

## 12. Aviation and Telecommunications

### 12.1 Introduction

- 12.1.1 This chapter sets out the proposed scope, study areas, consultation and assessment approach for aviation, radar and telecommunications receptors to inform the Environmental Statement and the Scoping Direction for an application for Infrastructure Consent under the Infrastructure (Wales) Act 2024.
- 12.1.2 This section of the Scoping Report has been written by Cdr John Taylor RN (Ret) of Wind Power Aviation Consultants Ltd (WPAC). John has over 35 years' experience as an Air Traffic Controller, Fighter Controller and Aviation Regulator and was head of Air Traffic Control for the Royal Navy. His responsibilities included responding to wind farm consultations on and offshore. Since 2008, WPAC has provided advice on the interaction between wind turbines and aviation including assessing over 3000 wind turbine proposals and giving evidence at over 20 Inquiries and Appeals in England and Scotland. John has also advised a number of Local Authorities on this issue. His team includes experts on radar propagation and modelling and low flying operations.
- 12.1.3 An assessment will also be undertaken of the likely significant effects of the Proposed Development on telecommunications. Wind turbines have the potential to affect telecommunications and broadcast reception primarily through the physical obstruction of line-of-sight radio paths (including point-to-point fixed links) and, less commonly, through scattering effects where turbines are located within safeguarded radio corridors. This section of the Scoping Report sets out the methodology that will be used to undertake the telecommunications assessment, the baseline information sources, consultation requirements and the mitigation approach to be applied where required.
- 12.1.4 Telecommunications effects are distinct from aviation and radar effects. The assessment will therefore focus on the potential for interaction with fixed wireless links, broadcast transmission infrastructure and, where relevant, other radio services that rely on clear propagation paths within the vicinity of the Proposed Development.

### 12.2 Legislation, Policy and Guidance

- 12.2.1 This chapter should be read alongside the overarching EIA scoping approach for the project (Chapter 4), which is being progressed under the Significant Infrastructure Project (SIP) regime. The Environmental Statement will support an application to Welsh Ministers for Infrastructure Consent under the Infrastructure (Wales) Act 2024 and will be prepared in accordance with the applicable Welsh EIA framework and guidance (Infrastructure (Wales) Act 2024) (Senedd Cymru, 2024).

12.2.2 There are a number of aviation publications relevant to the interaction of turbines and aviation containing guidance and legislation, which cover the complete spectrum of aviation activity in the UK including:

- Civil Aviation Authority (2025) Policy and Guidance on Wind Turbines Version 7 CAP764 CAA; (Civil Aviation Authority, 2025)
- Civil Aviation Authority (2025) Licensing of Aerodromes, Edition 13 CAP 168 CAA; (Civil Aviation Authority, 2025).
- Civil Aviation Authority (2019) ATS Safety Requirements Version CAP 670 CAA; (Civil Aviation Authority, 2019).
- Civil Aviation Authority (2021) UK Flight Information Services, Ed 4 CAP 774 CAA; (Civil Aviation Authority, 2021).
- Civil Aviation Authority (2020) Safeguarding of Aerodromes Version 3 CAP738 CAA; (Civil Aviation Authority, 2020).
- Civil Aviation Authority (2010) Safe Operating Practices at Unlicensed Aerodromes Ed 1 CAP 793 CAA; (Civil Aviation Authority, 2010).
- Civil Aviation Authority (2025) Manual of Air Traffic Services Part 1 Ed 12.0 CAP 493 CAA; (Civil Aviation Authority, 2025).
- Civil Aviation Authority (2020) Parachuting Ed 5 CAP660 CAA; (Civil Aviation Authority, 2020).
- Military Aviation Authority (2026) Regulatory Article 2330 (Low Flying) (RA 2330) (Ministry of Defence, 2026).
- Civil Aviation Authority (2017) CAA Policy Statement: Lighting of Onshore Wind Turbine Generators in the United Kingdom with a maximum blade tip height at or in excess of 150m Above Ground Level CAA; (Civil Aviation Authority, 2017).

12.2.3 Telecommunications in the UK is regulated through a licensing and spectrum management framework administered by the Office of Communications (Ofcom). The assessment will be informed by the relevant legislative framework and good practice, including:

- UK Parliament (2003) Communications Act 2003 (UK Parliament, 2003).
- UK Parliament (2006) Wireless Telegraphy Act 2006 (UK Parliament, 2006); and
- UK Government (2016) The Control of Electromagnetic Fields at Work Regulations 2016 (SI 2016/588) (The Control of Electromagnetic Fields at Work Regulations 2016 (SI 2016/588)) (UK Government, 2016).

12.2.4 The assessment will also have regard to consultee requirements and operator safeguarding procedures relevant to fixed links and broadcast infrastructure, as confirmed through consultation responses during scoping and pre-application engagement.

### 12.3 Study Area

12.3.1 The assessment of effects of the proposed turbines will be based upon the guidance laid down in CAA Publication CAP 764 Policy and Guidelines on Wind Turbines Version 7 (December 2025) (Civil Aviation Authority, 2025). These distances inform the size of the study area and include:

- Airfield with a surveillance radar – 30 km.
- Non radar licensed aerodrome with a runway of more than 1.1 km – 17 km.
- Non radar licensed aerodrome with a runway of less than 1.1 km – 5 km.
- Licensed aerodromes where the turbines would lie within airspace coincidental with any published Instrument Flight Procedure (IFP).
- Unlicensed aerodromes with runways of more than 800 metres – 4 km.
- Unlicensed aerodromes with runways of less than 800 metres – 3 km.
- Gliding sites – 10 km.
- Other aviation activity such as parachute sites and microlight sites within 3 km – in such instances developers are referred to appropriate organisations.

12.3.2 CAP 764 further states that these distances are for guidance purposes only and do not represent ranges beyond which all wind turbine developments will be approved or within which they will always be objected to. These distances are intended as a prompt for further discussion between developers and aviation stakeholders and will be reported upon in the Environmental Statement (Civil Aviation Authority, 2025).

12.3.3 It is necessary to take into account the aviation and air defence activities of the Ministry of Defence (MOD) as safeguarded by the Defence Infrastructure Organisation (DIO). The types of issues that are routinely addressed in the Environmental Statement include:

- MOD Airfields, both radar and non-radar equipped;
- MOD Air Defence Radars;
- UK Met Office Meteorological Radars; and
- Military Low Flying.

12.3.4 It is necessary to take into account the possible effects of turbines upon the National Air Traffic Services En Route Ltd (NERL) communications, navigation and surveillance (CNS) systems – a network of primary and secondary radars and navigation facilities around the country.

12.3.5 As well as examining the technical impact of turbines on Air Traffic Control (ATC) facilities, it is also necessary to consider the physical safeguarding of ATC operations using the criteria

laid down in CAP 168 Licensing of Aerodromes to determine whether a Proposed Development will breach obstacle clearance criteria (Civil Aviation Authority, 2025).

- 12.3.6 The telecommunications study area will be informed by the location and safeguarding requirements of telecommunications infrastructure with the potential to be affected by the Proposed Development. In practice, this is driven by the geometry of specific radio paths rather than by a single fixed radius. An initial screening area will be applied to identify potentially relevant assets and to target consultation.
- 12.3.7 For the purposes of this Scoping Report, an initial telecommunications screening area of up to 10 km from the outermost turbines will be used to identify mobile and broadcast assets and to inform consultation. The assessment of fixed point-to-point links will be refined based on any link path information received from consultees and operators, including confirmation of whether any safeguarded paths traverse the turbine envelope.

## **12.4 Data Sources**

- 12.4.1 Data sources include CAA1:250K and 1:500K aviation charts, the NATS Aeronautical Information Publication database and WPAC databases (NATS Aeronautical Information Publication database, 2026).
- 12.4.2 Data sources for the telecommunications assessment will include:
- Ofcom spectrum and licensing information, including records of licensed radio services where available;
  - Consultation responses from telecommunications operators and infrastructure owners (including operators responsible for fixed links and broadcast transmission where relevant); and
  - Ordnance Survey mapping and digital terrain data to support line-of-sight screening where required.

## **12.5 Methodology**

- 12.5.1 The radar calculation results referred to in this section were produced using specialist propagation prediction software (RView Version 5). Developed over a number of years, it has been designed and refined specifically for the task. RView will be used to identify potential aviation effects of the Proposed Development as its design evolves. The results will then be used as a basis for consultation and liaison with relevant aviation bodies, as detailed below.
- 12.5.2 The telecommunications assessment will comprise a desk-based screening supported by consultation with relevant bodies and infrastructure owners. The purpose of the assessment at EIA scoping stage is to identify whether the Proposed Development has the potential to interact with safeguarded telecommunications infrastructure and to define any proportionate further work required for the Environmental Statement.

- 12.5.3 Where consultation or baseline screening identifies potential interaction with fixed links or other safeguarded radio paths, an appropriate line-of-sight and clearance appraisal will be undertaken using turbine parameters (including maximum tip height) and terrain data. Where necessary, further technical assessment will be undertaken in liaison with the relevant operator to confirm whether any technical mitigation is required.
- 12.5.4 The assessment will consider construction, operation and decommissioning. Operational effects are typically the most relevant for telecommunications and, where impacts are identified, these would normally be addressed through micro-siting, design refinement, or agreed technical solutions with the relevant operator.

## **12.6 Determining Significant Effects**

- 12.6.1 Assessing significance in an aviation context is highly controversial as there is no agreed definition of significance. This is due to the fact that whilst technical effects on communications, navigation and surveillance (CNS) systems are simple to identify and evaluate, operational and flight safety effects can be subjective and are often challenged by third parties. It is enough in this context to identify any technical effects and then, taking into account the statements in CAP 764 regarding the status of aviation stakeholders, in general to accept the judgement of those stakeholders in assessing the significance of the effects. For example CAP 764 states: *“Where an Air Navigation Service Provider (ANSP) determines that it is likely that a planned wind turbine development would result in any of the above effects on their CNS infrastructure, this may not, in itself, be sufficient reason to justify grounds for rejection of the planning application. The ANSP must determine whether the effect on the CNS infrastructure has a negative impact on the provision of the Air Traffic Service (ATS). The developer should pay for an assessment of appropriate mitigating actions that could be taken by the ANSP and/or wind energy developer to deal with the negative impact. The position of an ANSP at inquiry would be significantly degraded if they had not considered all potentially appropriate mitigations.”*
- 12.6.2 Therefore, taking the above into account, it is not considered to be appropriate for the Applicant to be making an assessment of significance of an effect in relation to aviation interests. It is also often the case that different ANSPs can take a different view of the same scenario and may disagree with the assessment findings leading to the need for further post submission consultation to confirm the findings of the assessment and/or agree to the need for and extent of mitigation.

## **12.7 Baseline Context**

- 12.7.1 The Proposed Development is remote from significant aviation facilities. It is located 20km to the north-west of the Sennybridge Danger Area (D203) and 60km to the north-east of the MOD range control facility at Aberporth. It is within Class G unregulated airspace which extends up to Flight Level (FL)195 (approximately 19,500ft). The Proposed Development straddles the northern boundary of another danger area, D202C, which extends east/west,

has a base of FL100 (10,000ft) and is used for trials on unmanned aerial vehicles (UAVs). The Proposed Development is also under the Valley Aerial Tactics Area which extends upwards from 6000ft. Finally, the airspace is used at high level as 'Free Routing Airspace' for commercial air traffic transiting on to the North Atlantic.

- 12.7.2 The Proposed Development is located in a rural upland area where telecommunications infrastructure is generally limited to dispersed mobile coverage assets and any local fixed wireless services. A preliminary desk-based review does not indicate the presence of obvious major broadcast transmission facilities within the immediate vicinity of the Proposed Development; however, the baseline will be confirmed through consultation and review of any licensed link information provided by consultees and operators.
- 12.7.3 Telecommunications effects, where they occur, are typically linked to specific safeguarded paths (for example, point-to-point microwave links). These cannot be fully verified without operator input. Consultation is therefore an essential part of establishing the baseline and confirming whether telecommunications should be scoped into the Environmental Statement.

## **12.8 Consultation Requirements**

- 12.8.1 Consultation will be undertaken with bodies and operators relevant to telecommunications safeguarding. This will include Ofcom where appropriate, and telecommunications infrastructure owners and operators identified through baseline review and consultee recommendations.
- 12.8.2 Where consultees identify fixed links or safeguarded paths that may be affected by the Proposed Development, further liaison will be undertaken to confirm the technical basis of any concern and the scope of any assessment required for the Environmental Statement.

## **12.9 Potential Effects**

### **Construction**

- 12.9.1 There are no technical effects on aviation interests during construction. The only aviation issues are those associated with the operation of large cranes which will be the subject of standard conditions for crane operations as laid down in CAA CAP1096 'Guidance to crane users on aviation lighting and notification' (Civil Aviation Authority, 2021).
- 12.9.2 There are unlikely to be significant telecommunications effects during construction. Temporary plant and cranes do not typically generate material interference with licensed telecommunications services; any potential effects would be short-term and would be managed through standard construction controls and liaison where required.

### **Operation**

- 12.9.3 Operational effects could arise if turbines obstruct, encroach upon, or otherwise interact with safeguarded radio paths (particularly point-to-point fixed links). Based on the

preliminary baseline review, significant effects are not anticipated; however, this will be confirmed through consultation, and the need for any further assessment will be determined on the basis of operator feedback.

### **Decommissioning**

- 12.9.4 There are no technical effects on aviation interests during decommissioning. The only aviation issues are those associated with the operation of large cranes which will be the subject of standard conditions for crane operations as laid down in CAA CAP1096 'Guidance to crane users on aviation lighting and notification' (Civil Aviation Authority, 2021).
- 12.9.5 There are unlikely to be significant telecommunications effects during decommissioning.

## **12.10 Scoping Assessment**

### **Radar Equipped Licensed Aerodromes**

- 12.10.1 None within consultation distance or likely to be affected by the Proposed Development. This issue can therefore be scoped out of the Environmental Statement.

### **Non-Radar Equipped Licensed Aerodromes**

- 12.10.2 None within consultation distance or likely to be affected by the Proposed Development. This issue can be scoped out of the Environmental Statement.

### **Unlicensed Aerodromes, Farm Strips, Microlight Sites and Gliding Sites**

- 12.10.3 None within consultation distance or marked on aviation charts. This issue can be scoped out of the Environmental Statement.

### **MOD Air Traffic Control (ATC) Radar**

- 12.10.4 The closest MOD ATC radars are located at RAF Valley in Anglesey, over 100km to the north, and the new MOD Range Control Thales Star 2000NG Radar located 50km to the south-west at Aberporth. Initial radar modelling shows that the turbines will all be screened by terrain from the RAF Valley radar but that up to fourteen of the turbines will be partially visible to the Aberporth Radar. This issue will be included in the Environmental Statement when additional radar modelling will be undertaken using the finalised turbine locations and the MOD will be consulted. The outcome will be reported in the Environmental Statement.

### **MOD Air Defence Radar**

- 12.10.5 Initial radar modelling shows that there is no possibility of any air defence radars being affected and this issue can be scoped out of the Environmental Statement.

### **MOD Low Flying**

- 12.10.6 The Proposed Development is located within a Tactical Training Area (TTA7), and in an area designated 'Red' on the MOD Wind Farm consultation charts. The MOD will look closely at any potential effect on tactical low flying. The MOD will be consulted and the outcome

reported in the Environmental Statement. It is likely that as mitigation the MOD will require Infra-Red lighting installed on each turbine.

#### **UK Met Office Weather/Rainfall Radars**

- 12.10.7 The Met Office safeguards its network of radars using a European methodology known as OPERA (Operational Programme for the Exchange of Weather Radar Information). In general, they will object to any proposed turbine within 5 km in line of sight and will examine the impact of any turbines within 20 km.
- 12.10.8 In this case the closest Met Office radar is at Clee Hill, over 86km to the east of the Proposed Development and well beyond safeguarding distance. There will be no effect on Met Office radars and this issue can therefore be scoped out of the Environmental Statement.

#### **NATS En Route Ltd (NERL)**

- 12.10.9 An initial assessment has been conducted to determine any effect of the Proposed Development on NERL communications, navigation and surveillance (CNS) infrastructure. The results show that approximately thirteen turbines will be in radar line of sight of the Clee Hill radar which may result in radar clutter or other technical effects on the performance of the radar. The Applicant will consult with NERL once the turbine layout has been finalised and the outcome reported in the EIA Chapter.

#### **Fixed Point-to-Point Telecommunications Links**

- 12.10.10 At this stage, no safeguarded point-to-point links are known to cross the Proposed Development. Subject to confirmation through consultation with relevant operators and review of any path safeguarding information received, this issue is expected to be scoped out of the Environmental Statement. If consultation identifies potentially affected links, the scope will be updated and the assessment reported in the Environmental Statement.

#### **Broadcast Transmission and Reception**

- 12.10.11 No broadcast transmission infrastructure has been identified within the screening area that would be likely to be affected by the Proposed Development. Subject to confirmation through consultation responses, this issue can be scoped out of the Environmental Statement.

#### **Mobile Telecommunications**

- 12.10.12 Mobile telecommunications infrastructure is generally not safeguarded in the same way as fixed links, and wind farms do not typically give rise to significant effects on mobile networks. This issue can be scoped out of the Environmental Statement.

#### **Electromagnetic Effects**

- 12.10.13 The Proposed Development would not introduce unusual electromagnetic hazards. Any occupational exposure considerations are addressed through standard workplace

requirements under the relevant UK legislation. This issue can therefore be scoped out of the Environmental Statement.

## 12.11 Approach to Mitigation

### Aviation Obstruction Lighting

- 12.11.1 A wind farm with tip heights in excess of 150m will need to be illuminated at the hub of selected turbines with medium intensity red aviation obstruction lighting. WPAC will design a lighting layout which minimises the number of lit turbines whilst fulfilling flight safety requirements and gain approval for the lighting layout from the CAA. This will be reported in a technical appendix to describe the effect of aviation lighting on the environment and to inform the LVIA. It will also articulate the mitigation techniques available taking into account the extant legislation and guidance. This issue will be fully reported in the Aviation Lighting and Mitigation Technical Appendix to the Environmental Statement.
- 12.11.2 An infra-red lighting layout to fulfil MOD requirements will also be designed and approval obtained from the MOD and reported in the Environmental Statement.

Table 12-1 – Aviation matters to be scoped out of the assessment

| Matters to be scoped out of the assessment  |                                   |
|---------------------------------------------|-----------------------------------|
| Matter                                      | Rationale                         |
| CAA Radar Equipped Licenced Aerodromes      | None affected                     |
| CAA non -radar equipped licensed aerodromes | None affected                     |
| MOD Air Defence Radar                       | None Affected                     |
| Met Office Radars                           | None within safeguarding distance |

- 12.11.3 Where consultation identifies a potential interaction with telecommunications infrastructure, mitigation would normally be agreed with the relevant operator. Typical mitigation measures may include micro-siting of turbines, minor design refinements, or other measures identified through operator safeguarding processes.

- 12.11.4 On the basis of the preliminary baseline review, no specific telecommunications mitigation measures are anticipated at this stage. This position will be confirmed through consultation and, where necessary, reported in the Environmental Statement.

Table 12-2 - Telecommunications matters to be scoped out

| Matters to be scoped out of the assessment    |                                                                                                                      |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Matter                                        | Rationale                                                                                                            |
| Fixed point-to-point telecommunications links | No safeguarded links currently identified as crossing the Proposed Development; to be confirmed through consultation |
| Broadcast transmission infrastructure         | None identified within screening area; to be confirmed through consultation                                          |
| Mobile Telecommunications                     | Not typically sensitive or safeguarded in a manner that gives rise to significant effects from wind turbines         |
| Electromagnetic Effects                       | Managed through standard legislative requirements; no significant EIA effects anticipated.                           |

## 12.12 Summary of Scoping position

- 12.12.1 The aviation effects of the Proposed Development will be limited to the MOD radar at MOD Aberporth, low flying operations and NATS Clee Hill radar. These issues will all be assessed and reported in the Environmental Statement.
- 12.12.2 On the basis of current desk-based information, significant effects on telecommunications are not anticipated. Subject to confirmation through consultation with relevant operators and review of any safeguarding information received, telecommunications effects are expected to be scoped out of the Environmental Statement. Should consultation identify potentially affected safeguarded links or infrastructure, the scope will be updated and the relevant assessment included in the Environmental Statement.

### 12.13 References

Civil Aviation Authority, 2010. *CAP 793: Safe Operating Practices at Unlicensed Aerodromes (Edition 1, 1 July 2010)*. [Online]

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