

Buchan Offshore Wind

Offshore Scoping Report

Appendix C



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C SCOTWIND LEASE STAGE - SHIPPING AND NAVIGATION STUDIES

A shipping and navigation study was undertaken for the Proposed Development Array Area during Quarter 4 2020 and Quarter 1 2021, whilst the Crown Estate Scotland (CES) ScotWind leasing process was underway, and in order to provide subject matter intelligence to Buchan Offshore Wind Ltd (the 'Applicant') (known as Floating Energy Alliance at that time).

As this work was utilised to support the production of the Offshore Scoping Report (see Chapter 13), a summary of this study is provided within this document.

The study involved three Work Packages (WP):

- WP 1 | Shipping and navigation constraint assessment. Based on publicly available data a baseline characterisation study was undertaken and an assessment made on the potential shipping and navigational constraints and site complexity.
- WP 2 | Detailed assessment of shipping and navigation. WP 1 was updated with high-fidelity Automatic Identification System (AIS) data, to give recommendations for potential appropriate site optimisation with a view to maximising the potential developable area, taking into account identified shipping and navigation constraints.
- WP 3 | Stakeholder consultation with statutory regulators (Maritime and Coastguard Agency (MCA) and Northern Lighthouse Board (NLB)) in order to review the data and methodological basis of the assessment.

This document summarises the findings for the NE8 Plan Option (PO) area although the NE7, NE8 and E2 PO sites and Draft Plan Option (DPO) areas are shown and referred to variously in analysis and plots. This is because, at the time the work was commissioned, the Applicant was also undertaking analysis of these areas, so they were assessed in parallel. The inclusion of these areas within this document is not intended to present a position regarding vessel traffic in E2 and NE7, and the implications of the data presented in these areas is not considered in relation to their development for offshore wind within this document. Additionally, **it's noted that**, whilst the work was underway, CES published the Sectoral Marine Plan (SMP) for Offshore Wind Energy (Scottish Government, 2020a) which superseded the Draft Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2019b) and as a result the site boundaries were revised from DPO areas to PO areas.

C.1 WP 1 | Constraint Assessment

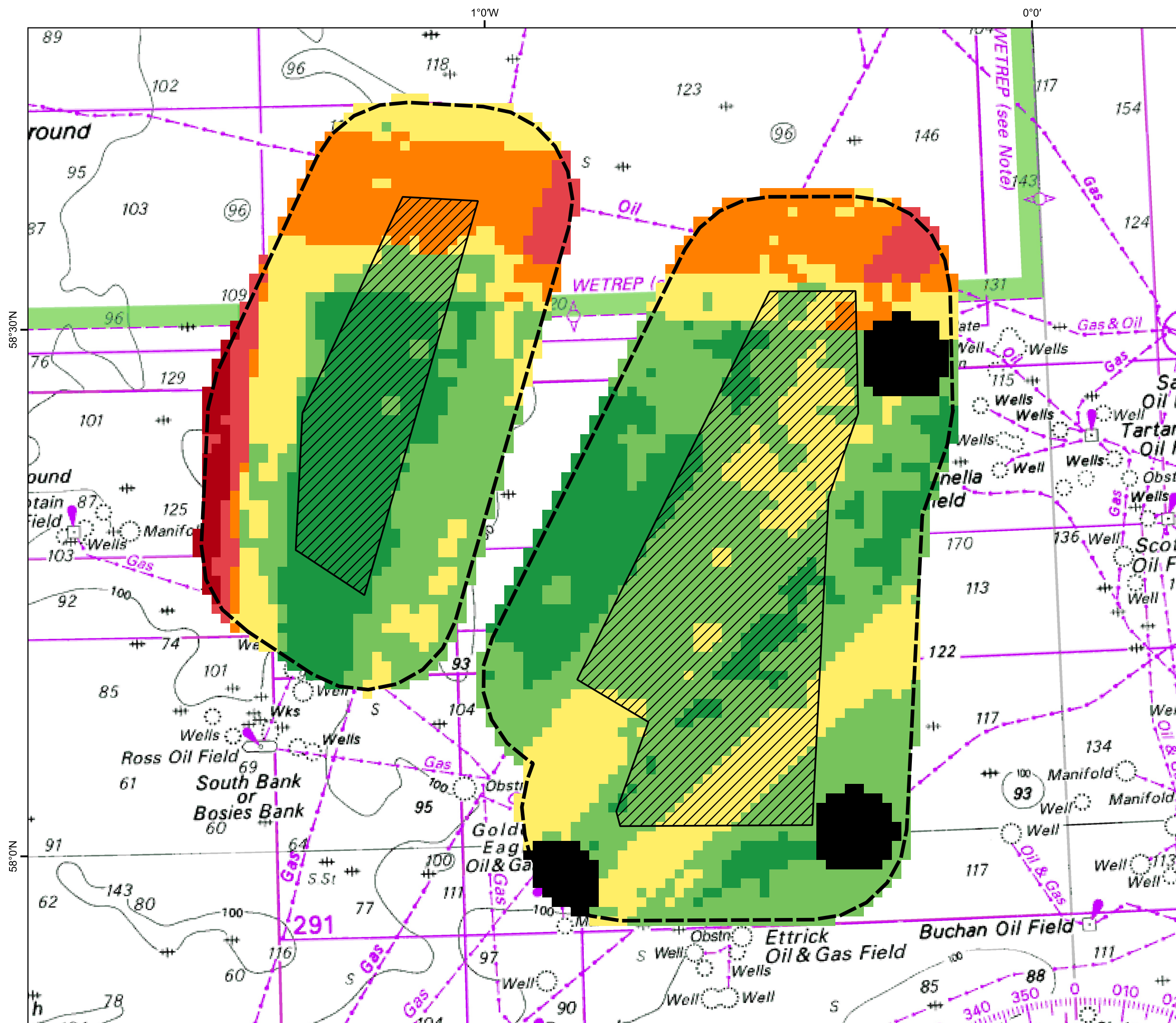
Publicly available datasets (including charts, publications and vessel traffic datasets (2017 AIS data from MMO and EMODnet) were obtained and analysed across the DPOs for which the analysis was undertaken and an indicative export cable corridor based on potential connection points as they were understood at the time to provide a general characterisation of baseline shipping and navigation and, in particular, vessel movements in the study area by

key vessel types and activity. Using a multi-criteria weighted overlay analysis methodology, a constraints matrix was subsequently developed to allocate weighting and scoring for a range of hard and soft constraints across the area.

The following section provides a precis of the results of the constraints mapping undertaken for the NE8 DPO offshore array area and export cable corridor as it was at the time of analysis.

Figure C.1 shows the greatest constraint results within the DPO area from the presence of a commercial route through the Pentland Firth intersecting the northern boundary of the Array Area. It was concluded that any development in this area would require vessels to deviate further north to maintain a suitable separation from the array boundaries. To the western fringes of the study area for NE8 (at the edge of the 8nm buffer) the Shetland/Aberdeen ferry route can be seen. The central and southern section of the sites appeared to be relatively clear of constraints.

Figure C.2 shows the constraint scores for the potential export cable route area to shore (as understood at that time). There are few constraints along the cable route with the constraint score increasing closer to shore where shipping activity is more significant from routeing around Rattray head and the convergence/divergence of vessel traffic to the ports of Fraserburgh and Peterhead. The level of constraint increased locally in the vicinity of the Port of Peterhead, where anchoring and vessel manoeuvring potentially increases the risk of a cable strike or impacts on harbour operations.



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Title:
Figure C.1: Array Constraint Scores for NE7 (right) and NE8 (left) DPO Areas

Key

- Site Area
- Study Area (10 km buffer)

Array Constraint Score

- 0 - 4.9
- 5 - 9.9
- 10 - 14.9
- 15 - 19.9
- 20 - 24.9
- 25-54
- Excluded

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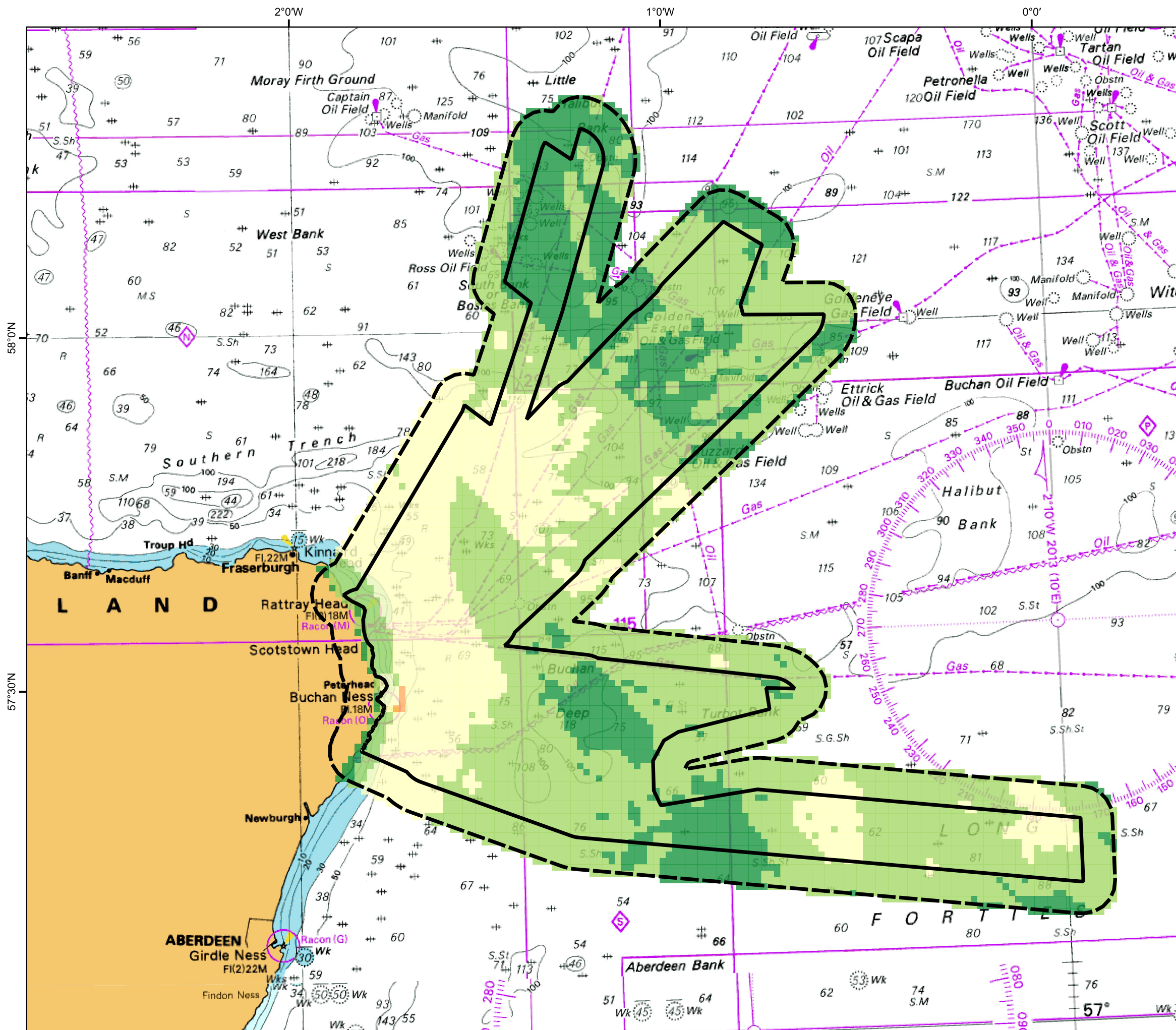
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Graticules: WGS84

Date: 23-08-23 Prepared by: RA Checked by: AF

Map Ref:
NASH96 Scotwind NE7NE8 ArrayResults v2 20201002

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Figure C.2: Constraint Scores for Potential Export Cable Route Areas for NE7 (top right), NE8 (top left) and E2 (bottom right) DPO Areas

Key

- Cable Corridor
- Study Area (5 km buffer)

Cable Constraint Score

- 0 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- 20 - 28

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C.2 WP 2 | Detailed Assessment

In order to further define the shipping and navigation baseline, and to identify and understand potential impacts, high fidelity AIS vessel traffic data (August 2019 and January 2020) was obtained to provide full field information (non-anonymised to expand on datasets used WP 1) to underpin further assessment.

Vessel traffic data was analysed by a range of key features including:

- Vessel type analysis;
- Vessel length and draught analysis;
- Vessel passage destination / origin analysis; and
- Gate analysis.

Further work was then undertaken following initial analysis in order to identify and define vessel routes, in accordance with recognised MCA methodology.

The analysis identified seven individual routes passing through or adjacent to the NE8 DPO area. The seven individual routes identified are listed below and shown in Figure C.3 having been identified on a precautionary basis and grouped by their destination/origin by generic region. Due to the study area for the NE8 DPO being an area of general navigation and relatively open, there are limited obstructions acting to limit the routes so there is a wide lateral distribution along them.

- Route 1 – Pentland Firth to Baltic (North);
- Route 2 - Scotland to Shetland;
- Route 3 – Pentland Firth to South North Sea;
- Route 4 – Pentland Firth to Baltic (South);
- Route 5 – Fair Isle to Central Europe;
- Route 6 – Fair Isle to South North Sea; and
- Route 7 – Pentland Firth to Denmark.

The routes were then considered in the context of relevant marine planning policies and guidance to determine their sensitivity in terms of safety and commercial impact and therefore provide insight into potential viability of diversions or impacts where, should offshore wind array areas be built occupying the full extent of DPO area. The majority of the routes were determined as less strategically important following review in line with guidance and also in consideration of frequency of transit and extent to which the 90th

percentile of the above routes interacted with the boundary. Table C.1 provides the number of vessel transits for each of the seven routes.

Route 1 and 4 were considered collectively noting that Route 1 reflected vessels passing to the north of the Claymore Oil Field whereas Route 4 vessels passed to the south albeit both converged to the east of the study area.

| Table C.1 - Total number of transits (annualised) | | |
|---|------------------------------|--------|
| Route ID | Routes | Number |
| 1 | Pentland to Baltic | 1,038 |
| 2 | Scotland to Shetland | 372 |
| 3 | Pentland to South North Sea | 720 |
| 4 | Pentland to Baltic | 384 |
| 5 | Fair Isle to Central Europe | 144 |
| 6 | Fair Isle to South North Sea | 342 |
| 7 | Pentland to Denmark | 30 |
| | Total | 3,030 |

1°0'W

0°0'

58°30'N

58°0'N

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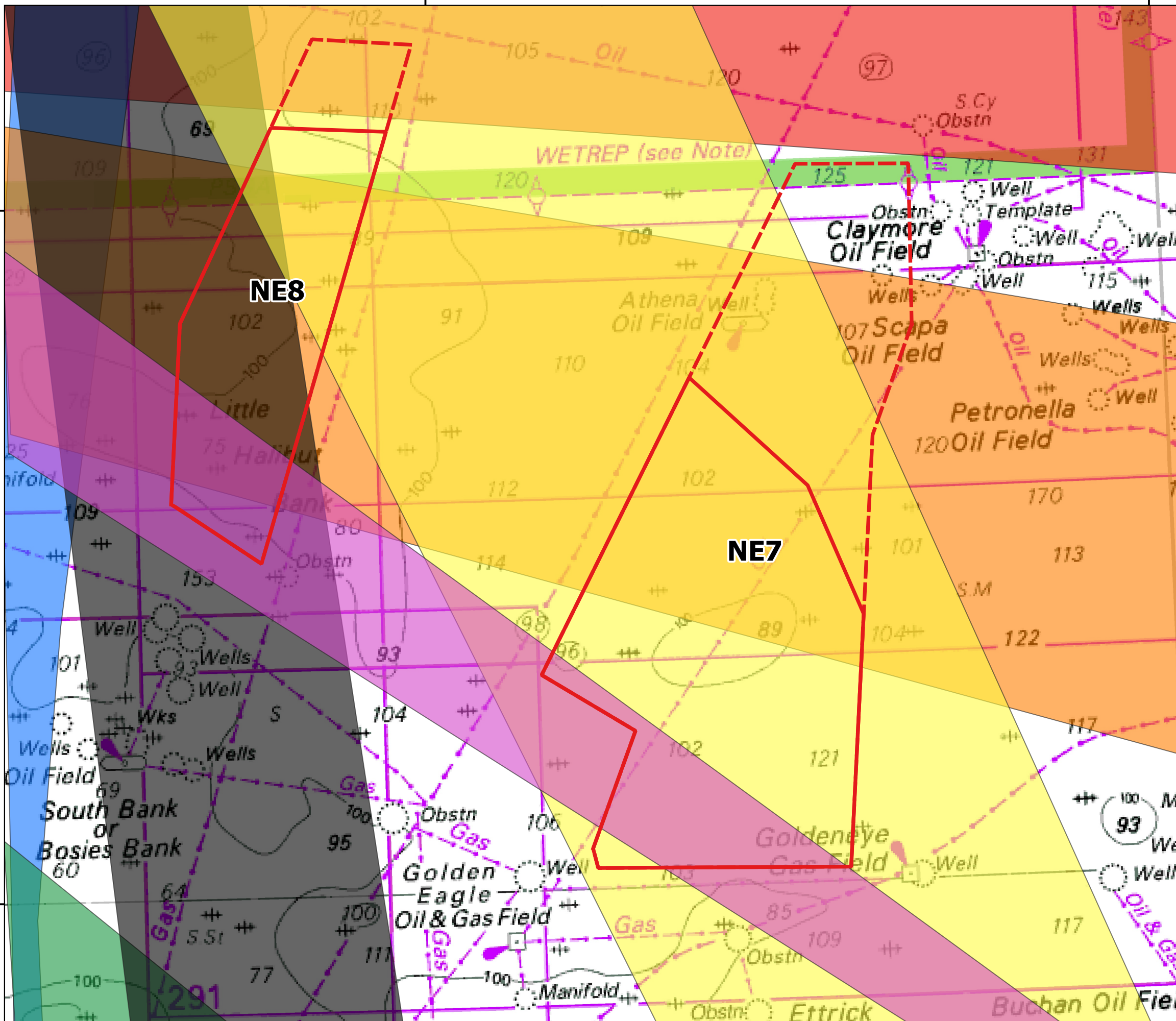
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Figure C.3: Identified Routes in NE7 and NE8

Key

- Plan Option (PO) Site Boundary
- Draft Plan Option (DPO) Boundary

90th Percentile

- Route 1
- Route 2
- Route 3
- Route 4
- Route 5
- Route 6
- Route 7



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 NASH96 Scotwind NE78 Routes_v2_20201221



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C.3 WP 3 | Consultation

In recognition of the Scotwind leasing process, and to reflect the recommendation of guidance and policy, a consultation workshop was undertaken with the MCA and NLB. The MCA is an executive agency carrying statutory responsibility for marine and navigation safety in UK waters (amongst other responsibilities) and, in doing so, provides and implements legislation, guidance and undertakes supporting operational duties. The NLB is the General Lighthouse Authority for Scotland and the Isle of Man and carries statutory responsibility for the provision of marine Aids to Navigation for the benefit and safety of all mariners.

The objectives of this early consultation were to:

- Provide an introduction and overview;
- Provide an overview of the shipping and navigation assessments (and methodology) being undertaken during the Scotwind leasing process;
- Review early results and discuss key findings and potential impacts; and
- Seek input, findings and commentary on the methodology adopted, verify the approach and key findings.

Findings of WP 1 and WP 2 were shared with MCA and NLB during the meeting. No specific concerns were raised regarding the NE8 site (notwithstanding the northern portion was subsequently reduced) although feedback was given around the importance of considering cumulative and in combination impacts given the multiple Scotwind developments – particularly in relation to route deviations for which early discussion with shipping operators was encouraged.

C.4 Conclusions

The following general conclusions were reached through the process:

- The DPO Area was intersected by circa. 2,800 commercial transits per year, the most significant route is the Pentland Firth to Baltic (North) (Route 1) of 1,038 commercial transits per year;
- The Adopted PO Area (broadly equivalent to the current scoping Array Area) has a residual impact on c.558 commercial transits per annum and are not considered to be significant;
- No Oil and Gas Service routes intersect the site; and
- Development of the Proposed Development Array Area does not provide significant constraints on shipping and navigation receptors.

In summary, the study demonstrated that the Proposed Development Array Area does not carry significant constraints on shipping and navigation. Whilst this site contains a comparatively heavily transited route to the north, the small reduction in the original area through the SMP process deconflicts interference with this route.