



East Anglia ONE North Offshore Windfarm

Appendix 15.1

Civil and Military Aviation and Radar Consultation Responses

Environmental Statement Volume 3

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Glossary of Acronyms

AARA	Air to Air Refuelling Area
ACT	Air Combat Training
AD	Air Defence
agl	Above Ground Level
AIC	Aeronautical Information Circulars
AIP	Aeronautical Information Publication
AIS	Aeronautical Information Services
ALARP	As low as reasonably practicable
amsl	Above Mean Sea Level
ANO	Air Navigation Order
ANSP	Air Navigation Service Provider
ATA	Aerial Tactics Area
ATC	Air Traffic Control
ATS	Air Traffic Services
ATSOCAS	Air Traffic Services outside Controlled Airspace
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAS	Controlled Air Space
CNS	Communication Navigation & Surveillance
CTA	Control Area
DECC	Department of Energy and Climate Change
EIA	Environmental Impact Assessment
ERCoP	Emergency Response and Cooperation Plan
FIR	Flight Information Region
FL	Flight Level
GASIL	General Aviation Safety Information Leaflet
HAT	Highest Astronomical Tide
HMRs	Helicopter Main Route(s)
ICAO	International Civil Aviation Organisation
ILT	Inspectie Leefomgeving en Transport – the NL CAA
ITAR	International Traffic in Arms Regulations
LAT	Lowest Astronomical Tide
LoS	Line of Sight
LVNL	Luchtverkeersleiding Nederland – the NL equivalent of NATS
MAA	Military Aviation Authority
MCA	Maritime and Coastguard Agency
MGN	Maritime Guidance Note
MoD	Ministry of Defence
MSD	Minimum Separation Distance
NAIZ	Non-Auto Initiation Zone
NATMAC	National Air Traffic Management Advisory Committee
NATS	NATS Holdings Limited (formerly National Air Traffic Services)
NERL	NATS (En Route) plc
NM	Nautical Mile
NL	Netherlands
NOTAMs	Notices to Airmen

NPS	National Policy Statement
NSL	NATS (Services) Limited
OLS	Obstacle Limitation Surfaces
OREI	Offshore Renewable Energy Installation
Pd	Probability of Detection
PEI	Preliminary Environmental Information
PEIR	Preliminary Environmental Information Report
PID	Public Information Day
PSRs	Primary Surveillance Radars
RAF	Royal Air Force
RLoS	Radar Line of Sight
RNAV	Area Navigation
RRH	Remote Radar Head
SAR	Search and Rescue
SARG	UK CAA Safety and Airspace Regulation Group
SARPs	Standards and Recommended Practices
SMS	Safety Management System
SPR	ScottishPower Renewables
SSRs	Secondary Surveillance Radars
TMZ	Transponder Mandatory Zone
UARs	Upper Air Routes
VFR	Visual Flight Rules
ZAP	Zone Appraisal and Planning process

Glossary of Terminology

East Anglia ONE North project	The proposed project consisting of up to 67 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia ONE North windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
Offshore infrastructure	All of the offshore infrastructure including wind turbines, platforms, and cables.
Air to Air Refuelling Area (AARA)	Defined airspace in which the transfer of aviation fuel from a tanker aircraft to a receiving aircraft takes place.
Air Navigation Service Provider (ANSP)	A public or private legal entity managing air traffic on behalf of a company, region or country. NATS is the main ANSP in the UK.
Controlled Airspace (CAS)	Defined airspace in which pilots must follow Air Traffic Control instructions implicitly. In the UK, classes A, C, D and E are areas of controlled airspace.
Flight Information Region (FIR)	Airspace managed by a controlling authority with responsibility for ensuring air traffic services are provided to aircraft flying within it.
Flight Level (FL)	An aircraft altitude expressed in hundreds of feet at a standard sea-level pressure datum of 1013.25 hectopascals.
Highest Astronomical Tide (HAT)	The highest tidal level which can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions.
Lowest Astronomical Tide (LAT)	The lowest tidal level which can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions.
Mean Sea Level (msl)	The average level of the sea surface over a long period or the average level which would exist in the absence of tides.
Obstacle Limitation Surfaces (OLS)	A series of complex 3D surfaces described around an airport runway where the control of obstacles is necessary to protect aircraft.
Primary Surveillance Radar (PSR)	A radar system that measures the bearing and distance of targets using the detected reflections of radio signals.
Secondary Surveillance Radar (SSR)	A radar system that transmits interrogation pulses and receives transmitted responses from suitably equipped targets.
Uncontrolled Airspace	Defined airspace in which Air Traffic Control does not exercise executive authority but may provide basic information services to aircraft in radio contact. In the UK, class G is uncontrolled airspace.

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15.1 Consultation Responses

15.1.1 Introduction

1. This appendix covers those statutory consultation responses that have been received as a response to the Scoping Report (2017) and the Preliminary Environmental Information Report (PEIR) (2018).
2. The aforementioned consultation responses that are addressed in this appendix relate to ES **Chapter 15 Civil and Military Aviation and Radar**.
3. Responses from stakeholders and regard given by the Applicant have been captured in **Table A15.1.1**.
4. As Section 42 consultation for the proposed East Anglia ONE North project was conducted in parallel with the proposed East Anglia TWO project, where appropriate, stakeholder comments which were specific to East Anglia TWO, but may be of relevance East Anglia ONE North, have also been included in the consultation responses for East Anglia ONE North.

Table A15.1.1 Consultation Responses Related to Chapter 15 Civil and Military Aviation and Radar.

Consultee	Date/ Document	Comment	Response / where addressed in the ES
Scoping Comments			
NATS	27/11/2017 Scoping Response	Depending on the exact height of the turbine tip, the potential is for the northern part of the application site to be detected by NATS's Cromer radar. It is anticipated that the radar detection of the turbines will lead to substantial "clutter" appearing on Air Traffic Controllers' displays. Accordingly, the anticipated impact is deemed to be unacceptable to NATS's operations and at this time, NATS objects to the application.	See section 15.6.2.2 of this chapter.
NATS	27/11/2017 Scoping Response	Notwithstanding the objection however, NATS has been and remains positively engaged with SPR (UK) around the need for and identification of an acceptable mitigation scheme. While a solution has not been identified at this time, through its work with its stakeholders and the Applicant, NATS believes that a solution will be forthcoming in order to address the impact of the proposal and thus mitigate the effect of the turbines.	See section 15.6.2.2 of this chapter and section 15.2.8.5 of Appendix 15.2.
Ministry of Defence	07/12/2017 Scoping Response	I am writing to advise you that the MOD objects to the proposal. Our assessment has been carried out on the basis that there will be up to 75 turbines, a maximum of 300 metres in height from ground level to blade tip and located within the boundary points indicated below as provided by the developer (see Scoping Response for boundary coordinates).	See section 15.6.2.2 of this chapter.
Ministry of Defence	07/12/2017 Scoping Response	The turbines will be between 82.1km and 109.0km from, detectable by, and will cause unacceptable interference to the AD radar at RRH Trimmingham. Wind turbines have been shown to have detrimental effects on the operation of radar. These include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns. The probability of the radar detecting aircraft flying over or in the vicinity of the turbines would be reduced; hence turbine proliferation within a specific locality	See section 15.6.2.2 of this chapter.

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Consultee	Date/ Document	Comment	Response / where addressed in the ES
		can result in unacceptable degradation of the radar's operational integrity. This would reduce the RAF's ability to detect and deter aircraft in United Kingdom sovereign airspace, thereby preventing it from effectively performing its primary function of Air Defence of the United Kingdom.	
Ministry of Defence	07/12/2017 Scoping Response	<p>Close examination of the proposal has indicated that the proposed turbines would have a significant and detrimental effect on AD operations. The MOD therefore has concerns with the development. The reasons for this objection include, but are not limited to:</p> <p>a. Several of the turbines within the development being radar line of sight (RLOS)</p> <p>b. The quantity of the turbines visible to the radar at RRH Trimmingham would exceed our 'cumulative effect' thresholds.</p> <p>Research into technical mitigation solutions is currently ongoing and the developer may wish to consider investigating suitable mitigation solutions. If the developer is able to overcome the issues stated above, the MOD will request that the turbines are fitted with aviation lighting in accordance with Article 219 of the Air Navigation Order. MOD Safeguarding wishes to be consulted and notified about the progress of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.</p>	<p>See section 15.6.2.2 of this chapter.</p> <p>See Appendix 15.2, section 15.2.7.5 and section 15.3.3.2 of this chapter.</p>
The Planning Inspectorate	20/12/2017 Scoping Response	The Scoping Report lacks justification as to why transboundary impacts will be scoped out of the PEI. Without this justification, the Inspectorate does not agree that this matter can be scoped out of the PEI.	See section 15.8 of this chapter.
The Planning	20/12/2017	The Scoping Report states 'Impacts considered within the EIA are as previously agreed for the East Anglia THREE EIA'. The	See Table 15.1 of this chapter.

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Consultee	Date/ Document	Comment	Response / where addressed in the ES
Inspectorate	Scoping Response	Applicant should restate and include these impacts within the PEI.	
The Planning Inspectorate	20/12/2017 Scoping Response	The PEI should include suitable mitigation measures to avoid or reduce significant effects on radar systems and seek to agree these with relevant stakeholders.	See section 15.6.2.2 of this chapter, Appendix 15.2 sections 15.2.7.5 and 15.2.8.5
Section 42 Responses			
NATS	19/2/2019 Section 42 Consultation Response	NATS position remains unchanged from that previously communicated. We remain engaged with the Applicant around assessing the final design when the full turbine details have been determined. Once the final assessment is undertaken, NATS will work with the developer on any mitigation measures required. NATS re-attached its Scoping Response outlined above.	See section 15.6.2.2 of this chapter and Appendix 15.2, section 15.2.8.5
NATS	21/03/2019	Meeting between NATS, the Applicant and Cyrrus at NATS Prestwick: NATS confirmed that to extent turbines were detected by the Cromer PSR, NATS would require the resulting “radar clutter” to be mitigated – either by blanking alone or, where the blanked footprint extended beyond an as yet unspecified size, blanking in conjunction with a Transponder Mandatory Zone. NATS confirmed that an infill primary radar feed would not be required. NATS indicated that mitigation would need to be implemented prior to WTG operation. NATS would seek to secure the necessary mitigation through a combination of suspensive condition in the DCO and a commercial mitigation agreement with the Applicant.	n/a
Ministry of Defence	21/03/2019 Section 42 Consultation Response	The proposed development will affect military low flying training activities that may be conducted in the area, it will therefore be necessary for the turbine structures to be fitted with appropriate aviation warning lighting to maintain the safety of military aviation.	See section 15.3.3.2 of this chapter.
Ministry of Defence	21/03/2019	Several of the proposed wind turbines will be in line of site and	See section 15.6.2.2 of this

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Consultee	Date/ Document	Comment	Response / where addressed in the ES
	Section 42 Consultation Response	<p>detectable to the air defence radar located at RAF Trimmingham.</p> <p>Wind turbines have been shown to have detrimental effects on the operation of radar. These include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns. The probability of the radar detecting aircraft flying over or in the vicinity of the turbines would be reduced, hence turbine proliferation within a specific locality can result in unacceptable degradation of the radar's operational integrity. This would reduce the RAF's ability to detect and deter aircraft in United Kingdom sovereign airspace, thereby preventing it from effectively performing its primary function of Air Defence of the United Kingdom.</p> <p>Our assessments have determined that, when operational, the proposed wind farm will cause unacceptable and unmanageable interference to the effective operation of this air defence radar. As a result, the MOD objects to this application in its current form.</p>	chapter.
Ministry of Defence	21/03/2019 Section 42 Consultation Response	It should be noted that our radar assessments have been completed using the boundary coordinates provided for the maximum extent of the offshore windfarm development area identified in this application. Should further details on the layout and dimensions of the proposal become available further technical and operational assessments can be completed to clarify the impact the development will have upon the MOD radar identified. We will gladly review more detailed plans and mitigation proposals that the applicant may wish to submit to us.	Noted.
Maritime & Coastguard Agency	27/3/2019 Section 42 Consultation Response	Referring to Schedule 1 Part 3 27. (1) of the draft Development Consent Order: MGN543 Annex 5 para 9.9.3: aviation hazard lighting requirements fall outside of the ANO but the developer will need to request a derogation from the CAA. The CAA's position on offshore windfarm lighting is detailed in CAP764 which includes MCA requirements for SAR.	See section 15.3.3.2 of this chapter.

Consultee	Date/ Document	Comment	Response / where addressed in the ES
Trinity House Lighthouse Service	22/3/2019 Section 42 Consultation Response	With reference to aviation lighting, Trinity House request that you seek the approval of the CAA for all required aviation lighting to exhibit synchronised red Morse Code “W” light characteristics.	See section 15.3.3.2 of this chapter.