

# **MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS**

## **Environmental Statement**

**Volume 3, Chapter 11: Aviation and radar**



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## Glossary

| Term                                 | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aerodrome Reference Point            | An Aerodrome Reference Point is the centre-point of an aerodrome, located at the geometric centre of all the usable runways and is used as the designated geographical location of an aerodrome.                                                                                                                                                                                                                                 |
| Applicants                           | Morgan Offshore Wind Limited (Morgan OWL) and Morecambe Offshore Windfarm Ltd (Morecambe OWL).                                                                                                                                                                                                                                                                                                                                   |
| Baseline                             | The status of the environment without the Transmission Assets in place.                                                                                                                                                                                                                                                                                                                                                          |
| Commitment                           | This term is used interchangeably with mitigation and enhancement measures. The purpose of commitments is to avoid, prevent, reduce or, if possible, offset significant adverse environmental effects. Primary and tertiary commitments are taken into account and embedded within the assessment set out in the ES.                                                                                                             |
| Development Consent Order            | An order made under the Planning Act 2008, as amended, granting development consent.                                                                                                                                                                                                                                                                                                                                             |
| Effect                               | The term used to express the consequence of an impact. The significance of effect is determined by correlating magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.                                                                                                                                                                        |
| Environmental Impact Assessment      | The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.                                                                                                                           |
| Environmental Statement              | The document presenting the results of the Environmental Impact Assessment process.                                                                                                                                                                                                                                                                                                                                              |
| Generation Assets                    | The generation assets associated with the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm include the offshore wind turbines, inter-array cables, offshore substation platforms and platform link (interconnector) cables to connect offshore substations                                                                                                                                                       |
| Impact                               | Change that is caused by an action/proposed development, e.g., land clearing (action) during construction which results in habitat loss (impact).                                                                                                                                                                                                                                                                                |
| Instrument Meteorological Conditions | Instrument Meteorological Conditions are weather conditions which would preclude flight by the visual flight rules (conditions where the aircraft is in, or close to cloud or flying in visibility less than a specified minimum).                                                                                                                                                                                               |
| Intertidal Infrastructure Area       | The temporary and permanent areas between MLWS and MHWS.                                                                                                                                                                                                                                                                                                                                                                         |
| Landfall                             | The area in which the offshore export cables make landfall (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Lytham St. Annes between Mean Low-Water Springs and the Transition Joint Bay inclusive of all construction works, including the offshore and onshore cable routes, intertidal working area and landfall compound(s). |
| Maximum design scenario              | The realistic worst case scenario, selected on a topic-specific and impact specific basis, from a range of potential parameters for the Transmission Assets.                                                                                                                                                                                                                                                                     |

| Term                                                          | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Morgan and Morecambe Offshore Wind Farms: Transmission Assets | <p>The offshore and onshore infrastructure connecting the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm to the national grid. This includes the offshore export cables, landfall site, onshore export cables, onshore substations, 400 kV grid connection cables and associated grid connection infrastructure such as circuit breaker compounds.</p> <p>Also referred to in this report as the Transmission Assets, for ease of reading.</p>                                                                            |
| Morecambe OWL                                                 | Morecambe Offshore Windfarm Limited is owned by Copenhagen Infrastructure Partners' (CIP) fifth flagship fund, Copenhagen Infrastructure V (CI V).                                                                                                                                                                                                                                                                                                                                                                                          |
| Morgan OWL                                                    | Morgan Offshore Wind Limited is a joint venture between JERA Nex bp (JNbp) and Energie Baden-Württemberg AG (EnBW).                                                                                                                                                                                                                                                                                                                                                                                                                         |
| National Policy Statements                                    | The current national policy statements published by the Department for Energy Security and Net Zero in 2023 and adopted in 2024.                                                                                                                                                                                                                                                                                                                                                                                                            |
| Obstacle Limitation Surfaces                                  | Obstacle Limitation Surfaces define the airspace around aerodromes to be maintained free from obstacles so as to permit the intended aeroplane operations at the aerodromes to be conducted safely and to prevent the aerodromes from becoming unusable by the growth of obstacles around the aerodromes.                                                                                                                                                                                                                                   |
| Offshore export cables                                        | The cables which would bring electricity from the Generation Assets to the landfall.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Offshore substation platform(s)                               | A fixed structure located within the wind farm sites, containing electrical equipment to aggregate the power from the wind turbine generators and convert it into a more suitable form for export to shore.                                                                                                                                                                                                                                                                                                                                 |
| Onshore export cable corridor                                 | The corridor within which the onshore export cables will be located.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Onshore Infrastructure Area                                   | The area within the Transmission Assets Order Limits landward of Mean High Water Springs. Comprising the offshore export cables from Mean High Water Springs to the transition joint bays, onshore export cables, onshore substations and 400 kV grid connection cables, and associated temporary and permanent infrastructure including temporary and permanent compound areas and accesses. Those parts of the Transmission Assets Order Limits proposed only for ecological mitigation/biodiversity benefit are excluded from this area. |
| Onshore Order Limits                                          | See Transmission Assets Order Limits: Onshore (below).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Onshore substations                                           | The onshore substations will include a substation for the Morgan Offshore Wind Project: Transmission Assets, and a substation for the Morecambe Offshore Windfarm: Transmission Assets. These will each comprise a compound containing the electrical components for transforming the power supplied from the generation assets to 400 kV and to adjust the power quality and power factor, as required to meet the UK Grid Code for supply to the National Grid.                                                                           |
| Preliminary Environmental Information Report                  | A report that provides preliminary environmental information in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This is information that enables consultees to understand the likely significant environmental effects of a project, and which helps to inform consultation responses.                                                                                                                                                                                                      |



| Term                                       | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Substation                                 | Part of an electrical transmission and distribution system. Substations transform voltage from high to low, or the reverse, by means of electrical transformers.                                                                                                                                                                                                                                                                |
| Transmission Assets                        | See Morgan and Morecambe Offshore Wind Farms: Transmission Assets (above).                                                                                                                                                                                                                                                                                                                                                      |
| Transmission Assets Order Limits           | The area within which all components of the Transmission Assets will be located, including areas required on a temporary basis during construction and/or decommissioning.                                                                                                                                                                                                                                                      |
| Transmission Assets Order Limits: Offshore | <p>The area within which all components of the Transmission Assets seaward of Mean Low Water Springs will be located, including areas required on a temporary basis during construction and/or decommissioning.</p> <p>Also referred to in this report as the Offshore Order Limits, for ease of reading.</p>                                                                                                                   |
| Transmission Assets Order Limits: Onshore  | <p>The area within which all components of the Transmission Assets landward of Mean High Water Springs will be located, including areas required on a temporary basis during construction and/or decommissioning.</p> <p>Also referred to in this report as the Onshore Order Limits, for ease of reading.</p>                                                                                                                  |
| Uncontrolled Airspace                      | Airspace in which Air Traffic Control does not exercise any executive authority but may provide basic information services to aircraft in radio contact. In the UK, Class G airspace is uncontrolled. Aircraft operating in uncontrolled airspace may be in receipt of an Air Traffic Service; however, within this classification of airspace, pilots are ultimately responsible for their own terrain and obstacle clearance. |
| Visual Flight Rules                        | Visual Flight Rules simply means that the aircraft is intended to operate in Visual Meteorological Conditions utilising outside visual reference. Clouds, heavy precipitation, low visibility, and otherwise adverse weather conditions should be avoided under Visual Flight Rules.                                                                                                                                            |

## Acronyms

| Acronym | Meaning                                    |
|---------|--------------------------------------------|
| AIP     | Aeronautical Information Publication       |
| AOA     | Airport Operators Association              |
| ATS     | Air Traffic Service                        |
| BAEZ    | Blackpool Airport Enterprise Zone          |
| CEA     | Cumulative Effects Assessment              |
| CAA     | Civil Aviation Authority                   |
| CAP     | Civil Aviation Publication                 |
| CNS     | Communication, Navigation and Surveillance |
| CoT     | Commitment                                 |

| Acronym | Meaning                                              |
|---------|------------------------------------------------------|
| DCO     | Development Consent Order                            |
| DCSA    | Defence Communication Services Agency                |
| EC      | European Commission                                  |
| EIA     | Environmental Impact Assessment                      |
| EMF     | Electro-Magnetic Field                               |
| ES      | Environmental Statement                              |
| EU      | European Union                                       |
| HMR     | Helicopter Main Route                                |
| HDD     | Horizontal Directional Drilling                      |
| IAIP    | Integrated Aeronautical Information Package          |
| ICAO    | International Civil Aviation Organisation            |
| IEMA    | Institute of Environmental Management and Assessment |
| IFP     | Instrument Flight Procedures                         |
| ILS     | Instrument Landing System                            |
| MCA     | Maritime and Coastguard Agency                       |
| MDS     | Maximum Design Scenario                              |
| MGN     | Maritime Guidance Note                               |
| MHWS    | Mean High Water Springs                              |
| MLWS    | Mean Low Water Springs                               |
| MilAIP  | Military Aeronautical Information Publication        |
| MOD     | Ministry of Defence                                  |
| NAVAID  | Aeronautical Navigation Aids                         |
| NHV     | Noordzee Helikopters Vlaanderen                      |
| NPPF    | National Planning Policy Framework                   |
| NPS     | National Policy Statement                            |
| OLS     | Obstacle Limitation Surfaces                         |
| OREI    | Offshore Renewable Energy Installation               |
| OSP     | Offshore Substation Platform                         |
| PEIR    | Preliminary Environmental Information Report         |
| PEXA    | Military Practice and Exercise Areas                 |
| PSR     | Primary Surveillance Radar                           |
| SAR     | Search and Rescue                                    |
| SSR     | Secondary Surveillance Radar                         |



| Acronym | Meaning              |
|---------|----------------------|
| TJB     | Transition Joint Bay |
| UK      | United Kingdom       |
| VFR     | Visual Flight Rules  |

## Units

| Unit           | Description    |
|----------------|----------------|
| %              | Percentage     |
| km             | Kilometres     |
| m              | Metre          |
| m <sup>2</sup> | Square metre   |
| nm             | Nautical mile  |
| £              | Pound Stirling |

---

## 11 Aviation and radar

### 11.1 Introduction

- 11.1.1.1 This chapter of the Environmental Statement (ES) presents the findings of the Environmental Impact Assessment (EIA) work undertaken for the Morgan and Morecambe Offshore Wind Farms: Transmission Assets. For ease of reference the Morgan and Morecambe Offshore Wind Farms: Transmission Assets are referred to in this chapter as the 'Transmission Assets'. This ES accompanies the application to the Planning Inspectorate for development consent for the Transmission Assets.
- 11.1.1.2 The purpose of the Transmission Assets is to connect the Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets (referred to collectively as the 'Generation Assets') to the National Grid. A description of the Transmission Assets can be found in Volume 1, Chapter 3: Project description of the ES.
- 11.1.1.3 This chapter considers the potential impacts and effects of the Transmission Assets on aviation and radar during the construction, operation and maintenance, and decommissioning phases. Specifically, it relates to the onshore and intertidal elements (i.e. landward of Mean Low Water Springs (MLWS)) of the Transmission Assets on Blackpool Airport.
- 11.1.1.4 In the Preliminary Environmental Information Report (PEIR), some offshore elements of the Transmission Assets were considered within the scope of this chapter. Since this time, the offshore substation platforms have been removed from the Transmission Assets application. This infrastructure now solely sits within the respective Generation Assets applications. In addition, the Morgan offshore booster station is no longer required. The removal of the booster station, along with the removal of the offshore substation platforms, mean that there is no sea surface piercing infrastructure proposed for the Transmission Assets. Therefore, this chapter focuses solely on the onshore elements of the Transmission Assets.
- 11.1.1.5 This ES chapter:
- identifies the key legislation, policy and guidance relevant to aviation and radar;
  - details the EIA scoping and consultation process undertaken to date for aviation and radar;
  - confirms the study area for the assessment, the methodology used to identify baseline environmental conditions and sets out the existing and future environmental baseline conditions, established from desk studies, surveys and consultation;
  - identifies the scope of the assessment;
  - details the mitigation and/or monitoring measures that are proposed to prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process;

- defines the project design parameters used to inform the impact assessment;
- identifies the impact assessment methodology and presents an assessment of the likely impacts and effects in relation to the construction, operation and maintenance and decommissioning phases of the Transmission Assets on aviation and radar (and, where relevant, the impacts and effects of aviation and radar on the Transmission Assets); and
- identifies any cumulative, transboundary and/or inter-related effects in relation to the construction, operation and maintenance and decommissioning phases of the Transmission Assets on aviation and radar.

11.1.1.6 This chapter also draws upon additional information to support the assessment contained within the following annexes:

- Volume 3, Annex 11.1: Outline Wildlife Habitat Attractant Risk Assessment of the ES.

## 11.2 Legislation, policy and guidance

### 11.2.1 Legislation

11.2.1.1 Relevant legislation includes the Civil Aviation Authority (CAA) Civil Aviation Publication (CAP) 393: The Air Navigation Order (CAA, 2022) which sets out the provisions of the Air Navigation Order, as amended, together with regulations made under the Order. It is prepared for those concerned with day-to-day matters relating to air navigation that require an up-to-date version of the air navigation regulations and is edited by the legal advisers' department of the CAA. CAP 393 also includes legislation applicable to aerodromes and their operation.

### 11.2.2 Planning policy context

11.2.2.1 The Transmission Assets will be located in English offshore waters (beyond 12 nautical miles (nm) from the English coast) and inshore waters (within 12 nm from the English coast), with the onshore infrastructure located wholly within England. As set out in Volume 1, Chapter 1: Introduction, of this ES, the Secretary of State for the Department for Business, Energy and Industrial Strategy (BEIS) (the department which preceded the Department for Energy Security and Net Zero) has directed that the Transmission Assets are to be treated as development for which development consent is required under section 35 of the Planning Act 2008, as amended.

#### National Policy Statements

11.2.2.2 There are currently six energy National Policy Statements (NPSs), three of which contain policy relevant to offshore wind development and the associated Transmission Assets, specifically:

- overarching NPS for Energy (NPS EN-1) which sets out the United Kingdom (UK) Government's policy for the delivery of major energy infrastructure (Department for Energy Security & Net Zero 2023a);
- NPS for Renewable Energy Infrastructure (NPS EN-3) (Department for Energy Security & Net Zero 2023b); and
- NPS for Electricity Networks Infrastructure (NPS EN-5) (Department for Energy Security & Net Zero 2023c).

**11.2.2.3** **Table 11.1** sets out a summary of the policies within the current NPSs, relevant to aviation and radar. The assessment presented within this chapter is based primarily on current policy set out within the designated NPSs but takes into account any material changes emerging in the draft NPSs as a relevant consideration. The policies generally address above ground infrastructure regarding aviation interests; however, the Transmission Assets are primarily underground cabling or low height above ground substations.

**11.2.2.4** The policies within the current NPSs relevant to all topics in the ES can be viewed in the National Policy Statement tracker (document reference J26) and Planning Statement (document reference J28), submitted with the application.

**Table 11.1: Summary of the NPS EN-1, NPS EN-3 and NPS EN-5 requirements relevant to this chapter**

| Summary of NPS provision                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | How and where considered in the ES                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>NPS EN-1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                             |
| [5.5.1] All aerodromes, covering civil and military activities, as well as aviation technical sites, meteorological radars and other types of defence interests (both onshore and offshore) can be affected by new energy development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Impacts arising from the construction, operations and maintenance and decommissioning phases of the Transmission Assets have been assessed in <b>section 11.11</b> .        |
| [5.5.5] UK airspace is important for both civilian and military aviation interests. It is essential that new energy infrastructure is developed collaboratively alongside aerodromes, aircraft, air systems and airspace so that safety, operations and capabilities are not adversely affected by new energy infrastructure. Likewise, it is essential that aerodromes, aircraft, air systems and airspace operators work collaboratively with energy infrastructure developers essential for net zero. Aerodromes can have important economic and social benefits, particularly at the regional and local level, but their needs must be balanced with the urgent need for new energy developments, which bring about a wide range of social, economic, and environmental benefits. | A summary of consultation undertaken to date is presented in <b>section 11.3</b> and <b>Table 11.5</b> .                                                                    |
| [5.5.10] Areas of airspace around aerodromes used by aircraft, including taking off or on approach and landing are described as "Obstacle Limitation Surfaces" (OLS). All civil aerodromes licensed by the CAA and all military aerodromes must comply with the OLS. These are defined according to criteria set out in relevant CAA guidance for licensed civil aerodromes and according to Ministry of Defence (MOD) criteria, as set by the Military Aviation                                                                                                                                                                                                                                                                                                                      | Impacts arising from the construction, operations and maintenance and decommissioning phases of the Transmission Assets on OLS have been assessed in <b>section 11.11</b> . |

| Summary of NPS provision                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | How and where considered in the ES                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Authority (MAA), which is part of the Defence Safety Authority, for military aerodromes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                         |
| [5.5.11] Aerodromes that are officially safeguarded will have officially produced plans that show the OLS. Care must be taken to ensure that new developments do not infringe these protected OLS except where an aerodrome operator has considered the development and either determined there to be no adverse impact or agreed an acceptable mitigation can be put in place, as these encompass the critical airspace within which key air traffic associated with the aerodrome operates.                                                                                                                                                                                                                     | Impacts arising from the construction, operations and maintenance and decommissioning phases of the Transmission Assets on OLS have been assessed in <b>section 11.11</b> .                                                             |
| [5.5.34] Other operational defence assets may be affected by new development, for example non-aviation technical equipment such as: the Seismological Monitoring Station at Eskdalemuir; maritime acoustic facilities; communications installations including satellite ground stations; and range control radars.                                                                                                                                                                                                                                                                                                                                                                                                | Defence assets have been assessed in <b>section 11.11</b> .                                                                                                                                                                             |
| [5.5.37] Where the proposed development may affect the performance of civil or military aviation CNS, meteorological radars and/or other defence assets an assessment of potential effects should be set out in the ES.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Civil and defence assets have been assessed in <b>section 11.11</b> .                                                                                                                                                                   |
| [5.5.39] The Applicants should consult the MOD, Met Office, CAA, NATS and any aerodrome – licensed or otherwise – likely to be affected by the proposed development in preparing an assessment of the proposal on aviation, meteorological or other defence interests.                                                                                                                                                                                                                                                                                                                                                                                                                                            | A summary of consultation undertaken to date is presented in <b>section 11.3</b> and <b>Table 11.5</b> .                                                                                                                                |
| [5.5.40] Any assessment of effects on aviation, meteorological or other defence interests should include potential impacts of the project upon the operation of CNS infrastructure, flight patterns (both civil and military), generation of weather warnings and forecasts, other defence assets (including radar) and aerodrome operational procedures. It should also assess the demonstratable cumulative effects of the project with other relevant projects in relation to aviation, meteorological and defence.                                                                                                                                                                                            | Impacts arising from the construction, operations and maintenance phases of the Transmission Assets on aerodrome operational procedures have been assessed in <b>section 11.11</b> and cumulative impacts within <b>section 11.12</b> . |
| <p>[5.5.44] Mitigation for infringement of OLS may include:</p> <ul style="list-style-type: none"> <li>• agreed changes to operational procedures of the aerodromes in accordance with relevant guidance, provided that safety assurances can be provided by the operator that are acceptable to the CAA where the changes are proposed to a civilian aerodrome. Applicants should engage airport operators at an early stage of the planning process to understand the potential impacts of development on aviation operations and develop mitigations if appropriate; or</li> <li>• installation of obstacle lighting and/or by notification in Aeronautical Information Service (AIS) publications.</li> </ul> | <p>Mitigation is discussed in <b>paragraph 11.11.3.9</b>.</p> <p>The requirement for approved marking and lighting post consent has been embedded in the project (<b>section 11.3.3</b> and <b>Table 11.5</b>).</p>                     |
| [5.5.49] The Secretary of State should be satisfied that the effects on meteorological radars, civil and military aerodromes, aviation technical sites and other defence assets or operations have been addressed by the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Impacts on civil and military radar, and aviation and defence interests are assessed in <b>section 11.11</b> .                                                                                                                          |

| Summary of NPS provision                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | How and where considered in the ES                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicants and that any necessary assessment of the proposal on aviation, National Severe Weather Warning Service or defence interests has been carried out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                   |
| [5.5.53] If there are conflicts between the Government's energy and transport policies and military interests in relation to the application, the Secretary of State should expect the relevant parties to have made appropriate efforts to work together to identify realistic and pragmatic solutions to the conflicts. In so doing, the parties should seek to protect the aims and interests of the other parties as far as possible, recognising simultaneously the evolving landscape in terms of the UK's energy security and the need to tackle climate change, which necessitates the installation of wind turbines and the need to maintain air safety and national defence and the national weather warning service. | Consultation activity is included within <b>Table 11.5</b> , mitigation is provided in <b>paragraph 11.11.3.9</b> .                                                                                               |
| <b>NPS EN-3</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                   |
| [2.8.50] The applicant will also need to consider impacts on civil and military radar and other aviation and defence interests (Section 5.5 of EN-1).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Civil and military aviation infrastructure of relevance is assessed in <b>section 11.11</b> .                                                                                                                     |
| [2.8.240] Aviation and navigation lighting should be minimised and/or on demand (as encouraged in EN-1 Section 5.5) to avoid attracting birds, taking into account impacts on safety.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Marking and lighting for aviation will be agreed post consent with Blackpool Airport.<br>The requirement for approved marking and lighting post consent has been embedded in the project ( <b>section 11.8</b> ). |
| <b>NPS EN-5</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                   |
| [2.11.14] In order to avoid unacceptable adverse impacts of Electro-magnetic Fields (EMFs) from electricity network infrastructure on aviation, the Secretary of State will take account of statutory technical safeguarding zones defined in accordance with (sic) the Department for Transport (DfT)/Office of the Deputy Prime Minister (ODPM) circular 01/2003., or any successor, when considering recommendations for Development Consent Order (DCO) applications. More detail on this issue can be found in Section 5.5 of EN-1.                                                                                                                                                                                        | Impacts on civil aviation, associated with EMF are assessed in <b>section 11.11</b> .                                                                                                                             |

### The National Planning Policy Framework

- 11.2.2.5 The National Planning Policy Framework (NPPF) was published in 2012 and updated in 2018, 2019, 2021 and 2023 (Department for Levelling Up, Housing and Communities, 2023). The NPPF sets out the Government's planning policies for England.
- 11.2.2.6 **Table 11.2** sets out a summary of the NPPF policies relevant to this chapter.
- 11.2.2.7 The Government has published proposed reforms to the NPPF for consultation on 30 July 2024, with the consultation period ending on 24 September 2024 (Ministry of Housing, Communities and Local Government, 2024). Following consultation, the NPPF will be updated.

**Table 11.2: Summary of NPPF requirements relevant to this chapter**

| Policy | Key provisions                                                                                                                                                                                                                                                     | How and where considered in the ES                                                                             |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 217 b) | Ensure that there are no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety, and take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality. | Impacts on civil and military radar, and aviation and defence interests are assessed in <b>section 11.11</b> . |

11.2.2.8 The consultation draft includes similar provisions as the designated NPPF. The consultation draft NPPF has been reviewed and there are no material updates for aviation and radar.

11.2.2.9 The Planning Practice Guidance (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2023) supports the NPPF and provides guidance across a range of topic areas. All relevant policy is already covered in the NPS and NPPF sections above and particular Department for Transport (DfT) requirements are set out in **Table 11.3**.

**Table 11.3: Summary of the Department for Transport (DfT) requirements relevant to this chapter**

| Summary of DfT requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | How and where considered in the ES                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DfT/Office of the Deputy Prime Minister circular 1/2003</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>Advice to Local Planning Authorities on safeguarding aerodromes and military explosives storage areas.</p> <p>The circular:</p> <ul style="list-style-type: none"> <li>provides details of the system of safeguarding;</li> <li>lists the civil aerodromes which are officially safeguarded; and</li> <li>lists the local planning authority areas containing civil en-route technical sites for which separate official safeguarding maps have been issued.</li> </ul> <p>If a local planning authority proposes to grant permission for the development of land forming the site of or in the neighbourhood of an aerodrome, technical site or military explosives storage area, or to grant permission subject to conditions, contrary to the advice of the consultee, they shall notify;</p> <ol style="list-style-type: none"> <li>both the Civil Aviation Authority and the consultee; or</li> <li>the Secretary of State for Defence</li> </ol> <p>as the case may be.</p> | <p>Mitigation is discussed in <b>paragraph 11.11.3.9</b>.</p> <p>The requirement for approved marking and lighting post consent has been embedded in the project (<b>section 11.8</b>).</p> <p>Fylde and Blackpool Councils as interested parties are considered, but it should be noted that there are no known plans to develop any new additional aerodrome, technical site or military explosives storage area locally at the time of writing.</p> |



## Marine policy

### UK Marine Policy Statement

11.2.2.10 No policy relevant to aviation and radar.

### North West Inshore and North West Offshore Marine Plan 2021

11.2.2.11 No policy relevant to aviation and radar.

## Local planning policy

11.2.2.12 The policy context for the Transmission Assets is set out in Volume 1, Chapter 2: Policy and legislation context of the ES. The onshore elements of the Transmission Assets are located within the administrative areas of Fylde Council, Blackpool Council, South Ribble Borough Council, and Preston City Council (and Lancashire County Council at the County level).

11.2.2.13 The relevant local planning policies applicable to aviation and radar based on the extent of the study areas (see **section 11.4**) for this assessment are summarised in **Table 11.4**.

**Table 11.4: Summary of local planning policy relevant to this chapter**

| Policy                   | Key provisions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | How and where considered in the ES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fylde Council</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fylde Local Plan to 2032 | <p>Policy T2<br/>Warton Aerodrome</p> <ul style="list-style-type: none"><li>The Aerodrome at Warton is a key piece of strategic infrastructure. The Council places great importance on the retention and development of its aviation capabilities, particularly in relation to military aerospace and information.</li><li>Development proposals within the defined safeguarded area at Warton Aerodrome will not be permitted, unless the Applicants can demonstrate that there would not be any potential for adverse impacts on aviation operations, or on defence navigation systems and communications.</li><li>Development proposals within the wider area surrounding Warton Aerodrome will be assessed for potential for adverse impacts on aviation operations, and on defence navigation systems and communications. Where such impact is identified, planning permission will be refused.</li><li>Development proposals that could compromise the security of the Warton Aerodrome and wider BAE Systems site at Warton will not be permitted.</li></ul> | <p>The Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits – Onshore (hereafter referred to as the Onshore Order Limits) and the Intertidal Infrastructure Area lie beyond the Communication, Navigation and Surveillance (CNS) and the runway safeguarded area of BAE Systems Warton Aerodrome; over 2.5 km from the runway strip. The Onshore Order Limits and Intertidal Infrastructure Area lie below the Warton Aerodrome OLS Inner Horizontal Surface but construction equipment (in the Construction Phase) and remaining, low height, above surface infrastructure (in the operation and maintenance phase) will not penetrate the surface ceiling.</p> <p>Therefore, BAE Systems Warton (Aerodrome) has been scoped out.</p> |

| Policy                   | Key provisions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | How and where considered in the ES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fylde Local Plan to 2032 | <p>Policy T3</p> <p>Blackpool Airport</p> <ul style="list-style-type: none"> <li>The Council will support improvements to surface access (public transport) to Blackpool Airport from surrounding areas and other transport nodes.</li> <li>Blackpool Airport, including Centrica's heliport will be consulted on all developments within the Airport Safeguarding Zone.</li> </ul> <p>NOTE: Certain civil aerodromes including Blackpool Airport are officially safeguarded through Circular 1/2003 – 'Safeguarding Aerodromes, Technical Sites and Military Explosive Storage Areas'. This is necessary to ensure that their operations and development are not inhibited by buildings, structures, erections or works which would infringe on protected surfaces, obscure runway approach lights or have the potential to impair the performance of aerodrome navigation aids, radio aids or telecommunication systems; by lighting which has the potential to distract pilots; or by developments which have the potential to increase the number of birds or the bird hazard risk. The maps showing the safeguarded areas are certified by the CAA.</p> | <p><b>Table 11.5</b> provides consultation activities completed to the date of the submission of this document, further engagement with Blackpool Airport and Centrica continues. Mitigation, through current required engagement with Blackpool Airport, is discussed in <b>section 11.8</b>.</p> <p>The requirement for approved marking and lighting post consent has been embedded in the project (<b>section 11.8</b>).</p>                                                                                                                                                                                                                                                                                                                                      |
| Fylde Local Plan to 2032 | <p>Policy CL3</p> <p>Renewable and Low Carbon Energy Generation – excluding onshore wind turbines.</p> <p>Proposed developments will be assessed in relation to the following criteria.</p> <ul style="list-style-type: none"> <li>Impacts on aviation and defence navigation systems and communications, particularly Blackpool Airport, Warton Aerodrome and the Defence Communication Services Agency (DCSA) Inskip radio communication facility. The avoidance of impacts on these strategically important facilities should be given great weight in decision-making.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>Applicable civil and defence assets have been assessed in <b>section 11.11, paragraph 11.11.2 et seq.</b></p> <p>The Onshore Order Limits and Intertidal Infrastructure Area are beyond/outside the DCSA Inskip safeguarded areas and lie beyond the CNS and the runway safeguarded area of BAE Systems Warton Aerodrome; over 2.5 km from the runway strip. The Onshore Order Limits and Intertidal Infrastructure Area lie below the Warton Aerodrome OLS Inner Horizontal Surface but construction equipment (in the Construction Phase) and remaining above surface infrastructure (in the operation and maintenance phase) will not penetrate the surface ceiling.</p> <p>Therefore, DCSA Inskip and BAE Systems Warton (Aerodrome) have been scoped out.</p> |

### 11.2.3 Relevant guidance

#### 11.2.3.1 The following documents provide aviation guidance.

- CAA CAP 032 UK Integrated Aeronautical Information Package (IAIP): Contains information, updated every 28 days, which contains information of lasting (permanent) character essential to air navigation.

- 
- Appropriate information about the site construction and any associated lighting (where applicable), for example the height and temporary location of construction cranes, should be provided to the NATS Aeronautical Information Service (for promulgation in CAP 032, the UK IAIP).
  - CAA CAP 168 Licensing of Aerodromes: Sets out the standards required at UK licensed aerodromes relating to their management systems, operational procedures, physical characteristics, assessment and treatment of obstacles and visual aids.
  - CAA CAP 670 Air Traffic Services Safety Requirements: Sets out the safety regulatory framework and requirements associated with the provision of an Air Traffic Service (ATS).
  - CAA CAP 738 Safeguarding of Aerodromes: Sets out the safety regulatory framework and requirements, advice and guidance to operators involved in the process of ‘aerodrome safeguarding’ and assist Aerodrome Operator’s understanding of, and compliance with the requirements laid down in:
    - International Civil Aviation Organisation (ICAO) Annex 14 Volume I, Aerodrome Design and Operations;
    - European Union (EU) Regulation (EU) 2018/1139, Regulation (European Commission (EC) No 1108/2009, COMMISSION REGULATION (EU) No 139/2014; and
    - UK CAP 168 Licensing of Aerodromes.
  - CAA CAP 785B Implementation and Safeguarding of Instrument Flight Procedures (IFP) in the UK: IFPs are regulated in the UK through the oversight of Approved Procedure Design Organisations and the approval of IFP design before their implementation in the UK Aeronautical Information Publication (AIP). The specific requirements for the development and approval of IFP designs, and the delivery of safeguarding services are published in this publication.
  - CAA CAP 791 Procedures for Changes to Aerodrome Infrastructure: Guidance on the procedures to be used to notify the CAA of changes at an aerodrome, covering both infrastructure and management system changes in accordance with EU and National Regulations.
  - MOD Military Aeronautical Information Publication (MilAIP): The main resource for information and flight procedures at all military aerodromes as well as airspace, en-route procedures, charts and other air navigation information.
  - Maritime and Coastguard Agency (MCA) Maritime Guidance Note (MGN) 654 Safety of Navigation Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety and Emergency Response: Contains information for operators and developers in formulating their emergency response plans and site safety management.

- Airport Operators Association (AOA) Aerodrome Safeguarding (2016) – Advice Notes 1, 2, 4 and 5.
- RenewableUK suggests that information regarding construction should be passed to the Defence Geographic Centre (at dvof@mod.gov.uk) at least 10 weeks in advance of the obstacle type(s) erection detailing position, height (tip of arc) and type of aviation lighting. Once reported, all will be included in the Defence Geographic Centre Obstruction database and all that meet aviation chart inclusion criteria will be published for broader awareness.

11.2.3.2 Additional guidance includes the following.

- CAA Visual Flight Rules (VFR) Charts (2022) Sectional aeronautical charts which are designed for visual navigation of slow to medium speed aircraft. The topographic information featured consists of a judicious selection of visual checkpoints used for flight under VFR.
- MOD MilAIP En Route Low Altitude (Flight Information) Chart UK(L)2.

## 11.3 Consultation

### 11.3.1 Scoping

11.3.1.1 On 28 October 2022, the Applicants submitted a Scoping Report to the Planning Inspectorate, which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects for the construction, operations and maintenance, and decommissioning phases of the Transmission Assets to the onshore and offshore aviation and radar environment.

11.3.1.2 Following consultation with the appropriate statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion on 8 December 2022.

### 11.3.2 Statutory consultation responses

11.3.2.1 The preliminary findings of the EIA process were published in the PEIR in October 2023. The PEIR was prepared to provide the basis for formal consultation under the Planning Act 2008. This included consultation with statutory and non-statutory bodies under section 42 and 47 of the Planning Act 2008 as presented in **Table 11.5**.

### 11.3.3 Summary of consultation responses received

11.3.3.1 A summary of the key items raised specific to aviation and radar is presented in **Table 11.5**, together with how these have been considered in the production of this chapter. It should however be noted that formal responses are provided for all consultation responses received and can be accessed in the Consultation Report (document reference: E1).

**Table 11.5: Summary of key consultation comments raised during consultation activities undertaken for the Transmission Assets relevant to aviation and radar**

| Date           | Consultee and type of response                              | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                     |
|----------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| May 2022       | Noordzee Helikopters Vlaanderen (NHV) – Pre-Scoping (email) | NHV provide helicopter support to both Spirit Energy (including Harbour Energy) and ENI, who stated to NHV that impacts of varying degrees will be experienced by helicopter operations, completed in poor weather conditions, to their offshore hydrocarbon platforms due to the creation of any obstacles.                                                                                                                                                                                         | The Applicants acknowledge the impact and are continuing to engage with those offshore hydrocarbon industries impacted.<br>The OSPs and Morgan offshore booster station have been removed from the application and clarified in <b>section 11.11</b> . |
| 12 August 2022 | Planning Inspectorate – Scoping                             | Potential disruption to Helicopter Main Routes (HMRs) due to the presence of the Offshore Substation Platforms (OSPs) and the Morgan offshore booster station:<br><i>In the absence of information confirming the location of OSPs and the Morgan offshore booster station in relation to the three HMRs that overlap with the scoping boundary, the Inspectorate considers that the ES should provide an assessment of potential significant effects and disruption on HMRs.</i>                    | The OSPs and Morgan offshore booster station have been removed from the application as clarified in <b>section 11.11</b> .                                                                                                                             |
| 12 August 2022 | Planning Inspectorate – Scoping                             | Impacts of increased helicopter traffic on availability of airspace for other users:<br><i>The Applicants propose to scope out impacts of increased helicopter traffic on availability of airspace for other users on the basis that the Transmission Assets will be located within Class G (uncontrolled) airspace and that air traffic services will be available in the area. The Inspectorate agrees that significant effects are unlikely and is content for this matter can be scoped out.</i> | Noted. Scoped out as per comment received.                                                                                                                                                                                                             |
| 12 August 2022 | Planning Inspectorate – Scoping                             | Potential disruption to military Practice and Exercise Area (PEXA):<br><i>Given the information in the Scoping Report demonstrating the absence of PEXAs within the study area, the Inspectorate is content that no impact pathway exists. The</i>                                                                                                                                                                                                                                                   | Since publication of the PEIR no change to Practice and Exercise Areas has been notified by the MOD.<br>Noted. Scoped out as per comment received.                                                                                                     |

| Date           | Consultee and type of response  | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                |                                 | <i>Inspectorate agrees to scope potential disruption to military practice and exercise areas out of the ES, subject to any changes to Practice and Exercise Areas that may occur as the EIA is refined.</i>                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 12 August 2022 | Planning Inspectorate – Scoping | <p>Primary Surveillance Radar (PSR) and Secondary Surveillance Radar (SSR) systems:</p> <p><i>The Scoping Report does not describe the location of any PSR and SSR systems in relation to the Proposed Development. The ES should set out the location of any PSR and SSR systems including an assessment of potential impacts to these radar systems or information demonstrating the absence of likely significant effects and agreement with relevant consultation bodies.</i></p> | <p>Impacts on civil and military radar, and aviation and defence interests are assessed in <b>section 11.11</b>.</p> <p>This ES sets out the location of PSR and SSR systems including an assessment of potential impacts to these radar systems or information demonstrating the absence of likely significant effect. The statutory consultation response from NATS anticipated no impact to the St Anne's PSR and therefore has been scoped out of assessment. (NATS response, 16 October 2023 below).</p> |
| 12 August 2022 | Planning Inspectorate – Scoping | <p>Mitigation measures:</p> <p><i>It is noted that the measures listed include appropriate lighting and marking of the OSPs and the Morgan offshore booster station. Unless otherwise agreed with relevant stakeholders, including the MOD, the ES should explain how the Proposed Development would be fitted with MOD accredited aviation safety lighting in accordance with the Civil Aviation Authority Air Navigation Order 2016.</i></p>                                        | <p>The OSPs and Morgan offshore booster station have been removed therefore this is no longer required.</p> <p>Measures to address appropriate lighting and marking of OSPs is included within the Morecambe Offshore Windfarm: Generation Assets ES and the Morgan Offshore Wind Project: Generation Assets ES.</p>                                                                                                                                                                                          |
| 12 August 2022 | NATS – Scoping                  | <p>As noted in the Scoping Report, the NATS radar station at St. Annes lies within the Transmission Area Scoping Boundary.</p> <p>NATS is pleased to note that the developer has identified this as a risk and is committed to working with us to manage the construction process in particular.</p>                                                                                                                                                                                  | <p>Noted. Scoped out (NATS response, 16 October 2023, below).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                             |



| Date            | Consultee and type of response | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12 August 2022  | MOD – Scoping                  | The Proposed Development site occupies the statutory height and technical safeguarding zones of Warton Aerodrome that ensure air traffic approaches and the line of sight of navigational aids and transmitters/receivers are not impeded. The airspace above and around aerodromes is safeguarded to maintain an assured, obstacle free environment for aircraft manoeuvre.                                                                                                                                                                                                       | Impacts on civil and military OLS and CNS are assessed in <b>section 11.11</b> .<br><br>The Onshore Order Limits and Intertidal Infrastructure Area lie beyond the CNS and the runway safeguarded area of BAE Systems Warton Aerodrome; over 2.5 km from the runway strip. The Onshore Order Limits and Intertidal Infrastructure Area lie below the Warton Aerodrome OLS Inner Horizontal Surface but construction equipment (in the Construction Phase) and remaining above surface infrastructure (in the Operation and Maintenance Phase) will not penetrate the surface ceiling.<br><br>Therefore, BAE Systems Warton (Aerodrome) has been scoped out ( <b>Table 11.10</b> ).                 |
| 8 December 2022 | Blackpool Council – Scoping    | Blackpool Airport lies to the south of Blackpool and straddles Blackpool and Fylde Borough Council's administrative boundaries. As such, in terms of Aerodrome and Air Navigation Safety, the following matters require further details. <ul style="list-style-type: none"> <li>Details are required on possible electro-magnetic interference on the navigation aids at the Airport from the cables and other equipment which may impact these sensitive navigation aids.</li> <li>Height of all structures and construction equipment to consider impact on airspace.</li> </ul> | Potential EMF interference and structure height impacts on civil CNS are assessed in <b>section 11.11</b> .<br><br>The Applicants are discussing and closely engaged with Blackpool Airport.<br><br>Further work will be undertaken at detailed design, including as a part of the CAP 791 process (CoT105). During detailed design, consideration will be given to construction installation techniques and to the micro-siting of permanent and temporary infrastructure, amongst a range of other factors, in to order to mitigate or avoid potential impacts. This would be a pre-requisite to any CAP 791 approvals relating to any airside construction activities within Blackpool Airport. |



| Date            | Consultee and type of response                  | Comments raised                                                                                                                                                                            | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                                 |                                                                                                                                                                                            | Hazard identification and risk assessment is in line with the guidance within CAP 791.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8 December 2022 | Blackpool Council – Scoping                     | The ES should provide further details considering the potential impact upon future development at the Enterprise Zone and Blackpool Airport.                                               | Impacts arising from the construction, operations and maintenance and decommissioning phases of the Transmission Assets have been assessed in <b>section 11.11</b> .<br><br>Further work will be undertaken at detailed design, including as a part of the CAP 791 process (CoT105). During detailed design, consideration will be given to construction installation techniques and to the micro-siting of permanent and temporary infrastructure, amongst a range of other factors, in to order to mitigate or avoid potential impacts. This would be a pre-requisite to any CAP 791 approvals relating to any airside construction activities within Blackpool Airport<br><br>Further details considering the potential impact upon future developments at the Enterprise Zone and Blackpool Airport can be found in Volume 3, Chapter 6: Land use and recreation of the ES, and Volume 4, Chapter 2: Socio-economics of the ES. |
| 8 December 2022 | MCA – Scoping                                   | Particular consideration will need to be given to the implications of the location of the booster station on Search and Rescue (SAR) resources and Emergency Response Co-operation Plans . | The OSPs and Morgan offshore booster station have been removed from the scope of the Transmission Assets application.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 8 December 2022 | Isle of Man (IoM) Government – Scoping Response | We would request that the impact on infrastructure aviation interests, including airport radar issues are also fully considered.                                                           | Impacts arising from the construction, operations and maintenance and decommissioning phases of the Transmission Assets have been assessed in <b>section 11.11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Date            | Consultee and type of response                     | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                            |
|-----------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | The Applicants are fully engaged with IoM Government through the Territorial Sea Committee.                                                                                                                                                                                                                   |
| 8 December 2022 | Isle of Man (IoM) Government –<br>Scoping Response | SAR Helicopter Operations to be considered.<br><br>SAR within the UK is coordinated by the MCA, with other organisations providing declared assets to undertake SAR operations. The MCA provides a coordination service for SAR, The Caernarfon SAR helicopter base is the closest to the Transmission Assets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | The OSPs and Morgan offshore booster station have been removed from the application; helicopter SAR operations have been scoped out ( <b>Table 11.10</b> ).<br><br>The Applicants are fully engaged with IoM Government through the Territorial Sea Committee.                                                |
| 8 December 2022 | Isle of Man (IoM) Government –<br>Scoping Response | It is noted that in this instance, with the specific project relating only to the transmission assets, Ronaldsway Airport has not been included in the list of impacted parties in Table 9.7 on page 331.<br><br>As most of the transmission assets would be under water or on land on the mainland, this should not affect Ronaldsway, however, the specification of the offshore substation platforms (see page 46) are significant with the main structure to a height of 75 m and top of antenna structure to 125 m. As the sites for these are not yet confirmed, the Territorial Sea Committee would request that Ronaldsway Airport continued to be engaged as this project progresses to ensure there is to be no detrimental impact to the radars from the substations. | Ronaldsway (IoM) Airport to be kept informed, particularly regarding siting of infrastructure. The OSPs and Morgan offshore booster station have been removed from the application ( <b>Table 11.10</b> ).<br><br>The Applicants are fully engaged with IoM Government through the Territorial Sea Committee. |
| 16 October 2023 | NATS (Safeguarding Office) –<br>s42 Response       | We refer to the consultation below. NATS owns and operates the St. Annes radar station. This site is part of the national critical infrastructure and supports the provision of Air Traffic Services to various users in the UK. NATS notes that the site has been scoped out of the DCO. Accordingly, other than raising awareness and advising due care in respect of the power connection to the site, NATS                                                                                                                                                                                                                                                                                                                                                                   | The Applicants acknowledge this response and NATS St Annes radar station has been scoped out.                                                                                                                                                                                                                 |

| Date             | Consultee and type of response                         | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                  |                                                        | anticipates no impact from the proposal and has no comments on the DCO application.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 22 November 2023 | Fylde Council – s42 Response                           | There is also potential for impacts from Electromagnetic Fields to adversely impact upon air navigation aids. It is noted that the proposed cable route runs in close proximity to both Blackpool Airport and Warton Aerodrome and the proposed substations sit beneath the approach to the main runway at Blackpool Airport and are relatively close to BAE System's Warton site. Both airfields contain active runways where such navigation aids are critical to their safe continued operation. In turn these sites provide a significant economic benefit to the borough and so any potential impact on air navigation and air safety must be ruled out to the satisfaction of the operators of those facilities. | Impacts arising from the construction, operations and maintenance and decommissioning phases of the Transmission Assets have been assessed in <b>section 11.11</b> .<br><br>Further work will be undertaken at detailed design, including as a part of the CAP 791 process (CoT105). During detailed design, consideration will be given to construction installation techniques and to the micro-siting of permanent and temporary infrastructure, amongst a range of other factors, in to order to mitigate or avoid potential impacts. This would be a pre-requisite to any CAP 791 approvals relating to any airside construction activities within Blackpool Airport.<br><br>BAE Systems Warton (Aerodrome) has been scoped out. The Onshore Order Limits and Intertidal Infrastructure Area lay beyond the CNS safeguarded areas and beyond the runway safeguarded area. The Onshore Order Limits and Intertidal Infrastructure Area lie below the Aerodrome OLS Inner Horizontal Surface but construction equipment (in the Construction Phase) and remaining above surface infrastructure (in the Operation and Maintenance Phase) will not penetrate the surface ceiling. |
| 23 November 2023 | Cllr Michelle Norris (of Fylde Council) – s42 Response | The impact from the electromagnetic fields would affect both Blackpool airport which is looking to reintroduce commercial flights and Warton Aerodrome used by BAE. Both these airfields bring a huge economic benefit to the area and air safety is the utmost priority for both these sites. BAE are                                                                                                                                                                                                                                                                                                                                                                                                                 | EMF interference effects arising from the operations and maintenance phases of the Transmission Assets have been assessed in <b>section 11.11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Date             | Consultee and type of response   | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|                  |                                  | expanding their workforce at a significant rate and many of their staff live not only in Warton but nearby Freckleton an area you want to dig up to lay your cables.                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>Further work will be undertaken at detailed design, including as a part of the CAP 791 process (CoT105). During detailed design, consideration will be given to construction installation techniques and to the micro-siting of permanent and temporary infrastructure, amongst a range of other factors, in to order to mitigate or avoid potential impacts. This would be a pre-requisite to any CAP 791 approvals relating to any airside construction activities within Blackpool Airport.</p> <p>BAE Systems Warton (Aerodrome) has been scoped out. The Onshore Order Limits and Intertidal Infrastructure Area lay beyond the CNS safeguarded areas and beyond the runway safeguarded area. The Onshore Order Limits and Intertidal Infrastructure Area lie below the Aerodrome OLS Inner Horizontal Surface but construction equipment (in the Construction Phase) and remaining above surface infrastructure (in the Operation and Maintenance Phase) will not penetrate the surface ceiling.</p> |
| 23 November 2023 | Ørsted Burbo Bank – s42 Response | <p>Helicopter activity</p> <p>It is difficult to quantify the level of impact of helicopter usage during the construction and operation of the Morgan and Morecambe Transmission Assets. It is noted that the PEIR highlights that there may be three helicopter supports completing 180 return trips during installation works. No heliport site(s) or transit route(s) have been identified within the PEIR documentation.</p> <p>We request that more information on this is provided so we can properly understand and respond to the potential impacts and mitigations being proposed.</p> | <p>Volume 1 Chapter 3: Project Description of the ES anticipates that during the offshore Morgan Transmission Assets construction phase (over 18 months in a concurrent scenario or 30 months in a sequential scenario) there will be a maximum of one helicopter on site at any one time involving 20 return supply flights. The offshore Morecambe Transmission Assets construction phase will not employ helicopter support.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Date             | Consultee and type of response                    | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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|                  |                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | The OSPs and Morgan offshore booster station have been removed from the application; helicopter operations have been scoped out ( <b>Table 11.10</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 23 November 2023 | Ørsted Burbo Extension Ltd – s42 Response         | <p>Helicopter activity</p> <p>It is difficult to quantify the level of impact of helicopter usage during the construction and operation of the Morgan and Morecambe Transmission Assets. It is noted that the PEIR highlights that there may be three helicopter supports completing 180 return trips during installation works. No heliport site(s) or transit route(s) have been identified within the PEIR documentation.</p> <p>We request that more information on this is provided so we can properly understand and respond to the potential impacts and mitigations being proposed.</p> | <p>Volume 1 Chapter 3: Project description of the ES anticipates that during the offshore Morgan Transmission Assets construction (over 18 months in a concurrent scenario or 30 months in a sequential scenario) there will be a maximum of one helicopter on site at any one time involving 20 return supply flights. The offshore Morecambe Transmission Assets construction phase will not employ helicopter support.</p> <p>The OSPs and Morgan offshore booster station have been removed from the application; helicopter operations have been scoped out (<b>Table 11.10</b>).</p>        |
| 23 November 2023 | Walney (UK) Offshore Windfarms Ltd – s42 Response | <p>Helicopter activity</p> <p>It is difficult to quantify the level of impact of helicopter usage during the construction and operation of the Morgan and Morecambe Transmission Assets. It is noted that the PEIR highlights that there may be three helicopter supports completing 180 return trips during installation works. No heliport site(s) or transit route(s) have been identified within the PEIR documentation.</p> <p>We request that more information on this is provided so we can properly understand and respond to the potential impacts and mitigations being proposed.</p> | <p>Volume 1 Chapter 3: Project Description of the ES anticipates that during the offshore Morgan Transmission Assets construction phase ((over 18 months in a concurrent scenario or 30 months in a sequential scenario) there will be a maximum of one helicopter on site at any one time involving 20 return supply flights. The offshore Morecambe Transmission Assets construction phase will not employ helicopter support.</p> <p>The OSPs and Morgan offshore booster station have been removed from the application; helicopter operations have been scoped out (<b>Table 11.10</b>).</p> |

| Date             | Consultee and type of response                      | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| 22 November 2023 | Ørsted West of Duddon Sands Ltd – s42 Response      | <p>Helicopter activity</p> <p>It is difficult to quantify the level of impact of helicopter usage during the construction and operation of the Morgan and Morecambe Transmission Assets. It is noted that the PEIR highlights that there may be three helicopter supports completing 180 return trips during installation works. No heliport site(s) or transit route(s) have been identified within the PEIR documentation.</p> <p>We request that more information on this is provided so we can properly understand and respond to the potential impacts and mitigations being proposed.</p> | <p>Volume 1 Chapter 3: Project description of the ES anticipates that during the offshore construction phase for the Morgan Offshore Wind Project: (over 18 months in a concurrent scenario or 30 months in a sequential scenario) there will be a maximum of one helicopter on site at any one time involving 20 return supply flights. The offshore construction phase for the Morecambe Offshore Windfarm: Transmission Assets will not employ helicopter support.</p> <p>The OSPs and Morgan offshore booster station have been removed from the application; helicopter operations have been scoped out (<b>Table 11.10</b>).</p> |
| 22 November 2023 | Marine Management Organisation (MMO) – s42 Response | <p>Volume 4 Chapter 2: Aviation and Radar</p> <p>16.1. MMO defers to and supports the Civil Aviation Authority and Ministry of Defence regarding the potential impacts on shipping and navigation that may occur because of the Projects.</p>                                                                                                                                                                                                                                                                                                                                                   | The Applicants welcome the MMOs engagement and response.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 23 November 2023 | Spirit Energy – s42 Response                        | Further work is required between parties to ensure Spirit can undertake safe helicopter operations in all environmental conditions throughout the proposed development. The development in such proximity to the platforms could result in compromised ability to access the offshore installations and/or an inability to meet regulatory requirements for safe platform approach.                                                                                                                                                                                                             | The OSPs and Morgan offshore booster station have been removed from the application; helicopter operations have been scoped out ( <b>Table 11.10</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 23 November 2023 | Spirit Energy – s42 Response                        | Of the two proposed Morgan Booster Station sites, the site proposed to the East of the Morecambe Wind Farm could introduce less impact risk on the Spirit Energy Production UK Limited ("Spirit") infrastructure and the aviation and                                                                                                                                                                                                                                                                                                                                                           | The OSPs and Morgan offshore booster station have been removed from the application; helicopter operations have been scoped out ( <b>Table 11.10</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



| Date             | Consultee and type of response | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                               |
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|                  |                                | operational interactions between South Morecambe, DP6 and Calder platforms, however both proposed locations introduce risks given proximity to Spirit's existing operations which will need to be understood and considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 23 November 2023 | Spirit Energy – s42 Response   | There has been limited engagement and consultation with Spirit to date on bpEnBW transmission asset plans in order for Spirit to determine if the offshore booster locations will have an additional impact on aviation operations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | The OSPs and Morgan offshore booster station have been removed from the application; helicopter operations have been scoped out ( <b>Table 11.10</b> ).                                                                                                                                                                                                                                                          |
| 23 November 2023 | Spirit Energy – s42 Response   | <p>En-route obstacles, such as a booster platform, to the CPP1 and Calder platforms may result in inability to operate flights in Instrument Meteorological Conditions with the Airborne Radar Approach approach to the CPP1 platform helidecks. This will result in only VFR operations for the CPP1 and Calder platforms, which will result in a significant reduction of available flights per year.</p> <p>Close proximity of the offshore booster station to the CPP1 platform may result in the additional restrictions imposed for the platform helidecks approach sectors over and above those introduced as a result of the proposed Morecambe Offshore Windfarm: Generation Assets. This will restrict platform operations and some approach sectors will be prohibited. Offshore booster station exact location is crucial to understand the impact.</p> | The OSPs and Morgan offshore booster station have been removed from the application; helicopter operations have been scoped out ( <b>Table 11.10</b> ).                                                                                                                                                                                                                                                          |
| 23 November 2023 | Spirit Energy – s42 Response   | Spirit Energy Production UK Limited ("Spirit") has a lease in place with Blackpool Airport Properties Limited which is scheduled to run until 31 October 2035. Pursuant to the lease, Spirit leases a terminal building, an aircraft maintenance hangar and car parking facilities (the "Leased Facilities") at Blackpool Airport all of which it uses to facilitate helicopter flights for its workforce, and occasional emergency spare parts, to its petroleum production assets located offshore in Morecambe Bay (the "Morecambe Fields"). It is noted that the Leased Facilities, and also the                                                                                                                                                                                                                                                                | <p>The Leased Facilities are outside the Order Limits except for the normal aerodrome access route that runs across the Leased Facilities, which will be utilised only during the operation and maintenance phase by one vehicle per week. The effect is scoped out.</p> <p>Engagement with the helicopter operator facilitating support to petroleum production assets, from the Leased Facilities, located</p> |

| Date             | Consultee and type of response | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Response to comment raised and/or where considered in this chapter                                                                                      |
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|                  |                                | <p>wider airport facilities surrounding the Leased Facilities, are included within Morgan/Morecambe Transmission Corridor.</p> <p>Should Spirit's ability to use and/or access (whether by vehicle, foot or flying/taxiing aircraft) either: (i) any of the Leased Facilities; or (ii) the wider Blackpool Airport Facility (particularly the air traffic control tower, runway and taxiways between the Leased Facilities and the airport runway); be restricted, either temporarily or permanently, this will impact Spirit's ability to use helicopters to access the Morecambe Fields and may prevent Spirit operating the Morecambe Fields in a safe and economic manner.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | offshore in Morecambe Bay will be through Blackpool Airport Operations Ltd.                                                                             |
| 23 November 2023 | Spirit Energy – s42 Response   | <p>Spirit Energy Production UK Limited ("Spirit") has undertaken some initial work, along with Harbour Energy, the owner of the nearby Calder platform, and it has been determined that would be a requirement for a minimum of 3.3 nautical mile radius of unobstructed airspace around each offshore facility/platform to ensure safe helicopter operations. Each facility/platform would also require a straight unobstructed 2 nautical mile wide corridor and this would need to be taken into consideration when designing and locating the offshore substations and booster stations.</p> <p>It is a requirement for Spirit to fly between the CPP1 platform and the nearby Normally Unmanned Installations ("NUIs") to maintain operations on a daily basis with flights being able to operate in all environmental conditions between: (i) the mainland to offshore installations; and (ii) offshore installation to offshore installation. Helicopter access is required at all times when personnel are on board as a primary means of escape in the event of an emergency.</p> <p>Further work would be required between parties to develop a layout plan that wouldn't impact Spirit's ability to conduct safe commercial aircraft transport operations to and from offshore helidecks ensuring full compliance with the Health</p> | The OSPs and Morgan offshore booster station have been removed from the application; helicopter operations have been scoped out ( <b>Table 11.10</b> ). |

| Date             | Consultee and type of response | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Response to comment raised and/or where considered in this chapter                                                                                                                                                               |
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|                  |                                | <p>and Safety Executive Prevention of fire and explosion, and emergency response on offshore installations ("PFEER") regulations. An impact assessment on Offshore SAR operations will also be required.</p> <p>Spirit will need to ensure that bpEnBW plans for offshore substations and booster stations take into account aviation requirements as to not impede safe Morecambe Hub asset operations, including future decommissioning requirements. Spirit requests that bpEnBW consult with Spirit directly regarding to proposed booster station location plans due to the proximity of the existing infrastructure helidecks to both the proposed booster station search areas.</p>                                |                                                                                                                                                                                                                                  |
| 23 November 2023 | Spirit Energy – s42 Response   | Aviation operations between CPP1 and Calder platforms are performed on the direct ,straight line route and if the offshore booster platform proposed to be located West of the CPP1 platform, operations between the CPP1 platform and the Calder platform will have to be re-assessed. Flying operations in Instrument Meteorological Conditions in the close proximity of turbines is not permitted under UK Civil Aviation Authority regulations and UK aviation providers operations manuals.                                                                                                                                                                                                                         | This comment is no longer considered to be relevant to this application. The requirement for the Morgan offshore booster station has been removed from the application.                                                          |
| 23 November 2023 | Spirit Energy – s42 Response   | <p>Emergency Response:</p> <p>As development progresses, Spirit Energy Production UK Limited ("Spirit") would like to understand the emergency response impact due to increased activities and infrastructure in the area and how Spirit's existing emergency response plans and safety case are impacted by the introduction of these new activities. It will also be necessary for Spirit to have sight of the developers' emergency response plans in order that all parties have clarity regarding plans to co-exist together in proximity. Emergency escape and evacuation from the Spirit assets needs to be considered to understand any impacts there could be on the ability of the and Emergency Rescue and</p> | The OSPs and Morgan offshore booster station have been removed from the application; helicopter operations have been scoped out ( <b>Table 11.10</b> ). This comment is no longer considered to be relevant to this application. |

| Date             | Consultee and type of response | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                  |                                | Recovery Vessels ("ERRVs") to provide direct assistance in coordinating escape and evacuation, including potential retrieval of personnel. The area in and around where it is proposed to construct the transmission assets is already congested with emergency evacuation of existing installations via Lifeboats to a safe haven restricted due to the number of windfarms already in the surrounding area and this should be taken into consideration in determining final location for the transmission assets.                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 23 November 2023 | Spirit Energy – s42 Response   | With this increased level of activity in the area there will be considerable simultaneous operation planning required between existing infrastructure owner activities and wind farm development activities. Spirit has been engaging with OWL on their generation and transmission plans for several years now. Spirit will continue to work openly with OWL to share information and extends this invitation to bpEnBW regarding transmission asset development.                                                                                                                                                                                                                                                                                        | The Applicants welcome Spirit's engagement and proactive approach to the Transmission Assets regional planning and development and is continuing to engage with offshore hydrocarbon industries.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 23 November 2023 | BAE Systems – s42 Response     | <p>Subject: Representations to the Morgan and Morecambe Offshore Wind Farms: Transmission Assets Consultation</p> <p>We act for BAE Systems and would like to take the opportunity to submit the following important representations to the consultation.</p> <p>BAE Systems also requests that the Applicants continue to involve the company as the project is developed.</p> <p>The representations relate to the potential for impacts on the operations of BAE Systems at Warton Aerodrome. The impacts could arise at the operational and construction stages of the project when there is potential to affect air safety. They could also arise following incidental aspects of the project such as changes to habitats near to the Aerodrome.</p> | <p>Impacts arising from the construction, operations and maintenance and decommissioning phases of the Transmission Assets have been assessed in <b>section 11.11</b>.</p> <p>The Applicants welcome BAE Systems' engagement and proactive approach to the Transmission Assets planning and development and will engage with both the MOD and BAE Systems where required.</p> <p>BAE Systems Warton (Aerodrome) has been scoped out. The Onshore Order Limits and Intertidal Infrastructure Area lay beyond the CNS safeguarded areas and beyond the runway safeguarded area. The Onshore Order Limits and Intertidal Infrastructure Area lie below the Aerodrome OLS Inner Horizontal Surface but construction equipment (in the</p> |

| Date | Consultee and type of response | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Response to comment raised and/or where considered in this chapter                                                                                    |
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|      |                                | <p>Before explaining the potential for impacts on the operation of the Aerodrome it is important to understand the significance of the facility.</p> <p>Warton Aerodrome</p> <p>Warton Aerodrome is a UK strategic asset supporting the UK and international partners with national and international defence. The Aerodrome is licensed by both the CAA and Military Aviation Authority. Under the terms of the license the Aerodrome must be regulatory compliant. The aerodrome complies with the following CAA publications: CAP 168, 772, 738. These are specific in relation to planning in and around the Aerodrome and the management of habitat and wildlife. In addition to these (and other regulatory articles), the Aerodrome is technically safeguarded by the MOD, Defence Infrastructure Organisation. The MOD/Defence Infrastructure Organisation are governed by statute with regards to the technical safeguarding of Warton Aerodrome and are a mandatory consultee for any matters that may affect the safe operation of flying aircraft/platforms.</p> <p>Statutory and Offshore Team Considerations</p> <p>MOD safeguarding involves the MOD as a statutory consultee in the UK planning system to ensure designated zones around key operational defence sites such as aerodromes, explosive storage sites, air weapon ranges, technical sites and meteorological radar sites are not adversely affected by development outside of the MOD estate.</p> <p>The MOD is also a consultee for the licensing of marine developments and the extraction of hydrocarbon resources in the UK continental shelf area, to ensure that offshore developments and activities do not affect strategic defence interests or inhibit the use of designated danger and exercise areas supporting military training and weapon trials.</p> | <p>Construction Phase) and remaining above surface infrastructure (in the Operation and Maintenance Phase will not penetrate the surface ceiling.</p> |

| Date | Consultee and type of response | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Response to comment raised and/or where considered in this chapter |
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|      |                                | <p>The statutory and offshore team assesses development proposals in consultation with relevant defence stakeholders and formulates the MOD's position. Wherever impacts on defence interests are identified, the team seeks mitigation measures to overcome them so that the development can proceed.</p> <p>The statutory and offshore team also engage in the preparation of development plans governing both onshore and offshore development to ensure MOD safeguarding interests are appropriately recognised and taken into account.</p> <p>Generally, both construction activity and operational development within a six-kilometre radius of the Aerodrome will need to be assessed so as to demonstrate the degree of impact on the assets at the Aerodrome (a safeguarding assessment). This will need to include all aspects of construction, including the use of high cranes. Aerodrome Safeguarding is in place to ensure the safety of aircraft manoeuvring on the ground, taking off, landing or flying in the vicinity of the Aerodrome. BAE Systems needs to be assured that no aspect of the project will affect the safe operation and development of Warton Aerodrome. This includes a demonstration that the substations will not affect the Aerodrome OLS or radar and transmitter/receiver aerial surfaces.</p> <p>There is also a 13 km radius wildlife zone. The Aerodrome at Warton needs to be consulted on any developments that have the potential to attract wildlife. Birds are the main concern, particularly large, over-wintering birds. In relation to this, BAE Systems have initial concerns about the proposal to develop an '<i>Onshore and Intertidal Net Gain Enhancement Plan</i>' to identify areas where biodiversity net gain is proposed. This will include details of the measures proposed, including details of any enhancement measures proposed for waterbirds." (Preliminary Environmental</p> |                                                                    |

| Date             | Consultee and type of response   | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|                  |                                  | Information Report Non-Technical Summary, October 2023). BAE Systems is particularly concerned about any enhancement measures in the wildlife zone that will increase the attractiveness of the area for birds (including new areas of standing water) as this has significant potential to negatively affect air safety."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 23 November 2023 | Blackpool Airport – s42 Response | <p>Consultation on Morgan and Morecambe Offshore Wind Farms: Transmission Assets</p> <p>Introduction</p> <p>We act on behalf of Blackpool Airport Enterprise Zone and Blackpool Council (the owners of Blackpool Airport) and have been instructed to provide a formal response to the Consultation on Morgan and Morecambe Offshore Wind Farms: Transmission Assets. In doing so we have reviewed the consultation documents provided to us.</p> <p>In making these comments it should be noted that the Airport and all of its safety assurance processes must take priority in any decisions made in respect to a proposed route across the site. In this respect, this includes but is not limited to an understanding that the airport cannot be closed for any period of time to accommodate the transmission assets of the windfarm development.</p> <p>Background to the Enterprise Zone</p> <p>In November 2015, Enterprise Zone status was approved for the wider Airport site, coming into force from April 2016. The Enterprise Zone status is valid for 25 years and in line with national policy on Enterprise Zones, business incentives are available.</p> <p>Following operational commencement of the Enterprise Zone, a Memorandum of Understanding (MoU) was agreed between the then Secretary of State for Communities and Local Government, Blackpool Borough Council, Fylde Borough Council and the Lancashire Local Enterprise</p> | <p>Impacts arising from the construction, operations and maintenance and decommissioning phases of the Transmission Assets have been assessed in <b>section 11.11</b>.</p> <p>The Applicants welcome Blackpool Airport's engagement.</p> <p>The Applicants are working closely with Blackpool Airport and the Enterprise Zone to address their concerns in reducing the potential adverse effects to flight operations and to find a workable solution for all parties.</p> <p>Further work will be undertaken at detailed design, including as a part of the CAP 791 process (CoT105). During detailed design, consideration will be given to construction installation techniques and to the micro-siting of permanent and temporary infrastructure, amongst a range of other factors, in to order to mitigate or avoid potential impacts. This would be a pre-requisite to any CAP 791 approvals relating to any airside construction activities within Blackpool Airport</p> |



| Date             | Consultee and type of response | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Response to comment raised and/or where considered in this chapter      |
|------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
|                  |                                | <p>Partnership (LEP). The MoU states that with respect to capital expenditure which can be funded by retained business rates growth this will include:</p> <ul style="list-style-type: none"> <li>relocation of critical Operational Airport Infrastructure – including control tower, apron, fire station, taxiway, fuel farm facilities and radar.</li> </ul> <p>The Enterprise Zone is also looking to target a wide range of sectors, including food and drink manufacturers, energy, aviation, creative and digital, advanced manufacturing and professional services. It is envisaged within the Enterprise Zone Delivery Plan that the Enterprise Zone status will attract over 280 no. new businesses and create circa. 5,000 no. new jobs over its lifespan, in addition to the existing businesses and employees already based on the site.</p> <p>55% of the Enterprise Zone is located within Fylde and 45% in Blackpool. Blackpool Council is the major freehold landowner at the Airport and Enterprise Zone following the purchase of the Airport in September 2017.</p> <p>In total, the Enterprise Zone extends to 144 hectares of land. Over its lifetime, it is expected that it will:</p> <ul style="list-style-type: none"> <li>support 5,000 no. new jobs;</li> <li>attract £300 million + of private sector investment;</li> <li>generate a cumulative Gross Value Added total over the first five years of £232 million and £2.08 billion over the Enterprise Zone's lifetime;</li> <li>assist in the diversification of the local economy, which relies heavily upon tourism and the public sector; and</li> <li>seek a sustainable future for Blackpool Airport.</li> </ul> |                                                                         |
| 23 November 2023 | Harbour Energy – s42 Response  | Figure 4.19 of Volume 1 of the PEIR sets out the current search areas for the Morgan Offshore Substation. Section 4.9.3.2 of Volume 1, Chapter 4 of the PEIR identifies that the location of an offshore booster station (if required) within                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | The OSPs and Morgan offshore booster station have been removed from the |

| Date         | Consultee and type of response                                                          | Comments raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                                                                                         | the search areas will be determined during the design phase (typically post-consent). Figure 4 below shows the location of the search areas relative to the Calder platform. Some locations within the west search areas would place the offshore substation within 6.1 km (3.3 nm) of the Calder platform. Depending on the height of the offshore substation this may not impose any restrictions on helicopter operations to/from Calder but further consultation and appropriate protective provisions will be required. | application; helicopter operations have been scoped out ( <b>Table 11.10</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 11 June 2024 | Blackpool Airport Operations Ltd (BAOL) – In Person Meeting (Blackpool Council Offices) | Discussion of works on the aerodrome. Including: <ul style="list-style-type: none"> <li>• construction methodology; and</li> <li>• potential impacts to Navigation Aids (NAVAID).</li> <li>•</li> </ul>                                                                                                                                                                                                                                                                                                                      | <p>The Applicants welcome BAOL's engagement and is setting in place processes and procedures, in line with the CAAs regulatory expectation (CAP 791: <i>Procedures for changes to aerodrome infrastructure</i>) for on-aerodrome works and the Airport's Safety and Airport's Safety Management System (SMS).</p> <p>The Applicants are working closely with Blackpool Airport and the Enterprise Zone to address their concerns.</p> <p>Further work will be undertaken at detailed design, including as a part of the CAP 791 process (CoT105). During detailed design, consideration will be given to construction installation techniques and to the micro-siting of permanent and temporary infrastructure, amongst a range of other factors, in to order to mitigate or avoid potential impacts. This would be a pre-requisite to any CAP 791 approvals relating to any airside construction activities within Blackpool Airport</p> |
| 27 June 2024 | BAOL – Virtual Meeting                                                                  | Discussion of potential effects to NAVAID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | The Applicants welcome BAOL's engagement and is setting in place processes and procedures, in line with the CAAs regulatory expectation (CAP 791: <i>Procedures for</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Date           | Consultee and type of response                           | Comments raised                                                                                                   | Response to comment raised and/or where considered in this chapter                                                                                                                                                                                                               |
|----------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                |                                                          |                                                                                                                   | <i>changes to aerodrome infrastructure</i> ) for on-aerodrome works and the Airport's Safety and Airport's SMS.                                                                                                                                                                  |
| 3 July 2024    | BAOL Engineering - In Person Meeting (Blackpool Airport) | Preliminary discussion regarding Blackpool Airport SMS risk review and CAP791 process for the on-aerodrome works. | The Applicants welcome BAOL's engagement; and alignment of Volume 1 Chapter 3: Project description of the ES activity with Blackpool Airport's SMS and CAA requirements in CAP791.                                                                                               |
| 15 July 2024   | BAOL - In Person Meeting (Blackpool Airport)             | Construction works overview workshop.                                                                             | The Applicants welcome BAOL's engagement.                                                                                                                                                                                                                                        |
| 30 July 2024   | BAOL - Virtual Meeting                                   | CAA CAP791 Co-ordination                                                                                          | The Applicants welcome BAOL's engagement and is setting in place processes and procedures, in line with the CAAs regulatory expectation (CAP 791: <i>Procedures for changes to aerodrome infrastructure</i> ) for on-aerodrome works and the Airport's Safety and Airport's SMS. |
| 12 August 2024 | BAOL - Virtual Meeting                                   | CAA CAP791 Co-ordination                                                                                          | The Applicants welcome BAOL's engagement and is setting in place processes and procedures, in line with the CAAs regulatory expectation (CAP 791: <i>Procedures for changes to aerodrome infrastructure</i> ) for on-aerodrome works and the Airport's Safety and Airport's SMS. |

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- 11.3.3.2 Following scoping, engagement with interested parties specific to aviation and radar is continuing.
- 11.3.3.3 A summary of the key comments raised during engagement activities undertaken to date is presented in **Table 11.5**, together with how these issues have been considered in the production of the ES chapter.

## 11.4 Study area

- 11.4.1.1 The scope of this chapter relates to the onshore and intertidal elements of the Transmission Assets including the following.
- Transmission Assets Order Limits: Onshore: The area within which all components of the Transmission Assets landward of Mean High Water Springs will be located, including areas required on a temporary basis during construction and/or decommissioning. Also referred to in this report as the Onshore Order Limits, for ease of reading.
  - Intertidal Infrastructure Area: The temporary and permanent areas between MLWS and MHWS.
- 11.4.1.2 As set out in **paragraph 11.1.1.4**, no sea piercing offshore elements are proposed as part of the final application.
- 11.4.1.3 The study area includes all land within the Onshore Order Limits, the Intertidal Infrastructure Area and the airspace encompassing an area of 15 km from this boundary. Flight operations are vulnerable to disruption by obstacles of vertical extent, within 15 km (CAPs 168, 738 and 764) of an Aerodrome Reference Point; however, the Transmission Assets are primarily construction works, direct pipe, underground cabling or low height above ground substations.
- 11.4.1.4 The above study area is presented on Figure 11.1 of Volume 3, Figures of the ES.

## 11.5 Baseline methodology

### 11.5.1 Methodology for baseline studies

#### Desk studies

- 11.5.1.1 A comprehensive desk-based review was undertaken to inform the baseline for aviation and radar. The existing studies and datasets referred to as part of the desk-based review are summarised in **Table 11.6** below.

**Table 11.6: Summary of desk study sources used**

| Title                                                        | Source | Year | Author | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------|--------|------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CAP 032 – UK IAIP                                            | CAA    | 2024 | CAA    | Contains information, updated every 28 days, of lasting (permanent) character essential to air navigation. <ul style="list-style-type: none"> <li>Appropriate information about the site construction and any associated lighting (where applicable), for example the height and temporary location of construction cranes, should be provided to the NATS Aeronautical Information Service (for promulgation in CAP 032, the UK IAIP).</li> </ul>                                                                            |
| CAP 168 – Licensing of Aerodromes                            | CAA    | 2022 | CAA    | Sets out the standards required at UK licensed aerodromes relating to their management systems, operational procedures, physical characteristics, assessment and treatment of obstacles and visual aids.                                                                                                                                                                                                                                                                                                                      |
| CAP 670 – Air Traffic Services Safety Requirements           | CAA    | 2019 | CAA    | Sets out the safety regulatory framework and requirements associated with the provision of an ATS.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| CAP 738 – Safeguarding of Aerodromes                         | CAA    | 2020 | CAA    | Sets out the safety regulatory framework and requirements, advice and guidance to operators involved in the process of 'aerodrome safeguarding' and assist Aerodrome Operator's understanding of, and compliance with the requirements laid down in: <ul style="list-style-type: none"> <li>ICAO Annex 14 Volume I, Aerodrome Design and Operations;</li> <li>EU Regulation (EU) 2018/1139, Regulation (EC) No 1108/2009, COMMISSION REGULATION (EU) No 139/2014; and</li> <li>UK CAP 168 Licensing of Aerodromes.</li> </ul> |
| CAP 764 – Policy and Guidelines on Wind Turbines             | CAA    | 2016 | CAA    | Aids aviation stakeholders to help understand and address wind energy related issues thereby ensuring greater consistency in the consideration of the potential impact of proposed wind farm developments.                                                                                                                                                                                                                                                                                                                    |
| CAP 785B – Implementation and Safeguarding of IFP in the UK  | CAA    | 2022 | CAA    | IFPs are regulated in the UK through the oversight of Approved Procedure Design Organisations and the approval of IFP design before their implementation in the UK AIP. The specific requirements for the development and approval of IFP designs, and the delivery of safeguarding services are published in this publication.                                                                                                                                                                                               |
| CAP 791 – Procedures for Changes to Aerodrome Infrastructure | CAA    | 2016 | CAA    | Guidance on the procedures to be used to notify the CAA of changes at an aerodrome, covering both infrastructure and management system changes in accordance with EU and National Regulations.                                                                                                                                                                                                                                                                                                                                |

| Title                        | Source | Year | Author                      | Notes                                                                                                                                                                                                                                                                          |
|------------------------------|--------|------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MOD – MilAIP                 | MOD    | 2024 | Military Aviation Authority | The main resource for information and flight procedures at all military aerodromes as well as airspace, en-route procedures, charts and other air navigation information.                                                                                                      |
| MCA – MGN 654                | MCA    | -    | MCA                         | Safety of Navigation OREIs. <ul style="list-style-type: none"> <li>Guidance on UK Navigational Practice, Safety and Emergency Response: Contains information for operators and developers in formulating their emergency response plans and site safety management.</li> </ul> |
| AOA – Aerodrome Safeguarding | AOA    | 2016 | AOA                         | Advice Notes 1, 2, 4 and 5.                                                                                                                                                                                                                                                    |

## 11.6 Baseline environment

### 11.6.1 Desk study

11.6.1.1 In addition to the review of existing datasets (**section 11.2**); other sources are summarised at **Table 11.7**.

**Table 11.7: Summary of other desk study sources used**

| Title                                               | Source                                                 | Year | Author                      | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------|--------------------------------------------------------|------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CAA VFR – Charts                                    | NATS                                                   | 2022 | CAA/NATS                    | VFR Low Altitude (Flight Information) Chart                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| CAP 772 – Wildlife Hazard Management at Aerodromes  | CAA                                                    | 2017 | CAA                         | Provides guidance to assist aerodrome operators in establishing and maintaining an effective Bird Control Management Plan, including the measures necessary to assess the birdstrike risk at the aerodrome, and the identification of appropriate action to minimise that risk.<br><br>The management of the risk of birdstrikes defined in an aerodrome Bird Control Management Plan should be an integral part of that aerodrome's safety management culture and its Safety Management System (SMS). |
| MOD – En Route Low Altitude                         | MOD                                                    | 2024 | Military Aviation Authority | MilAIP En Route Low Altitude (Flight Information) Chart UK(L)2.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Blackpool Airport Enterprise Zone (BAEZ) Masterplan | Blackpool, Fylde and Wyre Economic Development Company | 2018 | BE Group                    | This report serves as the final Masterplan document, which explains the process which has been undertaken in constructing the Masterplan, and the decisions and areas of consideration which have been included in the development.                                                                                                                                                                                                                                                                    |

| Title                     | Source                            | Year | Author                                                                            | Notes |
|---------------------------|-----------------------------------|------|-----------------------------------------------------------------------------------|-------|
| BAEZ Masterplan - Summary | Lancashire Enterprise Partnership | -    | Abridged version of the Baseline Study and Masterplan published by Mott MacDonald |       |

- 11.6.1.2 The Transmission Assets will be located within the study area as shown in Figure 11.1 (see Volume 3, Figures), within Class G uncontrolled airspace. The following paragraphs describe the baseline environment within, and around, the Transmission Assets Order Limits, within which the onshore export cable corridor, 400 kV grid connection cable corridor, and onshore substations would be located (Figure 11.2, Volume 3, Figures).

### Civil aviation

- 11.6.1.3 HMRs support the transport of personnel and equipment to offshore oil and gas installations. HMRs are routes typically and routinely flown by helicopters operating to and from offshore destinations and are promulgated for the purpose of signposting concentrations of helicopter traffic to other airspace users. HMRs have no airspace status and assume the background airspace classification within which they lie (Class G for the Transmission Assets).
- 11.6.1.4 In order to maintain a safe operating environment, the CAA CAP 764 Policy and Guidance on Wind Turbines (CAA, 2016) recommends a consultation zone of 9 nm radius around offshore installations serviced by helicopters. This consultation zone is not considered a prohibition on development, but a trigger for consultation between offshore helicopter operators, the operators of existing installations and developers of proposed offshore wind farms, in order to determine a solution that maintains safe offshore helicopter operations.

### Civil and military radar

- 11.6.1.5 Onshore elements of the Transmission Assets comprise stationary low height, surface infrastructure (or below ground cables). There is no sea surface piercing infrastructure associated with the offshore elements of the Transmission Assets.

### Aerodromes

- 11.6.1.6 The Onshore Order Limits include Blackpool Airport and are approximately 15 km to the boundary of Warton Aerodrome, Figure 11.1 (see Volume 3, Figures).

### Airborne search and rescue operations

- 11.6.1.7 The SAR helicopter force provides constant SAR cover in the UK from ten bases located across the UK with the closest SAR base to the study area being at Caernarfon Airport, Gwynedd, at range of approximately 70 km.



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## Military aviation

### Military Practice and Exercise Areas (PEXA)

- 11.6.1.8 There is no Military PEXA in the study area.

### 11.6.2 Future baseline conditions

- 11.6.2.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 require that ‘*an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge*’ is included within the ES. This section provides an outline of the likely future baseline conditions in the absence of the Transmission Assets.
- 11.6.2.2 It is difficult to define what the likely future evolution of the aviation interests in the Irish Sea and Lancaster coastal plain will be either with, or in the absence of, the Transmission Assets. The airspace structure is unlikely to change significantly, as are operations at Blackpool Airport. The Blackpool Airport Enterprise Zone (BAEZ) Masterplan sets out the vision and future baseline for the Blackpool Airport which forms the west end of the BAEZ. The BAEZ Masterplan highlights that commercial passenger numbers are low and are unlikely to increase significantly due to the close proximity to three major regional airports and the main potential for future growth lies around offshore helicopter operations, aviation training, pleasure flying/general aviation, and private aircraft. The runway is excluded from the BAEZ, so as not to preclude future development of this for larger commercial aircraft.
- 11.6.2.3 Blackpool Airport operations might shift in focus to support offshore helicopter operations and greater business aviation support. Fundamentally, the aviation baseline and the vision for an operational shift in focus at Blackpool Airport, and associated BAEZ development, is unlikely to be affected or alter significantly.

### 11.6.3 Key receptors

- 11.6.3.1 **Table 11.8** identifies the receptors taken forward into the assessment and agreed with stakeholders through the consultation process, as presented in **section 11.3**. **Table 11.10** identifies the receptors, with reasoning, scoped out of the assessment.

**Table 11.8: Key receptors taken forward to assessment**

| Receptor          | Description                      | Sensitivity/value |
|-------------------|----------------------------------|-------------------|
| Blackpool Airport | Airport of regional significance | Medium            |

## 11.7 Scope of the assessment

- 11.7.1.1 The scope of this ES has been developed in consultation with relevant consultee responses as detailed in **Table 11.5**. The scope of the assessment

considered the following in identifying the aviation and radar receptors relevant to the onshore and intertidal elements within the Transmission Assets study area (the study area is shown in Figure 11.1 (see Volume 3, Figures) and **Section 11.4**). As stated in section **11.1.1.4**, the removal of the booster station, along with the removal of the offshore substation platforms, mean that there is no sea surface piercing infrastructure proposed for the Transmission Assets. Therefore, offshore receptors and impacts are scoped out of the assessment.

- Aerodromes, including flight procedures, within 15 km of the study area (in accordance with guidance within CAP 764):
  - other onshore aviation CNS infrastructure within 5 km of the study area (in accordance with guidance in CAP 738 and CAP 791).
- HMR (Indicator) within the study area (scoped out, **Table 11.10**).
- Low flying operations including Helicopter SAR activities (scoped out, **Table 11.10**).

11.7.1.2 Taking into account the scoping and consultation process, **Table 11.9** summarises the potential impacts considered as part of this assessment.

**Table 11.9: Matters considered within this assessment**

| Activity                                                                                                                                                                                                  | Impacts scoped into the assessment                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Onshore</b>                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Construction phase</b>                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                 |
| Impacts to Blackpool Airfield: Onshore construction activity (including temporary above surface structures (construction compounds and construction bays) at/near Blackpool Airport (impacts to airfield) | Effect upon airport OLS, runway protected surfaces, Instrument Landing System (ILS) and the DME. These effects could temporarily suspend flight operations over short periods, only when the weather is below visual flight minima, to a small number of commercial flight operations (Business Aviation and Offshore helicopter support at Blackpool Airport). |
| <b>Operation and maintenance phase</b>                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                 |
| EMF effect of the onshore export cable (impacts to communication, navigation and surveillance as well as airfield infrastructure)                                                                         | Effect upon NAVAIDs at Blackpool Airport that could interfere with the aids signal in space and provide erroneous flight guidance to aircraft.                                                                                                                                                                                                                  |
| <b>Decommissioning</b>                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                 |
| Removal of cables (reversal of construction phase)                                                                                                                                                        | Decommissioning is likely to occur within construction working areas and to require no greater amount or duration of activity than assessed for construction.                                                                                                                                                                                                   |

11.7.1.3 Impacts that are not likely to result in significant effects have been scoped out of the assessment. A summary of the impacts scoped out, together with justification for scoping them out and whether the approach has been agreed with key stakeholders through either scoping or consultation, is presented in **Table 11.10**.

**Table 11.10: Impacts scoped out of the assessment**

| Issue                                                                                                                                                | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Onshore</b>                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>NATS St Anne's PSR/SSR systems</b>                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Onshore construction activity near NATS St. Anne's PSR/SSR systems (effect upon associated safeguarded areas and interruption to PSR/SSR operation)  | <p>See NATS (Safeguarding Office) response (16 October 2023) consultation table (<b>Table 11.5</b>)</p> <p>NATS owns and operates the St. Annes radar station. NATS anticipates no impact from the proposal and has no comments on the DCO application. Accordingly, other than raising awareness and advising due care in respect of the power connection to the site. Therefore, this onshore receptor is scoped out.</p>                                                                                                                                                                                                                                                                                   |
| <b>DCSA Inskip</b>                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Onshore construction activity near DCSA Inskip (effect upon associated safeguarded areas and interruption to transmitter/receiver aerial operations) | The Onshore Order Limits and Intertidal Infrastructure Area are beyond/outside the DCSA Inskip safeguarded areas. Therefore, this onshore receptor is scoped out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Onshore construction activity near BAE Systems Warton (effect upon associated safeguarded areas, OLS and CNS equipment)                              | <p>The Onshore Order Limits and Intertidal Infrastructure Area lie beyond the CNS safeguarded areas and beyond the runway safeguarded area; over 2.5 km from the runway strip. The Onshore Order Limits and Intertidal Infrastructure Area lie below the Aerodrome OLS Inner Horizontal Surface but construction equipment (in the Construction Phase) and remaining above surface infrastructure (in the Operation and Maintenance Phase) will not penetrate the surface ceiling. Therefore, this onshore receptor is scoped out.</p> <p>However, an outline wildlife habitat attractant risk assessment has been prepared as part of the wildlife hazard management plan and is contained in Annex 11.1</p> |
| <b>Woodvale Aerodrome</b>                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Construction activity.                                                                                                                               | The aerodrome is located more than 15 km away from the Onshore Order Limits and Intertidal Infrastructure Area, the limit of the safeguarded Outer Horizontal Surface of the safeguarded OLS for an aerodrome with a runway of 1,100 m (CAP 738), and thus, beyond any aerodrome protected surfaces. The aerodrome does not have safeguarded CNS assets. Therefore, this onshore receptor is scoped out.                                                                                                                                                                                                                                                                                                      |
| <b>Offshore</b>                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Helicopter Activity</b>                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Potential disruption to HMRS due to the presence of the OSPs and the Morgan offshore booster station.                                                | <p>The OSPs and Morgan offshore booster station have been removed from the application.</p> <p>The Transmission Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area. Volume 1, Chapter 3:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Issue                                                                                                                   | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Increased helicopter traffic within the Transmission Assets Order Limits may affect available airspace for other users. | Project description of the ES anticipates that during the offshore elements of the Morgan Transmission Assets construction phase there will be a maximum of one helicopter on site at any one time involving 40 return supply flights; a negligible amount in the Irish Sea airspace over that time period. The offshore element of the Morecambe Transmission Assets construction phase will not employ helicopter support. The Planning Inspectorate agrees the scope out within the Scoping Opinion. See Planning Inspectorate response (12 August 2022) consultation table ( <b>Table 11.5</b> )<br><br>Therefore, these offshore receptors are scoped out. |
| <b>PEXA</b>                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Potential disruption to military Practice and Exercise Area.                                                            | There are no aeronautical PEXAs overlapping the Transmission Assets Order Limits. The Planning Inspectorate agrees the scope out within the Scoping Opinion. See Planning Inspectorate response (12 August 2022) consultation table ( <b>Table 11.5</b> )<br><br>Therefore, this offshore receptor is scoped out.                                                                                                                                                                                                                                                                                                                                               |

## 11.8 Measures adopted as part of the Transmission Assets (Commitments)

11.8.1.1 For the purposes of the EIA process, the term 'Measures adopted as part of the Transmission Assets' is used to include the following types of mitigation measures (adapted from the Institute of Environmental Management and Assessment (IEMA), 2016). These measures are set out in the Commitments Register (Volume 1, Annex 5.3: Commitments register of the ES).

- Embedded mitigation. This includes the following.
  - Primary (inherent) mitigation - measures included as part of the project design. IEMA describes these as 'modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project and do not require additional action to be taken'. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself through the description of the project and the parameters secured in the DCO and/or marine licences. For example, a reduction in footprint or height.
  - Tertiary (inexorable) mitigation. IEMA describes these as '*actions that would occur with or without input from the EIA feeding into the design process*'. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects'. It may be helpful to secure such measures through a Code of Construction Practice or similar.
- Secondary (foreseeable) mitigation. IEMA describes these as '*actions that will require further activity in order to achieve the anticipated outcome*'. These include measures required to reduce the significance of

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environmental effects (such as lighting limits) and may be secured through an environmental management plan.

- 11.8.1.2 In addition, where relevant, measures have been identified that may result in enhancement of environmental conditions. Such measures are clearly identified within Volume 1, Annex 5.3: Commitments register of the ES. The measures relevant to this chapter are summarised in **Table 11.11**.
- 11.8.1.3 Embedded measures that will form part of the final design (and/or are established legislative requirements/good practice) have been taken into account as part of the initial assessment presented in **section 11.11** below (i.e., the initial determination of impact magnitude and significance of effects assumes implementation of these measures). This ensures that the measures that the Applicants are committed to are taken into account in the assessment of effects.
- 11.8.1.4 Where an assessment identifies likely significant adverse effects, further or secondary mitigation measures may be applied. These are measures that could further prevent, reduce and, where possible, offset these effects. They are defined by IEMA as actions that will require further activity in order to achieve the anticipated outcome and may be imposed as part of the planning consent, or through inclusion in the ES (referred to as secondary mitigation measures in IEMA, 2016). For further or secondary measures, both pre-mitigation and residual effects are presented.

**Table 11.11: Measures (commitments) adopted as part of the Transmission Assets**

| <b>Commitment number</b> | <b>Measure adopted</b>                                                                                                                                                                                                                                                                                                                   | <b>How the measure will be secured</b>                                         |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Embedded measures</b> |                                                                                                                                                                                                                                                                                                                                          |                                                                                |
| CoT105                   | No construction works within the operational (i.e. airside) boundary of Blackpool Airport will commence until Civil Aviation Publication (CAP) 791 Parts 1 & 2 approval has been obtained from the Civil Aviation Authority (CAA) in connection with those works. Part 3 will be finalised on the CAA inspection of the completed works. | In consultation with Blackpool Airport and secured outside of the DCO process. |

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## 11.9 Key parameters for assessment

### 11.9.1 Maximum design scenario

- 11.9.1.1 The Maximum Design Scenarios (MDS) identified in **Table 11.12** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The project design encompasses two construction scenarios, for trenching or drilling activity along two cable routes across Blackpool Airport for the Morgan Offshore Wind Project: Transmission Assets and Morecambe Offshore Windfarm: Transmission Assets, to take place at the same time or over different time periods; concurrent or sequential scenarios. These scenarios are detailed in Volume 1, Chapter 3: Project description of the ES.
- 11.9.1.2 The MDS is one of sequential construction of Morgan Offshore Wind Project: Transmission Assets and Morecambe Offshore Windfarm: Transmission Assets on Blackpool Airport. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within Volume 1 Chapter 3: Project description of the ES (e.g., different infrastructure layout), to that assessed here be taken forward in the final design.



**Table 11.12: Maximum design scenario considered for the assessment of impacts**

| Impact                                                                                                                                                                                                                                                          | Phase <sup>a</sup> |   |   | Maximum Design Scenario                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                 | C                  | O | D |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p>Onshore trenching activity (impacts to airfield):</p> <p>Resulting in a physical obstruction within Class G (uncontrolled) airspace, potentially affecting aerodrome flight operations (technical safeguarded areas), OLS, and other protected surfaces.</p> | ✓                  | ✓ | ✓ | <p><b>Construction phase</b></p> <p><b>Landfall: Transition Joint Bays (TJBs)</b></p> <ul style="list-style-type: none"> <li>Entry pits for the direct pipe will be situated within the transition joint bay area within Blackpool Airport: The maximum number of entry pits will be six. The total duration of entry pit works which is included within the overall transition joint bay construction works is 29 months assuming a sequential construction scenario.</li> <li>There will be two transition joint bay compounds (10,000 m<sup>2</sup> for Morgan and 10,000 m<sup>2</sup> for Morecambe) within Blackpool Airport to facilitate construction works, to be active for up to 29 months over a 45 month period.</li> <li>Maximum working area of the transition joint bay: 4,900 m<sup>2</sup> for Morgan and 2,800 m<sup>2</sup> for Morecambe. Total working area: 7,700 m<sup>2</sup>.</li> </ul> <p><b>Landfall: Direct pipe</b></p> <ul style="list-style-type: none"> <li>The offshore export cables between the transition joint bay working area within Blackpool Airport and the beach will be installed using the direct pipe trenchless technique for a maximum length of 1,500 m.</li> <li>There will be up to four compounds required west of the transition joint bays to MLWS: <ul style="list-style-type: none"> <li>Compound 1 (welfare): 300 m<sup>2</sup> to be active for 36 weeks;</li> <li>Compound 2: 2,500 m<sup>2</sup> to be active for 48 weeks;</li> <li>Compound 3: 510 m<sup>2</sup> to be active for 48 weeks; and</li> <li>Compound 4: 600 m<sup>2</sup> to be active for 36 months (in a sequential constriction scenario).</li> </ul> </li> </ul> | <p>Greatest number of structures (compounds, bays and equipment) and sequential trenching of either of the cable routes resulting in greatest extent of operational interference.</p> <p>Blackpool Airport</p> <ul style="list-style-type: none"> <li>Daytime works open cut open trench would have the maximum effect to concurrent runway/aerodrome operations with regard to flight safety.</li> <li>Nighttime works would have no effect to concurrent runway/aerodrome operations (2130 – 0600 local time) with regard to flight safety.</li> </ul> <p>The sequential construction scenario is included as the maximum design scenario as this results in the longest duration of impact.</p> |

| Impact | Phase <sup>a</sup> |   |   | Maximum Design Scenario                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Justification |
|--------|--------------------|---|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|        | C                  | O | D |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |
|        |                    |   |   | <ul style="list-style-type: none"> <li>Direct pipe (drill) has the potential to require night-time works.</li> </ul> <p><b>Onshore export cables (in the vicinity of Blackpool Airport)</b></p> <ul style="list-style-type: none"> <li>The maximum number of cable circuits will be six (across Blackpool Airport and across open space south of Blackpool Airport).</li> </ul> <p>Duration: 5.5 months over 6 months.</p> <p><b>Onshore export cables east of Blackpool Airport</b></p> <ul style="list-style-type: none"> <li>The maximum number of trenches will be six (one per cable circuit) with a typical trench depth of 1.8 m (indicative 1.2 m to the top of the protective tile). Trenches will be excavated using a mechanical excavator or trenchers. Cable circuits could be installed by open cut, HDD or other trenchless techniques.</li> <li>Construction corridor width 100 m. Duration of installation by sequential trenching of up 66 months in a sequential construction scenario (inside, below OLS).</li> </ul> <p><b>Onshore substations (outside OLS)</b></p> <ul style="list-style-type: none"> <li>Maximum height 15 m.</li> </ul> <p><b>400 kV grid connection corridor</b></p> <ul style="list-style-type: none"> <li>The maximum number of trenches will be four (one per cable circuit) with a typical trench depth of 1.8 m (indicative 1.2 m to the top of the protective tile). Trenches will be excavated using a mechanical excavator or trenchers. Cable circuits could be installed by open cut, Horizontal Direction Drilling (HDD) or direct pipe techniques.</li> <li>Construction corridor width 76 m. Duration of installation up 66 months in a sequential construction scenario.</li> </ul> |               |

| Impact                                                                                                                                                                                                    | Phase <sup>a</sup> |   |   | Maximum Design Scenario                                                                                                                                                                                                                                                                                                                                                                                                                                                | Justification                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                           | C                  | O | D |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                      |
|                                                                                                                                                                                                           |                    |   |   | <b>Operation and maintenance phase</b> <ul style="list-style-type: none"> <li>Operational duration of 35 years.</li> </ul> <b>Decommissioning phase</b> <ul style="list-style-type: none"> <li>Decommissioning is likely to operate within the parameters identified for construction (i.e., any activities are likely to occur within construction working areas and to require no greater amount or duration of activity than assessed for construction).</li> </ul> |                                                                                                                      |
| Operational electrical current of the onshore export cables creating an EMF with the potential to interfere with aviation associated systems their associated power infrastructure (impacts to airfield). | x                  | ✓ | x | <b>Operation and maintenance phase</b> <ul style="list-style-type: none"> <li>Operational duration of 35 years.</li> <li>The maximum number of cable circuits is six.</li> <li>The indicative trench depth to top of the protective tile will be 1.2 m (with a typical trench depth of 1.8 m).</li> <li>The maximum voltage will be 400 kV.</li> </ul>                                                                                                                 | Maximum length of cable in proximity to CNS infrastructure resulting in greatest extent of operational interference. |

<sup>a</sup> C=construction, O=operations and maintenance, D=decommissioning

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## 11.10 Assessment methodology

### 11.10.1 Overview

- 11.10.1.1 The approach to determining the significance of effects is a two-stage process that involves defining the magnitude of the impact and the sensitivity of the receptor. This section describes the criteria applied in this chapter to assign values to the magnitude of impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on relevant guidance, including the Design Manual for Roads and Bridges (DMRB) methodology (Highways England *et al.*, 2020) where appropriate as described in further detail in Volume 1, Chapter 5: Environmental assessment methodology of the ES.

### 11.10.2 Receptor sensitivity/value

- 11.10.2.1 The criteria for defining sensitivity in this chapter are outlined in **Table 11.13** below.

**Table 11.13: Sensitivity criteria**

| Sensitivity | Definition                                                                                                      | Aerodrome example         |
|-------------|-----------------------------------------------------------------------------------------------------------------|---------------------------|
| Very High   | International scale and very limited potential for substitution or recoverability is long-term or not possible. | Heathrow Airport          |
| High        | National scale and limited potential for substitution or recoverability is slow and/or costly.                  | BAES Warton               |
| Medium      | Regional scale, limited potential for substitution and/or has moderate to high levels of recoverability.        | Humberside Airport        |
| Low         | Local scale and/or has high recoverability.                                                                     | Cotswold Airport (Kemble) |
| Negligible  | Local scale.                                                                                                    | Burn Aerodrome (Selby)    |

### 11.10.3 Magnitude of impact

- 11.10.3.1 The criteria for defining magnitude in this chapter are outlined in **Table 11.14** below.

**Table 11.14: Magnitude of Impact criteria**

| Magnitude of impact |            | Definition                                                                                                                                                                                                                                                                                                                             |
|---------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High                | Adverse    | Total loss of ability to carry on activities and/or impact is of extended physical extent and/or long-term duration (total life of project and/or frequency of repetition is continuous and/or effect is not reversible for project phase).                                                                                            |
|                     | Beneficial | Large scale or major improvement of resource quality; major improvement of attribute quality.                                                                                                                                                                                                                                          |
| Medium              | Adverse    | Loss or alteration to significant portions of key components of current activity and/or physical extent of impact is moderate and/or of medium-term duration (operational period, six to ten years) and/or frequency of repetition is medium to continuous and/or effect is not reversible for project phase.                          |
|                     | Beneficial | Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.                                                                                                                                                                                                                               |
| Low                 | Adverse    | Minor shift away from baseline, leading to a reduction in level of activity that may be undertaken and/or physical extent of impact is low and/or of short to medium-term duration (construction period, one year to six years) and/or frequency of repetition is low to continuous and/or effect is not reversible for project phase. |
|                     | Beneficial | Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.                                                                                                                                                      |
| Negligible          | Adverse    | Very slight change from baseline condition and/or physical extent of impact is negligible and/or of short-term duration (less than one year) and/or frequency of repetition is negligible to continuous and/or effect is reversible.                                                                                                   |
|                     | Beneficial | Very minor benefit to, or positive addition of one or more characteristics, features or elements.                                                                                                                                                                                                                                      |
| No change           |            | No loss or alteration of characteristics, features or elements; no observable impact in either direction.                                                                                                                                                                                                                              |

#### 11.10.4 Significance of effect

- 11.10.4.1 The significance of the effect upon aviation and radar has been determined by correlating the sensitivity of the receptor and the magnitude of the impact. The method employed for this assessment is presented in **Table 11.15**. Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement.
- 11.10.4.2 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect has been informed by professional aviation judgement and is underpinned by narrative to explain the conclusions reached.
- 11.10.4.3 For the purpose of this assessment, any effects with a significance level of minor or less are not considered to be significant in terms of the Infrastructure Planning (EIA) Regulations 2017.

**Table 11.15: Assessment matrix**

| Sensitivity of receptor | Magnitude of impact |                     |                     |                   |
|-------------------------|---------------------|---------------------|---------------------|-------------------|
|                         | Negligible          | Low                 | Medium              | High              |
| <b>Negligible</b>       | Negligible          | Negligible or Minor | Negligible or Minor | Minor             |
| <b>Low</b>              | Negligible or Minor | Negligible or Minor | Minor               | Minor or Moderate |
| <b>Medium</b>           | Negligible or Minor | Minor               | Moderate            | Moderate or Major |
| <b>High</b>             | Minor               | Minor or Moderate   | Moderate or Major   | Major             |
| <b>Very High</b>        | Minor               | Moderate or Major   | Major               | Major             |

11.10.4.4 Where the magnitude of impact is ‘no change’, no effect would arise.

11.10.4.5 The definitions for significance of effect levels are described as follows.

- Major: These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category as well as a long-term duration (total life of project). Effects upon human receptors may also be attributed this level of significance.
- Moderate: These beneficial or adverse effects have the potential to be important and may influence the key decision-making process as well as a medium-term duration (six to ten years). The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse or beneficial effect on a particular resource or receptor.
- Minor: These beneficial or adverse effects are generally, but not exclusively, raised as local factors, as well as a duration short-term duration (less than one year). They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.
- Negligible: No effects or those that are beneath levels of perception, within normal bounds of variation (in dimension or time (short-term duration (less than one year)) or within the margin of forecasting error.

## 11.10.5 Assumptions and limitations of the assessment

11.10.5.1 The data sources used in this chapter are detailed in **Table 11.7**. The data used in this chapter is the most up to date publicly available information which can be obtained from the data sources as cited. Data has also been provided through consultation as detailed in **section 11.3** above. The data is limited by what is available and by what has been made available at the time of writing the ES.

11.10.5.2 Given the base level of aviation activity in the east Irish Sea is fully transparent and lacking complexity, it is considered that the data employed in

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the assessment is of a robust nature and is sufficient for the purposes of the impact assessment presented.

## **11.11 Assessment of effects**

### **11.11.1 Introduction**

11.11.1.1 The impacts arising from the construction, operation and maintenance, and decommissioning phases of the Transmission Assets are listed in **Table 11.12**, along with the maximum design scenario against which each impact has been assessed.

11.11.1.2 A description of the likely effect on receptors caused by each identified impact is given below.

### **11.11.2 Onshore construction activity (including temporary above surface structures) at/near Blackpool Airport (impacts to airfield)**

11.11.2.1 Excavation, construction equipment (plant), construction compound berms, construction of fencing associated with the excavation and backfill of the trench have the potential to create multiple barriers to and aeronautical ground-based NAVAIDs.

11.11.2.2 Excavation and backfill of a trench can affect the suitability of the area to birds/wildlife; birdstrikes are a cause of damage to aircraft and have the potential to cause accidents.

11.11.2.3 The maximum effect would arise due to the maximum area of the onshore export cable corridors, within Blackpool Airport, the longest duration (sequential) construction scenario and open cut technique rather than trenchless resulting in greatest extent of operational interference.

## **Construction phase**

### **Sensitivity of the receptor**

11.11.2.4 Blackpool Airport is of regional importance, as it is owned by Blackpool Council, considered a key part of the local economy (along with the encompassing nationally successful BAEZ, and operated as an important aviation hub supporting oil and gas recovery, business aviation and General Aviation. Its flight operation is vulnerable to disruption by construction activity within 15 km (CAPs 168, 738 and 764) of the Aerodrome Reference Point . The greatest impact is likely to be experienced closest to the Aerodrome Reference Point and has limited potential for substitution/replacement and recoverability.

11.11.2.5 The sensitivity of the Blackpool Airport receptor is, therefore, considered to be **medium**.



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## Magnitude of impact

### Blackpool Airport

- 11.11.2.6 The offshore export cables make landfall along the north west coast of England to the north of Lytham St. Anne's near Blackpool Airport, Lancashire.
- 11.11.2.7 Landfall refers to the area where the offshore export cables come ashore (i.e. make landfall) and are jointed to the onshore export cables via the TJBs. This will be undertaken by direct pipe installation. The direct pipe trenchless technique is a hybrid method between micro-tunnelling and HDD that allows for installation under sensitive features.
- 11.11.2.8 Relevant to this chapter, the works from the TJBs within Blackpool Airport and east towards Queensway (B5261) to install the onshore export cables include the following:
- the temporary construction compounds associated with the onshore export cable corridor and TJBs within Blackpool Airport;
  - the onshore export cable corridor installation within Blackpool Airport;
  - the onshore export cable corridor installation within Blackpool Airport and Blackpool Road Playing Fields; and
  - onshore export cable installation within the eastern section of Blackpool Airport.
- 11.11.2.9 Sequential construction activity within the obstacle limitation surface would have a total active construction duration of up to 11 months within 12 months, for both Morgan OWL and Morecambe OWL. Work at the TJBs within the Airport would have a duration of up to 29 months over a 45 month period. Installation of the onshore export cables east of the Airport would have a total active construction duration of up to 5.5 months over a period of six months.
- 11.11.2.10 This work will directly affect concurrent Blackpool Airport flight operations and the worst-case scenario is interference with operational protected surfaces, or volumes (including ILS and DME), by construction activity and/or vertical extent of the construction within compounds.
- 11.11.2.11 The impact to Blackpool Airport protected surfaces (or volumes) will be short/medium-term (dependent upon type of trenching/drilling activity) and continuous and there potentially would be an alteration to significant portions of key flight activity in poor weather conditions of low cloud or visibility (impacts to the operation of the ILS or DME) during this period, incurring loss or frequent alteration to runway operations. This impact would be periodically reversible during the construction phase; construction or vehicle movements suspended/delayed for a period of time (a few hours to a day in duration) and being cognisant of the Blackpool Airport weather conditions and forecast. These impacts will be managed through operationally sensitive construction techniques (HDD, direct pipe or open cut) and cable route planning along in line with the CAA CAP791 process (see CoT105, **Table 11.11**). This will be expanded upon and assessed following further engagement with Blackpool Airport.

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- 11.11.2.12 The impact to Blackpool Airport is predicted to affect elements of flight operations for a medium-term duration with a medium to continuous frequency of repetition and fully reversible after the construction phase. The magnitude is therefore considered to be **medium adverse**.

### **Significance of the effect**

#### **Blackpool Airport**

- 11.11.2.13 Embedded measures are adopted in CoT105.
- 11.11.2.14 Overall, the sensitivity of the receptor is **medium** and the magnitude of the impact to Blackpool Airport is **medium**. The effect will, therefore, be of **moderate adverse** significance, which is significant in EIA terms.

### **Further (secondary) mitigation and residual effect**

#### **Blackpool Airport**

- 11.11.2.15 Construction works mitigation protocol will be produced through engagement with the Blackpool Airport Air Traffic Control Safeguarding and Engineering Team and in line with the CAAs regulatory expectation (CAP 791 process and procedures (CoT105). This will operationally and contemporaneously address the works requirements (HDD and/or trenching, TJB position, route, techniques and operational management) and magnitude (extent) of the effects within the flight operations environment of Blackpool Airport.
- 11.11.2.16 Recent or current on-aerodrome works (i.e., lighting on export cable associated above surface construction equipment) at Blackpool Airport would also be briefed to flight operators and broadcast on Blackpool Air Traffic Control channels, in line with CAP 738 guidance.
- 11.11.2.17 Overall, with the implementation of further (secondary) mitigation, the magnitude of the impact to Blackpool Airport is reduced to **low**. The residual effect following application of a works plan is therefore, considered to be of **minor adverse** significance, which is not significant in EIA terms.

### **Operation and maintenance phase**

#### **Sensitivity of receptor**

- 11.11.2.18 The sensitivity of the Blackpool Airport receptor is considered to be **medium** as detailed in **paragraphs 11.11.2.4 and 11.11.2.5**.

#### **Magnitude of impact**

- 11.11.2.19 Effects will be managed through the CAA CAP791 process (including operational access for cable route inspection) to minimise impact to operations and in maintenance of the safe operations (see CoT105, **Table 11.11**).
- 11.11.2.20 All construction works, including installation of the landfall and all onshore cable route works will have been completed and the land restored (including the construction compounds) by this stage. There is likely a requirement for

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routine inspections to take place on an annual basis. for inspection of cable route and serviceability.

#### Blackpool Airport

- 11.11.2.21 The direct impact on Blackpool Airport would require a very slight change from baseline., Routine inspections can expect to take place on an annual basis, requiring entry to cable route access points at Blackpool Airport. These effects will be managed operationally in line with the CAA CAP791 process (see CoT105, **Table 11.11**). As this would constitute a very slight change from the baseline condition, the physical extent of impact is negligible.
- 11.11.2.22 The individual impact to Blackpool Airport, is predicted to be of long term/permanent duration (total life of project) and continuous, local spatial extent. These effects will be managed operationally in line with the CAA CAP791 process access and required visits will be agreed with the airport prior to each event (see CoT105, **Table 11.11**).
- 11.11.2.23 The magnitude is therefore considered to be **low adverse**.

#### Significance of effect

##### Blackpool Airport

- 11.11.2.24 Embedded measure adopted is CoT105.
- 11.11.2.25 Overall, the sensitivity of the receptor is **medium** and the magnitude of the impact to Blackpool Airport is **low**. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

#### Decommissioning phase

- 11.11.2.26 The onshore export cables will either remain *in situ* or be removed via link boxes and joint bays. No new trenching or drilling is anticipated. Link boxes will be removed. The effects are thus likely to be less than during construction and up to **minor adverse** significance, which is not significant in EIA terms, as outlined above.

### 11.11.3 Electro-Magnetic Fields (EMF)

- 11.11.3.1 The operational electrical current of the onshore export cables under Blackpool Airport could create an EMF when in operation. An EMF has the potential to interfere with aviation associated CNS (ILS and DME). The onshore infrastructure will comply with the guidelines discussed within Volume 1, Annex 3.4: EMF Compliance Statement of the ES.
- 11.11.3.2 The likelihood of impact is proportionate to the proximity of a CNS system (and the systems electrical supply and data communication cables) to the export cable. Detailed design works including sensitive export cable routing, micro-siting and appropriate construction techniques (cable depth, shielding, ducting and physical separation from CNS systems and power and data communications cables) will provide mitigation from impacts from EMF. Detailed design and routing of the export cables will be undertaken in consultation with Blackpool Airports Authorised Electrical person and will

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consider any potential impacts upon Blackpool Airports CNS systems. Actual construction works mitigation will be addressed in, and be in line with the CAAs regulatory expectation (CAP 791 process and procedures) i.e. CoT105.

### Operations and maintenance phase

#### Sensitivity of receptor

- 11.11.3.3 The sensitivity of the Blackpool Airport receptor is considered to be **medium** as detailed in **paragraphs 11.11.2.4 and 11.11.2.5**.

#### Magnitude of impact

- 11.11.3.4 The direct impact of EMF interference on Blackpool Airport CNS safeguarded areas would be long-term with potential continuous electrical interference of or alteration to key elements resulting in erroneous operational flight operations data. The physical extent of impact would be moderate and potentially not reversible for project phase.
- 11.11.3.5 These effects will be managed through operationally sensitive trench route planning; avoiding the CNS safeguarded areas and/or providing distance from each CNS component as essential mitigation to minimise the effect. This will be expanded upon and assessed through constant engagement with Blackpool Airport in line with the Blackpool Airport SMS and CAA CAP 791 regulatory process.
- 11.11.3.6 The magnitude is therefore, considered to be **medium adverse**.

#### Significance of effect

##### Blackpool Airport

- 11.11.3.7 The embedded measures adopted in CoT105 will significantly contribute to the mitigation of this effect.
- 11.11.3.8 Overall, the sensitivity of the receptor is **medium** and the magnitude of the impact to Blackpool Airport is considered to be **medium**. The effect is therefore, considered to be of **moderate adverse** significance, which is significant in EIA terms.

#### Further mitigation and residual effect

- 11.11.3.9 Further work will be undertaken at detailed design, in line with the CAA approved CAP 791 Part 1 (Compliance), as a part of the CAP 791 process (CoT105). The CAA assesses the Part 1 submission and when satisfied that change (works) meets regulatory requirements, it issues an approval for the change (works). During detailed design, consideration will be given to construction installation techniques and to the micro-siting of permanent and temporary infrastructure, amongst a range of other factors, in to order to mitigate, avoid or reduce effects to the CNS by the export cable and any potential EMF to agreed acceptable levels. This would be a pre-requisite to

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any CAP 791 approvals relating to any airside construction activities within Blackpool Airport.

#### Blackpool Airport

- 11.11.3.10 Overall, the magnitude of the impact to Blackpool Airport would be reduced to **low adverse** and the sensitivity of the receptor would remain **medium**. The expected residual effect following application CoT105 therefore, considered to be of **minor adverse** significance, which is not significant in EIA terms.

## 11.12 Cumulative effect assessment methodology

### 11.12.1 Introduction

- 11.12.1.1 The Cumulative Effects Assessment (CEA) takes into account the impact associated with the Transmission Assets together with other projects and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see Volume 1, Annex 5.5: CEA screening matrix and location plan). Each project has been considered on a case-by-case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

- 11.12.1.2 The cumulative assessment has been undertaken as follows.

- Scenario 1: Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets.
- Scenario 2: Transmission Assets together with Morgan Offshore Wind Project: Generation Assets.
- Scenario 3: Transmission Assets together with Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets.
- Scenario 4: Scenario 3 together with Tier 1, Tier 2 and Tier 3 projects, plans and activities.
- defined as follows.
  - Scenario 4a: Scenario 3 and Tier 1 projects, plans and activities which are:
    - under construction;
    - permitted application;
    - submitted application; or
    - those currently operational that were not operational when baseline data were collected, and/or those that are operational but have an ongoing impact.
  - Scenario 4b: Scenario 4a and Tier 2 projects, plans and activities which a:
    - scoping report has been submitted in the public domain.

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- Scenario 4c: Scenario 4b and Tier 3 projects (no Tier 3 projects have been identified), plans and activities which are:
    - where a scoping report has not been submitted and it is not in the public domain;
    - identified in the relevant Development Plan; or
    - identified in other plans and programmes.

- 11.12.1.3 The Generation Assets are inherent to Scenarios 1- 3 and the cumulative assessment of offshore activity near Blackpool Airport (impacts to airfield) for these scenarios is presented in **Table 11.18**.
- 11.12.1.4 Scenarios 4a-4c include other offshore plans and developments scoped into the assessment within 40 km of the Transmission Assets Order Limits: Offshore, and these are presented in **Table 11.19**.
- 11.12.1.5 No onshore developments have been identified to have a cumulative effect on Blackpool Airport directly, either by height or proximity to the airport, and therefore no onshore developments are scoped into the CEA assessment. There will also be no cumulative effect to the BAEZ.
- 11.12.1.6 The specific projects, plans and activities scoped into the CEA, are outlined in **Table 11.16**.

**Table 11.16: List of other projects, plans and activities considered within the CEA**

| Project/Plan                                    | Status                           | Distance from the Transmission Assets (nearest point, km) | Description of project/plan                                                                                                                                                                                          | Dates of construction (if applicable) | Dates of operation (if applicable) | Overlap with the Transmission Assets (airspace) |
|-------------------------------------------------|----------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------|-------------------------------------------------|
| Morecambe Offshore Windfarm: Generation Assets  | Submitted                        | 0.0                                                       | 480 MW Offshore wind farm (generating assets). Maximum of 35 wind turbines and indicative minimum spacing between rows of wind turbines of 1,400 m. Area: 87 km <sup>2</sup> .                                       | Proposed 2026                         | 2030                               | Yes                                             |
| Morgan Offshore Wind Project: Generation Assets | Submitted                        | 0.0                                                       | 1.5 GW Offshore wind farm (generating assets). Proposed offshore wind farm. Maximum of 96 wind turbines and four OSPs, with indicative minimum spacing between wind turbines of 1,400 m. Area: 280 km <sup>2</sup> . | Proposed 2026                         | 2030                               | Yes                                             |
| <b>Tier 1</b>                                   |                                  |                                                           |                                                                                                                                                                                                                      |                                       |                                    |                                                 |
| Awel y Môr Offshore Wind Farm                   | Submitted but not yet determined | 23.1                                                      | Proposed offshore wind farm to the west of Gwynt y Môr. Maximum of 50 wind turbines and array area of 78 km <sup>2</sup> .                                                                                           | Proposed 2025-2029                    | 2030                               | Yes                                             |
| Mona Offshore Wind Project                      | Submitted but not yet determined | 34.4                                                      | Proposed offshore wind farm. Maximum of 96 wind turbines and four OSPs, with minimum spacing between wind turbines of 1,400 m. Area: 300 km <sup>2</sup> .                                                           | Proposed 2026                         | 2030                               | Yes                                             |
| <b>Tier 2</b>                                   |                                  |                                                           |                                                                                                                                                                                                                      |                                       |                                    |                                                 |
| Moor Vannin Offshore Wind Farm                  | Scoping report published         | 2.6                                                       | Proposed offshore wind farm. Maximum of 100 wind turbines. Array area: 253 km <sup>2</sup> .                                                                                                                         | Proposed 2023                         | 2032                               | Yes                                             |
| <b>Tier 3– None applicable</b>                  |                                  |                                                           |                                                                                                                                                                                                                      |                                       |                                    |                                                 |



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## 11.12.2 Scope of cumulative effects assessment

- 11.12.2.1 The impacts identified in **Table 11.17** have been selected as those having the potential to result in the greatest cumulative effect on an identified receptor or receptor group. The cumulative effects presented and assessed in this section have been based on information provided in Volume 1, Chapter 3: Project description of the ES as well as the publicly available information available on other projects and plans. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within Volume 1 Chapter 3: Project description of the ES, to that assessed here, be taken forward in the final design scheme.

**Table 11.17 Scope of assessment or cumulative effects**

| Potential cumulative effect                                    | Phase <sup>a</sup> |   |   | Maximum Design Scenario                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Justification                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------|--------------------|---|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                | C                  | O | D |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                |
| Offshore activity near Blackpool Airport (impacts to airfield) | ✓                  | ✓ | ✓ | <p>MDS as described for the Transmission Assets (<b>Table 11.12</b>) assessed cumulatively with the following other projects/plans:</p> <ul style="list-style-type: none"> <li>• Morecambe Offshore Windfarm: Generation Assets.</li> <li>• Morgan Offshore Wind Project: Generation Assets.</li> </ul> <p><b>Tier 1</b></p> <ul style="list-style-type: none"> <li>• Awel y Môr Offshore Wind Farm.</li> <li>• Mona Offshore Wind Project</li> </ul> <p><b>Tier 2</b></p> <ul style="list-style-type: none"> <li>• Mooir Vannin Offshore Wind Farm (Generation Assets)</li> </ul> <p><b>Tier 3</b></p> <ul style="list-style-type: none"> <li>• There are no applicable Tier 3 projects.</li> </ul> | The outcome of the CEA will be greatest when the greatest number of other plans and projects are considered in-combination. This therefore includes the presence of other developments which will have the potential to create a cumulative offshore aviation obstacle within a representative 40 km buffer of the Transmission Assets Order Limits: Offshore. |

<sup>a</sup> C=construction, O=operation and maintenance, D=decommissioning

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## 11.13 Cumulative effects assessment

### 11.13.1 Introduction

- 11.13.1.1 A description of the significance of cumulative effects upon aviation and radar receptors arising from each identified impact is given below.
- 11.13.1.2 The cumulative study area which is shown in Figure 11.2 (see Volume 3, Figures) includes the 'Tiered' wind farm developments listed in **Table 11.17**.
- 11.13.1.3 The CEA is presented in a series of tables (one for each potential cumulative impact) and considers the following.
- Scenario 1: Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets.
  - Scenario 2: Transmission Assets together with Morgan Offshore Wind Project: Generation Assets.
  - Scenario 3: Transmission Assets together with Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets.
  - Scenario 4a to 4c: Transmission Assets together with Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets and other relevant projects and plans.

## 11.13.2 Aviation and radar

11.13.2.1 There are aviation and radar cumulative effects in Scenarios 1 to 4.

**Table 11.18: Offshore activity near Blackpool Airport (impacts to airfield) (Scenarios 1–3)**

|                           | Scenario 1: Transmission Assets + Morecambe Offshore Windfarm: Generation Assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Scenario 2: Transmission Assets + Morgan Offshore Windfarm: Generation Assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Scenario 3: Transmission Assets + Morecambe Offshore Windfarm: Generation Assets and Morgan Offshore Windfarm: Generation Assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Construction phase</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Sensitivity of receptor   | <ul style="list-style-type: none"> <li>Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>Similar to Scenario 1</p> <p>Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>Similar to Scenario 1</p> <p>Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Magnitude of impact       | <ul style="list-style-type: none"> <li>The cumulative effects assessment for Scenario 1 considers the following: Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area.</li> </ul> <p>The cumulative effect is predicted to be of local spatial extent, long-term duration (operations and maintenance phases), continuous and high reversibility. It is predicted that the impact will affect the receptor indirectly. The magnitude is therefore, considered to be <b>Low</b>.</p> | <p>The cumulative effects assessment for Scenario 2 considers the following:</p> <p>Similar to Scenario 1.</p> <p>Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morgan Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area</p> <p>The cumulative effect is predicted to be of local spatial extent, long-term duration, continuous and high reversibility. It is predicted that the impact will affect the receptor indirectly. The magnitude is therefore, considered to be <b>Low</b>.</p> | <p>The cumulative effects assessment for Scenario 2 considers the following:</p> <p>Similar to Scenario 1.</p> <p>Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area.</p> <p>The cumulative effect is predicted to be of local spatial extent, long-term duration, continuous and high reversibility. It is predicted that the impact will affect the receptor indirectly. The magnitude is therefore, considered to be <b>Low</b>.</p> |

|                                              | Scenario 1: Transmission Assets + Morecambe Offshore Windfarm: Generation Assets                                                                                                                                                                                                                                                                                   | Scenario 2: Transmission Assets + Morgan Offshore Windfarm: Generation Assets                                                                                                                                                                                                                                | Scenario 3: Transmission Assets + Morecambe Offshore Windfarm: Generation Assets and Morgan Offshore Windfarm: Generation Assets                                                                                                                                                                                                                                    |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Significance of effect                       | Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be Medium. The cumulative effect will, therefore, be of minor adverse significance, which is <b>not significant</b> in EIA terms.                                                                                                         | Similar to Scenario 1<br>Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be Medium. The cumulative effect will, therefore, be of minor adverse significance, which is <b>not significant</b> in EIA terms.                          | Similar to Scenario 1<br>Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be Medium. The cumulative effect will, therefore, be of minor adverse significance, which is <b>not significant</b> in EIA terms.                                                                                 |
| Further mitigation and residual significance | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                                                                                                                                       | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                                                                                 | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                                                                                                                                        |
| <b>Operation and maintenance phase</b>       |                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                     |
| Sensitivity of receptor                      | Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b> .                                                                                                                                                                                    | Similar to Scenario 1.<br>Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b> .                                                                                                    | Similar to Scenario 1<br>Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b> .                                                                                                                                                            |
| Magnitude of impact                          | The cumulative effects assessment for Scenario 1 considers the following:<br>Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area. | Similar to Scenario 1.<br>Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morgan Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area. | Similar to Scenario 1.<br>Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area. |

|                                              | Scenario 1: Transmission Assets + Morecambe Offshore Windfarm: Generation Assets                                                                                                                                                                                                            | Scenario 2: Transmission Assets + Morgan Offshore Windfarm: Generation Assets                                                                                                                                                                              | Scenario 3: Transmission Assets + Morecambe Offshore Windfarm: Generation Assets and Morgan Offshore Windfarm: Generation Assets                                                                                                                           |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                              | The cumulative effect is predicted to be of local spatial extent, long-term duration (operations and maintenance phases), continuous and high reversibility. It is predicted that the impact will affect the receptor indirectly. The magnitude is therefore, considered to be <b>Low</b> . | The cumulative effect is predicted to be of local spatial extent, long-term duration, continuous and high reversibility. It is predicted that the impact will affect the receptor indirectly. The magnitude is therefore, considered to be <b>Low</b> .    | The cumulative effect is predicted to be of local spatial extent, long-term duration, continuous and high reversibility. It is predicted that the impact will affect the receptor indirectly. The magnitude is therefore, considered to be <b>Low</b> .    |
| Significance of effect                       | Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be Medium. The cumulative effect will, therefore, be of minor adverse significance, which is <b>not significant</b> in EIA terms.                                  | Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be Medium. The cumulative effect will, therefore, be of minor adverse significance, which is <b>not significant</b> in EIA terms. | Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be Medium. The cumulative effect will, therefore, be of minor adverse significance, which is <b>not significant</b> in EIA terms. |
| Further mitigation and residual significance | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                                                                | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                               | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                               |

**Table 11.19: Offshore activity near Blackpool Airport (impacts to airfield) (Scenarios 4a-4c)**

|                           | Scenario 4a: Scenario 3 (Transmission Assets and Generation Assets) + Tier 1                                                                                                                                                                                                                                                                                                                                                                                                     | Scenario 4b: Scenario 3 (Transmission Assets and Generation Assets) + Tier 2                                                                                                                                                                                                                                                                                                                                                                                                                                | Scenario 4c: Scenario 3 (Transmission Assets and Generation Assets) + Tier 3                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Construction phase</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Sensitivity of receptor   | Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b> .                                                                                                                                                                                                                                                                                                  | Similar to Scenario 4a.<br>Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b> .                                                                                                                                                                                                                                                                                                  | Similar to Scenario 4a.<br>Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b> .                                                                                                                                                                                                                                                                                                  |
| Magnitude of impact       | The cumulative effects assessment for Scenario 4a considers the following:<br>Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area.<br>No loss or alteration of characteristics, features or elements; no observable impact in either direction. | The cumulative effects assessment for Scenario 4b considers the following:<br>Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area.<br>Similar to Scenario 4a.<br>No loss or alteration of characteristics, features or elements; no observable impact in either direction. | The cumulative effects assessment for Scenario 4c considers the following:<br>Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area.<br>Similar to Scenario 4a.<br>No loss or alteration of characteristics, features or elements; no observable impact in either direction. |
| Significance of effect    | Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be Medium. The cumulative effect will, therefore, be of minor adverse significance, which is <b>not significant</b> in EIA terms.                                                                                                                                                                                                                       | Similar to Scenario 4a.<br>Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be                                                                                                                                                                                                                                                                                                                                                      | Similar to Scenario 4a.<br>Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be Medium. The cumulative effect will, therefore,                                                                                                                                                                                                                                                                                                       |



|                                              | Scenario 4a: Scenario 3 (Transmission Assets and Generation Assets) + Tier 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Scenario 4b: Scenario 3 (Transmission Assets and Generation Assets) + Tier 2                                                                                                                                                                                                                                                                                                                       | Scenario 4c: Scenario 3 (Transmission Assets and Generation Assets) + Tier 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Medium. The cumulative effect will, therefore, be of minor adverse significance, which is <b>not significant</b> in EIA terms.                                                                                                                                                                                                                                                                     | be of minor adverse significance, which is <b>not significant</b> in EIA terms.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Further mitigation and residual significance | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                                                                                                                                                                                                                                                                                                                                                        | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                                                                                                                                                                       | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                                                                                                                                                                                                                                                                                                             |
| <b>Operation and maintenance phase</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Sensitivity of receptor                      | Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b> .                                                                                                                                                                                                                                                                                                                                                                                                     | Similar to Scenario 4a.<br>Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b> .                                                                                                                                                                                         | Similar to Scenario 4a.<br>Blackpool Airport is deemed to be of medium vulnerability, high recoverability and medium value. The sensitivity of the receptor is therefore, considered to be <b>Medium</b> .                                                                                                                                                                                                                                                                                                                               |
| Magnitude of impact                          | The cumulative effects assessment for Scenario 4a considers the following:<br>Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area.<br><br>The cumulative effect is predicted to be of local spatial extent, long-term duration (operations and maintenance phases), continuous and high reversibility. It is predicted that the impact will affect | The cumulative effects assessment for Scenario 4b considers the following:<br>Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area.<br><br>Similar to Scenario 4a. | The cumulative effects assessment for Scenario 4c considers the following:<br>Increased helicopter air traffic in concurrent construction and operations and maintenance phases. The Transmission Assets together with Morecambe Offshore Windfarm: Generation Assets will be located within Class G (uncontrolled) airspace and ATS will be available in the area.<br><br>Similar to Scenario 4a.<br><br>The cumulative effect is predicted to be of local spatial extent, long-term duration, continuous and high reversibility. It is |

|                        | Scenario 4a: Scenario 3 (Transmission Assets and Generation Assets) + Tier 1                                                                                                                                                                               | Scenario 4b: Scenario 3 (Transmission Assets and Generation Assets) + Tier 2                                                                                                                                                                               | Scenario 4c: Scenario 3 (Transmission Assets and Generation Assets) + Tier 3                                                                                                                                                                               |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | the receptor indirectly. The magnitude is therefore, considered to be <b>Low</b> .                                                                                                                                                                         | The cumulative effect is predicted to be of local spatial extent, long-term duration, continuous and high reversibility. It is predicted that the impact will affect the receptor indirectly. The magnitude is therefore, considered to be <b>Low</b> .    | predicted that the impact will affect the receptor indirectly. The magnitude is therefore, considered to be <b>Low</b> .                                                                                                                                   |
| Significance of effect | Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be Medium. The cumulative effect will, therefore, be of minor adverse significance, which is <b>not significant</b> in EIA terms. | Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be Medium. The cumulative effect will, therefore, be of minor adverse significance, which is <b>not significant</b> in EIA terms. | Overall, the magnitude of the cumulative impact is deemed to be Low and the sensitivity of the receptor is considered to be Medium. The cumulative effect will, therefore, be of minor adverse significance, which is <b>not significant</b> in EIA terms. |
| Further significance   | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                               | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                               | Assuming compliance with regulatory requirements and national procedures, the significance of effect to aircraft operators in the vicinity of the windfarm site has been assessed to be <b>not significant</b> in EIA terms.                               |

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## 11.14 Transboundary effects

- 11.14.1.1 A screening of transboundary impacts has been carried out (see Volume 1, Annex 5.4: Transboundary screening of the ES) and has identified that there was no potential for significant transboundary effects with regard to aviation and radar from the Transmission Assets upon the interests of other states.

## 11.15 Inter-related effects

- 11.15.1.1 Inter-relationships are the impacts and associated effects of different aspects of the Transmission Assets on the same receptor. These are as follows.
- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Transmission Assets (construction, operation and maintenance, and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases (e.g., onshore construction activity, presence of onshore substation and decommissioning disturbance).
  - Receptor led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on aviation and radar, such as interaction or creation of an aviation obstacle, may interact to produce a different, or greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects may be short term, temporary or transient effects, or incorporate longer term effects.
- 11.15.1.2 There are no inter-related effects that are of greater significance than those assessed in isolation. A description of the likely interactive effects arising from the Transmission Assets is provided in Volume 4, Chapter 3: Inter-relationships of the ES.

## 11.16 Summary of impacts, mitigation measures and monitoring

- 11.16.1.1 Information on aviation and radar within the study area was collected through desktop review and stakeholder engagement.
- 11.16.1.2 **Table 11.20** presents a summary of the impacts, measures adopted as part of the Transmission Assets and residual effects in respect to aviation and radar. The impacts assessed include:
- trenching activity; and
  - EMF.
- 11.16.1.3 Overall, it is concluded that, without secondary mitigations, there will be the following significant effects at Blackpool Airport arising from the Transmission Assets during the construction, operation and decommissioning phases:
- effect upon airport OLS and runway protected surfaces; and
  - effect upon CNS NAVAIDs at Blackpool Airport (ILS and DME).

- 
- 11.16.1.4 Overall, it is concluded that, with secondary mitigations as provided within **Table 11.20**, there will be no significant effects arising from the Transmission Assets during the construction phase.
- 11.16.1.5 Overall, it is concluded that, without secondary mitigations, there will be the following significant effects arising from the Transmission Assets during the operations and maintenance phase.
- EMF creation at Blackpool Airport.
- 11.16.1.6 Overall, it is concluded that, with secondary mitigations as provided within **Table 11.20**, there will be no likely significant effects arising from the Transmission Assets during the operation and maintenance phase.
- 11.16.1.7 **Table 11.21** presents a summary of the potential cumulative impacts, mitigation measures and residual effects.
- 11.16.1.8 Overall, it is concluded that there will be no significant cumulative effects from the Transmission Assets alongside other projects/plans.
- 11.16.1.9 No potential transboundary impacts have been identified in regard to effects of the Transmission Assets.

**Table 11.20: Summary of environmental effects, mitigation and monitoring**

| Description of impact                                            | Phase <sup>a</sup> |   |   | Commitment number | Magnitude of impact                                                  | Sensitivity of the receptor                                             | Significance of effect                                                     | Further mitigation | Residual effect                                                           | Proposed monitoring |
|------------------------------------------------------------------|--------------------|---|---|-------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------|---------------------|
|                                                                  | C                  | O | D |                   |                                                                      |                                                                         |                                                                            |                    |                                                                           |                     |
| Trenching activity<br>- Creation of an onshore aviation obstacle | ✓                  | ✓ | ✓ | CoT 105           | C: Blackpool - Medium<br>O: Blackpool - Low<br>D: Blackpool - Medium | C: Blackpool - Medium<br>O: Blackpool - Medium<br>D: Blackpool - Medium | C: Blackpool - Moderate<br>O: Blackpool - Minor<br>D: Blackpool - Moderate | CoT 105            | C: Blackpool - Minor<br>O: Blackpool - Negligible<br>D: Blackpool - Minor | None required.      |
| EMF                                                              | ✗                  | ✓ | ✗ | CoT 105           | O: Blackpool – Medium                                                | O: Blackpool – Medium                                                   | O: Blackpool – Moderate                                                    | CoT 105            | O: Blackpool – Minor                                                      | None required.      |

<sup>a</sup> C=construction, O=operations and maintenance, D=decommissioning

**Table 11.21: Summary of cumulative environmental effects, mitigation and monitoring**

| Description of effect                      | Phase <sup>a</sup> |   |   | Commitment number | Magnitude of impact                      | Sensitivity of the receptor                  | Significance of effect                       | Further mitigation | Residual effect                                        | Proposed monitoring |
|--------------------------------------------|--------------------|---|---|-------------------|------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------|--------------------------------------------------------|---------------------|
|                                            | C                  | O | D |                   |                                          |                                              |                                              |                    |                                                        |                     |
| Scenario 1                                 |                    |   |   |                   |                                          |                                              |                                              |                    |                                                        |                     |
| Cable/trenching activity at/near Blackpool | ✓                  | ✓ | ✓ | None.             | C:Blackpool – Low<br>C:Blackpool - Low   | C:Blackpool - Medium<br>O:Blackpool - Medium | C: Blackpool - Minor<br>O:Blackpool - Minor  | None.              | C: Blackpool - Negligible<br>O: Blackpool - Negligible | None required.      |
| Scenario 2                                 |                    |   |   |                   |                                          |                                              |                                              |                    |                                                        |                     |
| Cable/trenching activity at/near Blackpool | ✓                  | ✓ | ✓ | None.             | C: Blackpool – Low<br>C: Blackpool - Low | C: Blackpool - Medium                        | C: Blackpool - Minor<br>O: Blackpool - Minor | None.              | C: Blackpool - Negligible                              | None required.      |

| Description of effect                      | Phase <sup>a</sup> |   |   | Commitment number | Magnitude of impact                      | Sensitivity of the receptor                    | Significance of effect                       | Further mitigation | Residual effect                                        | Proposed monitoring |
|--------------------------------------------|--------------------|---|---|-------------------|------------------------------------------|------------------------------------------------|----------------------------------------------|--------------------|--------------------------------------------------------|---------------------|
|                                            | C                  | O | D |                   |                                          |                                                |                                              |                    |                                                        |                     |
|                                            |                    |   |   |                   |                                          | O: Blackpool - Medium                          |                                              |                    | O: Blackpool - Negligible                              |                     |
| <b>Scenario 3</b>                          |                    |   |   |                   |                                          |                                                |                                              |                    |                                                        |                     |
| Cable/trenching activity at/near Blackpool | ✓                  | ✓ | ✓ | None.             | C:Blackpool – Low<br>C:Blackpool - Low   | C:Blackpool - Medium<br>O:Blackpool - Medium   | C:Blackpool - Minor<br>O:Blackpool - Minor   | None.              | C: Blackpool - Negligible<br>O: Blackpool - Negligible | None required.      |
| <b>Scenario 4a</b>                         |                    |   |   |                   |                                          |                                                |                                              |                    |                                                        |                     |
| Cable/trenching activity at/near Blackpool | ✓                  | ✓ | ✓ | None.             | C: Blackpool – Low<br>C: Blackpool - Low | C: Blackpool - Medium<br>O: Blackpool - Medium | C: Blackpool - Minor<br>O: Blackpool - Minor | None.              | C: Blackpool - Negligible<br>O: Blackpool - Negligible | None required.      |
| <b>Scenario 4b</b>                         |                    |   |   |                   |                                          |                                                |                                              |                    |                                                        |                     |
| Cable/trenching activity at/near Blackpool | ✓                  | ✓ | ✓ | None.             | C: Blackpool – Low<br>C: Blackpool - Low | C: Blackpool - Medium<br>O: Blackpool - Medium | C: Blackpool - Minor<br>O:Blackpool - Minor  | None.              | C: Blackpool - Negligible<br>O: Blackpool - Negligible | None required.      |
| <b>Scenario 4c</b>                         |                    |   |   |                   |                                          |                                                |                                              |                    |                                                        |                     |
| Cable/trenching activity at/near Blackpool | ✓                  | ✓ | ✓ | None.             | C: Blackpool – Low<br>O: Blackpool - Low | C: Blackpool - Medium<br>O: Blackpool - Medium | C: Blackpool - Minor<br>O: Blackpool - Minor | None.              | C: Blackpool - Negligible<br>O: Blackpool - Negligible | None required.      |

<sup>a</sup> C=construction, O=operations and maintenance, D=decommissioning

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## **Appendix A: Draft Wildlife Habitat Attractants Risk Assessment**

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# **1 Draft Wildlife Habitat Attractants Risk Assessment**

## **1.1 Introduction**

- 1.1.1.1 In response to BAE Systems' submissions at ISH 2 and 3 (REP4-128) the Applicants have prepared a draft Wildlife Habitat Attractants Risk Assessment. This document follows on from section 1.3 (Wildlife Attractants Risk Assessment) of the outline Wildlife Hazard Management Plan (S\_D3\_8/F03) and takes into consideration the approach set out in CAP 795 guidance.
- 1.1.1.2 The draft Wildlife Habitat Attractant Risk Assessment has been updated at Deadline 6 to include the following:
- minor amendments to the structure of the risk assessment
  - removal of baseline data (to avoid duplication with information provided in the Outline Wildlife Hazard Management Plan)
  - updates to reflect ongoing discussions with BAE Systems and DIO (on behalf of the MoD).

## **1.2 Purpose and scope**

- 1.2.1.1 The draft Wildlife Habitat Attractants Risk Assessment considers those elements of the Transmission Assets, as identified in

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- 1.2.1.2 Table 1.1, with the potential to cause a change in the abundance, species and patterns of use of birds within Warton Aerodrome's 13 km wildlife hazard management zone. It also considers construction activities associated with the Transmission Assets as set out in Table 1.4.
- 1.2.1.3 The draft Wildlife Habitat Attractants Risk Assessment focuses on the bird species that are at risk of collision (highlighted in
- 1.2.1.4 Table 1.3), as agreed with BAE Systems. The Transmission Assets comprise environmental mitigation and biodiversity benefit areas, as well as the construction activities and infrastructure features required for the Transmission Assets. The environmental mitigation and biodiversity benefit areas are identified in the Outline Ecological Management Plan (oEMP) (document reference J6) and the Outline Biodiversity Benefit Management Plan (document reference J11/F06) and the construction activities are described in Volume 1, Chapter 3: Project Description (document reference F1.3).

**Table 1.1: Transmission Assets areas/features considered within the draft Wildlife Habitat Attractant Risk Assessment**

| <b>Transmission Assets Areas/ Feature*</b>                               |
|--------------------------------------------------------------------------|
| Fairhaven Saltmarsh Mitigation Area<br>(Work No 49A/49B)                 |
| Newton- with-Scales (Work No 49A/49B)                                    |
| Pond creation at Morgan onshore substation (Work No 49A)                 |
| Pond creation at Moss Side (Work No 49AB)                                |
| Lytham Moss (Work No 35A/35B)                                            |
| Lea Marsh Biological Heritage Site (BHS)                                 |
| Lea Marsh Fields Biodiversity Benefit Area (Work No 44A/44B)             |
| Onshore substations (Work No 21A/21B)                                    |
| Attenuation ponds at onshore substations (Work Nos 20A/20B and 21A/21B)  |
| Landscape planting at onshore substations (Work Nos 20A/20B and 21A/21B) |

- 1.2.1.5 Post consent, the Applicants will prepare detailed Wildlife Habitat Attractants Risk Assessment(s) to reflect the detailed design of the Transmission Assets. The detailed Wildlife Habitat Attractants Risk Assessment(s) will be in accordance with the draft Wildlife Habitat Attractants Risk Assessment and will form part of the detailed Wildlife Hazard Management Plan(s) for Warton Aerodrome.

## **1.3 Approach**

### **1.3.1 Definitions**

- 1.3.1.1 This draft Wildlife Habitat Attractants Risk Assessment uses the definitions listed in Table 1.2 for the likelihood of the feature increasing the number of the target species, attracting other species or changing patterns of use of birds (listed within
- 1.3.1.2 Table 1.3) within Warton Aerodrome's 13 km wildlife hazard management (safeguarding) area. A qualitative approach has been used rather than assigning a numerical value.

**Table 1.2: Draft Wildlife Habitat Attractants Risk assessment definitions**

| <b>Rating</b> | <b>Description</b>                                                                                     |
|---------------|--------------------------------------------------------------------------------------------------------|
| 1 - Unlikely  | Bird species are unlikely to be attracted, or change, in numbers exceeding the existing baseline.      |
| 2 - Possible  | Bird species may be attracted, or change, in numbers slightly above the existing baseline.             |
| 3 - Likely    | Bird species are likely to be attracted, or change, in numbers noticeably above the existing baseline. |

| Rating             | Description                                                                                                              |
|--------------------|--------------------------------------------------------------------------------------------------------------------------|
| 4 - Almost Certain | Bird species will almost certainly be attracted, or change, in significantly greater numbers than the existing baseline. |

### 1.3.2 Species considered within the draft Wildlife Habitat Attractant Risk Assessment

- 1.3.2.1 The draft Wildlife Habitat Attractant Risk Assessment focuses on the bird species with potential to increase bird strike within Warton Aerodrome's 13km wildlife hazard management zone. The species have been agreed with BAE Systems and the Applicants have presented data on these species with the Baseline Bird Technical Report (S\_D3\_5).
- 1.3.2.2 The Baseline Bird Technical Report compiles national, regional, and site-specific data (2022–2024) from multiple sources, including Wetland Bird Survey (WeBS), Fylde Bird Club, and the Applicants' survey data to establish baseline bird abundance and trends.
- 1.3.2.3 The species at risk of collision will be kept under review in discussion with BAE Systems/DIO and will be based on monitoring results and will be reflected in the detailed Wildlife Habitat Attractants Risk Assessment and detailed Wildlife Hazard Management Plan(s). In addition to the detailed trends outlined within the Baseline Bird Technical Report (S\_D3\_5), the Applicants have summarised the distribution and ecology of these species in the Outline Wildlife Hazard Management Plan (S\_D3\_8/F03).
- 1.3.2.4 The species included in Table 1.3 were updated at Deadline 5, following further technical input from the Applicants' advisors. The following species were all removed from the list on the basis that they are either not recorded in the area, or are deemed such a low risk for collision in the area: Bewick's swan, great black-backed gull, magpie, marsh harrier, red kite, sparrowhawk, merlin and peregrine. These species can be reinstated if BAE require and will be incorporated into the bird strike risk assessment when this is carried out for Warton Aerodrome. However, it is the Applicants' view that none of those species will increase bird strike risk. Feral pigeon has been added since Deadline 5 as it is deemed a potential risk species in the area.

**Table 1.3: Species with the potential to increase the birdstrike risk within Warton Aerodrome's 13km wildlife hazard management (safeguarding) area**

| Group | Species           |
|-------|-------------------|
| Swan  | Whooper swan      |
|       | Mute swan         |
| Geese | Canada goose      |
|       | Greylag goose     |
|       | Pink-footed goose |

| Group           | Species                  |
|-----------------|--------------------------|
| Ducks           | Shelduck                 |
|                 | Mallard                  |
|                 | Wigeon                   |
|                 | Teal                     |
| Waders          | Oystercatcher            |
|                 | Golden plover            |
|                 | Lapwing                  |
|                 | Redshank                 |
|                 | Black-tailed godwit      |
|                 | Curlew                   |
| Gulls           | Black-headed gull        |
|                 | Common gull              |
|                 | Herring gull             |
|                 | Lesser black-backed gull |
| Corvids         | Jackdaw                  |
|                 | Rook                     |
|                 | Carrion crow             |
| Pigeons         | Woodpigeon               |
|                 | Feral pigeon             |
| Starling        | Starling                 |
| Winter thrushes | Redwing                  |
|                 | Fieldfare                |
| Raptors         | Buzzard                  |
|                 | Kestrel                  |
|                 | Barn owl                 |

1.3.2.5 The detailed Wildlife Habitat Attractants Risk Assessment(s) will include the results of pre-construction surveys reflecting the existing baseline (at the time of construction). The surveys will be undertaken in accordance with the Outline Breeding Bird Protection Plan of the oEMP (document reference J6) and will be aligned with existing monitoring undertaken by BAE and DIO to ensure comparative results and to maximise efficiencies in monitoring.

### 1.3.3 Draft Wildlife Habitat Attractants Risk Assessment

1.3.3.1 Table 1.4 addresses whether elements of the Transmission Assets are likely to increase the number of birds or change the patterns of use of



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habitats within Warton Aerodrome's 13km wildlife hazard management zone . These are shown on Figure 1.3 and Figure 1.4 of the Outline Wildlife Hazard Management Plan (S\_D3\_8). This Draft Wildlife Habitat Attractants Risk Assessment focuses on the bird species within

- 1.3.3.2 Table 1.31.3 as these represent the species with the greatest risk of collision. The Applicants note that baseline numbers of these species fluctuate both seasonally and annually. The Applicants' Baseline Bird Technical Report (S\_D3\_5) provides information on the national, regional and local trends, taking into account potential fluctuations. The Applicants note that, if future monitoring identifies that other species are attracted to the Transmission Assets, the detailed Wildlife Habitat Attractants Risk Assessment (including the management measures) will be updated accordingly.
- 1.3.3.3 The Draft Wildlife Habitat Attractants Risk Assessment sets out a series of design commitments/management measures that will be implemented at each of the areas/features identified in Table 1.4. The Applicants will undertake appropriate monitoring at each of these areas/features to record the implementation of the design commitments/management measures and to identify potential changes in bird number/species of birds/patterns of use of the area. Monitoring frequency and intensity will vary on a case-by-case basis, but all monitoring frequencies and intensities are to be agreed in consultation with BAE Systems/DIO and Natural England.
- 1.3.3.4 The Applicants will also follow an adaptive management approach that will be informed by evidence from monitoring and trigger levels (see below). If trigger levels are exceeded, management measures will be escalated to next level of measures that will be defined in the detailed Wildlife Attractants Habitat Risk Assessment. These measures may comprise passive habitat management measures and/or active controls and will be specific to the bird species and the element of the Transmission Assets works. Any changes are to be agreed in consultation with BAE Systems/DIO and Natural England.
- 1.3.3.5 The adaptive management approach comprises the key stages below and described in further detail in the Outline Wildlife Hazard Management Plan (document reference S\_D3\_8/F03):
1. **Passive Design and Management** – Inbuilt design or management features to reduce attractiveness for numbers/species composition of birds.
  2. **Active Management** – Reactive measures designed to immediately control risk.
  3. **Monitoring** – Regular monitoring informs of any increase in numbers/species composition of birds.
  4. **Adaptive Management** – Alteration of the passive measures based upon changes in numbers/species composition.
- 1.3.3.6 The design commitments/management measures within Table 1.4 are based on the construction management measures within the Outline

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Code of Construction Practice (oCoCP (document reference J1)) and its supporting appendices, the oEMP (document reference J6) and measures within the CAP 772 guidance. The measures will include habitat management measures and active controls. The measures will be implemented to reduce the likelihood that the Transmission Assets will increase the number of target bird species in the wider area, attract non target bird species or change the pattern of use to an unacceptable level.

- 1.3.3.7 The Applicants will set out in the detailed Wildlife Habitat Attractants Risk Assessment the decision-making procedure for applying the trigger levels and escalating the management measures that will be implemented. The Applicants will also establish a Communication Protocol, based on the principles identified in the oWHMP (section 1.4.2) with BAE Systems/DIO to communicate when the management measures are escalated. As part of the procedure, no measures to disperse birds will be implemented without express permission from Warton Aerodrome. Conversely, there will also be an emergency protocol whereby Warton Aerodrome can communicate with the Applicants if there is the need for emergency active measures to be employed.

#### Trigger levels

- 1.3.3.8 Trigger levels are a key element of the Applicants' adaptive management approach and provide an agreed trigger level above which additional management measures will be implemented. Data from monitoring of bird species, numbers and patterns of use (e.g. flight lines) will provide the evidence for assessing when the trigger levels are exceeded.
- 1.3.3.9 Trigger levels will be set for each of the areas and species identified in Table 1.4 and will include:
- Bird numbers within target species above the agreed baseline
  - Change in pattern of use (e.g. flight lines)
  - Bird numbers within non-target species above the agreed baseline
  - Specific triggers relating to areas/features of the Transmission Assets. These measures include:
    - Detection of nests on the roofs of the onshore substations
    - Birds attracted to areas of standing water in the construction areas, water bodies, attenuation ponds at the onshore substations or vegetation.
- 1.3.3.10 The trigger levels will be determined in consultation with BAE and DIO and will be set out in the detailed Wildlife Habitat Attractants Risk Assessment. If any trigger levels are exceeded, an escalation of the management measures (listed in Table 1.4) will be implemented.

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## Monitoring and review

- 1.3.3.11 The Applicants commit to undertaking ongoing monitoring of all aspects of the onshore Transmission Assets to ensure that the number/species/patterns of use of birds within Warton Aerodrome's 13km safeguarding zone do not increase beyond an acceptable level as a result of the Transmission Assets and to ensure that the passive management and design-based measures are still fit for purpose. This will include monitoring of temporary areas during the construction phase and monitoring of permanent areas during the operational phase of the Project.
- 1.3.3.12 The Applicants will prepare a detailed monitoring strategy prior to construction that will set out the types, location, frequency, and reporting of monitoring. The monitoring strategy will form part of the detailed Wildlife Habitat Attractants Risk Assessment(s) and will be developed in consultation with BAE/DIO to ensure that the Transmission Assets' monitoring aligns with BAE's monitoring. The strategy will also agree procedures for communicating with Warton Aerodrome regarding active management measures and aircraft movements. The Applicants will fund the monitoring (as set out in the monitoring strategy) via a commercial or cooperation agreement. In addition, the Applicants will also cover the costs associated with the implementation of the design commitments and additional measures.
- 1.3.3.13 The monitoring strategy will set out roles and responsibilities of the Applicants' team for undertaking monitoring, the frequency of monitoring, and the reporting of results and liaison with Warton Aerodrome. The strategy will also set out the trigger levels (see paragraphs 1.3.3.8 to 1.3.3.10) and the decision-making process for when additional measures should be implemented.
- 1.3.3.14 The detailed Wildlife Habitat Attractants Risk Assessment(s) will be subject to regular review to ensure that it reflects that management measures being implemented. The risk assessment will be updated to reflect any changes to the proposed management measures identified from the ongoing monitoring.

**Table 1.4: Draft Wildlife Habitat Attractants Risk Assessment**

| Area/<br>feature                                                                          | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                | Species                  | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Fairhaven Saltmarsh (Work Area 49A/49B)</p> <p><b>Purpose:</b><br/>Bird mitigation</p> | <p>SD 33934 27153</p> <p>Approx. 6.5 km</p>                                         | <p>Reducing disturbance impacts to waders using the existing high tide roost site</p> | <p>Intertidal waders</p> | <p><b>Passive Design and Management Measures</b></p> <p>The measures at Fairhaven Saltmarsh are designed to reduce disturbance to intertidal waders that use the area as a high tide roost. The proposed measures aim to minimise the time birds spend flying due to disturbance, thereby maximising their roosting time. Since birds pose a risk to aircraft safety only when airborne, reducing their flight time may also help decrease the risk of birdstrike.</p> <p>Measures focus on managing the interaction of the bird roost and recreational users of Fairhaven Saltmarsh (e.g. wardens, soft fencing and education boards). Further information is provided in the oEMP (document reference J6).</p> | <p>1 – Unlikely</p>            | <p>Primarily this area was chosen as it currently houses large numbers of intertidal waders. The intention of this mitigation area is to reduce recreational disturbance pressures on the birds that are currently present in the area. During the passage period, there is a high turnover of birds moving through the Ribble Estuary, with individuals stopping only briefly. Although reducing disturbance at roost sites benefits the daily energy balance and fitness of individual birds, it is unlikely to influence the overall number of birds passing through the estuary. Therefore, this mitigation is highly unlikely to cause an increase in the number of intertidal waders within the 13 km safeguarding zone.</p> <p>The intertidal waders that use this area are also low flying (often within metres of the ground/sea surface) and are therefore of low risk to aircraft at this distance from the airfield. This area is</p> |

| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|-------------------------------------------------------------------------------------|------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                     |                        |         | <p><b>Monitoring</b></p> <p>The bird abundance and behaviour will be regularly monitored at a frequency to be agreed with BAE/DIO and Natural England.</p> <p>If the agreed trigger levels are reached, then the management measures below may be implemented.</p> <p><b>Adaptive Management Measures</b></p> <p>Active management measures would aim to further reduce disturbance to the birds using Fairhaven Saltmarsh. This may include more stringent restrictions on public access during particularly sensitive times of the year.</p> |                                | <p>on the edge of a congested urban area and adjacent/partly within a wildlife site.</p> <p>The typical species assemblage currently using this area for roosting is oystercatcher, ringed plover, grey plover, dunlin, knot, sanderling, bar-tailed godwit and curlew. This area is currently used by high numbers of birds with counts of 10,000 – 20,000 waders made during a number of surveys, these numbers fluctuate but are not predicted to increase as a result of the mitigation, this is due to wintering waders being site faithful to roost sites, and the mitigation measures having no influence over the numbers of passage birds moving through.</p> <p><b>Changes to bird flight pattern</b></p> <p>The mitigation in this area is being proposed to reduce the flight times of the birds already present. In addition, the proposed mitigation will not alter the birds predictable approach paths to this site (along the tideline). Therefore, it is predicted that there would be no significant changes to existing flight patterns to and from the existing intertidal roost. If anything, there would</p> |

| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species | Design<br>commitments/management<br>measures (to control attraction) | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------|-------------------------------------------------------------------------------------|------------------------|---------|----------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                     |                        |         |                                                                      |                                | be a reduction in flight activity caused when birds are flushed by the currently high levels of recreational disturbance events at Fairhaven Saltmarsh.                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                  |                                                                                     |                        | Ducks   |                                                                      | 1 – Unlikely                   | While small numbers of shelduck and pintail forage in the shallow waters, the area is predominantly used by intertidal waders and does not attract roosting ducks. This is not predicted to change as a result of the proposed mitigations.                                                                                                                                                                                                                                                                                                                                        |
|                  |                                                                                     |                        | Gulls   |                                                                      | 1 – Unlikely                   | Gulls, unlike waders, are not dependent upon tidal state for foraging and can utilise a wide number of marine, coastal and terrestrial (frequently urban) habitats and resources. As such they tend not to roost around high water in the same way that waders do but instead roost at night. They are also tolerant of disturbance, so this mitigation measure is unlikely to benefit gulls, and whilst gulls currently use the area for loafing, this area is predominantly used by intertidal waders and the proposed improvements pose no additional risk of attracting gulls. |

| Area/<br>feature                                                                       | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                                                                                        | Species                                | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                             | Likelihood<br>of<br>attractant                                                    | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                        |                                                                                     |                                                                                                                                                                               | Raptors                                | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1 – Unlikely                                                                      | The proposed mitigation at Fairhaven Saltmarsh is not likely to attract problematic terrestrial raptors as there will be no increase in prey abundance for them.                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                        |                                                                                     |                                                                                                                                                                               | All other<br>species (in<br>Table 1.2) | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1 – Unlikely                                                                      | The proposed mitigation at Fairhaven Saltmarsh is not suitable to benefit the remaining terrestrial species                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Newton-with-Scales<br>(Work Area 49A/49B)<br><br><b>Purpose:</b><br>Bird<br>mitigation | SD 45388<br>30064<br><br>Approx. 2.6 km                                             | Enhancement and restoration of existing habitat features e.g. stopping up hedgerows, managing water levels within existing ditches, creating mosaic of grassland, creation of | Ducks<br><br>Waders                    | <b>Passive Design and Management Measures</b><br><br>The scrapes and management of ditches will be designed to enhance and restore existing habitat features which have been affected by recent land management practices and will not seek to provide additional or create new habitat features.<br><br>Measures to be undertaken include fitting existing drains with a sluice to control water levels within the site to enhance the existing scrapes and wet | 2 – Possible<br>(numbers)<br><br>1 – Unlikely<br>(change in<br>pattern of<br>use) | Primarily this area was chosen as it currently houses high numbers of waterbirds, and it is very close the area of impact (onshore substations). The intention of this mitigation is not to increase overall bird numbers in the area, but simply to enhance the area for the birds currently present and provide a safe space for birds displaced at the substation sites.<br><br>Site-specific survey data collected by the Applicants over the last three years indicates that this area has recently been used by high numbers of |

| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|                  |                                                                                     | permanent<br>scrapes   |         | <p>grassland habitats, reducing livestock levels, and creating heterogenous sward height through selective mowing/grazing to stop scrub or rush encroachment.</p> <p><b>Monitoring</b></p> <p>The bird abundance and behaviour will be regularly monitored (e.g., monthly) at a frequency to be agreed with BAE and Natural England.</p> <p>If the agreed trigger levels are reached, then the agreed management measures shall be implemented.</p> <p><b>Active Management Measures</b></p> <p>The final active measures are to be agreed in consultation with BAE and Natural England but could include the following in order of escalation:</p> <ol style="list-style-type: none"> <li>1. Arm-waving</li> <li>2. Lure</li> <li>3. Bio-acoustics (e.g. distress calls)</li> <li>4. Use of bird scaring lasers</li> </ol> |                                | <p>waterbirds such as wigeon, teal and black-tailed godwit.</p> <p>Recent land management practices have involved draining the area for agricultural purposes. The proposed measures aim to enhance existing habitats to their pre-drained condition to benefit birds using the area and to retain this area for these birds in perpetuity.</p> <p>As the target species are those currently using the area, it is unlikely that there will be an increase in the number of birds, changes to the species assemblage, or changes to existing behaviours in the area. In addition, the appropriate monitoring, active management measures and adaptive management practices are in place to ensure that this risk remains controllable.</p> <p><b>Changes to bird flight pattern</b></p> <p>Whilst there are unknowns surrounding current flight paths in this area, it is likely that most waterbirds present in the area either overwinter in this area, or switch between Newton Marsh SSSI</p> |



| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species                                 | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                            | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|                  |                                                                                     |                        |                                         | 5. Bird-scaring rockets and cartridges<br>6. Shooting.<br><b>Adaptive Management Measures</b><br>These would be informed by monitoring and tailored to be species specific where necessary but could include: <ol style="list-style-type: none"> <li>Reducing water levels.</li> <li>Altering livestock and/or mowing regimes to control sward height.</li> <li>Temporarily increasing hedge height (artificially) to reduce line of sight and shrink the area usable by waterbirds.</li> </ol> |                                | and this site. As the proposal's sole aim is to improve the area for the bird species that currently use the site, there are not predicted to be any significant changes in the flight patterns of waders and ducks. It is not predicted that the larger waterbirds such as geese and swans will be attracted to the area.<br><br>In addition, the appropriate management measures are in place to respond to any increase in risk caused by unexpected increases in bird numbers or changes in species composition and/or behaviour. |
|                  |                                                                                     |                        | Pigeons<br>Starlings<br>Winter thrushes | <b>Passive design and management measures</b><br>Hedgerow species used for gapping up of hedgerows will avoid fruit bearing species thus reducing attraction to pigeons, starlings and winter thrushes.<br><br>Habitat management e.g. pruning of hedgerows and trees to ensure they                                                                                                                                                                                                            | 1 – Unlikely                   | No attractants are available for these species, and it is therefore not predicted to cause significant changes in the abundance of these birds using this area or their use of this area<br><br>As the area will be unsuitable for most non-waterbird species, it is unlikely that this would cause an increase in flight activity for non-waterbirds in the area.                                                                                                                                                                    |

| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species                          | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                           | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|                  |                                                                                     |                        |                                  | do not exceed 4.5m and 5.5m in height (respectively)<br><br><b>Monitoring, Active Management and Adaptive Management Measures</b><br><br>See above                                                                                                                                                                                             |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                  |                                                                                     |                        | Raptors                          | <b>Design Features</b><br><br>The area will be designed as favourable for waders and wildfowl, this will include increasing line of site and removing raptor perches, this will make it less favourable for peregrine, marsh harrier and merlin.<br><br><b>Monitoring, Active Management and Adaptive Management Measures</b><br><br>See above | 1 – Unlikely                   | The waterlogged nature of the ground will make it unsuitable to support prey such as rabbits, or voles which in turn may attract birds such as buzzard, red kite, barn owl and kestrel. Therefore, it is not predicted that there will be attraction for non-intended species.<br><br>As the area will be unsuitable for most non-waterbird species, it is unlikely that this would cause an increase in flight activity for non-waterbirds in the area. |
|                  |                                                                                     |                        | All other species (in Table 1.2) | N/A                                                                                                                                                                                                                                                                                                                                            | 1 – Unlikely                   | The proposed mitigation at Newton-with-Scales is not suitable to benefit the remaining terrestrial species.                                                                                                                                                                                                                                                                                                                                              |

| Area/<br>feature                                                                                                             | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                 | Species | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <p>Pond creation at Morgan onshore substation (Work Area 49A)</p> <p><b>Purpose:</b><br/>Aquatic invertebrate mitigation</p> | <p>SD 43685 30564</p> <p>Approx. 2.1 km</p>                                         | Creation of replacement ponds and planting of marginal vegetation could attract birds to feed or roost | Ducks   | <p><b>Passive Design and Management Measures</b></p> <p>Ducks may be attracted to the created ponds. To reduce this attraction the ponds will be comparable to those lost and small, and planting around the pond margins would be designed to discourage birds, particularly wigeon, from roosting in the area. Bank profiles will be steep and ongoing weed management will be carried out as appropriate.</p> <p>Despite these measures, small numbers of mallard and teal may still use the ponds.</p> <p><b>Monitoring</b></p> <p>Regular monitoring</p> <p><b>Active Management Measures</b></p> <ol style="list-style-type: none"> <li>1. Arm-waving</li> <li>2. Lure</li> <li>3. Bio-acoustics (e.g. distress calls)</li> <li>4. Use of bird scaring lasers</li> </ol> | 1 – Unlikely                   | <p>These ponds are a replacement for ponds that will be lost as a result of the Morgan onshore substation. The size will be similar to the ponds being lost and will therefore not have the capacity to increase duck numbers in the area. The pond creation is intended to compensate for a loss of ponds in the area. Therefore, while there may be some minor redistribution of mallard and teal, it is unlikely to result in an increase in the number of ducks within the 13 km safeguarding zone. In addition, this area is not required for bird mitigation so can be designed to repel birds.</p> <p><b>Changes to bird flight pattern</b></p> <p>These ponds simply represent moving a small discrete habitat from one area to another close by. This will not increase carrying capacity for any bird species and the ponds will be designed to be unattractive to waterbirds. Therefore, there are not predicted to be any significant changes to bird flight patterns in the area.</p> |

| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species         | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                 | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                             |
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|                  |                                                                                     |                        |                 | 5. Bird-scaring rockets and cartridges<br>6. Shooting.<br><b>Adaptive Management Measures</b><br>If bird numbers associated with this mitigation proved to be a risk, netting could be deployed to deter birds further.                                                                                                                                                                                                                              |                                |                                                                                                                                                                                           |
|                  |                                                                                     |                        | Waders<br>Gulls | <b>Passive Design and Management Measures</b><br>These ponds will be permanent and designed specifically to avoid attracting waders and gulls, including the planting of marginal fringing vegetation. Since the ponds to be created serve as mitigation for the loss of existing ponds, they are unlikely to attract additional waders and gulls to the area.<br><b>Monitoring, Active Management and Adaptive Management Measures</b><br>See above | 1 – Unlikely                   | No attractants are available for these species, and it is therefore not predicted to cause significant changes in the abundance of these birds using this area or their use of this area. |

| Area/<br>feature                                                                                                            | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                                         | Species                                | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                              | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|                                                                                                                             |                                                                                     |                                                                                                                                | Raptors                                | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1 – Unlikely                   | It is not predicted that these ponds will be of value for any raptor species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                                                             |                                                                                     |                                                                                                                                | All other<br>species (in<br>Table 1.2) | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1 – Unlikely                   | The proposed Pond creation at Morgan onshore substation is not suitable to benefit the remaining terrestrial species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Pond<br>creation at<br>Moss Side<br><br>(Work Area<br>49AB)<br><br><b>Purpose:</b><br>Aquatic<br>invertebrate<br>mitigation | SD 38758<br>29607<br><br>Approx. 2.4 km                                             | Creation of<br>replacement<br>ponds and<br>planting of<br>marginal<br>vegetation<br>could attract<br>birds to feed or<br>roost | Ducks                                  | <b>Passive Design and Management Measures</b><br><br>Ducks may be attracted to the created ponds. To reduce this attraction the ponds will be comparable to those lost and small, and planting around the pond margins would be designed to discourage birds, particularly wigeon from roosting in the area. Bank profiles will be steep and ongoing weed management will be carried out as appropriate.<br><br>Despite these measures, small numbers of mallard and teal may still use the ponds | 1 – Unlikely                   | These ponds are a replacement for ponds that will be lost as a result of the Morecambe onshore substation. The size will be similar to the ponds being lost and will therefore not have the capacity to increase duck numbers in the area. The pond creation is intended to compensate for a loss of ponds in the area. Therefore, while there may be some minor redistribution of mallard and teal, it is unlikely to result in an increase in the number of ducks within the 13 km safeguarding zone. In addition, this area is not required for bird mitigation so can be designed to repel birds.<br><br><b>Changes to bird flight pattern</b><br><br>These ponds simply represent moving a small discrete habitat from one area to |

| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species             | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                               | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                |
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|                  |                                                                                     |                        |                     | <b>Monitoring</b><br><br>Regular monitoring<br><br><b>Active Management Measures</b><br><br>1. Arm-waving<br>2. Lure<br>3. Bio-acoustics (e.g. distress calls)<br>4. Use of bird scaring lasers<br>5. Bird-scaring rockets and cartridges<br>6. Shooting.<br><br><b>Adaptive Management Measures</b><br><br>If bird numbers associated with this mitigation proved to be a risk, netting could be deployed to deter birds further. |                                | another close by. This will not increase carrying capacity for any bird species and the ponds will be designed as unattractive to flocking waterbirds. Therefore, there are not predicted to be any significant changes to bird flight patterns in the area. |
|                  |                                                                                     |                        | Waders<br><br>Gulls | <b>Passive design and management measures</b><br><br>These ponds will be permanent and designed specifically to avoid attracting waders and gulls, including the planting of marginal fringing vegetation. Since the ponds to be                                                                                                                                                                                                   |                                | No attractants are available for these species, and it is therefore not predicted to cause significant changes in the abundance of these birds using this area or their use of this area                                                                     |

| Area/<br>feature                | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                | Species                          | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                        | Likelihood<br>of<br>attractant                                               | Justification                                                                                                                                                                                                                                                                                                                                               |
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|                                 |                                                                                     |                                                       |                                  | <p>created serve as mitigation for the loss of existing farm ponds, they are unlikely to attract additional waders and gulls to the area.</p> <p><b>Monitoring, Active Management and Adaptive Management Measures</b></p> <p>See above</p> |                                                                              |                                                                                                                                                                                                                                                                                                                                                             |
|                                 |                                                                                     |                                                       | Raptors                          | N/A                                                                                                                                                                                                                                         | 1 – Unlikely                                                                 | It is not predicted that these ponds will be of value for any raptor species.                                                                                                                                                                                                                                                                               |
|                                 |                                                                                     |                                                       | All other species (in Table 1.2) | N/A                                                                                                                                                                                                                                         | 1 – Unlikely                                                                 | The proposed Pond creation at Moss Side is not suitable to benefit the remaining terrestrial species.                                                                                                                                                                                                                                                       |
| Lytham Moss (Work Area 35A/35B) | SD 35915 29597<br><br>Approx. 4.9 km                                                | Temporary scrape and feeding during the winter months | Geese<br><br>Swans               | <p><b>Passive design and management measures</b></p> <p>The indicative location and size of the feeding area and scrape has been refined following discussion with Blackpool Airport.</p>                                                   | <p>2 – Possible (numbers)</p> <p>1 – Unlikely (change in pattern of use)</p> | Primarily this area was chosen as it currently houses high numbers of geese and other waterbirds, and it is very close the greatest area of impact (i.e., the highest densities of affected birds). The intention of this mitigation is not to increase overall bird numbers in the area, but simply to provide food and safe space for the birds currently |

| Area/<br>feature                      | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <b>Purpose:</b><br>Bird<br>mitigation |                                                                                     |                        |         | <p>Supplementary feeding will be provided at agreed rates and during the winter months only (November to March). Feeding rates will be agreed in consultation with Natural England and BAE (see section B2.5.2 of the oEMP).</p> <p>Agree cropping patterns with landowner during construction period.</p> <p><b>Monitoring</b></p> <p>The bird abundance and behaviour will be regularly monitored (e.g., weekly or when food is provided) at a frequency to be agreed with BAE and Natural England.</p> <p>If the agreed trigger levels are reached, then the agreed management measures shall be implemented.</p> <p><b>Active Management Measures</b></p> <ol style="list-style-type: none"> <li>1. The final active measures are to be agreed in consultation with BAE and Natural England but</li> </ol> |                                | <p>present at Lytham Moss that will be temporarily displaced during construction.</p> <p>Whilst this area will see an increase in bird numbers this will not represent an increase in goose and swan numbers within the 13 km safeguarding zone or Lytham Moss but will instead be a redistribution of birds displaced by the Transmission Assets infrastructure during construction.</p> <p><b>Changes to bird flight pattern</b></p> <p>The majority of these displaced birds currently feed in the vicinity of the proposed mitigation at Lytham Moss, and the current goose and swan feeding scheme is situated in the adjacent field. As numbers are not predicted to increase, and the area where they feed is only being moved by a few fields distance, the current flight patterns are not predicted to change, and the level of risk will remain predictable with birds transiting north to the feeding site in the morning and south to the roost site in the evening. This is the same as the existing baseline risk.</p> |



| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                    |
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|                  |                                                                                     |                        |         | <p>could include the following in order of escalation: Arm-waving</p> <ol style="list-style-type: none"> <li>Lure</li> <li>Bio-acoustics (e.g. distress calls)</li> <li>Use of bird scaring lasers</li> <li>Bird-scaring rockets and cartridges</li> <li>Shooting.</li> </ol> <p>In addition:</p> <ul style="list-style-type: none"> <li>Reduction /removal of supplementary feeding</li> <li>Modify design/ infill of scrapes</li> </ul> <p><b>Adaptive Management Measures</b></p> <p>These would be informed by monitoring and tailored to be species specific where necessary but could include:</p> <ol style="list-style-type: none"> <li>Reducing water levels.</li> <li>Altering the quantity of food provided</li> <li>Altering the type of food provided</li> </ol> |                                | In addition, the appropriate management measures are in place to respond to any increase in risk caused by unexpected increases in bird numbers or changes in species composition and behaviour. |

| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species             | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                | Likelihood<br>of<br>attractant                                        | Justification                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|                  |                                                                                     |                        |                     | 10. Altering the frequency that food is provided.                                                                                                                                                                                                                                                                   |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                  |                                                                                     |                        | Ducks<br><br>Waders | <b>Passive design and management measures</b><br><br>The temporary scrapes will be designed to attract the target species only (ducks and waders) and will be regularly monitored and managed during their creation.<br><br><b>Monitoring, Active Management and Adaptive Management Measures</b><br><br>See above. | 2 – Possible (numbers)<br><br>1 – Unlikely (change in pattern of use) | Whilst this area will see an increase in bird numbers this will not represent an increase in duck and wader numbers within the 13 km safeguarding zone but will instead be a redistribution of birds displaced by the Transmission Assets infrastructure during construction. The majority of these displaced birds currently feed in the vicinity of the proposed mitigation at Lytham Moss so flight patterns are not predicted to change |
|                  |                                                                                     |                        | Raptors             | <b>Passive design and management measures</b><br><br>The area will be designed as favourable for waders and wildfowl, this will include increasing line of site and removing raptor perches, this will make it less favourable for raptors. No long grass or thatch will be provided.                               | 1 – Unlikely                                                          | No attractants are available for these species, and it is therefore not predicted to cause significant changes in the abundance of these birds using this area or their use of this area.                                                                                                                                                                                                                                                   |

| Area/<br>feature                                                                                | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                                                                                                                                                                 | Species                                                    | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                            | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                                                                                                 |                                                                                     |                                                                                                                                                                                                                                                        |                                                            | <b>Monitoring, Active Management<br/>and Adaptive Management<br/>Measures</b><br><br>See above.                                                                                                                                                                                                                                                                                                                                                 |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                                                 |                                                                                     |                                                                                                                                                                                                                                                        | All other<br>species (in<br>Table 1.2)                     | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1 – Unlikely                   | No attractants are available for these species, and it is therefore not predicted to cause significant changes in the abundance of these birds using this area or their use of this area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Lea Marsh<br>Biological<br>Heritage Site<br>(BHS)<br><br><b>Purpose:</b><br>Otter<br>mitigation | SD 47885<br>29616<br><br>Approx. 4.7 km                                             | The grazing<br>regime of the<br>existing<br>grassland<br>areas will be<br>modified to<br>allow grassland<br>to reach a<br>longer sward<br>height by<br>reducing the<br>annual<br>livestock<br>grazing<br>density.<br><br>Existing reed<br>bed habitats | Geese<br><br>Swans<br><br>Ducks<br><br>Waders<br><br>Gulls | <b>Passive design and management<br/>measures</b><br><br>Implementation of a temporary<br>meadow grassland regime would<br>discourage roosting/ loafing flocks of<br>large waterbird species that currently<br>congregate at times in this habitat at<br>times due to the increased sward<br>height.<br><br>The sward would be managed with<br>low level grazing and/or an annual<br>hay cut with the arisings removed to<br>prevent thatching. | 1 – Unlikely                   | Habitat enhancements in this area will<br>make this area less suitable for flocking<br>waterbirds due to the longer length of<br>the grass that is proposed, this is to be<br>grazed so that a thatch doesn't build up.<br>The existing birds that are largely<br>composed of naturalised Canada and<br>greylag geese are predicted to move<br>into the main Ribble channel where a<br>significant population already exists.<br><br><b>Changes to bird flight pattern</b><br><br>Whilst there are many unknowns<br>surrounding current flight paths in this<br>area, it is likely that most waterbirds<br>currently present will relocate into the<br>River Ribble corridor, so flight patterns |

| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                                                                                                                                                                                   | Species | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Likelihood<br>of<br>attractant | Justification                                                                                                                                  |
|------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                     | <p>and ditches will be enhanced with the planting of marginal vegetation along the spurs of the tributaries.</p> <p>Artificial holt creation. It is not anticipated that the creation of the artificial otter holt would result in any habitat attractants for birds</p> |         | <p>The area of reedbeds will not be increased above existing levels.</p> <p><b>Monitoring</b></p> <p>Regular monitoring</p> <p><b>Active Management Measures</b></p> <ol style="list-style-type: none"> <li>1. Arm-waving</li> <li>2. Lure</li> <li>3. Bio-acoustics (e.g. distress calls)</li> <li>4. Use of bird scaring lasers</li> <li>5. Bird-scaring rockets and cartridges</li> <li>6. Shooting.</li> </ol> <p><b>Adaptive Management Measures</b></p> <p>Monitoring will determine whether additional targeted management measures are needed to ensure that the bird risk does not exceed acceptable levels. The measures are to be agreed in consultation with BAE and NE but could include:</p> <p>If reedbeds start to encroach then management will be undertaken to</p> |                                | <p>in the general area are predicted to remain at current levels, whereas flight activity within this specific area is likely to decrease.</p> |

| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                    | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------|-------------------------------------------------------------------------------------|------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                     |                        |         | <p>ensure that these are returned to baseline levels</p> <p>Grassland management or livestock levels could be altered.</p>                                                                                                                                                                                                                              |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                  |                                                                                     |                        | Raptors | <p><b>Passive design and management measures</b></p> <p>Whilst sward height will be taller, this will be managed by grazing and/or mowing (e.g., hay cut). This will prevent a thatch building up and keep raptor prey populations at a low density.</p> <p><b>Monitoring, Active Management and Adaptive Management Measures</b></p> <p>See above.</p> | 1 – Unlikely                   | <p>There has been some suggestion that discarded fish carcasses could increase bird scavenging activity in the area. This is highly unlikely as outlined below:</p> <p>Otters are wide ranging carnivorous mammals with male territories being up to 40 linear km of river habitat (females are smaller but still up to 20km).</p> <p>Within this they will have a number of safe resting sites and they will hunt in between as resources dictate.</p> <p>Otters mostly eat fish but will often take crustaceans (e.g., crayfish) and amphibians too. They mostly take small to medium sized prey which are eaten whole with no discards.</p> <p>Only occasionally will half eaten larger fish carcasses be left on the bankside.</p> |

| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species | Design<br>commitments/management<br>measures (to control attraction) | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|-------------------------------------------------------------------------------------|------------------------|---------|----------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                     |                        |         |                                                                      |                                | <p>These occasions will be random occurrences, both spatially and temporally, and in no way represent a reliable or predictable food source for birds.</p> <p>The artificial holt is to be created by an existing shallow pool of water that is unlikely to contain any significant fish numbers. This will mean that any otters will have to move up or downstream to locate reliable food sources.</p> <p>In addition, the creation of an artificial holt and a safe space for resting otters will not increase the otter population in the area, just mitigate for the potential loss of other safe spaces due to disturbance.</p> <p>Therefore, the risk level of widescale scavenging of fish carcasses by birds will remain extremely low, entirely unpredictable, and completely unchanged from that the level that currently exists.</p> <p>The waterlogged nature of the ground will make it unsuitable to support prey such as rabbits, or voles which in turn may attract birds such as buzzard, barn</p> |

| Area/<br>feature                                                                                                  | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                                                                                                                                     | Species                                                           | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                  | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                   |                                                                                     |                                                                                                                                                                                                                            |                                                                   |                                                                                                                                                                                                                                                                                                       |                                | owl and kestrel. Therefore, it is not predicted that there will be attractants for non-intended species.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                                                   |                                                                                     |                                                                                                                                                                                                                            | All other<br>species (in<br>Table 1.2)                            | N/A                                                                                                                                                                                                                                                                                                   | 1 – Unlikely                   | The slight modifications in habitat (increased sward height and marginal vegetation) are unlikely to significantly increase attraction for the flocking species such as corvids, starlings and pigeons. It is therefore not predicted to cause significant changes in the abundance of these birds using this area or their use of this area.                                                                                                                                                                                                                     |
| Lea Marsh<br>Fields<br>Biodiversity<br>Benefit Area<br><br><b>Purpose:</b><br>Habitats and<br>plant<br>mitigation | SD 48391<br>29555<br><br>Approx. 5.2 km                                             | These<br>measures<br>involve the<br>removal of the<br>existing<br>cropland and<br>the creation of<br>species-rich<br>grassland,<br>woodland,<br>scrub, ponds<br>and new<br>ditches. These<br>habitats could<br>potentially | Starlings<br><br>Pigeons<br><br>Winter<br>thrushes<br><br>Corvids | <b>Passive design and management<br/>measures</b><br><br>Seed mixes and tree species will be<br>carefully chosen to limit attraction by<br>starlings and winter thrushes.<br><br><b>Monitoring</b><br><br>Regular monitoring<br><br><b>Active Management Measures</b><br><br>1. Arm-waving<br>2. Lure | 1 – Unlikely                   | Whilst the creation of species-rich<br>grassland, woodland, scrub, ponds and<br>new ditches may increase the suitability<br>of the area for small breeding and<br>wintering passerines such as warblers<br>and finches, these species pose a<br>negligible risk to aircraft safety. Corvids,<br>pigeons and starlings tend to show<br>greater attraction to intensive land use<br>and thus may even show increased<br>avoidance of the area. Winter thrush<br>use will be limited due to the lack of<br>berry trees.<br><br><b>Changes to bird flight pattern</b> |

| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant             | Species                                | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                  |
|------------------|-------------------------------------------------------------------------------------|------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                     | attract birds to<br>feed or roost. |                                        | 3. Bio-acoustics (e.g. distress calls)<br>4. Use of bird scaring lasers<br>5. Bird-scaring rockets and<br>cartridges<br>6. Shooting.<br><b>Adaptive Management Measures</b><br>Monitoring will determine whether<br>additional targeted management<br>measures are needed to ensure that<br>the bird risk does not exceed<br>acceptable levels. The measures are<br>to be agreed in consultation with BAE<br>and NE but could include:<br><br>Grassland management or livestock<br>levels could be altered.<br><br>Scrub and woodland management.<br><br>Pond design could be altered. |                                | There are many unknowns surrounding<br>current flight paths in this area, however<br>it is likely that as this land is not<br>currently used by large numbers of<br>birds, and as the change in<br>management is not predicted to<br>increase attraction, there are not<br>predicted to be any significant changes<br>to bird flight patterns. |
|                  |                                                                                     |                                    | All other<br>species (in<br>Table 1.2) | <b>Passive design and management<br/>measures</b><br><br>The proposed Pond creation at<br>mitigation at Lea Marsh Fields are not<br>suitable to support the remaining                                                                                                                                                                                                                                                                                                                                                                                                                  | 1 – Unlikely                   | No attractants are available for these<br>species, and it is therefore not predicted<br>to cause significant changes in the<br>abundance of these birds using this<br>area or their use of this area.                                                                                                                                          |



| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                            | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                             |
|------------------|-------------------------------------------------------------------------------------|------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                     |                        |         | <p>large flocking waterbird species. This is due to these ponds being created within a matrix of tall grassland and scrub. These habitats provide cover for predators and are generally avoided by waterbirds who prefer more open habitats with a clear line of site.</p> <p><b>Monitoring, Active Management and Adaptive Management Measures</b></p> <p>See above.</p>       |                                |                                                                                                                                                                                           |
|                  |                                                                                     |                        | Raptors | <p><b>Passive design and management measures</b></p> <p>Whilst sward height will be taller, this will be managed by grazing and/or an annual hay cut with the arisings removed to prevent thatching. This will prevent a thatch building up and keep raptor prey populations at a low density.</p> <p><b>Monitoring, Active Management and Adaptive Management Measures</b></p> | 1 – Unlikely                   | No attractants are available for these species, and it is therefore not predicted to cause significant changes in the abundance of these birds using this area or their use of this area. |

| Area/<br>feature                                     | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                                                                                                                                                          | Species                          | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Likelihood<br>of<br>attractant | Justification                                  |
|------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------|
|                                                      |                                                                                     |                                                                                                                                                                                                                                                 |                                  | See above                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                                                |
| Onshore<br>Substations<br><br>Permanent<br>structure |                                                                                     | Roofs of<br>onshore<br>substation<br>buildings<br>provide<br>potential<br>roosting sites<br>and perching<br>opportunities,<br>particularly if<br>the design<br>includes flat<br>roofs or<br>sheltered<br>ledges access<br>holes and<br>crevices | All species<br>(in Table<br>1.2) | <p><b>Passive design and management measures</b></p> <p>Design of the onshore substation to avoid flat roofs, valleys or protruding features, anti-roosting features, allow safe access for checks.</p> <p><b>Monitoring</b></p> <p>Regular inspections</p> <p><b>Active Management Measures</b></p> <ol style="list-style-type: none"> <li>1. Arm-waving</li> <li>2. Lure</li> <li>3. Bio-acoustics (e.g. distress calls)</li> <li>4. Use of bird scaring lasers</li> <li>5. Bird-scaring rockets and cartridges</li> <li>6. Nest and egg removal under licence. (1,2,3 stages)</li> <li>7. Shooting.</li> </ol> | 1 – Unlikely                   | Birds will be monitored and actively deterred. |

| Area/<br>feature                    | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                                                                | Species                          | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                              | Likelihood<br>of<br>attractant | Justification                                  |
|-------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------|
| Fencing<br><br>Permanent<br>feature | N/A                                                                                 | Creation of<br>secure open<br>spaces around<br>the substations<br>with areas of<br>short grass or<br>gravel may<br>attract ground-<br>nesting species | All species<br>(in Table<br>1.2) | <p><b>Active Management Measures</b></p> <p>Bird management measures (e.g. regular inspection of the site in period leading up to nesting season.</p> <p><b>Monitoring</b></p> <p>Regular inspections</p> <p><b>Active Management Measures</b></p> <ol style="list-style-type: none"> <li>1. Arm-waving</li> <li>2. Lure</li> <li>3. Bio-acoustics (e.g. distress calls)</li> <li>4. Use of bird scaring lasers</li> <li>5. Bird-scaring rockets and cartridges</li> <li>11. Shooting.</li> </ol> | 1 - Unlikely                   | Birds will be monitored and actively deterred. |

| Area/<br>feature                                  | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                                                           | Species                          | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Likelihood<br>of<br>attractant | Justification                                                                        |
|---------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------|
| Attenuations<br>ponds<br><br>Permanent<br>feature |                                                                                     | Attenuation<br>ponds to<br>manage<br>surface water<br>runoff at the<br>onshore<br>substations<br>may attract<br>birds to feed,<br>roost or nest. | All species<br>(in Table<br>1.2) | <p><b>Passive design and management measures</b></p> <p>The design of the attenuation ponds will principally reflect its function to manage surface water run off (i.e. temporarily store to allow discharge at an agreed rate). Therefore, the ponds will not hold water in the long term.</p> <p><b>Monitoring</b></p> <p>Regular inspections</p> <p><b>Active Management Measures</b></p> <ol style="list-style-type: none"> <li>1. Arm-waving</li> <li>2. Lure</li> <li>3. Bio-acoustics (e.g. distress calls)</li> <li>4. Use of bird scaring lasers</li> <li>5. Bird-scaring rockets and cartridges</li> <li>6. Shooting.</li> </ol> <p><b>Adaptive Management Measures</b></p> <p>Potential netting of the ponds</p> | 1 – Unlikely                   | The proposed attenuation ponds will be designed to deter birds from using the ponds. |

| Area/<br>feature                                        | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                                                                                                                     | Species                          | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                             |
|---------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Landscape<br>planting<br><br>Permanent<br>feature       |                                                                                     | Tree and shrub<br>planting can<br>create dense<br>vegetation that<br>may provide<br>roosting<br>opportunities.<br>Berry and fruit<br>bearing<br>species provide<br>additional food<br>source in<br>autumn. | All species<br>(in Table<br>1.2) | <p><b>Passive design and management measures</b></p> <p>Detailed planting design to avoid the proportion of fruit and berry bearing species and trees with less robust crowns</p> <p><b>Monitoring</b></p> <p>Regular inspections</p> <p><b>Active Management Measures</b></p> <ol style="list-style-type: none"> <li>1. Arm-waving</li> <li>2. Lure</li> <li>3. Bio-acoustics (e.g. distress calls)</li> <li>4. Use of bird scaring lasers</li> <li>5. Bird-scaring rockets and cartridges</li> <li>6. Shooting.</li> </ol> | 1 – Unlikely                   | No attractants are available for these species, and it is therefore not predicted to cause significant changes in the abundance of these birds using this area or their use of this area. |
| Vegetation<br>clearance<br><br>Construction<br>activity | N/A                                                                                 | The exposure<br>of soils<br>following<br>vegetation<br>clearance and<br>stockpiling of<br>soils may                                                                                                        | All species<br>(in Table<br>1.2) | <p><b>Passive design and management measures</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1 – Unlikely                   | Birds will be monitored and actively deterred.                                                                                                                                            |

| Area/<br>feature                                 | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                             | Species                    | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                                                                                | Likelihood<br>of<br>attractant | Justification                                  |
|--------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------|
|                                                  |                                                                                     | attract birds to feed on the invertebrates in the soil. Seeding of the stockpiles may also attract birds to feed.  |                            | <p>Soil management (e.g. covering soils, selection of seed type), bird management during seeding.</p> <p><b>Monitoring</b></p> <p>Regular monitoring during construction</p> <p><b>Active Management Measures</b></p> <ol style="list-style-type: none"> <li>1. Arm-waving</li> <li>2. Lure</li> <li>3. Bio-acoustics (e.g. distress calls)</li> <li>4. Use of bird scaring lasers</li> <li>5. Bird-scaring rockets and cartridges</li> <li>6. Shooting.</li> </ol> |                                |                                                |
| Water and ponding<br><br>Construction activities | N/A                                                                                 | Areas of standing water within the construction areas may attract birds to feed (from invertebrates brought closer | All species (in Table 1.2) | <p><b>Passive design and management measures</b></p> <p>Management of surface water runoff to avoid accumulation of water.</p> <p><b>Monitoring</b></p>                                                                                                                                                                                                                                                                                                             | 1 – Unlikely                   | Birds will be monitored and actively deterred. |

| Area/<br>feature                                       | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                                                     | Species                    | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                                                                                | Likelihood<br>of<br>attractant | Justification                                          |
|--------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------|
|                                                        |                                                                                     | to the surface),<br>drink or bathe.                                                                                                        |                            | <p>Regular monitoring during construction</p> <p><b>Active Management Measures</b></p> <ol style="list-style-type: none"> <li>1. Arm-waving</li> <li>2. Lure</li> <li>3. Bio-acoustics (e.g. distress calls)</li> <li>4. Use of bird scaring lasers</li> <li>5. Bird-scaring rockets and cartridges</li> <li>6. Nest and egg removal under licence. (1,2,3 stages)</li> <li>7. Shooting.</li> </ol> |                                |                                                        |
| <p>Waste management</p> <p>Construction activities</p> | N/A                                                                                 | Discarded food waste or other edible waste, particularly from welfare units at temporary construction compounds may attract birds to feed. | All species (in Table 1.2) | <p><b>Passive design and management measures</b></p> <p>Secure storage of waste at construction compounds, regular collection of waste, good housekeeping policies.</p> <p><b>Monitoring</b></p> <p>Regular monitoring during construction</p>                                                                                                                                                      | 1 – Unlikely                   | These species will be monitored and actively deterred. |

| Area/<br>feature                                        | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant                                                                                                                                                                | Species                    | Design<br>commitments/management<br>measures (to control attraction)                                                                                                                                                                                                                                                                           | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                         |                                                                                     |                                                                                                                                                                                       |                            | <b>Active Management Measures</b> <ol style="list-style-type: none"> <li>1. Arm-waving</li> <li>2. Lure</li> <li>3. Bio-acoustics (e.g. distress calls)</li> <li>4. Use of bird scaring lasers</li> <li>5. Bird-scaring rockets and cartridges</li> <li>6. Nest and egg removal under licence. (1,2,3 stages)</li> <li>7. Shooting.</li> </ol> |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| General construction activities throughout the corridor | N/A                                                                                 | This area will be subject to displacement with the exception of a few generalist and disturbance tolerant species (e.g., gulls) that are dealt with by vegetation clearance and waste | All species (in Table 1.2) | See above areas/features for attractants and management measures.                                                                                                                                                                                                                                                                              |                                | <p>The greatest numbers of birds to be displaced are made up of waterbirds, this is the reason why the bird mitigations have been suggested.</p> <p>The bird mitigations suggested above are to house displaced birds and thereby maintain the status quo of bird numbers and distribution in the area. The mitigations have been sited as close to the areas of greatest impact (in this case the areas with the highest densities of birds) in order to minimise disruption to the birds daily and seasonal routines. It is predicted that birds displaced by construction will be able to relocate at the proposed</p> |



| Area/<br>feature | National grid<br>reference<br>and distance<br>from Warton<br>Aerodrome <sup>1</sup> | Wildlife<br>attractant | Species | Design<br>commitments/management<br>measures (to control attraction) | Likelihood<br>of<br>attractant | Justification                                                                                                                                                                                              |
|------------------|-------------------------------------------------------------------------------------|------------------------|---------|----------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                     | management<br>above.   |         |                                                                      |                                | mitigation areas thereby minimising any changes in bird abundance, distribution or activity, therefore there is predicted to be no significant change in bird flight activity other than minor relocation. |

\*Likelihood considers how likely the feature of the development will attract more birds, change the distribution or alter their behaviour within the 13km safeguarding buffer.

## 1.3.4 Engagement

- 1.3.4.1 The Applicants will establish an engagement procedure with Blackpool Airport and Warton Aerodrome prior to construction. The procedure will include sharing of monitoring data and identifying the lines of communication with the relevant roles at Blackpool Airport and / or Warton Aerodrome.
- 1.3.4.2 The Applicants will prepare an annual report which will provide a detailed account of all surveillance and active bird control undertaken during the previous year.
- 1.3.4.3 Communication protocols will be developed for Blackpool Airport and Warton Aerodrome based on the principles in the Outline Wildlife Hazard Management Plan which commits the Applicants to regular communication with Blackpool Airport and / or Warton Aerodrome including results from monitoring and escalation of management measures . within the respective 13km wildlife hazard management zones.

## 1.3.5 Next Steps

- 1.3.5.1 The next and final step in this process is to produce a full bird strike risk assessment. This has already been produced for Blackpool Airport in accordance with their existing risk assessment (see Appendix B of S\_D3\_8/F03 the Outline Wildlife Hazard Management Plan).
- 1.3.5.2 The Blackpool Airport Wildlife Hazard Risk Assessment and Management Plan follow the guidance set out in CAP772. This calculates risk as a product of the severity of a strike and the likelihood of a strike as shown in Table 1.5 below. All **red** risks are considered unacceptable, **amber** is tolerable and needs monitoring with additional measures taken if needed, **green** is acceptable.

**Table 1.5: Risk assessment matrix as taken from CAP772**

|          |           | Likelihood |      |          |     |          |
|----------|-----------|------------|------|----------|-----|----------|
|          |           | Very High  | High | Moderate | Low | Very Low |
| Severity | Very High | 25         | 20   | 15       | 10  | 5        |
|          | High      | 20         | 16   | 12       | 8   | 4        |
|          | Moderate  | 15         | 12   | 9        | 6   | 3        |
|          | Low       | 10         | 8    | 6        | 4   | 2        |
|          | Very Low  | 5          | 4    | 3        | 2   | 1        |

- 1.3.5.3 The severity of a strike is fixed in the CAP772 guidance and is based upon the weight or flocking behaviour of the bird, the severity examples as taken from CAP772 are shown below in Table 1.6.

**Table 1.6: The severity or damage probability percentages of birdstrike with examples as taken from CAP772**

|                       | Very high    | High        | Moderate                                     | Low                       | Very low         |
|-----------------------|--------------|-------------|----------------------------------------------|---------------------------|------------------|
| Probability of damage | >20%         | 10 - 20%    | 6 - 10%                                      | 2 - 6%                    | <2%              |
| Species groups        | Swans, geese | Large gulls | Waders, small gulls, corvids, pigeons, ducks | Starling, winter thrushes | Other passerines |

- 1.3.5.4 Therefore, the only remaining data needed to run a full risk assessment is the probability of a strike. The CAP772 guidance and Blackpool Airport's risk assessment are clear that the approach needed to estimate the probability of a strike is the airport's own strike rate from the last five years. An example is shown below in Table 1.7.

**Table 1.7: The probability of a strike as taken from CAP772**

|                               | Very high | High   | Moderate | Low     | Very Low |
|-------------------------------|-----------|--------|----------|---------|----------|
| Birdstrike per 10,000 flights | >10       | 3 - 10 | 1 - 3    | 0.3 - 1 | 0 - 0.3  |

- 1.3.5.5 The Applicants have not received the strike rate data from BAE Systems and therefore are unable to complete the final step in the risk assessment process. However, the Applicants have provided all of the detail needed in order to carry out a robust risk assessment.
- 1.3.5.6 As is demonstrated above, the Applicants have identified passive and active control measures that are recognised to be effective in controlling and managing bird numbers and distribution. Whilst the Applicants do not believe that these will all be required to ensure the continued safeguarding at Warton Aerodrome, commitment to implementing the measures (as required) as well as monitoring and reporting are secured through the DCO. This will ensure that any unintended changes to bird populations or distributions can be managed within agreed and acceptable levels and therefore there will be no increase in bird strike risk. As such the Applicants have clearly identified a robust and CAP772 compliant process to monitor and take the necessary measures to reduce bird strike risk in a timely manner in all of the

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construction and environmental mitigation areas that are proposed as part of the Morgan and Morecambe Transmission Assets.

1.3.5.7 While the Applicants are confident that the Transmission Assets will not lead to an increased risk of bird strike, they acknowledge that the findings of this wildlife habitat attractants risk assessment must be carried through into the aerodrome's own bird strike risk assessment. This approach is demonstrated in the case of Blackpool Airport, as shown in Appendix B of the Outline Wildlife Hazard Management Plan (oWHMP).

1.3.5.8 As can be seen in this assessment, for all species, the bird strike risk, once control measures are implemented, returns to existing baseline levels. Therefore, if Warton Aerodrome applies the same assessment methodology as Blackpool Airport (in line with CAP 772), the commitments made by the Applicants will ensure that bird strike risk remains at current levels, regardless of any operational differences between the two facilities.

1.3.5.9 This will be confirmed once the necessary information to complete the bird strike risk assessment is made available.

## **1.3.6 Conclusion**

1.3.6.1 Following on from the Outline Wildlife Hazard Management Plan submitted at Deadline 4 (S\_D3\_8) the Applicants have undertaken a Draft Wildlife Habitat Attractants Risk Assessment for Warton Aerodrome. The risk assessment focuses on the bird species at risk of collision (as set out in Table 1.3) which have been agreed with BAE Systems/DIO. The risk assessment takes into account the Applicants' survey results, and national, regional and local data to establish the patterns of use as reported in the Baseline Bird Technical Report (S\_D3\_5).

1.3.6.2 The Applicants' approach considers the likelihood of the specific elements of the Transmission Assets to potentially cause a change in abundance, species and patterns of use of birds within Warton Aerodrome's 13 km safeguarding area. The approach is in accordance with the CAP 795 guidance.

1.3.6.3 The areas of the Transmission Assets set out in Table 1.4 are designed to provide (both temporary and permanent) alternative resources for birds that may be impacted through habitat loss and disturbance as a result of the construction and/or operation of the Transmission Assets. The Baseline Bird Technical Report (S\_D3\_5) provides evidence that these birds are currently present within Warton Aerodrome's 13km safeguarding area and provides trends of bird populations. The Draft Wildlife Habitat Attractants Risk Assessment concludes that with the implementation of design commitments and an adaptive management approach (supported by a detailed monitoring strategy) the Transmission Assets would not cause a material change in abundance, species and patterns of use by birds within the wildlife hazard management (safeguarding) area around Warton Aerodrome.

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- 1.3.6.4 Whilst there may be some localised redistribution of birds within the Transmission Assets Order Limits, the Applicants have designed their mitigations to limit additional movements of birds or alter existing patterns of use.
- 1.3.6.1 Although the final bird strike risk assessment for Warton Aerodrome is still pending, the Applicants have clearly demonstrated that such an assessment is not essential to confirm that any unintended changes in bird numbers or distribution resulting from the Transmission Asset can be effectively managed to agreed and acceptable levels. As a result, there will be no increase in bird strike risk beyond the current, managed baseline.