

Hornsea Four Offshore Wind Farm

Stage 1 – Assessment Meeting

Agenda

- Statement of need
- Background
- Baseline Impact
- Reasons for Mitigation
- Provisional Scaling and Process Discussion
- Draft Gateway Timescales
- Engagement and Next steps
- Stakeholders for Engagement

Statement of Need

Current Situation:

- Orsted Hornsea Project Four Limited is proposing to develop the Hornsea Project Four Offshore Wind farm, located approximately 65 km from the east Yorkshire coast in the southern North sea. This wind farm will comprise of up to 180 wind turbine generators and will cover approx. 600 square km.

Issue:

- As part of the pre -application process for Development Consent, Orsted Hornsea Project Four Limited has engaged with relevant aviation stakeholders to determine the impact of the Hornsea Four wind turbines on aviation radar systems and operations.
- In particular, NATS En-route PLC (NERL) has confirmed that without mitigation the development will have an adverse impact on their ability to provide Air Traffic Services (ATS) in the vicinity of Hornsea Four due to interference caused by wind turbine generators to the Claxby Primary Surveillance Radar (PSR).
- As a result, Orsted Hornsea Project Four Limited has agreed with NERL that the planned wind farm development should not be built until a suitable Primary Radar Mitigation Scheme (PRMS) has been established, and this condition will be contained within the draft Development Consent Order to be submitted to the Planning Inspectorate at application for the scheme in Q1 2021.

Statement of Need (cont.)

Action :

- Orsted Project Four Limited has employed NATS Services Ltd (NSL) to investigate potential impacts of wind turbines on NERL and other aviation stakeholder operations. Discussion with NERL has suggested that the Airspace Change Process (CAP 1616) should be initiated in order to manage the development of airspace -related mitigation options.

Background

- The purpose of this briefing is for Hornsea Offshore Wind Farm Project four to inform the CAA regarding proposals for airspace change related to the development of Hornsea Project Four Wind Farm off the coast of Yorkshire, in accordance with the CAA airspace change Proposal (ACP) process as specified in CAP 1616.
 - The development sits within UK Airspace
 - 65 km from the East Yorkshire coastline
 - This area is served by the following primary Radars:
 - **Claxby , MOR 250 NM (58.8 NM from Hornsea 4)**
- NERL has assessed this radar would be affected



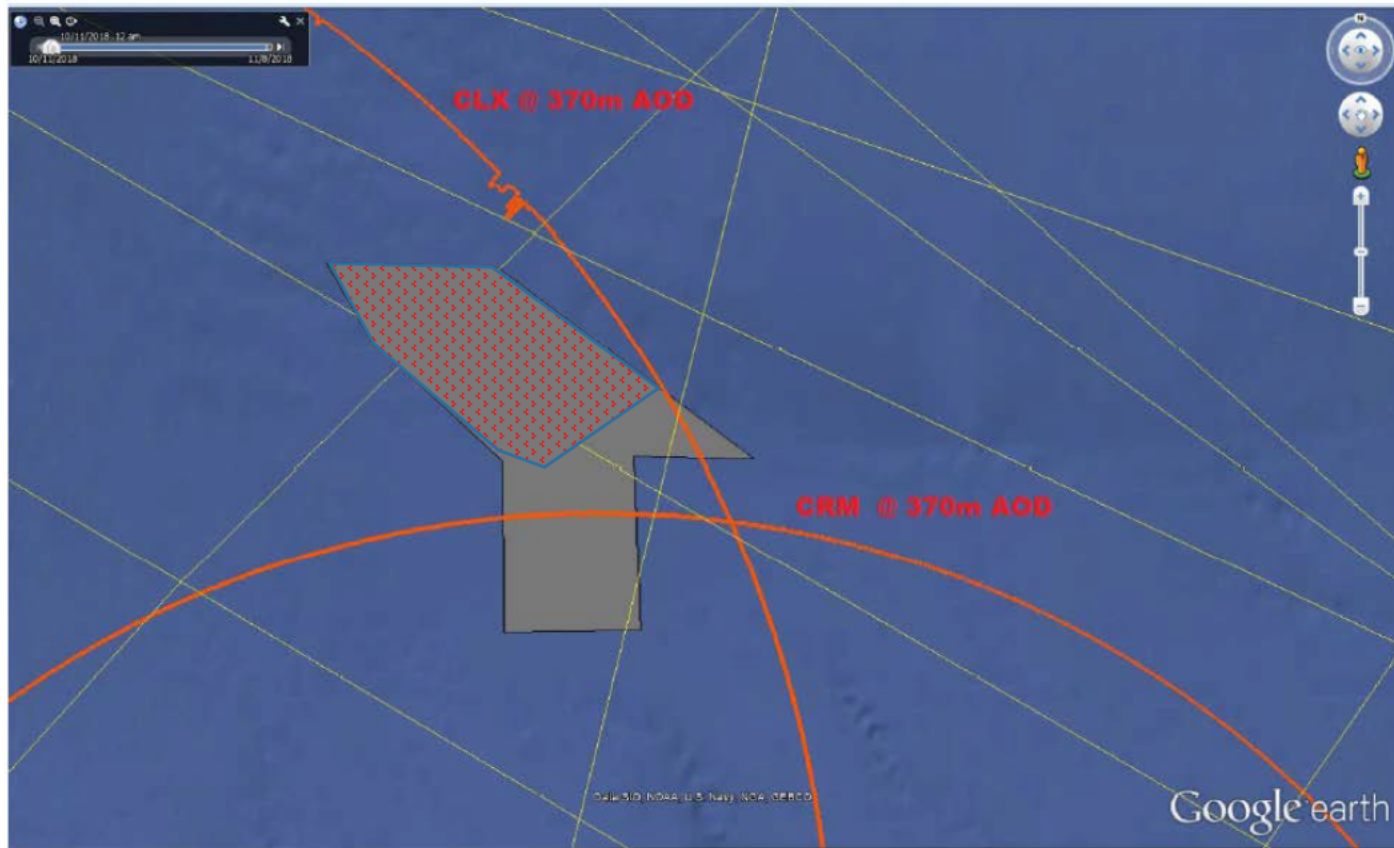
Background (cont.)

- **Cromer, MOR 160 NM (64.8 NM from Hornsea 4)**

NERL had assessed the site could be affected although outside the theoretical area of detection for the Cromer PSR

- Debdon , MOR 160 NM
- Pease Pottage, MOR 160 NM
- Clee Hill, MOR 140 NM
- Great Dunn Fell, MOR 160 NM

Background



- Hornsea Four is outside the theoretical AOD for the Cromer PSR. However Practical experience has shown that wind farms can be detected beyond this area.¹

Background

- This site is proposed to cover an area of ~500 km²
- It will contain up to 180 Turbines and is a Nationally Significant Infrastructure Project.
- It will provide power for over 1,000,000 UK homes
- The maximum turbine tip height is assessed at 370 m (1214 ft above mean sea level)

- Construction will begin from August 2024
- Total construction period four years six months (54 months)
- First Turbines are planned to be installed in February 2027
- It has an anticipated operational life of 35 years

Baseline Impact

- NERL has confirmed that the Hornsea Project 4 Turbine Generators (WTGs) are likely to be detected by the Claxby and Cromer PSRs and that mitigation will be required.
- Introduction of the Hornsea Project 4 WTGs has the potential to create clutter on radar screens, among other issues, and likely to interfere with the provision of Air Traffic Services (ATS). CAA document CAP 764 considers these issues in greater detail.
- NATS Enroute (NERL) provide ATS to commercial aircraft transiting ATS routes in the vicinity of Hornsea 4 which could be impacted by this ACP.
 - UL 975 (Base FL245)
 - M981 (Base FL245)
 - N97 (Base FL245)
 - P5 (Base FL245)
- The proposed site of the wind farm is underneath D323D (Base FL50)

Issues

- Likely primary radar clutter
 - consequent safety reduction
 - or consequent reduced provision of ATS
- Potential 'shadowing' of radar return area
- Physical obstruction
- Reduced performance of Communication Navigation and Surveillance (CNS) equipment

Benefits

- Removal of primary radar clutter
 - consequent safety improvement from 'do nothing' scenario
 - and/or safety remains 'at least as safe' as today
 - and/or consequent increase in ATS provision
- Reduce impact of radar shadowing
- Coexistence of aviation and wind turbines
- Potential environmental impact on aviation (CO₂ emissions) is offset by the benefit of wind farm.

Provisional Scaling and Process Discussion

- Expectation of Level 2B
 - This ACP covers an area over the sea, approx. 65 km off the coast of East Yorkshire
 - The project aims to commence construction in 2024 and become operational by 2029.

Draft Gateway Timescale

Stages	Gateway Date	Submission Deadline
– Assessment meeting	Today	N/A
– Stage 1 – Define	31/05/2024	17/05/2024
– Stage 2 – Develop	26/07/2024	12/07/2024
– Stage 3 – Consult	30/08/2024	16/08/2024
– Stage 4 – Update and Submit	14/02/2025	
– Stage 5 – Decide	28/05/2025	
– Stage 6 – Implement	AIRAC 7 2026	

Engagement and Next Steps

- Initial engagement has taken place with key stakeholders as part of the planning process. This includes NATS (NERL) and the MOD
- Further detailed engagement will concern specific aviation aspects of the proposal, with the stakeholders listed on the next slide

Stakeholders for Engagement

Recipients of Cromer and/or Claxby Radar

Anglia Radar
Norwich Airport
Humberside Airport
Maastricht

Helicopter Operators

Maritime Coastguard Agency
Bristow
NHV
Babcock helicopters
CHC Heli
Uni-Fly

Ministry of Defence
Through DAATM

NATS (NERL)
Provision of ATS within UK Airspace

NATMAC
Members of NATMAC

Others
Any other organisation or person considered appropriate as the CAP 1616

Questions?