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RWE RENEWABLES UK SOLAR AND STORAGE LTD

HIGH GROVE SOLAR FARM, NORFOLK REPTILE SURVEY REPORT

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1 INTRODUCTION

1.1 Background

1.1.1 Wardell Armstrong was commissioned by RWE Renewables UK Solar and Storage Ltd (the Applicant) to undertake a riparian mammal surveys for High Grove Solar Farm, located in Norfolk (the Proposed Development). This report has been prepared to accompany Chapter 6 Biodiversity of the Preliminary Environmental Information Report (PEIR).

1.1.2 This report presents the results of the surveys for riparian mammal surveys undertaken between April and September 2024 to determine the habitat suitability and presence/-distribution of water voles and otters within the Panel Areas (and a 50m buffer where access was available).

1.2 Development Description

1.2.1 The Proposed Development is a renewable energy scheme, comprising five distinct Panel Areas covering an area of approximately 1,700 hectares (ha), including solar photovoltaic (PV) panels, on-site Battery Energy Storage Systems (BESS), underground cabling and associated infrastructure including substations and environmental mitigation and enhancement areas. The Proposed Development will also include underground Cable Corridors, which are still being refined, connecting the Panel Areas to one another and to the point of connection. The Proposed Development will have the capacity to generate over 50 Megawatts (MW) of alternating current (AC) electricity. The Proposed Development is located between Narborough and Dereham in the county of Norfolk in the East of England.

1.2.2 A full description of the Proposed Development and a detailed description of the design and environmental mitigation is provided in PEIR Chapter 2 The Proposed Development.

1.3 Aim and Objectives

1.3.1 The aim of this report is to determine the likely impact of the Proposed Development on any population of water voles and otters that may occur on the site, considering the habitats that may be affected, and the potential for impact avoidance, mitigation, and enhancement measures.

1.4 Quality Assurance & Environmental management

1.4.1 The surveys and assessments have been overseen by and the report checked and verified by a full member of CIEEM, who is bound by its code of professional conduct.

1.4.2 All surveys and assessments have been undertaken with reference to the recommendations given in British Standard BS 42020, and as stated within specialist guidance, as appropriate, and are referenced separately.

2 LEGISLATION AND POLICY

2.1.1 Under Section 9 of Schedule 5 of the Wildlife and Countryside Act, 1981 (as amended) water voles and their dwellings receive full protection. Under this legislation the following offenses apply:

- Intentionally kill, injure or take a water vole [Section 9 (1)];
- Any part or derivative, possess or control any live or dead water vole [Section 9(2)];
- Damage, destroy or obstruct a structure or place used as shelter or protection by water voles, intentionally or recklessly [Section 9 (4) (a)];
- Disturb a water vole whilst it is occupying a structure or place which it uses for that purpose [Section 9 (4)(b)]
- Sell, offer for sale, or possess or transport for the purpose of sale, any live or dead water vole, or any part or derivative or advertise any of these for buying or selling [Section 9 (5) (a &b)].

2.1.2 Under the Conservation of Habitats and Species Regulations 2017 (as amended) the Wildlife and Countryside Act 1981 (as amended) otters and their dwellings receive full protection. Under this legislation the following offenses apply:

- Kill injure, disturb or capture an otter deliberately.
- Damage or destroy otters breeding sites and resting places- even if otter is not present;
- Possess, control or transport them alive or dead;
- Damage, destroy or obstruct access to, a structure or place which is used by an otter for shelter or protection;

2.1.3 Under Section 41 of the Natural Environment and Rural Community Act (2006) otters are listed species of principal importance (and as rare and most threatened species) and must be regarded as part of the planning decision.

2.2 Norfolk Biodiversity Action Plan

2.2.1 The site is located within the East of Norfolk. The Norfolk Biodiversity Action Plan (Norfolk Biodiversity Partnership, 2002) provides a focus on the local threats to habitats and species within Norfolk. It addresses the strategies and plans that will be used to protect and restore these biodiversity challenges.

2.2.2 Water vole surveys conducted in 1997 have shown that their population is distributed throughout the county of Norfolk. Water vole stronghold is within the Broads area (highest rates of occupancy in River Ant and Broadland dykes). Other high site occupancy areas are North Norfolk Coast, North-West Norfolk Coastal Marshes and parts of the River Wensum. Within the south and west of Norfolk there is a large gap in distribution shown in local records twenty years previously (gaps are thought to represent local extinctions).

The following threats to water voles have been identified as:

- Population fragmentation and isolation main threat.
 - Habitat loss and degradation by development and inappropriate management;
 - Insensitive watercourse engineering and maintenance works have caused inappropriate water level management;
 - Invasive species such as the American mink *Neovison vison* considered to be main agent of the acceleration of decline in water vole population.
 - Use of rodenticides to control rats have caused poisoning of water voles.
- 2.2.3 Otter population and distribution within Norfolk have seen a continued, gradual increase since recent surveys in 1997 and 2000-01, though numbers are unknown. All river catchments and main rivers have found otters with strongholds being rivers Ant, Thet, Waveney, Wensum and Wissey. Reintroductions in 1996 by the Otter Trust have helped with the increase in population.

Though there are minimal factors that are causing decline, there are factors minimising the suppressing of population and distributional expansion:

- Poor riparian and local of wetland habitats;
- Poor food supplies;
- Unsustainable fishing populations on some rivers;
- Lack of suitable and undisturbed areas for breeding;
- Accidental road deaths;

- Direct persecution;
- Drowning in nets (fyke nets) set for eels.

3 WATER VOLE AND OTTER SURVEY METHODOLOGY

3.1 Desk Study

3.1.1 A desk study was carried out prior to the survey to identify any waterbodies and contextual information within and adjacent to the site boundaries. This included a review of OS maps, aerial photographs and the Multi- Agency Geographical Information for the Countryside (MAGIC) website.

3.1.2 The Norfolk Biodiversity Information Service (NBIS) was contacted on 13th May 2024 to ascertain whether any records of water voles and otters, within a 2km radius of the Site, had been submitted.

3.2 Habitat Assessment

3.2.1 During April – September 2024 a PEA was undertaken which initially identified any ditches, waterbodies and watercourses within the Panel Areas (see Figure 6.6). During the period of April to September 2024, these ditches, waterbodies and watercourses were assessed for their suitability to support water vole and otter (shown on Figure 6.7). The riparian mammal surveys were undertaken by pairs of suitably experienced ecologists walking the banks of the watercourses to determine the potential suitability of the habitat to support water voles and otters.

3.2.2 When assessing the suitability of habitat for water voles, the following habitat preferences need to be considered (Dean, 2021):

- Water voles generally prefer riparian habitats that support a dense assortment of grasses and other marginal species.
- This is usually characterised as slow- flowing watercourse that is less than 3m wide and around 1m deep with limited fluctuation of water levels. They prefer a waterbody with a steep earth bank.
- Water voles prefer riparian vegetation where there is a lack of shading by trees or scrub. Instead, they prefer at least 60% ground cover of continuous swathe of tall and luxurious riparian vegetation and tussocky bankside grasses.
- Poor suitability for water voles would be factors such as the presence of American mink, polluted waters, habitat that is rocky or otherwise impenetrable substrates, has over shading trees and fast flowing or shallowing water.

- An area is more likely to be inhabited if the presence of further colonies is nearby.

3.2.3 When assessing the suitability of habitat for otters, these habitat preferences need to be considered (Woodroffe, 2007) and (Chanin, 2003):

- Otters inhabit a wide range of aquatic habitats. These include small ditches, moorland streams, lakes and ponds, to larger rivers, estuaries and coasts.
- Habitat usage can depend on its suitability in providing food and shelter needs.
- A favourable habitat requires a good food supply with fish stocks of a species diversity being appropriate to the nutrient status of the river.
- Though otters are not directly affected by water quality, polluted watercourses can lead to deterioration in food supplies. Modified rivers with changes in channel structure can lead to less favourable conditions for otters.
- They inhabit large catchment areas and travel long distances which require connectivity amongst watercourses to other areas. Barriers such as roads can prevent otters, when they leave the water, to travel up or down stream.

3.2.4 The suitability of each watercourse to support water vole and otter was assessed with reference to points listed above and in line with guidance from Harris et al. (2009) for water voles and Chanin P (2003) for otters. The categories are defined as:

- **Optimal** - Watercourses and water bodies that were identified as being 'optimal' for water vole included those that were wet throughout the survey period; had sufficient year-round food sources; had steep banks suitable for burrowing and with the presence of a berm or sufficient bankside cover. For otter, these were defined as those that would form part of an otter's territory (/ home range) and are those that were wet throughout the year, connected to other suitable watercourses and provided food sources (such as fish).
- **Sub-optimal** – Watercourses and water bodies had a small number of features that could be suitable to support water vole or otter, but unlikely to support a population of either species throughout the year.
- **Unsuitable** - Watercourses and water bodies that were identified during the habitat suitability assessment as being dry; were heavily shaded; were in heavy agricultural use with no marginal vegetation; or where there were significant barriers to movement between the water body or watercourse and the Site, were considered as being unsuitable for water vole and otter as they lack the food, cover and habitat features necessary for the species.

3.3 Water Vole and Otter Survey Techniques

3.3.1 Water vole and otter surveys involves identification of evidence of water vole's and otters' presence and activity.

3.3.2 In accordance with the guidance set out in the Water Vole Mitigation Handbook (Dean et al., 2016), one survey was undertaken in the first half of the breeding season (April to June) and one conducted in the second half of the breeding season (between July and September). All surveys were undertaken during suitable weather conditions and by experienced ecologists.

3.3.3 Any information gathered during the survey on water vole signs were used to estimate water vole population and, or activity within those specific waterbodies or watercourses.

3.3.4 The characteristics that determine the presence of water voles as referenced by Dean, 2021 and Strachan et al., 2011 are:

Sightings

3.3.5 Water voles are usually a chestnut brown colour but occasionally they are a black colour. Their fur is fairly uniform in colour apart from their underside are lighter. Water voles with brown fur sometime have a white dot on their forehead with a white tail tip and white paw/paws. They have a blunt face with small eyes and ears that do not protrude beyond their fur and very rounded appearance. Water voles are distinguished from other vole species by their larger size (adults weighing 200-350g) and longer tail. Adult water voles are approximately 14-22cm long.

Faeces/ Latrines

3.3.6 Water vole droppings are a cylindrical shape with blunt ends and symmetrical, size being about 8-12mm. Its colour will vary depending on what food it has eaten and water content, from a green, brown, black or purple colour. Droppings texture can vary, fresh droppings have a putty texture, dry droppings when broken open have a green concentric rings of fine plant material. Latrines are piles of deposited droppings at distinct sites, these sites can be scattered along runways, but mostly at the nest, range of boundaries or where they leave or enter the water. Piles of latrines are usually found flattened.

3.3.7 Rat droppings are a similar shape but are larger and have an unpleasant odour. They also tend to be scattered along their runs and produce latrine sites away from the water's edge.

Feeding stations

- 3.3.8 Feeding stations consist of neat piles of chewed lengths of vegetation such as grasses, reeds or reed sweet grass. The vegetation is up to 10cm long and are cut at a 45-degree angle. These feeding stations are often found along water vole pathways or at haul- out platforms along the water's edge.
- 3.3.9 The feeding stations of rats contain different remains reflecting their omnivorous diet such as chewed tubers, piles of snail shells or fruits or even skinned frogs. Field voles also chop vegetation, but these are generally in no more than 4cm long pieces.

Burrows

- 3.3.10 Water voles burrow entrances have a diameter of 4-8cm and are typically wider than high, a similar size to a tennis ball. Their burrow systems externally appear as a series of holes along the water edge, some being at or just above the water level on steep banks. Others have been found below the water line or within vegetation up to five metres from the water allowing access to food and ventilation. From these excavations there is no spoil heap found.
- 3.3.11 Rat burrows in comparison are dug higher up the bank but rats have been known to take over some vole's colonies and enlarge them in the process.

Lawns/ nests

- 3.3.12 Nests are created in burrowing systems where nest chambers are lined by both males and females taking bedding underground to line these nest chambers. Entrances to the nest are plugged with loose soil or grass by the female, whilst these nurseries consist of large ball of finely shredded grasses or reed. Other water vole's nests can be identified in vegetation cover which is dense, and the water table is high. These nests are the size and shape of a rugby ball and sometimes found above ground as woven bases of rushes, sedges and reed.
- 3.3.13 Water voles may create a grazed 'lawn' around their burrow entrance. This is done by poking their head and shoulders out of the burrow and grazing what they can reach. This usually done by the females who are nursing young and do not want to leave the burrow system.

Footprints/ Runways

- 3.3.14 Water vole's footprints contain five toes from the hind foot and four toes from the fore foot displayed in a star arrangement. The fore footprint measures 18mm long and 23mm wide. The hind footprint measures between 26-34mm. These footprints can be

confused with rat footprints which tend to be larger, heavier and tend to leave a deep impression. Therefore on their own footprints are not used to identify water vole presence.

3.3.15 Water voles also leave a pathway with a width of 5-9cm, that is often within two metres of the water's edge or vegetation that led to water's edge, burrow entrances or favoured feeding areas. Rats create similar paths but these tend to be clearer as bare or nearly bare pathways that lead to burrows, or running along the bank away from the water's edge.

3.3.16 The characteristics that determine the presence of otters as referenced by Dean, 2021 and Woodroffe, 2007 are:

Spraints (droppings)

3.3.17 Otter faeces are known as a spraint. Spraints are identified by a black colour with a sweet-musky odour. The size and shape vary from tiny blob to a tarry smear to a compact cylindrical dropping of up to 6cm long. When a spraint dries, its colour fades and it crumbles to a grey ashy deposit. Otters also produce a substance called anal jelly. Anal jelly is often left in a similar place to spraint and is white, black, orange or brown in colour and has no bones in it.

3.3.18 Compared to otters, the mink faeces have an unpleasant smell when fresh and as it dries becomes more uniform and tapered.

Footprints/slides

3.3.19 Otter's footprints form are five toes, with the front of the large pad being arched. Footprints signs can be identified in soft mud, snow or on sand flats. The size of otter prints range from width of 5 to 7cm, with males being greater than 6.5 cm and cubs being smaller; less than 4.5 cm.

3.3.20 A feature distinguishing otter footprints from other animals such as dogs or foxes is that otter footprints are not symmetrical. Otters will also create slides down riverbanks.

Feeding remains

3.3.21 Otters leave the remains of fish and frogs. These are not as reliable evidence of otters' presence as signs outlined above. This is because they are difficult to distinguish from competing predators' feeding remains, unless footprints and spraints are left.

Couches/ Holts

2.3.15 Otters use different site for shelter depending on availability. Holts are a hole in the riverbank, hollow trees, the crowns of pollarded willows, cavities in rock piles or tree roots, peat tunnels or some man-made structures. Couches are flattened resting areas of vegetation used as bedding, located in scrub, reed beds or long grass.

3.4 Limitations

- 3.4.1 Some ditches/ waterbodies were found to be dried up. Other waterbodies could not be surveyed as they consisted of dense scrub habitat that could not be entered. One watercourse in the Southern Panel Area was surrounded by electric fencing and could not be safely accessed.
- 3.4.2 Ecological surveys are limited by factors that affect species presence such as time of year, weather, migration patterns and behaviour. As such surveys were conducted within the suitable survey window for otter and water vole, and within weather conditions suitable for surveying.

4 SURVEY RESULTS

4.1 Desk Study

- 4.1.1 A data search collected by Norfolk Biodiversity Information Service (NBIS) shows that there were 14 records of water voles with the most recent recording being 2022. There are 19 recorded otter sightings which have been documented since 2014 with the most recent sighting being recorded in 2022.

4.2 Habitat suitability assessment

- 4.2.1 A total of 17 watercourses were further assessed for their suitability to support water voles and otters (as shown on Figure 6.5).
- 4.2.2 The watercourses surveyed are located in the Northern, Eastern and Southern Panel Areas with the southern area having the most ditches.
- 4.2.3 A summary of the habitat suitability assessment alongside signs of water voles and otters is presented in Table 1.

4.3 Water Vole and Otter survey

- 4.3.1 Evidence of water voles and otters have been present within certain areas, mostly the River Wissey in Southern Panel Area (see Watercourse 18, Figure 6.7) and the Wendling Beck (see Watercourse 17, Figure 6.7) in the Northern Panel Area.
- 4.3.2 Water vole evidence has included a sighting of a water vole swimming northwest up a ditch in the Wendling Beck area, Northern Panel Area. Multiple incomplete water vole footprints were identified in the Southern Panel Area. Other signs of water voles include feeding signs where grass has been eaten at a 45-degree angle, burrows and evidence of a sitting area been created where the vegetation has been flattened in a small circle.
- 4.3.3 Otter signs have been identified in the Northern Panel Area in Wendling Beck. An otter spraint and possible slide was identified on the bankside of a stream in the area.

Table 1: Results of riparian mammal survey				
Site	Waterbody description and notes	Signs of water vole or otter		Photograph
Northern Panel: 1 - Wendling Beck (17)	- Waterbody was a stream bordering arable land. - Bankside was 0.5-1m deep, steep >45 degrees and 2-5m width with earth substrate and marginal vegetation. - Vegetation present was tall grasses and herbs. - Water voles and otter present.	Sightings	Water vole seen swimming north-west up ditch	 
		Latrines:	Otter spraint	
		Burrows:	Possible water vole burrows x2	
		Footprints:	none	
		Feeding remains:	Water vole feeding remains	
		Runs/ pathways:	Possible otter slide. Water vole sitting area	

Table 1: Results of riparian mammal survey				
Site	Waterbody description and notes	Signs of water vole or otter		Photograph
				

Table 1: Results of riparian mammal survey				
Site	Waterbody description and notes	Signs of water vole or otter		Photograph
				
Eastern panel:2	Wet Ditch - Waterbody was a ditch bordering arable land. - Bankside was <0.5m deep, steep >45 degrees and 1-2m width with earth substrate and marginal and floating vegetation. - Vegetation present was tall grasses. - Suboptimal suitability for otters and moderate for water voles.	No signs		
Eastern panel: 3	Dry ditch	No signs		No photographs

Table 1: Results of riparian mammal survey				
Site	Waterbody description and notes	Signs of water vole or otter		Photograph
Southern panel:4	Dry ditch	No signs		
Southern Panel: River Wissey (18)	- Waterbody was a stream bordering arable land. - Bankside was <0.5m deep, steep >45 degrees and 2-5m width with earth substrate, marginal and marginal vegetation. - Vegetation present was tall grasses. - Suboptimal disturbance and moderate suitability.	Sightings	None	
		Latrines	None	
		Burrows	Five possible water vole burrows found	
		Footprints	Multiple incomplete water vole footprints	
		Feeding remains	None	

Table 1: Results of riparian mammal survey				
Site	Waterbody description and notes	Signs of water vole or otter		Photograph
		Runs/ pathways	None	

Table 1: Results of riparian mammal survey				
Site	Waterbody description and notes	Signs of water vole or otter		Photograph
				 

Table 1: Results of riparian mammal survey			
Site	Waterbody description and notes	Signs of water vole or otter	Photograph
Southern panel:5	Dry ditch - Waterbody was a ditch bordering arable land. - Bankside was very dry and completely filled, steep >45 degrees and 2-5m width with earth substrate. - Vegetation present was tall grasses. - Suboptimal disturbance and ditch were unsuitable for both mammals.	No signs	
Southern panel:6	Dry ditch Waterbody was a dry and overgrown	No signs	No photographs

Table 1: Results of riparian mammal survey			
Site	Waterbody description and notes	Signs of water vole or otter	Photograph
Southern panel:7	Wet ditch - Waterbody was a ditch bordering arable land. - Bankside was <0.5m deep, steep >45 degrees and 2-5m width with earth substrate with marginal vegetation. - Vegetation present was bushes and shrubs. - Suboptimal disturbance with suboptimal suitability. - Access difficult due to high quantity of vegetation.	No signs	
Southern panel:8	Wet ditch		No photographs

Table 1: Results of riparian mammal survey			
Site	Waterbody description and notes	Signs of water vole or otter	Photograph
Southern panel:9	Wet ditch - Waterbody was a ditch bordering arable land. - Bankside was <0.5m deep with water, steep >45 degrees and 1-2 width with earth substrate and marginal vegetation. - Suitability of the site was suboptimal. - Suboptimal disturbance - Access was difficult one side due to electric fence.	No signs	
Southern panel:10	Wet ditch - Waterbody was a ditch bordering arable land. - Bankside was <0.5m deep, steep >45 degrees and 0.5- 1m width with earth substrate. - Vegetation present was tall grasses. - Suboptimal disturbance and suboptimal suitability for otters and suboptimal suitability for water voles.	No signs	No photographs

Table 1: Results of riparian mammal survey			
Site	Waterbody description and notes	Signs of water vole or otter	Photograph
	Access was restricted due to being very scrubbed up.		
Southern panel:11	Dry ditch	No signs	
Southern panel:12	Dry ditch Access was restricted due to being covered with bramble.	No signs	No photographs

Table 1: Results of riparian mammal survey			
Site	Waterbody description and notes	Signs of water vole or otter	Photograph
Southern panel:13	Wet ditch - Waterbody was a very shallow ditch bordering arable land. - Bankside was <0.5m deep, steep >45 degrees and 0.5- 1m width with earth substrate - Vegetation was tall grasses. - Suboptimal disturbance and Suboptimal suitability for water voles and not suitable for otters.		
Southern panel:14	Wet ditch - Waterbody was a ditch bordering arable land. - Bankside was <0.5m deep with running water, steep >45 degrees and 1-2m width with gravel substrate and marginal vegetation. - Vegetation present was bushes/ shrubs. - Suboptimal disturbance and suboptimal suitability. - Access difficulty as bank covered with grass/ shrub and trees		

Table 1: Results of riparian mammal survey			
Site	Waterbody description and notes	Signs of water vole or otter	Photograph
Southern panel:15	Dry ditch - Waterbody was a ditch bordering arable land. - Bankside was <0.5m deep with water, steep >45 degrees and 1-2m width with earth substrate. - Suboptimal disturbance and Suboptimal suitability. - Majority of ditch was dry. Access restrictions due to high amount of vegetation.		
Southern panel:16	Wet ditch - Waterbody was a dyke bordering arable land - Bankside was <0.5m deep with water, steep >45 degrees and 1-2m width with earth substrate and floating and marginal vegetation. - Vegetation present was tall grasses. - Suboptimal suitability.		

5 CONCLUSION/ RECOMMENDATION

- 5.1.1 Overall, the Northern, Eastern and Southern Panel Areas have the most ditches throughout the Panel Areas. Water voles are only confirmed to be present in the Southern Panel Area along the River Wissey and in the Northern Panel Area on Wendling Beck. Otters are confirmed present in Northern Panel Area on Wendling Beck. No evidence of water vole and otters was recorded within Central, Eastern and Western panel Areas.
- 5.1.2 The results of the riparian mammal survey will be used to inform the Environmental Statement (ES) to be submitted in support of the DCO application, assessing the impacts of the Proposed Development and requirement for mitigation.

6 REFERENCES

Chanin, P. (2003). *Ecology of the European Otter*. Conserving Natura 2000 Rivers Ecology Series No. 10. English Nature, Peterborough.

Dean, M. (2021) *Water Vole Field Signs and Habitat Assessment: A Practical Guide to Water Vole Surveys*. Pelagic Publishing, Exeter.

Highway Agency (2001) *Design Manual for Roads and Bridges, Volume 10, Section 4, Part 5. Nature Conservation Advice in Relation to Otters. HA 81/99*. The Stationery Office, London. Available at:

<https://cieem.net/wp-content/uploads/2019/07/ha8199.pdf>

Norfolk Biodiversity Partnership (2002) *Norfolk Biodiversity Action Plan: Mammals*. Available online at: <https://norfolkbiodiversity.org/habitats-and-species/mammals/>

Strachan, R., Moorhouse, T., Gelling, M. (2011) *Water Vole conservation handbook*. The Wildlife Conservation Research Unit, Abingdon.

Woodroffe, G (2007). *The Otter*. The Mammal Society, London.

Harris, J., Markwell, H., and Raybould, B. (2009). A method for assessing Water Vole Habitat Suitability. IEEM In Practice, Issue 65, September 2009

Dean, M., Strachan, R., Gow, D. and Andrews, R. 2016. *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

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