

SP MANWEB

Reinforcement to the North Shropshire Electricity Distribution Network



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No Significant Effects Report

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November 2018

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**Reinforcement to the North Shropshire
Electricity Distribution Network**

**No Significant Effects Report (NSER)
Conservation of Habitats and Species
Regulations 2017: Stage 1 (Screening) Habitats
Regulations Assessment**

**DCO Document 5.4
November 2018
PINS Reference EN020021**

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The Planning Act 2008

**The Infrastructure Planning (Applications: Prescribed Forms and Procedure)
Regulations 2009**

Regulation 5(2)(g)

**Reinforcement to the North Shropshire Electricity Distribution Network
No Significant Effects Report**

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CONTENTS

1 INTRODUCTION..... 1

1.1 Introduction 1

1.2 Legislative Context 1

2 THE PROPOSED DEVELOPMENT..... 5

2.1 Location of the proposed Development..... 5

2.2 Summary of the Proposed Development..... 5

2.3 Operation and Maintenance 7

2.4 Decommissioning 7

3 SCOPE OF THE ASSESSMENT 8

3.1 Definition and Justification for Scope of the Assessment 8

3.2 Consultation 8

3.3 Zone of Influence..... 21

4 DESCRIPTION OF EUROPEAN AND OTHER DESIGNATED SITES..... 22

5 ASSESSMENT OF POTENTIAL EFFECTS 28

5.1 Introduction 28

5.2 Potential effects..... 29

5.3 Construction Phase 32

5.4 Operation and Maintenance 36

5.5 Decommissioning 37

5.6 In-Combination Effects 37

6 CONCLUSION 40

APPENDIX 1 – HABITATS REGULATIONS ASSESSMENT SCREENING

MATRICES 41

APPENDIX 2 – RAMSAR INFORMATION SHEETS..... 49

APPENDIX 3 – STANDARD GOOD PRACTICE CONSTRUCTION MEASURES

DURING CONSTRUCTION 69

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1 INTRODUCTION

1.1 INTRODUCTION

- 1.1.1 SP Manweb is making an application (the 'Application') to the Secretary of State for an Order granting Development Consent ('DCO') to for a new 132kV electrical circuit between Oswestry and Wem in North Shropshire together with associated construction works.
- 1.1.2 The need for the Proposed Development is set out in Section 1.4 of Chapter 1 'Introduction' of the ES (**DCO Document 6.1**) and descriptions of the alternative network design options and solutions that have been considered are presented in Sections 2.2 and 2.3 of Chapter 2 of the ES 'Alternatives and Design Evolution' (**DCO Document 6.2**). A description of the Proposed Development is provided in Chapter 3 of the ES (**DCO Document 6.3**) and in Section 2 of this report.
- 1.1.3 It is considered that the Proposed Development is a 'project' within the meaning of the Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) and the transposing regulations.
- 1.1.4 This report provides a Stage 1 Screening Assessment which has been undertaken on a precautionary basis and concludes that the Proposed Development will result in no Likely Significant Effect (LSE) on European sites or their qualifying interest features.
- 1.1.5 This Screening Assessment has specifically excluded consideration of any mitigation measures, including the Construction Environmental Management Plan (CEMP), in the assessment of potential effects.

1.2 LEGISLATIVE CONTEXT

- 1.2.1 This No Significant Effects Report (NSER) has been prepared to meet the requirements of The Conservation of Habitat and Species Regulations 2017 (the 'Habitats Regulations') which transpose the requirements of Article 6(3)

of the Habitats Directive 92/43/EEC (the 'Habitats Directive'). It has been prepared with reference to Advice Note Ten (Version 8) on Habitats Regulations Assessment from the Planning Inspectorate¹ and is supported by Screening Matrices as required by Advice Note 10. These are provided as Appendix 1 to this report.

- 1.2.2 The NSER takes account of the European Court of Justice ruling (Case C323/17 also known as the 'People over Wind' ruling) on Habitats Regulations Assessments referred to below in Paragraphs 1.2.5 - 1.2.7, and has excluded consideration of the draft CEMP and any other mitigation.

HRA within the Planning Act 2008

- 1.2.3 A Habitats Regulation Assessment ('HRA') is the process of assessment under the Habitats Directive and the Habitats Regulations. It is a multi-stage process:

- 1) Screening: The first stage is a screening stage to assess whether the project is likely to have a significant effect ('LSE') on the interest features of a European site alone and in combination with other plans/ projects.
- 2) Appropriate assessment: If a project is likely to have a significant effect on a European Site, the Habitats Regulations require the competent authority to go to the second stage which is to make an 'appropriate assessment' (AA) of the implications for that site in view of that site's conservation objectives. The question at this stage is whether it can be ascertained that the proposal will not adversely affect the integrity of the

¹The Planning Inspectorate (2017) Habitat Regulations Assessment. Advice Note Ten: Habitat Regulations Assessment relevant to nationally significant infrastructure projects. Version 8. Available online at:

<https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/06/Advice-note-10v4.pdf>

European site in view of its conservation principles. At this stage mitigation can be considered.

Article 6(4) provides that where an appropriate assessment has been carried out and results in a negative assessment (in other words, where adverse effects to European site(s) cannot be ruled out, despite any proposed avoidance or mitigation measures), consent can only be granted if: there are no alternative solutions, there are imperative reasons of overriding public interest (IROPI) for the development and compensatory measures have been secured. This leads to stages (3) and (4) of the assessment process, which are described below but do not form part of this NSER.

- 3) Assessment of alternatives: if the appropriate assessment has been carried out and results in a negative assessment and there are alternative solutions then consent cannot be granted;
- 4) IROPI: if there are no alternatives, the project may be consented, subject to securing compensatory measures, if the competent authority is satisfied there are IROPI.

1.2.4 This NSER provides information to inform the Competent Authority on Stage 1, concluding no LSE, with no consideration given to mitigation. If the Competent Authority requires further information in order to undertake a Stage 2 AA, Appendix 3 of this report provides a summary of standard good practice construction measures to be adopted within the draft CEMP (**DCO Document 6.3.2**), which provides sufficient information to inform the Competent Authority in the undertaking of the AA.

People over Wind: European Court Ruling

1.2.5 The ruling (12th April 2018) by the European Court of Justice (Case C323/17 also known as the 'People over Wind' ruling) on Habitats Regulations Assessments requires that mitigation measures (i.e. measures intended to

avoid or reduce the harmful effects of the plan or project on a European site) be excluded from consideration at Stage 1: Screening Assessment.

- 1.2.6 As a result Competent Authorities cannot take account of mitigation that relates to European sites or their qualifying interest features when considering (at the Stage 1 screening stage) whether the plan or project is likely to have a significant effect (LSE). Where the likelihood of significant effects cannot be excluded, the Competent Authority must proceed to carry out an AA to establish whether the plan or project will affect the integrity of the European site. At the AA stage, consideration can be given to the effectiveness of the proposed mitigation measures.
- 1.2.7 As a result, the Stage 1 screening assessment presented in this NSER is based solely on the project as proposed (the Proposed Development) in the absence of mitigation (including the CEMP), namely the route including undergrounded sections and, for the overhead line, the supporting structures (poles and stays) and associated temporary works.

2 THE PROPOSED DEVELOPMENT

2.1 LOCATION OF THE PROPOSED DEVELOPMENT

2.1.1 The Proposed Development is located entirely within the county of Shropshire, England. The Proposed Development therefore does not overlap into any devolved administrations or fall within other European Economic Area (EEA) States.

2.1.2 The landscape crossed by the Proposed Development is predominantly arable with some pastoral land. Although almost entirely agricultural the landscape does display some differing characteristics, with areas of settled farmland sitting alongside estate farmland and lower lying floodplains.

2.2 SUMMARY OF THE PROPOSED DEVELOPMENT

2.2.1 The Proposed Development comprises a new 132kV electrical circuit between Oswestry and Wem in North Shropshire, together with associated construction works (the 'Proposed Development'). A full description is provided within Chapter 3 'The Proposed Development' of the Environmental Statement (**DCO Document 6.3**) and further information is also provided in the Construction Report (**DCO Document 7.2**).

2.2.2 The proposed 132kV electricity circuit would connect the existing Oswestry and Wem Substations. The circuit would be a combination of buried insulated cables ('underground cable') and above ground overhead conductors supported by wood poles ('overhead line') of the 'Trident' type. Works are also required at Oswestry and Wem Substations to accommodate the new circuit.

2.2.3 The Proposed Development includes the following elements:

- Works within the boundary of the existing SP Manweb Substation at Oswestry including underground cabling and installation of electrical switchgear and associated equipment;

- Approximately 1.2km 132kV underground cable between Oswestry Substation and a 132kV terminal structure at Long Wood (grid reference SJ 31132 29877);
- Approximately 21km of 132kV overhead electricity Trident line from the terminal structure at Long Wood to the existing SP Manweb Wem Substation; and,
- Works within the existing Wem substation including the installation of a new 132,000 Volt to 33,000 Volt transformer (“grid transformer”);

2.2.4 The Proposed Development also includes work to facilitate the new electrical circuit including:

- Undergrounding of a number of existing lower voltage overhead lines in order to ensure safe electrical clearance for the new electrical circuit. In some locations where the new 132kV overhead line crosses existing lower voltage overhead lines, these lower voltage lines would be taken down and relocated underground; and
- Temporary works required for the construction of the new electrical circuit including temporary laydown areas, construction of new accesses and works to existing access tracks, vegetation clearance and reinstatement planting.

2.3.1 Construction access will be via the local road network, existing farm tracks, and land within the Order Limits. Temporary construction accesses would typically be 3m – 5m wide and would follow existing farm tracks wherever possible. Where appropriate temporary trackway systems or temporary stone improvements on access tracks may be used. Any such temporary access track improvements will be removed following construction.

2.3 OPERATION AND MAINTENANCE

2.4.1 Cables do not require regular inspection or replacement, unless there is a cable fault which could be caused by external damage. In this case the length of damaged cable would need to be identified and replaced.

2.4.2 132kV wood pole overhead lines generally require very little maintenance. They are regularly inspected to identify any unacceptable deterioration of components so that they can be replaced.

2.4 DECOMMISSIONING

2.5.1 As the connection is required for network reinforcement purposes it will be permanent infrastructure and therefore decommissioning has not been considered further. In the unlikely event that decommissioning was required the activities would be very similar to those for construction.

3 SCOPE OF THE ASSESSMENT

3.1 DEFINITION AND JUSTIFICATION FOR SCOPE OF THE ASSESSMENT

3.1.1 The method used to determine which European Sites have been considered within this report is summarised as follows:

- Detailed pre-application consultation with Natural England, Shropshire Council and nature conservation organisations; and,
- Review of Zone of Influence where European Sites which could potentially be affected and consideration of their qualifying interest features.

3.1.2 Further details are provided below.

3.2 CONSULTATION

3.2.1 To inform the preparation of the application for development consent, SP Manweb has undertaken a thorough pre-application consultation process, which has included the following key documents:

- Scoping Report submitted to the Planning Inspectorate (PINS) (9 March 2017)²;
- Scoping Opinion received from the Secretary of State (25 April 2017)³ and

² <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN020021/EN020021-000027-Scoping%20Report.pdf>

³ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN020021/EN020021-000012-Scoping%20Opinion.pdf>

- Statutory consultation (in accordance with section 42 of the Planning Act 2008) on a Preliminary Environmental Information Report (PEIR) (November 2017)⁴.

3.2.2 The consultation took into account European sites and helped ensure the Proposed Development avoided them. Further information on the statutory and non-statutory consultation is provided in the Consultation Report (**DCO Document 5.1**).

3.2.3 A summary of responses of relevance to this NSER, and how they have been addressed is provided in Table 3.1 below.

⁴ https://www.spenergynetworks.co.uk/userfiles/file/SPM_NSRRP_PEIR.pdf

Table 3.1 – Summary of Consultation Responses

Date	Summary of Contact	Response
Natural England		
16/09/2016 Consultation response from local Natural England officer	1. The proposed route options have taken into account statutory designated sites in the area and are not considered likely to have direct effects. Indirect effects can be readily managed and avoided through the implementation of standard pollution prevention and control measures during the construction phase. Risks to designated sites and associated protected species are considered low due to the nature of the project. 2. The project should ensure that due reference is made to the Midlands Meres and Mosses Ramsar/SAC/SSSSI designated areas however it is agreed that effects on these areas are unlikely due to the nature of the project and low risk of indirect pathways for effects. The assessment process should however reference and confirm this.	No significant effects identified on the Midlands Meres and Mosses or any other designated areas.

Table 3.1 – Summary of Consultation Responses

Date	Summary of Contact	Response
<p>April 2017 Scoping Opinion</p>	<p>The ES should thoroughly assess the potential for the proposal to affect designated sites. European sites (e.g. designated Special Areas of Conservation and Special Protection Areas) fall within the scope of the Conservation of Habitats and Species Regulations 2010 (<i>sic</i>). In addition paragraph 118 of the National Planning Policy Framework requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites. Under Regulation 61 of the Conservation of Habitats and Species Regulations 2010 (<i>sic</i>) an appropriate assessment needs to be undertaken in respect of any plan or project which is (a) likely to have a significant effect on a European site</p>	<p>No significant effects have been identified on any such sites. Note that the Scoping Opinion incorrectly refers to the LPA as the competent authority, when it should refer to the SoS.</p>

Table 3.1 – Summary of Consultation Responses

Date	Summary of Contact	Response
	<p>(either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the management of the site.</p> <p>Should a Likely Significant Effect on a European/Internationally designated site be identified or be uncertain, the competent authority (in this case the Local Planning Authority) may need to prepare an Appropriate Assessment, in addition to consideration of impacts through the EIA process.</p> <p>The development site will be within the vicinity of the following designated nature conservation sites (excluding SSSI): Midlands Meres and Mosses Ramsar Phase 2.</p> <p>In this case the proposal is not directly connected with, or necessary to, the management of a European site. We recommend that there should be a separate section of the Environmental Statement to address impacts upon European</p>	

Table 3.1 – Summary of Consultation Responses

Date	Summary of Contact	Response
	and Ramsar sites entitled 'Information for Habitats Regulations Assessment'. We welcome the intention stated in the Scoping Report to provide suitable information to allow a Habitats Regulations Assessment to be undertaken.	
02/02/2018 email from Natural England local office as part of the PEIR S42 Consultation	Email states, " <i>Natural England advises that the proposed development is unlikely to have significant direct impacts on internationally and nationally designated sites.</i> "	No significant effects have been identified on any such sites.
20/07/2017 meeting between SP Manweb and NE Notes from follow up email from SP	Following a consultation meeting between SP Manweb and Natural England the following was recorded with respect to the Midlands Meres and Mosses. It was, " <i>agreed that given the separation distance, there would be no direct effects on designated site and qualifying habitats. Dust, noise and any air pollution arising from the proposed development would be</i>	Natural England response addressed in Chapter 7 'Ecology' of the ES and in the NSER.

Table 3.1 – Summary of Consultation Responses

Date	Summary of Contact	Response
Manweb to NE dated 01/08/2017	<i>localised and fully mitigated against and addressed in a construction and environment management plan (CEMP). Therefore, there would also be no indirect effects. Therefore there would be no likely significant effects on the qualifying interest features of the Midlands Meres and Mosses sites, and as such, you [NE] agree we can screen out the need for HRA and should instead address matters through a 'stage one screening report – no likely significant effects'.</i>	
Email from Natural England to SP Manweb 11/01/2018	In response Natural England confirmed, <i>“With regard to the Meres and Mosses and the HRA, the stage one screening report would be a Habitats Regulations Assessment. As you’ll know it is a process where the first stage is screening i.e. the Likely Significant Effect test where sites potentially affected alongside mitigation to remove effects are considered, the second is Appropriate Assessment if effects can’t be ruled out</i>	As above

Table 3.1 – Summary of Consultation Responses

Date	Summary of Contact	Response
	<p><i>at stage one. Followed by assessment of alternatives and consideration of Imperative Reasons of Overriding Public Interest (IROPI) if adverse effects in the Integrity of the International sites are identified. From what I have seen so far, the proposal seems to avoid the designated sites themselves and should the final route of the line be within the catchment of some of the designated sites then due to the nature of the proposals it likely mitigation such as pollution prevention measures and a CEMP explaining measures to be employed to protect the environment would probably suffice.”</i></p>	
<p>Email from Natural England to SP Manweb 11/01/2018</p>	<p>Natural England continued, <i>“It would be acceptable for this report to be an addendum to the ES. Although, it would be more helpfully titled “No Significant Effects Report” as the competent authority will undertake the assessment based on the information you provide to them.”</i></p>	<p>This document provides a No Significant effects Report (NSER) to inform the Competent Authority when undertaking Habitats</p>

Table 3.1 – Summary of Consultation Responses

Date	Summary of Contact	Response
		Regulations Assessment (Stage 1) Screening.
SP Manweb to Natural England 09/07/2018	<i>Further consultation has been undertaken with NE specifically in relation to the People Over Wind (POW) European Court of Justice judgement on Habitats Regulations Assessments. NE had not provided any update to its previous response at the time of finalising this NSER</i>	Response awaited.
Shropshire Council		
03/05/2016 Telephone call with Shropshire Council Ecologist	Highlighted Midlands Meres and Mosses constituent sites as being a key feature where the potential effects from localised changes in drainage/hydrology (even some distance away) should be considered.	Potential effects are considered in the ES and the NSER. No significant effects have been identified on the Midlands Meres and Mosses European Sites.

Table 3.1 – Summary of Consultation Responses

Date	Summary of Contact	Response
April 2017 Scoping Opinion	The Council commented on the likely impact on the local wildlife and surveys undertaken.	No feedback was provided on European sites.
13/08/2018 Shropshire Council Ecologist Email	<i>Further consultation has been undertaken with SC (email 09/07/2018) specifically in relation to the People Over Wind (POW) European Court of Justice judgement on Habitats Regulations Assessments. SC responded as follows:</i> SC agrees that there should be no likely significant effect from the project as described on internationally designated sites (SACs or Ramsars).	No additional issues or concerns have been raised by SC in relation to European Sites, and their view that there would be no likely significant effects is confirmed.
The Royal Society for the Protection of Birds (RSPB)		
26/08/2016 Email	<i>“No serious concerns”</i>	No feedback was provided on European sites. No concerns were raised about any sensitive bird

Table 3.1 – Summary of Consultation Responses

Date	Summary of Contact	Response
		species, including those noteworthy bird species associated with the European Sites (as identified in the corresponding Ramsar Information Sheet, see Appendix 2).
23/07/2018 Email	<p><i>Further consultation has been undertaken with RSPB (email 09/07/2018) specifically in relation to the People Over Wind (POW) European Court of Justice judgement on Habitats Regulations Assessments. RSPB responded as follows:</i></p> <p>Thank you for your email. We have reviewed the revised draft HRA report and concluded that based on our understanding of this case, SP Manweb has avoided causing any likely significant effect on the Midlands Meres and Mosses Phase 1 and Phase 2 Special Area of Conservation and Ramsar site through careful route planning, and therefore</p>	In its response, RSPB has confirmed that their opinion that there are no likely significant effects in the absence of mitigation.

Table 3.1 – Summary of Consultation Responses

Date	Summary of Contact	Response
	the need to consider mitigation measures within an Appropriate Assessment has not arisen.	
Shropshire Wildlife Trust (SWT)		
07/09/2017 Email	As a means of compensating for the overall impact of the scheme Shropshire Wildlife Trust would recommend that contact is made with the Meres & Mosses Landscape Partnership Scheme. The Partnership has a number of schemes in proximity to the preferred route that have been developed in consultation with local businesses and communities that would benefit from support.	SWT made no comment on European Sites.
04/09/2018 Email	<i>Further consultation has been undertaken with SWT (09/07/2018) specifically in relation to the People Over Wind (POW) European Court of Justice judgement on Habitats Regulations Assessments. SWT responded as follows:</i>	No additional issues or concerns have been raised by SWT in relation to European Sites.

Table 3.1 – Summary of Consultation Responses

Date	Summary of Contact	Response
	<p>With regards to the People over Wind case it would seem to me that while line-routing could quite reasonably be considered to be part of the mitigation proposals the case would prevent this from allowing the scheme to be ruled out of HRA screening.</p> <p>Having said that the Shropshire Wildlife Trust view would be that the proposals are unlikely to produce a significant effect on the interest features of European sites either alone or in-combination with other plans/projects.</p>	

3.3 ZONE OF INFLUENCE

- 3.3.1 The Zones of Influence (Zol) in which effects could potentially occur are discussed in Section 7.3 of Chapter 7 'Ecology and Biodiversity' of the ES (**DCO Document 6.7**). The Zols were established through a consideration of the nature of the works required for the Proposed Development, as described in Section 2 of this NSER and Sections 3.6 – 3.10 of Chapter 3 of the ES 'The Proposed Development' (**DCO Document 6.3**). Survey extents and potential Zols were discussed and agreed with relevant consultees and set out in the Scoping Report.
- 3.3.2 Construction works involve small scale ground excavations at a series of isolated locations and sections of narrow trenching where cable undergrounding is required. Once operational, above ground infrastructure will comprise a series of new poles and associated electricity cables, along with supporting ancillary features. Consideration has been given to pathways for any potential effects on any European Site within the Zol reflecting the nature and scale of the Proposed Development, e.g. direct and indirect impacts arising from the construction and/or operation phases. These are discussed further in Section 5 below.
- 3.3.3 Subsequently the following Zols have been determined in relation to the European sites:
- Up to 5km from the Proposed Development for potential effects from construction related pollution; and,
 - Up to 10km from the Proposed Development where European Site qualifying features include bats or birds (i.e. mobile species) for potential effects from construction and operation.
- 3.3.4 Therefore European Sites considered within this assessment are limited to those which fall within the above Zols.

4 DESCRIPTION OF EUROPEAN AND OTHER DESIGNATED SITES

- 4.1.1 The Proposed Development does not lie within or adjacent to any European Site and does not cross or directly impact upon any designated sites. Figure 1 illustrates the relative location of European sites within the 5km and 10km Zols.
- 4.1.2 Table 4.1 describes European Sites within the 5km and 10km established Zols. It should be noted that European sites located more than 5km from the Proposed Development, with non-mobile qualifying species, are not considered to be at risk of being affected in any way, either alone or in combination with other projects and are not included in the assessment.
- 4.1.3 The European Sites within 5km (or 10km where there are mobile qualifying species) of the Proposed Development are (in order of proximity):
- UK11080 Midlands Meres and Mosses Phase 2 Ramsar; and
 - UK11043 Midlands Meres and Mosses Phase 1 Ramsar.
- 4.1.4 Data Sheets for the above European Sites are provided in Appendix 2 to this report.
- 4.1.5 Consultation responses from Natural England, the RSPB, Shropshire Council and Shropshire Wildlife Trust identified only the Midlands Meres and Mosses Ramsar sites as being of relevance, with no reference to any other European Sites.
- 4.1.6 The Midlands Meres and Mosses Phase 1 Ramsar (component site Whitemere SSSI) lies 3.2km from the Proposed Development at its nearest point.
- 4.1.7 The Midlands Meres and Mosses Phase 2 Ramsar (component site Brownheath Moss SSSI) lies 1.7km from the Proposed Development at its nearest point.

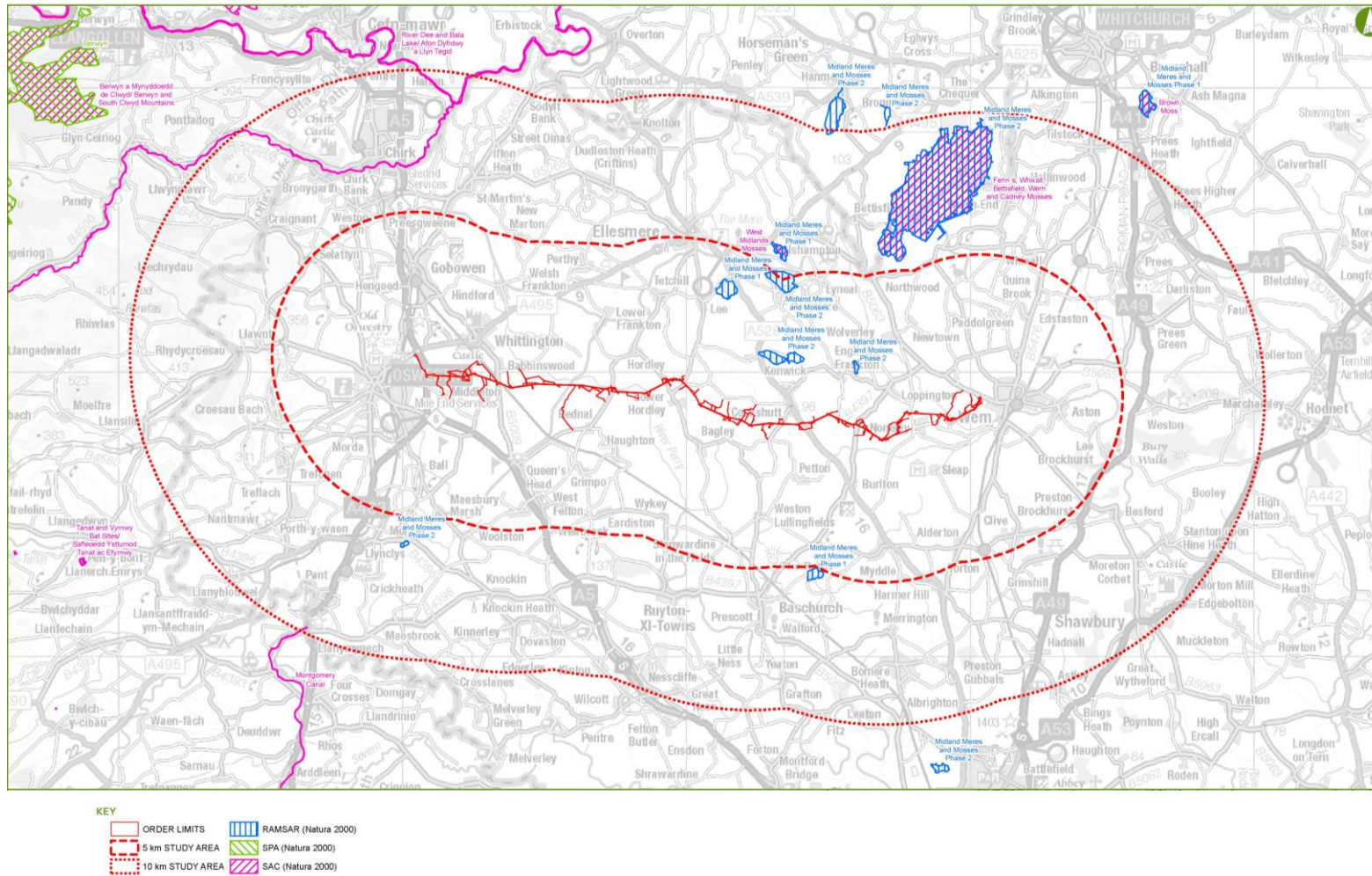


Figure 1: Proposed Development and European 2000 Sites

Table 4.1 – European Sites within Zone of Influence (5km and 10km of the Proposed Development)

Site	Description	Reason for Designation
<p>UK11043 Midland Meres and Mosses Phase 1 Ramsar <i>Nearest component SSSIs: White Mere 3.2km northeast Fenemere 5km south</i></p>	<p>The Meres & Mosses form a geographically discrete series of lowland open water and peatland sites in the north-west Midlands of England. These have developed in natural depressions in the glacial drift left by receding ice sheets which formerly covered the Cheshire/Shropshire Plain. The 16 component sites include open water bodies (meres), the majority of which are nutrient-rich with associated fringing habitats; reed swamps, fen, carr and damp pasture. Peat accumulation has resulted in nutrient poor peat bogs (mosses)</p>	<p><i>Ramsar Criterion 1</i> The site comprises a diverse range of habitats from open water to raised bog. <i>Ramsar Criterion 2</i> Supports a number of rare species of plants associated with wetlands including five nationally scarce species together with an assemblage of rare wetland invertebrates (three endangered insects and five other British Red Data Book species of invertebrates). <i>Noteworthy Flora:</i> Higher Plants - <i>Elatine hexandra</i>, <i>Eleocharis acicularis</i>, <i>Cicuta virosa</i>, <i>Thelypteris palustris</i>, <i>Carex elongate</i>. <i>Noteworthy Fauna:</i> Invertebrates - <i>Hagenella clathrata</i>, <i>Limnophila fasciata</i>, <i>Cararita limnaea</i>, <i>Lathrobium rufipenne</i>, <i>Donacia aquatica</i>,</p>

Table 4.1 – European Sites within Zone of Influence (5km and 10km of the Proposed Development)

Site	Description	Reason for Designation
	forming in some sites in the fringes of meres or completely infilling basins. In a few cases the result is a floating quaking bog or schwingmoor. The wide range of resulting habitats support nationally important flora & fauna.	<i>Prionocera pubescens</i> , <i>Gonomyia abbreviate</i> and <i>Sitticus floricola</i> .
<p>UK11080 Midland Meres and Mosses Phase 2 Ramsar <i>Nearest</i> <i>component</i></p>	As per Phase 1	<p><i>Ramsar Criterion 1</i> The site comprises a diverse range of habitats from open water to raised bog.</p> <p><i>Ramsar Criterion 2</i> Supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane <i>Cicuta virosa</i> and, elongated sedge <i>Carex elongata</i>. Also present are the nationally scarce bryophytes <i>Dicranum affine</i> and</p>

Table 4.1 – European Sites within Zone of Influence (5km and 10km of the Proposed Development)

Site	Description	Reason for Designation
<p>SSSIs:</p> <p><i>Brownheath Moss</i> 1.7km north</p> <p><i>Croze Mere</i> 2.1km north</p> <p><i>Sweat Mere</i> 2.1 km north</p> <p><i>Cole Mere</i> 4.6km north</p>		<p><i>Sphagnum pulchrum</i>. Also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insect listed for this site including the following endangered species: the moth <i>Glyphipteryx lathamella</i>, the caddisfly <i>Hagenella clathrata</i> and the sawfly <i>Trichiosoma vitellinae</i>.</p> <p><i>Noteworthy Flora:</i></p> <p>Higher Plants - <i>Calamagrostis stricta</i>, <i>Carex elongata</i>, <i>Cicuta virosa</i>, <i>Thelypteris palustris</i>.</p> <p>Lower Plants - <i>Sphagnum pulchrum</i>, <i>Dicranum undulatum</i>.</p> <p><i>Noteworthy Fauna:</i></p> <p>Birds - Northern shoveler <i>Anas clypeata</i>, Great cormorant <i>Phalacrocorax carbo carbo</i>, Great bittern <i>Botaurus stellaris stellaris</i>, Water rail <i>Rallus aquaticus</i>.</p>

Table 4.1 – European Sites within Zone of Influence (5km and 10km of the Proposed Development)

Site	Description	Reason for Designation
		Invertebrates - <i>Limnophila heterogyna</i> , <i>Atylotus plebeius</i> , <i>Hagenella clathrata</i> , <i>Limnophila fasciata</i> , <i>Carorita limnaea</i> , <i>Glyphipteryx lathamella</i> , <i>Trichiosoma vitellinae</i> , <i>Eilema serica</i> , <i>Brachythops wusteneii</i> , <i>Pachinematus xanthocarpus</i> , <i>Sittcus floricola</i> , <i>Lampronia fuscata</i> , <i>Hybomitra lurida</i> .

5 ASSESSMENT OF POTENTIAL EFFECTS

5.1 INTRODUCTION

- 5.1.1 This assessment considers the sources, pathways, and receptors of effects. Each of these elements is considered, and used to screen out/in sources/pathways and receptors. The location of the Proposed Development in relation to European sites is shown on Figure 1 above. The Information Sheets for the Phase 1 and Phase 2 Ramsar sites (provided as Appendix 1) identify factors of concern potentially adversely affecting these European sites' ecological character as: eutrophication, introduction/invasion of non-native plant species, and pollution – pesticides/agricultural runoff, and these factors have been taken into consideration as part of this NSER. Table 5.1 provides a summary of potential sources, pathways and receptors, which are then discussed in detail in this section
- 5.1.2 An appraisal of the effects of other plans or projects in combination with the Proposed Development has also been undertaken.
- 5.1.3 Following *People Over Wind (c-323/17)* referred to in Section 1 of this NSER, the assessment of potential effects considers the Proposed Development alone (i.e. the undergrounded sections, low voltage diversions and overhead line and the necessary support structures). The screening assessment does not take into account any mitigation measures relating to European sites and their qualifying interests.
- 5.1.4 Under the provisions of The Conservation of Habitats and Species Regulations (2017) the proposal is not directly connected with or necessary to the (conservation) management objectives of a European site and therefore further consideration of LSE is required.
- 5.1.5 Should there be significant changes to the proposed works, that may affect the conclusions presented herein, then a further screening of the potential for LSEs will be required.

5.2 POTENTIAL EFFECTS

- 5.2.1 The potential pathways and receptors for effects considered in Chapter 7 ‘Ecology and Biodiversity’ of the ES (**DCO Document 6.7**) in relation to the construction, operation and decommissioning phases are addressed in relation to European sites in this NSER, as set out in Table 5.1.

Table 5.1 – Summary Table of Potential Impacts, Pathways and Receptors Considered in the Assessment

Development Phase	Source/Pathway	Receptor(s)
Construction	Direct land take and habitat loss	N/A (The Proposed Development lies outside the European sites)
	Indirect damage or alteration through: <ul style="list-style-type: none"> - changes to surface or ground waters (hydrological alteration): alterations to the physical regime, typically water levels/availability to wetland plant species or habitats which constitute or support European site qualifying features; - pollution: release of pollutants (for example runoff from working areas and fuel spills) into habitats inside or outside the Order Limits including watercourses or ditches which provide pathways to affect downstream habitats and species associated with the European sites; and, - introduction or spread of invasive non-native species 	Qualifying habitats of European Sites Qualifying species of European sites

Table 5.1 – Summary Table of Potential Impacts, Pathways and Receptors Considered in the Assessment

Development Phase	Source/Pathway	Receptor(s)
	Disturbance – from machinery, equipment and human activities including noise and visual disruption	Mobile qualifying species of European sites
Operation	Collision with overhead wires	Mobile qualifying species (birds) of European sites
Decommissioning	As the connection is required for network reinforcement purposes it will be permanent infrastructure and therefore decommissioning has not been considered further. In the unlikely event that decommissioning was required the activities would be very similar to those for construction, i.e. creation of construction access tracks and temporary working areas, traffic movements, and working hours	N/A

5.3 CONSTRUCTION PHASE

Direct land take and habitat loss

- 5.3.1 There are no European sites or functionally linked habitats within the proposed area of development (the Order Limits). The nearest European site (component SSSI Brownheath Moss) is located 1.7km from the Order Limits and therefore there is no potential for direct effects on qualifying interest features from land take or habitat loss.
- 5.3.2 Consequently in relation to direct land take and habitat loss, there are no LSE on all the European site(s) and qualifying features considered, either alone or in combination with other plans or projects, and therefore no further assessment is required.
- 5.3.3 This is also the view of Natural England, whose consultation response (email received from Natural England local office dated 02/02/2018) states as follows: “*Natural England advises that the proposed development is unlikely to have significant direct impacts on internationally and nationally designated sites*”. An additional consultation response (reflecting the People Over Wind judgement) is awaited following a further consultation email sent to Natural England on 09/07/2018.

Indirect damage or alteration to habitats through changes to surface or ground waters

- 5.3.4 Brownheath Moss SSSI, a component site of the Midlands Meres and Mosses Phase 2 Ramsar is 1.7km from the Order Limits at its closest point. The majority of the Proposed Development lies more distant from the designated sites due to its linear nature and west-east alignment. The Midlands Meres and Mosses Ramsar sites, including Brownheath Moss, are not considered to be directly hydrologically linked with or dependent upon the habitats crossed by the Proposed Development. The SSSI and the land crossed by the Proposed Development drain independently to the River Roden; and Brownheath Moss SSSI also lies at a higher elevation. As a result, there is

no potential for any runoff or drainage effects on the SSSI, and the Midlands Meres and Mosses Phase 2 Ramsar from the Proposed Development.

- 5.3.5 Several watercourse crossings are required, including of the River Perry and the Montgomery Canal, along with small ditches which eventually drain into the larger watercourses. Chapter 3 of the ES 'The Proposed Development' (**DCO Document 6.3**), Section 3.8 (Paragraphs 3.8.25 to 3.8.31), describes the typical construction process associated with the erection of the wood poles. These typically require an area of 225m² at single circuit pole sites, with works at individual pole locations expected to last only between 1-3 days. Construction extents are also described in the Construction Report (**DCO Document 7.2**).
- 5.3.6 Due to the limited number, extent and duration of works adjacent to watercourses and lack of hydrological connectivity, there will be no effects on European sites or their qualifying features.
- 5.3.7 Works associated with the proposed undergrounding (cable trenching) is described in Section 3.8 (Paragraphs 3.8.3 to 3.8.7) of Chapter 3 'The Proposed Development of the ES' (**DCO Document 6.3**). Cabling works are not associated with any main watercourse crossings and, as for the overhead line elements, have no potential to affect the European sites due to separation distance and lack of hydrological connectivity.
- 5.3.8 Apart from those works associated with individual crossing points, construction works will maintain a buffer of at least 8m from main watercourses.
- 5.3.9 The construction compound will be located within an existing SP Energy Networks depot at Oswestry Industrial Estate and will therefore not require any new land-take as part of the Proposed Development, and the temporary laydown areas required will occupy a small footprint, in use for a temporary period of time (maximum of 12 months).

- 5.3.10 Any surface water effects during construction are considered to be temporary, highly localised and would have no appreciable effect at anything other than a highly localised geographic scale (see Chapter 9 of the ES 'Flood Risk, Water Quality and Resources (**DCO Document 6.9**)). As stated in Paragraph 5.3.3 above, the independent drainage routes to the River Roden and the higher elevation of Brownfield Moss SSSI (component site of the Phase 2 Ramsar) compared to the land crossed by the Proposed Development ensures that there is no potential to affect the European Sites. The assessment also concludes that there will be no pathway for surface or groundwater effects from the Proposed Development. As a result there will be no effects on the hydrology or water quality of the European Sites.
- 5.3.11 Consequently in relation to indirect damage or alteration to habitats through changes to surface or ground waters, there are no LSE on all the European site(s) and qualifying features considered, either alone or in combination with other plans or projects, and therefore no further assessment is required.

Indirect damage or alteration to habitats through introduction or spread of non-native species

- 5.3.12 The land affected by the construction phase (within the Order Limits) is almost entirely agricultural land under pastoral or arable management which does not provide functionally supporting habitat for the European sites. The distance of the Proposed Development from the European sites (1.7km at its nearest point) means that there is no direct potential for activities associated with the construction phase to introduce or spread non-native species or to have any effect within the European sites. Indirect pathways are restricted to waterways or public transport routes which are already subject to traffic movement and land management activities. Baseline ecological surveys described in Section 7.5 of Chapter 7 of the ES 'Ecology and Biodiversity' (**DCO Document 6.7**) found no invasive species within the Order Limits. Only two stands of Japanese knotweed were identified, located between 100m and 300m away from the Proposed Development. The movement of equipment

and vehicles associated with construction will be between Oswestry and Wem along the proposed route and public highways, well away from European sites. Given the absence of invasive species within the Order Limits, and distance of the European sites from the activities associated with the construction phase of the Proposed Development, it is considered that there is no likelihood of causing the spread of invasive species as far as the European sites or of having any effects on habitats and species associated with the designated sites. .

- 5.3.13 Consequently in relation to indirect damage or alteration to habitats through introduction or spread of non-native species, there are no LSE on all the European site(s) and qualifying features considered, either alone or in combination with other plans or projects, and therefore no further assessment is required.

Indirect damage or alteration to habitats through pollution

- 5.3.14 As described in Section 2 above and Chapter 3 of the ES 'The Proposed Development) (**DCO Document 6.3**)., the construction of the Proposed Development requires small working areas within the Order Limits.
- 5.3.15 The scale and type of equipment required during construction (not dissimilar in scale to agricultural machinery and plant) and restricted footprint of works within the Order Limits will result in small scale ground disturbance at excavation points along the cable and overhead line route, with the potential for runoff from exposed soils therefore very limited and considerably smaller in extent than agricultural operations in the wider area, such as ploughing and cultivation.
- 5.3.16 As a result, there are no LSE on all the European site(s) and qualifying features considered, either alone or in combination with other plans or projects, arising from construction related pollution therefore no further assessment is required.

Disturbance

- 5.3.17 The construction phase will proceed in a linear manner – such that construction activity and associated disturbance is localised at specific locations/sections along the route at any one time. The Order Limits, as described in Section 3.3 of Chapter 3 of the ES ‘The Proposed Development’ (**DCO Document 6.3**), demonstrate the limited extent of the working areas. The distance of the Proposed Development from the European sites means that there is no potential for visual, noise or other form of construction-related disturbance to occur.
- 5.3.18 The notable bird species associated with the Midlands Meres and Mosses Ramsar Phase 2, namely northern shoveler, great cormorant, great bittern and water rail, are all dependent on wetland habitats found within the European Site boundaries and are highly unlikely to regularly utilise any of the land area crossed by the Proposed Development or associated small watercourses. This is supported by the results of wintering bird surveys (Appendix 7.5 to the ES (**DCO Document 6.7.5**)) and no concerns over such species were raised through consultation (Table 3.1). Significant disturbance of these species can therefore be precluded.
- 5.3.19 Consequently there are no LSE on all the European site(s) and qualifying features considered, either alone or in combination with other plans or projects, arising from construction related disturbance and no further assessment is required.

5.4 OPERATION AND MAINTENANCE

- 5.4.1 Other than occasional inspections and minor maintenance works which are considered to have no potential to affect European Sites or their qualifying features, the potential for effects arising from the operational phase are restricted to collision with overhead wires for mobile (bird) species in relation to mobile qualifying bird species of the European sites.

- 5.4.2 The only relevant bird species are those listed associated with the Midlands Meres and Mosses Phase II Ramsar Site. Of these, two (great bittern and water rail) are almost entirely restricted to habitats found within the Ramsar Site and not present in the vicinity of the Proposed Development. The other two species (shoveler and great cormorant) are also reliant on waterbodies, but are somewhat more mobile and may commute between waterbodies; however no suitable habitats are present within the immediate vicinity of the Proposed Development and neither species is considered likely to regularly utilise any of the land area crossed by the Proposed Development or associated small watercourses. This is supported by the results of wintering bird surveys (Appendix 7.5 to the ES (**DCO Document 6.7.5**)), and no concerns over such species were raised through consultation by any organisation (Table 3.1). Collision risk for these species can therefore be considered inconsequential and significant effects precluded.
- 5.4.3 There are no LSE on all the European site(s) and qualifying features considered, either alone or in combination with other plans or projects, arising from operational collisions for noteworthy European Site bird species and therefore no further assessment is required.

5.5 DECOMMISSIONING

- 5.5.1 The connection is required for network reinforcement purposes and will be permanent infrastructure. In the unlikely event that decommissioning was required the activities would be very similar to those for construction, impacts are considered to be the same and no further assessment is therefore required.

5.6 IN-COMBINATION EFFECTS

- 5.6.1 The Conservation of Habitats and Species Regulations 2017 state that when considering whether a specific plan or project is likely to have a significant effect on a European Site, consideration should be given to the effect of the proposal alone and in-combination with other plans and projects. Part of the

HRA process is to identify the plans, programmes and projects that could have in-combination effects.

- 5.6.2 Whilst it can be concluded that the Proposed Development will not lead to any adverse impacts on European Sites or their qualifying features, an in-combination effects assessment has been undertaken in order to demonstrate procedural compliance.
- 5.6.3 The projects to be considered within the cumulative assessment and agreed with Shropshire Council are included within Chapter 12 of the ES 'Cumulative Effects' (**DCO Document 6.12**) and illustrated on Figure 4.2 of the ES (**DCO Document 6.14**). These projects have also been considered for the in-combination assessment in this NSER:
- 5.6.4 The NSER considers how the effects of the Proposed Development could combine and interact with the effects of other developments. Ecological information available on the Planning Portal for other developments listed in Table 5.2 was reviewed and any significant residual ecological effects resulting from these developments identified where possible. The nature and extent of any ecological effects were considered in relation to European sites in the context of how they, in combination with any identified ecological effects of the Proposed Development, could potentially result in significant effects.
- 5.6.5 The Proposed Development will occupy a narrow working corridor (as described in Sections 3.3 and 3.6 of Chapter 3 of the ES 'The Proposed Development' (**DCO Document 6.3**) and the Construction Report (**DCO Document 7.2**) and no other projects are known to be proposed within this location concurrently which are likely to have a significant effect on European sites. As with the Proposed Development, none of the other listed projects in the wider geographic area will have direct effects on European sites and all are sufficiently distant that indirect in-combination effects from disturbance or pollution risk can reasonably be excluded.
- 5.6.6 All the developments listed, apart from two, relate to residential or agricultural developments, a wastewater treatment facility and a solar farm, all of which

do not present risks for the Ramsar notable bird species or the Ramsar habitats under consideration.

5.6.7 Two applications relate to single wind turbines. One (Ref: 15/05475/SCR) lies approximately 3km south of the Proposed Development and has been screened as a non-EIA development by Shropshire council as it was not considered to lie in a 'sensitive area' as defined by the Town and Country (Environmental Impact Assessment) Regulations 2011 (applicable at that time). Apart from this screening confirmation, no further ecological information has been submitted in respect of the proposal.

5.6.8 The other application (Ref 15/03443/SCR) relates to a single wind turbine located approximately 4.5km south of the Proposed Development. This application has also been screened as non-EIA, and no further information is available on the proposals on the planning portal. Natural England, in its response to the screening consultation stated, "*From the information provided they have confirmed that the application site is not located within, adjacent to or in close proximity to any Site of Special Scientific Interest (SSSI) or Special Area of Conservation (SAC), Special Protection Area (SPA) or Ramsar Site and is not likely to significantly affect the interest features for which they are notified*".

5.6.9 It is considered that these two single wind turbine proposals, being small, and located some distance from the Proposed Development and in an area not considered to be sensitive for birds in general, would give rise to inconsequential effects from collision risk in combination with the Proposed Development. Similarly, all other projects listed in Table 5.2 would be inconsequential in relation to collision risk.

5.6.10 As stated in Section 5 of this NSER, the Proposed Development is considered to have no effect on European Sites and their qualifying interest species. Consequently, it is considered that there will be no in-combination effects arising from the projects presented in Chapter 12 of the ES 'Cumulative Effects' (**DCO Document 6.12**) and the Proposed Development.

6 CONCLUSION

- 6.1.1 The information contained in this NSER demonstrates that there are no LSEs on any of the European sites and qualifying features that have been considered, either alone or in combination with other plans or projects, and therefore no further Stages of the Habitats Regulations Assessment process are required.
- 6.1.2 An additional consultation exercise has been undertaken following the People Over Wind European Court of Justice ruling, and this has confirmed consultee views (respondents comprising Shropshire Council, RSPB and Shropshire Wildlife Trust) that there are no likely significant effects on European Sites or their qualifying interests arising from the Proposed Development, even in the absence of mitigation and standard good practice construction measures. However, further information has also been provided in Appendix 3 (summarising elements of the draft CEMP (DCO Document 6.3.2)) should the Secretary of State as Competent Authority wish to proceed to Stage 2 AA and consider good practice construction measures as described in the draft CEMP.

APPENDIX 1 – HABITATS REGULATIONS ASSESSMENT SCREENING MATRICES

Potential Effects

STAGE 1: SCREENING MATRICES

HRA Screening Matrix 1: Midland Meres and Mosses Phase 1

	<i>Denotes effects which are not relevant to a particular feature</i>			
Name of European site and designation: Midland Meres and Mosses Phase 1				
EU Code: UK11043 (Ramsar Information Sheet Ref)				
Distance to NSIP: Whitemere SSSI is the closest component of this Ramsar. 3.2km at nearest point. 3.9km at furthest point from Proposed Development				
European site features	Likely effects of NSIP			
<i>Effect</i>	<i>Direct Habitat Loss</i>	<i>Indirect Effects through hydrological change, pollution,</i>	<i>Disturbance of mobile qualifying species.</i>	<i>In combination effects</i>


				<i>or spread of non-native species.</i>								
<i>Stage of Development</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
Ramsar Criterion 1: wetland habitats. The site comprises a diverse range of habitats from open water to raised bog.				x a		x a				x b	x b	x b
Ramsar Criterion 2: rare wetland plants including five nationally scarce species. Also rare wetland invertebrates (three endangered insects and five other British Red Data Book species of invertebrates).				x a		x a				x b	x b	x b

<p>Noteworthy Flora: Higher plants: <i>Elatine hexandra</i>, <i>Eleocharis acicularis</i>, <i>Cicuta virosa</i>, <i>Thelypteris palustris</i>, <i>Carex elongata</i>.</p>				<p>x a</p>		<p>x a</p>				<p>x b</p>	<p>x b</p>	<p>x b</p>
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Evidence supporting conclusions:

- a. Effects ruled-out through lack of hydrological connectivity, separation distance and nature and scale of works (see Section 5 Paragraph 5.3.3 of this NSER, and Section 3.7 (Paragraphs 3.7.2 – 3.7.9, 3.7.11 – 3.7.15), and Section 3.8 (Paragraphs 3.8.3 – 3.8.7, 3.8.14 – 3.8.17, 3.8.25 – 3.8.31) of Chapter 3 of the ES ‘The Proposed Development’, (**DCO Document 6.3**) and Section 9.5, Paragraph 9.5.2 – 9.5.4 and Paragraph 9.6.8 of Chapter 9 ‘Flood Risk, Water Quality and Water Resources’ of the ES (**DCO Document 6.9**)).
- b. In combination effects considered and precluded on the basis of lack of any predicted impacts (see Section 5.6 of this NSER).

HRA Screening Matrix 2 Midland Meres and Mosses Phase 2

 Denotes effects which are not relevant to a particular feature

Name of European site and designation: Midland Meres and Mosses Phase 2												
EU Code: UK11080 (Ramsar Information Sheet Ref)												
Distance to NSIP: Brownheath Moss SSSI is the closest component of this Ramsar. 1.7km at nearest point. 2.1km at further point.												
European site features	Likely effects of NSIP											
	Direct Habitat Loss			Indirect Effects through hydrological change, pollution, spread of non-native species.			Disturbance of, or collision for, mobile qualifying bird species.			In combination effects		
Effect												
Stage of Development	C	O	D	C	O	D	C	O	D	C	O	D
Ramsar Criterion 1: wetland habitats				x c		x c				x e	x e	x e

<p>Ramsar Criterion 2: Rare wetland plants, including cowbane <i>Cicuta virosa</i> and elongated sedge <i>Carex elongata</i>. Nationally scarce bryophytes <i>Dicranum affine</i> and <i>Sphagnum pulchrum</i>.</p> <p>Also assemblage of invertebrates including rare species; 16 species of British Red Data Book insect listed including the following endangered species: the moth <i>Glyphipteryx lathamella</i>, the caddisfly <i>Hagenella clathrata</i> and the sawfly <i>Trichiosoma vitellinae</i>.</p>				<p>x c</p>		<p>x c</p>				<p>x e</p>	<p>x e</p>	<p>x e</p>
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<p>Noteworthy Fauna: Birds: Northern Shoveler <i>Anas clypeata</i>, Great Cormorant <i>Phalacrocorax carbo</i>, Great Bittern <i>Botaurus stellaris</i> and Water Rail <i>Rallus aquaticus</i>.</p>							<p>x d</p>	<p>x d</p>	<p>x d</p>	<p>x e</p>	<p>x e</p>	<p>x e</p>
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Evidence supporting conclusions:

- c.** Effects ruled-out through lack of hydrological connectivity, separation distance and nature and scale of works (see Section 5 Paragraph 5.3.3 of this NSER, and Section 3.7 (Paragraphs 3.7.2 – 3.7.9, 3.7.11 – 3.7.15), and Section 3.8 (Paragraphs 3.83 – 3.8.7, 3.8.14 – 3.8.17, 3.8.25 – 3.8.31) of Chapter 3 of the ES 'The Proposed Development', (**DCO Document 6.3**) and Section 9.5, Paragraph 9.5.2 – 9.5.4 and Paragraph 9.6.8 of Chapter 9 'Flood Risk, Water Quality and Water Resources' of the ES (**DCO Document 6.9**)).
- d.** Disturbance or collisions precluded through lack of habitat availability (suitable for these species) around the Proposed Development and targeted field surveys showing absence or very low occurrences of these species (Appendix 7.5 'Ornithological Surveys', and Section 7.6 Table 7.6 of Chapter 7 'Ecology and Biodiversity' of the ES (**DCO Document 6.7.**)). Statutory consultees (Table 3.1 of this NSER) raised no concerns over this issue.
- e.** In combination effects considered and precluded on the basis of lack of any predicted impacts (see Section 5.6 of this NSER).

APPENDIX 2 – RAMSAR INFORMATION SHEETS

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

Joint Nature Conservation Committee

Monkstone House

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Cambridgeshire PE1 1JY

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Email: RIS@JNCC.gov.uk

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DD MM YY

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

Designated: 09 May 1994

3. Country:

UK (England)

4. Name of the Ramsar site:

Midland Meres and Mosses Phase 1

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

- i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* ☐;
- ii) **an electronic format** (e.g. a JPEG or ArcView image) *Yes*
- iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* ☐;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

52 54 11 N 02 50 25 W

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Chester, Shrewsbury, Stafford

16 component sites are located in the Shropshire/Cheshire Plain, south-west of Manchester and north-west of Birmingham.

Administrative region: Cheshire; Shropshire; Staffordshire

10. Elevation (average and/or max. & min.) (metres): **11. Area (hectares):** 510.88

Min.	43
Max.	120
Mean	73

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Meres & Mosses form a geographically discrete series of lowland open water and peatland sites in the north-west Midlands of England. These have developed in natural depressions in the glacial drift left by receding ice sheets which formerly covered the Cheshire/Shropshire Plain. The 16 component sites include open water bodies (meres), the majority of which are nutrient-rich with associated fringing habitats; reed swamps, fen, carr & damp pasture. Peat accumulation has resulted in nutrient poor peat bogs (mosses) forming in some sites in the fringes of meres or completely infilling basins. In a few cases the result is a floating quaking bog or schwingmoor. The wide range of resulting habitats support nationally important flora & fauna.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 2

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

The site comprises a diverse range of habitats from open water to raised bog.

Ramsar criterion 2

Supports a number of rare species of plants associated with wetlands including five nationally scarce species together with an assemblage of rare wetland invertebrates (three endangered insects and five other British Red Data Book species of invertebrates).

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	acidic, basic, sand, clay, alluvium, peat, nutrient-rich, nutrient-poor, sandstone, sandstone/mudstone, gravel
Geomorphology and landscape	lowland, hilly, floodplain, escarpment
Nutrient status	eutrophic, mesotrophic, oligotrophic
pH	acidic, circumneutral, strongly acidic
Salinity	fresh
Soil	mainly mineral, mainly organic
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Shawbury, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/shawbury.html) Max. daily temperature: 13.4° C Min. daily temperature: 5.2° C Days of air frost: 61.8 Rainfall: 655.7 mm Hrs. of sunshine: 1398.1

General description of the Physical Features:

The Meres and Mosses of the north-west Midlands comprise a series of open water and peatland sites, most of which developed in natural depressions left by the retreating ice sheets at the end of the last Ice Age. There are over 60 open water sites, or 'meres', as well as a smaller number of peatland sites, known as 'mosses'.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Meres and Mosses of the north-west Midlands comprise a series of open water and peatland sites, most of which developed in natural depressions left by the retreating ice sheets at the end of

the last Ice Age. There are over 60 open water sites, or 'meres', as well as a smaller number of peatland sites, known as 'mosses'.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Sediment trapping, Recharge and discharge of groundwater, Flood water storage / desynchronisation of flood peaks

19. Wetland types:

Inland wetland

Code	Name	% Area
U	Peatlands (including peat bogs swamps, fens)	36.2
O	Freshwater lakes: permanent	35
Other	Other	13
Tp	Freshwater marshes / pools: permanent	7.7
W	Shrub-dominated wetlands	6.1
Ts	Freshwater marshes / pools: seasonal / intermittent	2

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The site's primary interest is its wide range of lowland wetland types and successional stages within a distinct biogeographical area. Waters are generally circumneutral or acidic depending on the component site's soil type, catchment size and usage. Substantial areas of open water remain in some sites, and in many cases this is fringed by extensive and varied swamp, fen and carr communities. Some basins have become peat-filled, leading in some circumstances to development of ombrotrophic conditions; of particular importance are the quaking bogs or schwingmoors.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

Elatine hexandra, Eleocharis acicularis, Cicuta virosa, Thelypteris palustris, Carex elongata

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species Information

Nationally important species occurring on the site.

Invertebrates.

Hagenella clathrata, Limnophila fasciata, Cararita limnaea, Lathrobium rufipenne, Donacia aquatica, Prionocera pubescens, Gonomyia abbreviata, Sitticus floricola

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

- Aesthetic
- Archaeological/historical site
- Environmental education/ interpretation
- Livestock grazing
- Non-consumptive recreation
- Scientific research
- Sport fishing

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	
Local authority, municipality etc.	+	+
National/Crown Estate	+	+
Private	+	+

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	
Recreation	+	+
Current scientific research	+	+
Commercial forestry		+
Fishing: recreational/sport	+	+
Arable agriculture (unspecified)		+
Grazing (unspecified)	+	+
Hay meadows	+	

Hunting: recreational/sport	+	+
Sewage treatment/disposal		+
Irrigation (incl. agricultural water supply)		+
Mineral exploration (excl. hydrocarbons)		+
Transport route		+
Urban development		+
Non-urbanised settlements		+

26. Factors (past, present or potential) adversely affecting the site’s ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.
2. Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Eutrophication	1		+	+	+
Introduction/invasion of non-native plant species	1		+		+

For category 2 factors only.

What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?

Is the site subject to adverse ecological change? NO

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
National Nature Reserve (NNR)	+	
Land owned by a non-governmental organisation for nature conservation	+	
Management agreement	+	+
Site management statement/plan implemented	+	
Other		+

Special Area of Conservation (SAC)	+	
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b) Describe any other current management practices:

The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Habitat.

Catchment management planning

Peatland restoration & monitoring

Fen rehabilitation.

Limnology.

Hydrology.

Environment.

Water chemistry.

Trophic status / nutrient budgets.

Peat palaeo-ecology.

Impacts of fish.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Areas owned by the Local Authority and National Nature Reserves are used by schools and universities for site-base projects and individual dissertations.

National Nature Reserves are used as sites to demonstrate management-practice and use of machinery.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities, Facilities provided and Seasonality.

Variable use of sites depending on their accessibility to the general public. No major tourism or recreational use apart from some angling and boating and motor sports (water-skiing) in one or two cases. Many sites are accessible through a network of public footpaths.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs,

European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Site-relevant references

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Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
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Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

Joint Nature Conservation Committee

Monkstone House

City Road

Peterborough

Cambridgeshire PE1 1JY

UK

Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948

Email: RIS@JNCC.gov.uk

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DD MM YY

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

Designated: 02 February 1997

3. Country:

UK (England/Wales)

4. Name of the Ramsar site:

Midland Meres and Mosses Phase 2

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

- i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* ☐;
- ii) **an electronic format** (e.g. a JPEG or ArcView image) *Yes*
- iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* ☐;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

52 55 20 N 02 45 43 W

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Chester, Shrewsbury, Stafford

The 18 units which make up the site are spread over the Wrexham / Shropshire / Cheshire and Staffordshire Plain. The majority of the units are in Cheshire and north Shropshire, with a small number of outlying sites in adjacent parts of Staffordshire and Wrexham.

Administrative region: Cheshire; Clwyd; Shropshire; Staffordshire; Wreccsam/ Wrexham

10. Elevation (average and/or max. & min.) (metres): **11. Area** (hectares): 1588.24

Min.	63
Max.	94
Mean	83

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Meres and Mosses form a geographically diverse series of lowland open water and peatland sites in the north-west Midlands of England and north-east Wales. These have developed in natural depressions in the glacial drift left by receding ice sheets which formerly covered the Cheshire/Shropshire Plain. The 18 component sites include open water bodies (meres), the majority of which are nutrient-rich with associated fringing habitats, reed swamp, fen, carr and damp pasture. Peat accumulation has resulted in the nutrient-poor peat bogs (mosses) forming in some sites on the fringes of the meres or completely infilling basins. In a few cases the result is a floating quaking bog or schwingmoor. The wide range of resulting habitats support nationally important flora and fauna.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 2

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

The site comprises a diverse range of habitats from open water to raised bog.

Ramsar criterion 2

Supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane *Cicuta virosa* and, elongated sedge *Carex elongata*. Also present are the nationally scarce bryophytes *Dicranum affine* and *Sphagnum pulchrum*.

Also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insect listed for this site including the following endangered species: the moth *Glyphipteryx lathamella*, the caddisfly *Hagenella clathrata* and the sawfly *Trichiosoma vitellinae*.

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	acidic, basic, neutral, sand, clay, alluvium, peat, nutrient-rich, nutrient-poor, sandstone, sandstone/mudstone, gravel
Geomorphology and landscape	lowland, hilly, floodplain, escarpment
Nutrient status	eutrophic, mesotrophic, oligotrophic
pH	acidic, circumneutral, strongly acidic
Salinity	fresh
Soil	mainly organic
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Shawbury, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/shawbury.html) Max. daily temperature: 13.4° C Min. daily temperature: 5.2° C Days of air frost: 61.8 Rainfall: 655.7 mm Hrs. of sunshine: 1398.1

General description of the Physical Features:

The Meres and Mosses of the north-west Midlands comprise a series of open water and peatland sites, most of which developed in natural depressions left by the retreating ice sheets at the end of the last Ice Age. There are over 60 open water sites, or 'meres', as well as a smaller number of peatland sites, known as 'mosses'.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Meres and Mosses of the north-west Midlands comprise a series of open water and peatland sites, most of which developed in natural depressions left by the retreating ice sheets at the end of the last Ice Age. There are over 60 open water sites, or 'meres', as well as a smaller number of peatland sites, known as 'mosses'.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Recharge and discharge of groundwater, Flood water storage / desynchronisation of flood peaks

19. Wetland types:

Inland wetland

Code	Name	% Area
U	Peatlands (including peat bogs swamps, fens)	66.1
O	Freshwater lakes: permanent	14.4
Other	Other	12.7
Xp	Forested peatland	4.7
W	Shrub-dominated wetlands	2.1

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The site's primary interest is its wide range of lowland wetland types and successional stages within a distinct biogeographical area. Waters are generally circumneutral or acidic depending on the component site's soil type, catchment size and usage. Substantial areas of open water remain in some sites, and in many cases this is fringed by extensive and varied swamp, fen and carr communities. Some basins have become peat-filled, leading in some circumstances to the development of ombrotrophic conditions; of particular importance are the quaking bogs or schwingmoors.

Fenns, Whixall, Bettisfield, Wem and Cadney Mosses are large raised bogs of exceptional importance.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.**Higher Plants.**

Calamagrostis stricta, Carex elongata, Cicuta virosa, Thelypteris palustris

Lower Plants.

Sphagnum pulchrum, Dicranum undulatum

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds**Species currently occurring at levels of national importance:****Species with peak counts in spring/autumn:**

Northern shoveler , *Anas clypeata*, NW & C Europe 171 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Great cormorant , *Phalacrocorax carbo carbo*, NW Europe 323 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3)

Great bittern , *Botaurus stellaris stellaris*, W Europe, NW Africa 1 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9-2002/3)

Water rail , *Rallus aquaticus*, Europe 7 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9-2002/3)

Species Information**Nationally important species occurring on the site.****Invertebrates.**

Limnophila heterogyna, Atylotus plebeius, Hagenella clathrata, Limnophila fasciata, Carorita limnaea, Glyphipteryx lathamella, Trichiosoma vitellinae, Eilema serica, Brachythops wusteneii, Pachinematus xanthocarpus, Sitticus floricola, Lampronia fuscateella, Hybomitra lurida.

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
 Archaeological/historical site
 Environmental education/ interpretation
 Livestock grazing
 Non-consumptive recreation
 Peat cutting (small-scale/subsistence)
 Scientific research
 Sport fishing

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	
Local authority, municipality etc.	+	+
National/Crown Estate	+	+
Private	+	+

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	
Recreation	+	
Current scientific research	+	
Collection of non-timber natural products: (unspecified)	+	
Commercial forestry		+
Fishing: recreational/sport	+	
Arable agriculture (unspecified)		+
Grazing (unspecified)	+	+
Hunting: recreational/sport	+	+
Sewage treatment/disposal		+
Irrigation (incl. agricultural water supply)		+
Mineral exploration (excl. hydrocarbons)		+
Transport route		+
Urban development		+
Non-urbanised settlements		+

26. Factors (past, present or potential) adversely affecting the site’s ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Eutrophication	1		+	+	+
Introduction/invasion of non-native plant species	1		+		+
Pollution – pesticides/agricultural runoff	1			+	+

For category 2 factors only.

What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?

Is the site subject to adverse ecological change? NO

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
National Nature Reserve (NNR)	+	
Land owned by a non-governmental organisation for nature conservation	+	
Management agreement	+	+
Site management statement/plan implemented	+	
Other	+	+
Special Area of Conservation (SAC)	+	

b) Describe any other current management practices:

The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Habitat.

Catchment management planning.

Peatland restoration & monitoring.

Fen rehabilitation.

Limnology.

Hydrology.

Environment.

Water chemistry.

Trophic status/nutrient budgets.

Peat paleo-ecology.

Impacts of fish.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Areas owned by the Local Authority and National Nature Reserves are used by schools and universities for site-based projects and individual dissertations.

National Nature Reserves are used as management-practice and machinery demonstration sites.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities.

Angling; boating.

Facilities provided.

There is a network of public footpaths.

Seasonality.

Increased use in summer.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs,

European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

Head, Countryside Division, Welsh Assembly Government, Cathays Park, Cardiff, CF1 3NQ

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK / Site Safeguard Officer, International Designations, Countryside Council for Wales, Maes-y-Ffynnon, Penrhosgarnedd, Bangor, Gwynedd, LL57 2DW

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Site-relevant references

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APPENDIX 3 – STANDARD GOOD PRACTICE CONSTRUCTION MEASURES DURING CONSTRUCTION

A draft Construction Environmental Management Plan (CEMP) has been produced (**DCO Document 6.3.2**) outlining the means by which effects on the environment would be managed. The document will sit alongside the Construction, Health, Safety and Welfare requirements for the Proposed Development. The CEMP will help to control and guide the working practices used during construction, and would be reviewed and amended as necessary throughout the works. The CEMP also incorporates Natural England, Historic England and Environment Agency guidelines by reflecting current best practice in protecting the environment during the works.

Standard good practice construction and operation phase pollution prevention measures will be implemented as part of the CEMP, including applicable current guidance such as Guidance for Pollution Prevention GPP5: *Works and Maintenance in or Near Water* (2018).

Notwithstanding the separation distance and lack of hydrological linkage between the land crossed by the Proposed Development and European Site(s), the CEMP includes Method Statements for working within 8m of watercourses and waterbodies as part of overall standard pollution prevention and control measures to protect the local environment.

The CEMP includes biosecurity measures to prevent the localised introduction or spread of invasive non-native species on agricultural land, including checking and cleaning vehicles and machinery before leaving construction working areas and maintaining buffer or exclusion zones around watercourses.