Annex 6.9A: Reptile Sightings Locations**

### The Order Limits

- 6.9.4 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 [EN0110020/APP/6.19]**. 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

- 6.9.5 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).
- 6.9.6 As the Proposed Development would have a generating capacity of more than 100MW, it is considered to be a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008.
- 6.9.7 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).
- 6.9.8 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]**.

### Legislation and Guidance

- 6.9.9 All native 'widespread' UK reptile species<sup>1</sup> are partially protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended)<sup>2</sup>. Under this legislation it is an offence to:
- Intentionally or recklessly kill or injure such a species; or
  - Sell or attempt to sell any part of the species alive or dead.
- 6.9.10 Sand lizard (*Lacerta agilis*) and Smooth Snake (*Coronella austriaca*) have additional protection under the Conservation of Habitats and Species Regulations 2017<sup>3</sup>, however, these species are not known to occur within or close to the Proposed Development.
- 6.9.11 All native reptiles are also listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006)<sup>4</sup>. Conservation of Section 41 species are regarded in any planning decision.
- 6.9.12 Determining the presence of reptiles on sites where development could occur is therefore of significance for:
- Ensuring that development adheres to the legal protection of reptiles;
  - Supporting the planning application process;
  - Determining the potential impacts of the Proposed Development; and
  - Informing suitable alterations to development plans to avoid or minimise potential impacts.

### Survey Methods

#### Desk Study

- 6.9.13 A data search was requested from Sheffield Biological Records Centre (SBRC), Rotherham Biological Records Centre (RBRC), and Derbyshire Biological Records Centre (DBRC) on 01 July 2024, with the results detailed in Paragraph 6.9.25.

### Survey Findings

#### Habitat Assessment

- 6.9.14 An Extended UK habitat survey was undertaken by Environmental Resources Management (ERM) beginning on 20 June 2024 which identified that the Site provided suitable habitat for reptiles; specifically, areas bordering hedgerows and watercourses, scattered scrub, rough grassland margins, as well as south facing banks, ditches and spots suitable for basking, foraging or sheltering reptiles. It was therefore necessary to confirm whether the Site supported native reptiles, which are protected under the Wildlife and Countryside Act 1981 (as amended)<sup>2</sup>.

## Presence / Absence Survey

- 6.9.15 Reptile surveys followed best practice guidance Froglife Advice Sheet 10 (1999)<sup>5</sup> and Herpetofaunas Worker’s Manual (2003)<sup>6</sup> and involved setting out approximately 450 ‘artificial refugia’ (corrugated metal sheets and felt roof mats, c. 0.5m<sup>2</sup>). The recommended density of refuges is at least ten per ha of potential habitat, except where this becomes impractical (e.g. on large sites), in which case hotspots of suitable habitat will need to be prioritised. There should be a minimum of 30 refuges across the Site, regardless of the size of the Site.
- 6.9.16 The Site encompasses a large area (1,371ha), with the area of suitable habitat considered to be approximately 120ha, referred to from this point on as the reptile Study Area. A bespoke proportionate density of refugia were deployed due to the large area of suitable habitat, rather than the standard minimum density of 10 per ha. This was due to the logistical constraint of deploying and checking refugia to a density of 10 per ha over a 120ha area whilst securing land access. This meant that a lower deployment and assessment density of c. 3.9/ha was used across the reptile Study Area, with areas of greater suitability being prioritised with higher refugia densities.
- 6.9.17 After being placed, the refugia were allowed to ‘bed-in’ for two weeks to allow time for reptiles to locate and become accustomed to the refugia. These refugia would then provide shelter and aid temperature regulation for basking reptiles. Surveyors then conducted regular ‘mat checks’ to inspect refugia for any reptiles that may be basking on or beneath them.
- 6.9.18 Surveys were initially undertaken throughout April-May 2025, with further surveys completed in September and October 2025, such that when the surveys were completed, the refuges will have been checked on seven occasions during suitable weather conditions<sup>7</sup>. When checking the refuges surveyors would also search the general area for reptiles which may be basking on banks or piles of wood/stone. Average weather conditions recorded during the reptile survey visits are recorded in **Annex 6.9A, Table 6.9.3** .
- 6.9.19 Locations of reptile mat deployment can be seen in **ES Volume 3, Figure 6.9.1: Reptile Mat Locations [EN0110020/APP/6.19]**.

## Population Assessment

- 6.9.20 Population assessments are based on the Herpetofauna Groups of Britain and Ireland guidelines<sup>8</sup>, population categories are shown in **Table 6.9.1** Table 6.9.1 . Reptile numbers are calculated from the maximum number of adults of each species spotted during a single reptile survey visit undertaken in suitable conditions.

**Table 6.9.1 Population Assessment Categories**

Species	Low Population	Medium Population	High Population
Adder	<2/ha	2-4/ha	> 4/ha
Common Lizards	<20/ha	20-80/ha	>80/ha
Grass Snake	<2/ha	2-4/ha	>4/ha
Slow Worm	<50/ha	50-100/ha	>100/ha

### Survey Limitations

- 6.9.21 Temperatures were recorded exceeding 20°C on survey visit 5 (12 – 16 May 2025) and approximately 30 mats were checked in temperatures outside the optimum range. It is anticipated that the impact of this did not significantly affect the survey results as this represents *circa* 0.95% of the total mat checks across the survey period, and the majority of surveys were undertaken within suitable temperatures. Therefore, this is considered a minor limitation.
- 6.9.22 Some of the refugia used for the reptile surveys were unable to be found or had been displaced. Some mats located in W3 were also missing, likely disposed of by the public. On LP 35 in W1 all 19 mats deployed were removed by a member of the public between the initial and secondary survey periods, preventing checks 3-7 being completed. Further mats across the Study Area were lost, either removed by members of the public, lost in overgrown field margins, or blown into inaccessible areas (e.g. ditches and streams). At the time of survey completion in October 2025, it was estimated by surveyors that a total of between 115-125 mats were lost in this manner, representing 25-28% of total mats deployed within the reptile Study Area. Given the extent of refugia loss across the reptile Study Area, this is considered a significant constraint to the assessment. However, most of the lost mats were checked multiple times prior to them being lost. Meaning that each lost mat doesn't represent a complete loss of data that would have been acquired from said mat.
- 6.9.23 Some of the refugia were accidentally damaged by farm machinery during mowing of field boundaries, which affected sample size in that locality and potentially harming the reptiles themselves. Affected refugia were located across the reptile Study Area. At the time of survey completion in October 2025, it was estimated by surveyors that between 60-70 mats were damaged beyond the point of useability in this manner. This represents approximately 13-15% of the total mats deployed within the reptile Study Area. Given the extent of total refugia deployment across the reptile Study Area, this is considered only a minor constraint to the assessment. Furthermore, most of the damaged mats were checked multiple times prior to them being damaged, meaning that each damaged mat doesn't represent a complete loss of data that would have been acquired from said mat.
- 6.9.24 Limited land access prevented the initial deployment of refugia in in W1 until 28 May 2025, limiting the number of checks that were completed in the first survey period. LP 37 was subsequently removed from the Order Limits after mat deployment, and land access permission revoked, meaning that the 26 mats deployed on this land parcel were only able to be checked once. Access to LP 110 between the A57 and Anston Brook was not possible during the second and third check respectively, limiting the number or checks completed in the first survey period.

### Survey Findings

#### Desk Study

- 6.9.25 The desk study returned records of grass snake (*Natrix natrix*) within areas close to the Site such as Killamarsh and Norwood fisheries, both located approximately 100m northwest of W3. 21 older records of grass snake within proximity to the

Site ranging from 1989 to 2005 were also returned. No records of grass snake recorded within the last ten years were returned.

- 6.9.26 These recordings are largely out of date for use in assisting in gathering population size or locations of reptiles. However, they do provide us with indicative information on the extent and distribution of reptiles within the Site over 30 years.

### **Presence/Absence Surveys**

- 6.9.27 Reptile surveys were completed within an appropriate Study Area based on the Site Boundary at the time of the surveys. The Order Limits have since changed; however, results are presented here in full based on the Study Area used.
- 6.9.28 14 grass snakes and three unidentified snakes were recorded within the Site across W1, W2, W3, as detailed in **Table 6.9.2** below.
- 6.9.29 Nine sightings were recorded within the reptile Study Area as part of the refugia surveys, marked as circles on **ES Volume 3, Figure 6.9.2: Reptile Siting Locations [EN0110020/APP/6.19]**. The further 8 sightings were incidental recordings made by surveyors undertaking other survey work, marked as triangles on **ES Volume 3, Figure 6.9.2: Reptile Siting Locations [EN0110020/APP/6.19]**. Land Parcel references can be seen in **ES Volume 3, Figure 6.1: Land Parcel Reference [EN0110020/APP/6.19]**.
- 6.9.30 Locations of sightings are displayed in **ES Volume 3, Figure 6.9.2: Reptile Siting Locations [EN0110020/APP/6.19]**.

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**Table 6.9.2 Reptile Results Summary**

Whitestone Area	Location	Reptile Area	Number of refugia	Refugia ID	Species and Numbers	Date	Comments	Figure Reference
Whitestone 1	Land Parcel 34	7	7	14	Grass snake	23 April 2025	Grass snake spotted basking next to refugia.	Figure 6.9.2, Purple Circle 1
Whitestone 1	Land Parcel 34	7	7	N/A	1 x Unidentified snake	12 May 2025	Brief passing observation of a snake, was insufficient to identify species.	Figure 6.9.2, Red Triangle 1
Whitestone 1	Land Parcel 34	7	7	N/A	Grass snake	20 May 2025	Grass snake spotted basking on grass bank nearby	Figure 6.9.2, Green Triangle 2
Whitestone 1	Land Parcel 34	7	7	8	Grass Snake	28 May 2025	Grass snake spotted, near to refugia	Figure 6.9.2, Purple Circle 2
Whitestone 1	Land Parcel 162	18	10	N/A	Grass Snake	04 June 2025	Grass snake spotted, not near refugia	Figure 6.9.2, Green Triangle 3
Whitestone 1	Land Parcel 162	18	10	N/A	Grass Snake	04 June 2025	Grass snake spotted, not near refugia	Figure 6.9.2, Green Triangle 4
Whitestone 1	Land Parcel 162	18	10	24	Grass Snake	19 September 2025	Grass snakeskin found under mat	Figure 6.9.2, Purple Circle 5
Whitestone 1	Land Parcel 162	11	19	8	Grass Snake	24 September 2025	Hatchling grass snake found under mat	Figure 6.9.2, Purple Circle 3

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Whitestone Area	Location	Reptile Area	Number of refugia	Refugia ID	Species and Numbers	Date	Comments	Figure Reference
Whitestone 1	Land Parcel 162	11	19	3	Grass Snake	26 September 2025	Hatchling grass snake found	Figure 6.9.2, Purple Circle 4
Whitestone 2	Land Parcel 82	2	17	122	Grass Snake	23 April 2025	Grass snake spotted next to refugia.	Figure 6.9.2, Purple Circle 7
Whitestone 2	Land Parcel 156	42	15	N/A	Grass Snake	20 May 2025	Grass snake spotted, not near refugia	Figure 6.9.2, Green Triangle 6
Whitestone 2	Land Parcel 82	2	17	Y24	1 x Unidentified snake	27 May 2025	Unidentified snake spotted, near to refugia	Figure 6.9.2, Orange Circle 6
Whitestone 2	Land Parcel 165	5	8	N/A	Grass Snake	12 June 2025	Grass snake spotted, not near refugia	Figure 6.9.2, Green Triangle 5
Whitestone 2	Land Parcel 156	42	15	N/A	Grass Snake	26 June 2025	Grass snake spotted, not near refugia	Figure 6.9.2, Green Triangle 7
Whitestone 3	Land Parcel 167	1	2	90	Grass snake	14 May 2025	Juvenile grass snake beneath refugia.	Figure 6.9.2, Purple Circle 8
Whitestone 3	Land Parcel 167	1	2	69	1 x Unidentified snake	15 May 2025	Unidentified snake spotted, near to refugia	Figure 6.9.2, Orange Circle 9
Whitestone 3	Land Parcel 200	13	10	N/A	1 x Unidentified snake	15 July 2025	Snake spotted, moved too quickly for confident ID.	Figure 6.9.2, Red Triangle 8

### Further Surveys

- 6.9.31 No further surveys are scheduled to take place within the reptile Study Area. Surveys were scheduled to ensure that the standard approach for reptile surveys was followed, with seven surveys visits carried out. The final survey visits within the Site were completed in suitable weather and temperature conditions in September and October 2025.

### Discussion

- 6.9.32 Surveys within the Cable Corridor are not proposed as only limited areas of suitable habitats are present that would be affected. These areas are contiguous with areas already surveyed within the Site where results suggest a low reptile population density. Moreover, any potential impacts on these habitats during works on the Cable Corridor are anticipated to be predominantly temporary, and therefore Reasonable Avoidance Measures (RAMs) have been proposed along with other mitigation details within **ES Volume 2, Chapter 6 Biodiversity and Nature Conservation [EN0110020/APP/6.6]**.

### Summary and Conclusions

- 6.9.33 Following the reptile surveys, grass snake are confirmed present within the Site. A total of 14 grass snake, three of which were confirmed to be juvenile, and three unidentified snakes were recorded.
- 6.9.34 Nine of these sightings were recorded beneath or adjacent to refugia during reptile mat check surveys. The remaining eight sightings were recorded away from the refugia in basking areas such as gravel paths and grass banks. Some of these were recorded in passing by surveyors while undertaking other survey types.
- 6.9.35 Final survey findings suggest there is an indicative low population of grass snake present across the reptile Study Area.

## Annex 6.9A: Survey Dates and Conditions

**Table 6.9.3 Average Weather Conditions Recorded During Survey Visits**

Date	Rain During Survey	Temp Range (°C)	Avg. Wind Speed <sup>9</sup>	Avg. Cloud Cover <sup>10</sup>
31/03/2025-04/04/2025	Dry	12-18	No data	6/8
14/04/2025-17/04/2025	Dry	13-15	No data	8/8
22/04/2025-25/04/2025	Dry	13-14	No data	2/8
06/05/2025-09/05/2025	Dry	13-15	No data	No data
12/05/2025-16/05/2025	Dry	10-23	No data	No data
19/05/2025-23/05/2025	Dry	10-18	No data	No data
27/05/2025-30/05/2025	Dry	13-14	No data	8/8
01/09/2025-05/09/2025	Dry	13-19	Light Breeze	8/8
08/09/2025-12/09/2025	Dry	12-21	Strong Breeze	6/8
15/09/2025-19/09/2025	Dry	15-20	Gentle Breeze	6/8
22/09/2025-26/09/2025	Dry	14-18	Light Breeze	No data
29/09/2025-03/10/2025	Dry	13-15	Light Breeze	5/8
06/10/2025-10/10/2025	Dry	16-20	Gentle Breeze	8/8

### References

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- <sup>1</sup> Adder (*Vipera berus*), common lizard (*Zootoca vivipara*), grass snake (*Natrix Helvetica*) and slow worm (*Anguis fragilis*)
- <sup>2</sup> UK Government (1981). Wildlife and Countryside Act. Available online at: <https://www.legislation.gov.uk/ukpga/1981/69> (Accessed March 2026)
- <sup>3</sup> UK Government (2017). The Conservation of Habitats and Species Regulations (2017). Available online at: <https://www.legislation.gov.uk/uksi/2017/1012/contents> (Accessed March 2026).
- <sup>4</sup> UK Government (2006). Natural Environment and Rural Communities Act (2006). Available online at: <https://www.legislation.gov.uk/ukpga/2006/16/contents> (Accessed March 2026)
- <sup>5</sup> Froglife. (1999). Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Halesworth: Froglife
- <sup>6</sup> Herpetofauna Workers' Manual (revised reprint) 2003. Available at: Herpetofauna Workers' Manual (revised reprint) | Joint Nature Conservation Committee Resource Hub
- <sup>7</sup> Bright sunshine between the hours of 0830 to 1100 and 1600 to 1830 with air temperatures between 9°C and 18°C and not during rain.
- <sup>8</sup> Herptofaua Groups of Britain and Ireland (1998). Evaluating local mitigation/translocation programmes: Maintaining best practice and lawful standards.
- <sup>9</sup> Met Office Beaufort wind force scale. Available at <https://www.metoffice.gov.uk/weather/guides/coast-and-sea/beaufort-scale>



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