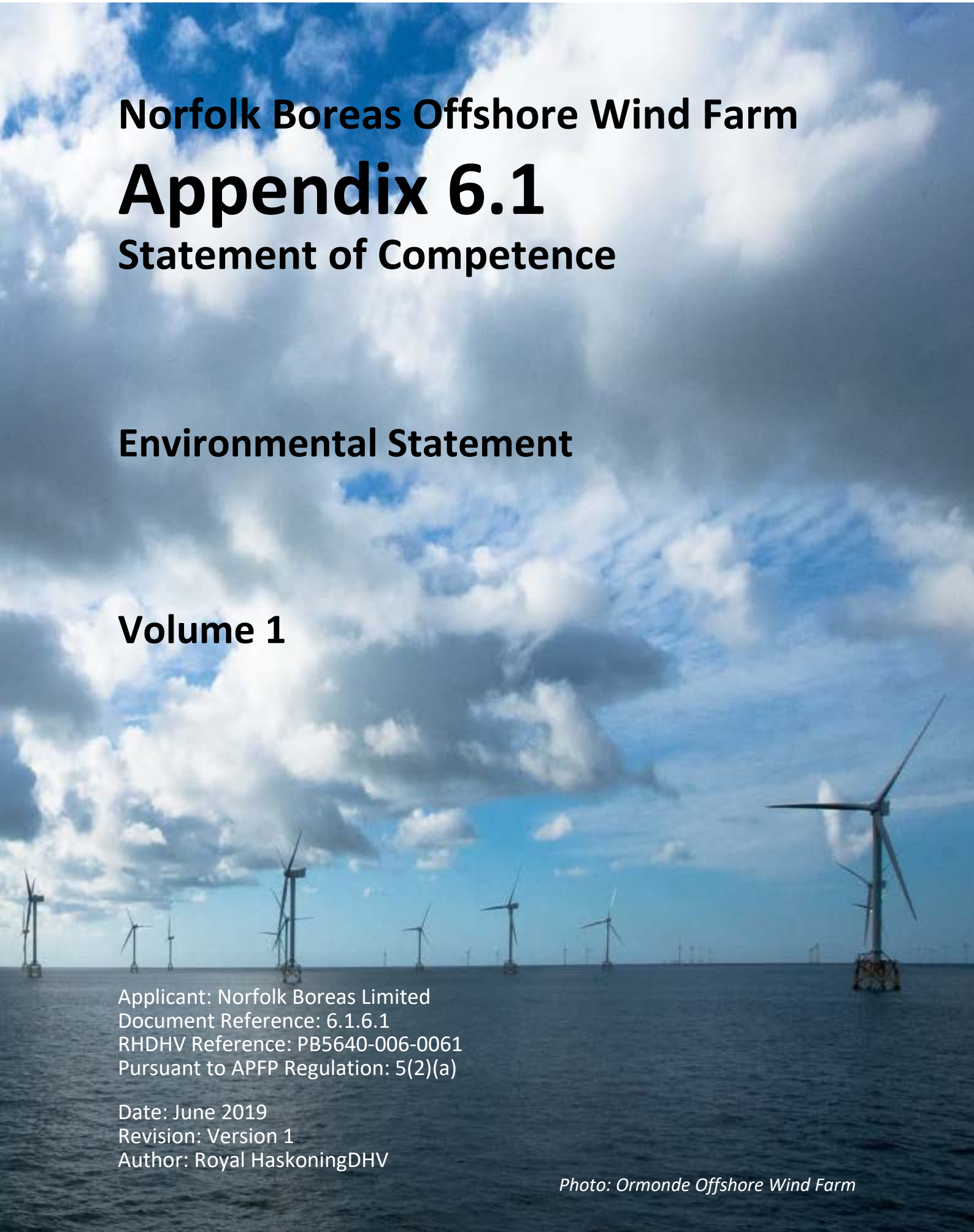
Norfolk Boreas Offshore Wind Farm

Appendix 6.1

Statement of Competence

Environmental Statement

Volume 1



Applicant: Norfolk Boreas Limited
Document Reference: 6.1.6.1
RHDHV Reference: PB5640-006-0061
Pursuant to APFP Regulation: 5(2)(a)

Date: June 2019
Revision: Version 1
Author: Royal HaskoningDHV

Photo: Ormonde Offshore Wind Farm

Date	Issue No.	Remarks / Reason for Issue	Author	Checked	Approved
03/01/2019	01D	First draft for Norfolk Boreas Limited review	RA	DT	AD
06/01/2019	02D	Second draft for Norfolk Boreas Limited review	RA	CD/DT	AD
18/04/2019	01F	Final draft for ES submission	RA	CD/DT	JL

Table of Contents

Glossary of Acronyms

ADR	Air Defence Radar
ATC	Air Traffic Control
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CSL	Consulting Services Limited
DEFRA	Department for Environment, Food and Rural Affairs
CIEEM	Chartered Institute of Ecology and Environmental Management
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement
GW	Gigawatts
IEMA	Institute of Environmental Management and Assessment
JNCC	Joint Nature Conservation Committee
LVIA	Landscape and Visual Impact Assessment
NRA	Navigation Risk Assessment
OPEN	Optimised Environments
UK	United Kingdom

Glossary of Terminology

Landfall	Where the offshore cables come ashore at Happisburgh South.
Offshore project area	The area including the Norfolk Boreas site, project interconnector search area and offshore cable corridor.
Onshore cable route	The up to 35m working width within a 45m wide corridor which will contain the buried export cables as well as the temporary running track, topsoil storage and excavated material during construction.
Onshore project area	The area of the onshore infrastructure (landfall, onshore cable route, accesses, trenchless crossing zones and mobilisation areas; onshore project substation and extension to the Necton National Grid substation and overhead line modifications).
Onshore project substation	A compound containing electrical equipment to enable connection to the National Grid. The substation will convert the exported power from HVDC to HVAC, to 400kV (grid voltage). This also contains equipment to help maintain stable grid voltage.

1 Introduction

1. In order to ensure the Environmental Statement (ES) is complete and is of a high quality, Norfolk Boreas Limited has appointed experienced Environmental Impact Assessment (EIA) consultants to undertake the assessment work. This document outlines the relevant expertise and qualifications of the EIA consultants who have undertaken the EIA and prepared the ES.

2 Competent Experts

2.1 Royal HaskoningDHV

2. Royal HaskoningDHV is the United Kingdom (UK)'s leading EIA consultant working in the offshore wind sector, successfully leading the EIA and consent process for over 10 Gigawatts (GW) of UK offshore wind projects, including six successful development consent order (DCO) applications. Royal HaskoningDHV has taken a significant role in providing environmental, EIA and consenting technical consultancy services to over 20 UK offshore wind farm projects. In addition, Royal HaskoningDHV holds the EIA quality mark from the Institute of Environmental Management and Assessment (IEMA).

3. The EIA team is overseen by Alistair Davison as Project Director. Alistair is Renewables Sector Director and an experienced Project Director with Royal HaskoningDHV. Alistair is a chartered professional with 27 years' experience including providing expert witness at major infrastructure planning inquiries. The EIA process and EIA team has been led by David Tarrant, an experienced EIA manager with Royal HaskoningDHV. David is a chartered Environmentalist and Full member of both IEMA and the Chartered Institute of Ecology and Environmental Management Chartered Institute of Ecology and Environmental Management (CIEEM). He has significant experience of delivering EIAs for complex offshore wind farm projects including Kentish Flats Extension and East Anglia THREE Offshore Wind Farms. As well as leading the EIA team, David also manages all offshore aspects of the project. David and Alistair are supported by a dedicated EIA management professional Claire Davies who also takes on the role as lead onshore consultant. This represents the core EIA team who are all qualified EIA professionals.

4. The majority of the technical impact assessments reported within the ES have been led by experienced technical experts from within Royal HaskoningDHV's UK team. The technical assessments draw on the very significant track record of previous offshore wind impact assessments Royal HaskoningDHV has successfully undertaken.

5. All Royal HaskoningDHV's lead authors are senior and chartered professionals with a significant track record in undertaking technical assessment and EIA in their discipline. The team undertaking the EIA for Norfolk Boreas are predominantly Royal HaskoningDHV professional consultants. The team is comprised of a dedicated core team of EIA professionals who take the lead role in the co-ordination and management of the EIA and the preparation of the ES. The core team is then supported by a wider team of technical specialists taking responsibility of the data collection, data analysis and technical impact assessment.

6. Royal HaskoningDHV undertook the technical impact assessment and were lead authors on the following impact assessment chapters within the ES:

- Chapter 8 Marine Geology, Oceanography and Physical Processes
- Chapter 9 Marine Water and Sediment Quality
- Chapter 10 Benthic and Intertidal Ecology
- Chapter 12 Marine Mammals
- Chapter 17 Offshore and Intertidal Archaeology and Cultural Heritage
- Chapter 18 Infrastructure and Other Users
- Chapter 19 Ground Conditions and Contamination
- Chapter 20 Water Resources and Flood Risk
- Chapter 21 Land Use and Agriculture
- Chapter 22 Onshore Ecology
- Chapter 23 Onshore Ornithology
- Chapter 24 Traffic and Transport
- Chapter 25 Noise and Vibration
- Chapter 26 Air Quality
- Chapter 27 Human Health
- Chapter 28 Onshore Archaeology and Cultural Heritage
- Chapter 30 Tourism and Recreation
- Chapter 31 Socio-economics

7. In all cases the assessment has a lead technical author who is a recognised expert in their field, is a member of a relevant professional body and has significant experience of impact assessments. The lead author takes responsibility for the quality and veracity of the data gathered and used in the assessment, the impact assessment methodology to be undertaken, the impact assessments made and any proposed mitigation and monitoring measures proposed. The lead author is usually supported by a team and their work is subject to both technical and consistency review by a Technical Director and the EIA core team.

8. The results of the above technical impact assessments and associated technical experts and EIA co-ordinators have significantly contributed during the site selection process; a key part of the EIA process outlined in Chapter 4 Site Selection and Assessment of Alternatives. Whilst the offshore site selection process is goverened in part by those areas identified as part of The Crown Estate Round 3 Offshore Wind Farm development process (see Chapter 4 Site Selection and Assessment of Alternatives); competent experts have played a key role in refining the offshore project area and in all elements relating to the onshore project area site selection including the landfall, onshore cable route and onshore project substation.

9. A small number of the technical assessment and associated ES chapters have been undertaken by specialist consultancies outside Royal HaskoningDHV. These include Shipping and Navigation (Anatec), Landscape and Visual Impact Assessment (Optimised Environments), Commercial Fisheries (Brown and May Marine Limited), Offshore Ornithology (MacArthur Green) and Aviation (Osprey Consulting Services Limited), these companies are included below. Other companies undertook descrete specialist pieces of work for example OPEN (Optimised Environments) have undertaken as assessment of the visial impacts for the project and Norfolk Wildlife services have undertaken ecology surveys which have fed into the main assessments. These are detailed within the technical chapters 8 to 31 of the ES.

2.2 Anatec

10. Anatec is a market leader in risk based decision making in relation to shipping, navigation and offshore developments, and has supported many of the wind, wave and tidal renewable energy projects within the UKs Renewable Energy Zone, as well as projects within mainland Europe and North American waters.

11. Anatec's Principal Risk Analysts have been at the forefront of the marine and risk assessment fields for the past 15-20 years. The Principal Risk Analysts are supported by a technical team of around 10 people who specialise in offshore risk assessments and collision/allision modelling in line with regulator guidance.

12. Anatec has undertaken the Shipping and Navigational impact assessments for a number of offshore wind farms within the Southern North Sea area including East Anglia ONE and East Anglia THREE. Consequently, Anatec are familiar with the shipping and navigation receptors and effects within the area of the North Norfolk Coast (nearshore and offshore). As part of the scope for Norfolk Boreas, Anatec also undertook the marine traffic surveys and the technical reports (Navigational Risk Assessment) as well as the lead author role on Chapter 15 Shipping and Navigation.

13. Over the past 10 years, Anatec have completed navigation risk assessments (NRAs) and ES chapters for the majority of rounds 1, 2 and 3 (initial projects and Zonal assessments) offshore wind, wave and tidal sites in the UK, as well as a significant number of interconnectors and pipelines. A sample of key offshore wind projects outside of the southern North Sea area includes Dogger Bank Creyke Beck, Dogger Bank Teesside, Hornsea Project One, Hornsea Project Two, Hornsea Project Three and Rampion.

2.3 OPEN – Optimised Environments

14. Optimised Environments Limited or "OPEN" is a multi-disciplinary design company with master-planning, urban design, landscape architecture and environmental planning at its core. OPEN are lead author on Chapter 29 Landscape and Visual Impact Assessment (LVIA).

15. OPEN's LVIA assessor, Jo Phillips, has over 15 years' experience preparing LVIAs for energy developments. Jo was project manager for the East Anglia THREE LVIA and is also currently working on the LVIAs for Moray West Onshore and Norfolk Vanguard. OPEN's LVIA project director, Lynda Thomson, has over 20 years' experience working in the renewables sector, more recently specialising in Seascape LVIA for offshore wind farms and LVIA for the associated onshore infrastructure.

16. The team at OPEN has gained a considerable level of knowledge of energy related LVIA and are specialists in this field, having carried out the LVIAs for over 100 wind farms since 1998, working with many of the major renewable energy companies across the UK.

2.4 Brown and May Marine Limited

17. Brown and May Marine Limited are one of the UK's leading commercial fisheries consultancies with extensive expertise in offshore fishery surveys, liaison with commercial fishermen and representative groups and in undertaking commercial fisheries and fish ecology impact assessment in relation to offshore wind and other marine sectors.

18. Brown and May Marine Limited undertook the data gathering, technical reports and impact assessments for the Chapter 11 Fish and Shellfish Ecology and Chapter 14 Commercial Fisheries.

19. The EIA team is overseen by Brown and May Marine Limited's Managing Director, Stephen Appleby. Stephen is a professional with 35 years' offshore industry experience undertaking commercial fisheries and fish ecology related studies for the oil, gas, cabling and offshore wind farm industries. The delivery of the ES chapters and supporting technical reports has been led by Sara Xoubanova, an experienced EIA senior consultant. Sara has undertaken and review commercial fisheries and fish ecology ES chapters and technical reports for a wide range of offshore wind farm projects in the UK. Stephen and Sara are supported by a dedicated technical team of fisheries experts and marine biologists which provide technical inputs and data analysis to inform the fish ecology and commercial fisheries assessments.

20. The Fish Ecology and Commercial Fisheries ES Chapters carried out for Norfolk Boreas draw on Brown and May Marine Limited's extensive track record of previous offshore wind farm impact assessments, including, but not limited to, East Anglia ONE, East Anglia THREE, Dogger Bank Creyke Beck, Dogger Bank Teesside, Rampion Offshore Wind Farm, Beatrice Offshore Wind Farm, Moray East Offshore Wind Farm, Firth of Forth Project Alpha and Bravo, Westermost Rough, Walney Extension, Burbo Bank Extension, Thanet, Dudgeon, Docking Shoal and Race Bank.

2.5 MacArthur Green

21. MacArthur Green is one of the leading technical ornithology consultancies in the UK. The team at MacArthur Green have undertaken technical impact assessment in relation seabirds for a number of the largest UK offshore wind projects including Beatrice, Hornsea Project One, East Anglia THREE and the Dogger Bank offshore wind projects. MacArthur Green has also provided guidance on ornithological monitoring for several consented wind farms including Triton Knoll, Dudgeon, Beatrice, East Anglia ONE and The European Offshore Wind Development Centre and has prepared guidance notes on principles for assessment of impacts on bird populations, and strategic level assessments, for bodies such as Scottish Natural Heritage, Natural England, Joint Nature Conservation Committee (JNCC), The Crown Estate, Marine Scotland, Department for Environment, Food and Rural Affairs (DEFRA) and Centre for Environment, Fisheries and Aquaculture Science (Cefas). Working with the Universities of Glasgow, Liverpool, Leeds and Highlands & Islands, MacArthur Green has recently supported four PhD studentships on developing understanding of interactions between marine renewables and seabirds.

22. MacArthur Green undertook the technical impact assessment and modelling for offshore ornithology and was lead author for Chapter 13 Offshore Ornithology.

23. Dr Mark Trinder is project manager for offshore assessment work. He has established a strong reputation for the delivery of population models and analytical assessments for the investigation of potential impacts on bird populations, particularly in relation to renewable developments. He has particular expertise in coding in R, in statistical analysis and Population Viability Analysis. He has been centrally involved in strategic and industry guidance work. Mark led on the ornithological assessment for the Beatrice offshore wind farm in the Moray Firth, as well as on offshore ornithology for East Anglia THREE, and has provided key technical inputs to the assessments for the Hornsea and Dogger Bank projects.

24. Professor Bob Furness is an internationally renowned ornithologist with a 35 year track record of high quality research and project supervision. Bob's work at MacArthur Green has focused on strategic projects developing methodologies to assess or mitigate impacts of offshore renewables. Bob chaired an International Advisory Panel of Experts in Marine Ecology appointed by the Danish Government to advise on the monitoring of environmental impacts of their demonstration offshore wind farms Nysted and Horns Rev, the first two large offshore wind farms to be constructed. Bob is a member of the Board of Scottish Natural Heritage, chairs the SNH Scientific Advisory Committee, and is a member of JNCC's marine sub-group advising on Marine Protected Areas.

2.6 Osprey Consulting Services Limited

25. Osprey Consulting Services Limited (Osprey CSL) is a privately held specialist technical company, founded in 2006 with the purpose of developing a highly credible, informed and independent consultancy, operating exclusively on aviation related projects. Members of Osprey CSL's Airports and Airspace Team boast over 350 years of combined aviation experience, all of which worked in operational or influential stakeholder roles within Government, the Civil Aviation Authority or RenewableUK before joining Osprey CSL. Of particular note, in 2014, Osprey CSL provided aviation support on 6.2 GW of wind farms which were consented, with aviation issues resolved or consent conditions agreed including Hornsea Projects 1, 2 and 3, Inch Cape and Neart na Gaoithe Offshore Wind Farm Developments. With regard to offshore expertise, Osprey CSL has authored both Round 2.5 and Round 3 Environmental Statement chapters on aviation and radar, including Burbo Bank Extension, Walney Extension, and Moray Firth Eastern Development Area.

26. Osprey CSL undertook the technical impact assessment and were lead author for Chapter 16 Aviation and Radar.

22. Osprey CSL's expertise includes the identification of aviation stakeholders and completion of operational impact assessments on the potential for developments to affect Air Traffic Control (ATC) and Air Defence Radar (ADR) infrastructure and operations. This includes the independent assessment of potential technical impact of wind farm developments on aviation stakeholders and equipment including radar, navigation beacons and communication links. The team has most recently successfully completed delivery of an Airspace Change Process for the mitigation of two offshore wind farms against Ministry of Defence radar systems. Furthermore, the team has an extensive knowledge of UK Flight Information Services and ATC rules, regulations and procedures in order to assess the potential impacts of wind energy developments on ATC radar equipment and service provision to aircraft.