TRINITY HOUSE

The Planning Inspectorate
Temple Quay House
Temple Quay
Bristol
BS1 6PN

Your Ref: **EN010109**
Identification No. **20032913**

8 June 2023

The Sheringham Shoal Offshore Wind Farm Extension and Dudgeon Offshore Wind Farm Extension Projects
Written Submission in respect of the Examining Authority's Third Written Questions (WQ3)
for Deadline 5

Dear Sir / Madam

We refer to the above application for development consent.

Accordingly, Trinity House requests to submit a written response to the Examining Authority (ExA) for Deadline 5 in respect of its Third Written Questions (WQ3) as follows:-

Q3.19.1.5	UK Chamber of Shipping Trinity House	**Assessment of Navigational Risk and Safety** With regards to the concerns raised relating to navigational safety from the MCA [REP1-117] [REP1-118] [REP3-134] [REP4-047], together with the Applicant's submissions (including the NRA [APP-198] and the Navigational Safety Technical Note [REP3-031]) comment on whether you would consider the remaining sea room past the proposed windfarms, particularly west of the DEP north boundary, as representing an unacceptable risk to navigational safety or have an acceptable and safe width of sea room? Explain with reasons and with reference to these submissions from MCA and the Applicant.

Trinity House Response to Q3.19.1.5:

1. INTRODUCTION

Trinity House is the General Lighthouse Authority for England, Wales, the Channel Islands and Gibraltar with powers principally derived from the Merchant Shipping Act, 1995, as amended. The role of Trinity House as a General Lighthouse Authority (GLA) under the Act includes the superintendence and management of all lighthouses, buoys and beacons within its area of jurisdiction.

Trinity House recognises the Maritime and Coastguard Agency's (MCA) remit in regard to Offshore Renewable Energy Installations (OREIs) is to ensure that the safety of navigation is preserved, and the UK's Search and Rescue (SAR) capability is maintained. As such Trinity House respect the MCA recommendations and advice in relation to ship routing.
When assessing the proposed DEP north boundary, 28 days AIS data supplied by the MCA and processed for Trinity House by Anatec has been used. This dataset related to the period mid-July to mid-August 2022. The dataset for a wider area has been viewed to try and assess the routeing of the vessels and possible changes if the windfarm were to be consented with the current red line boundary / order limits.

As stated at the first issue specific hearing and as set out in Trinity House's submissions at Deadline 1 [REP1-163], Trinity House do consider that the compression of marine traffic would increase the risk of collision, and from reading the submissions listed in the ExA's question and from the submissions that point is agreed by all parties, albeit to differing levels.

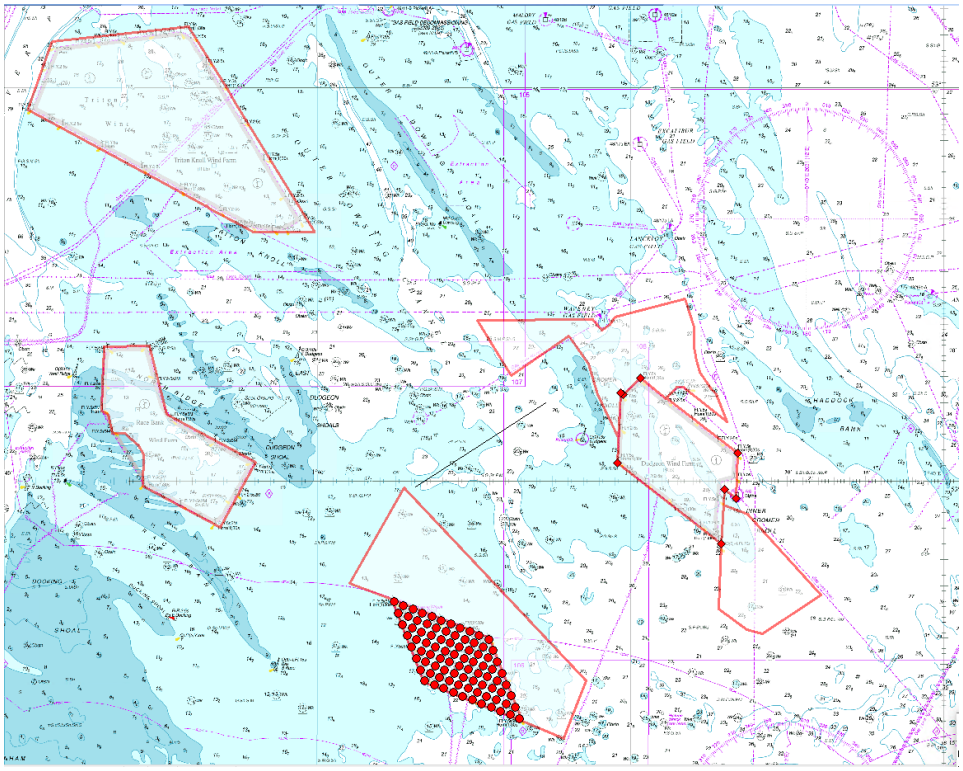

Figure 1: Overview of area

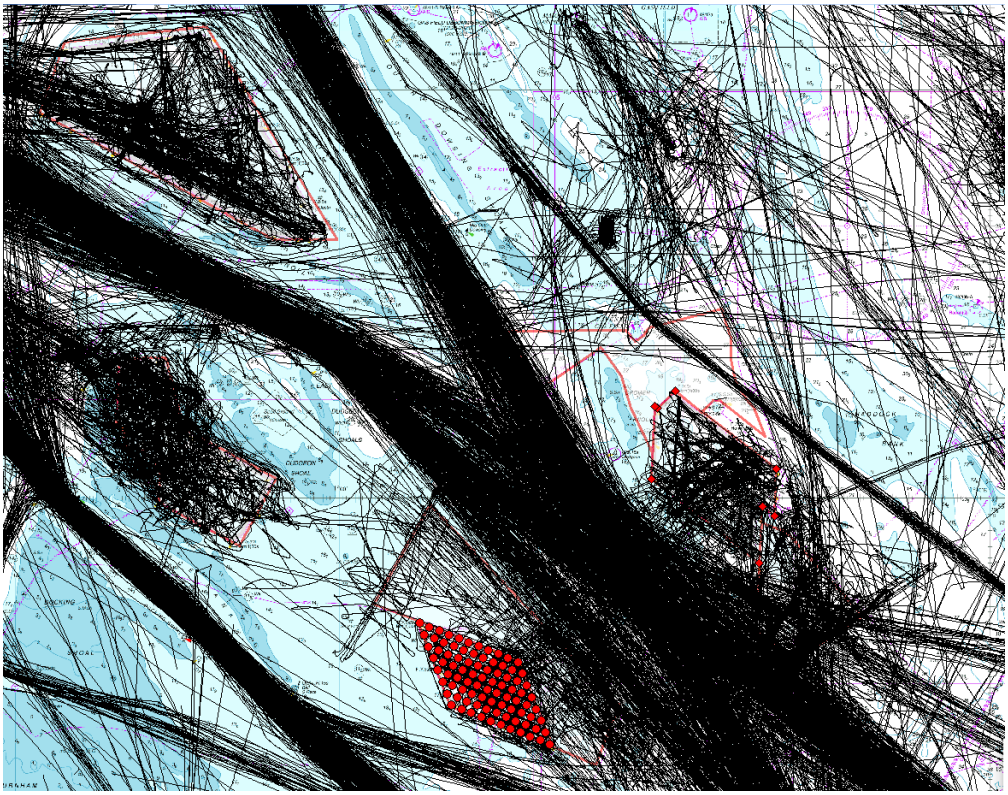

Figure 2 : Overview of area with 28 days AIS traffic

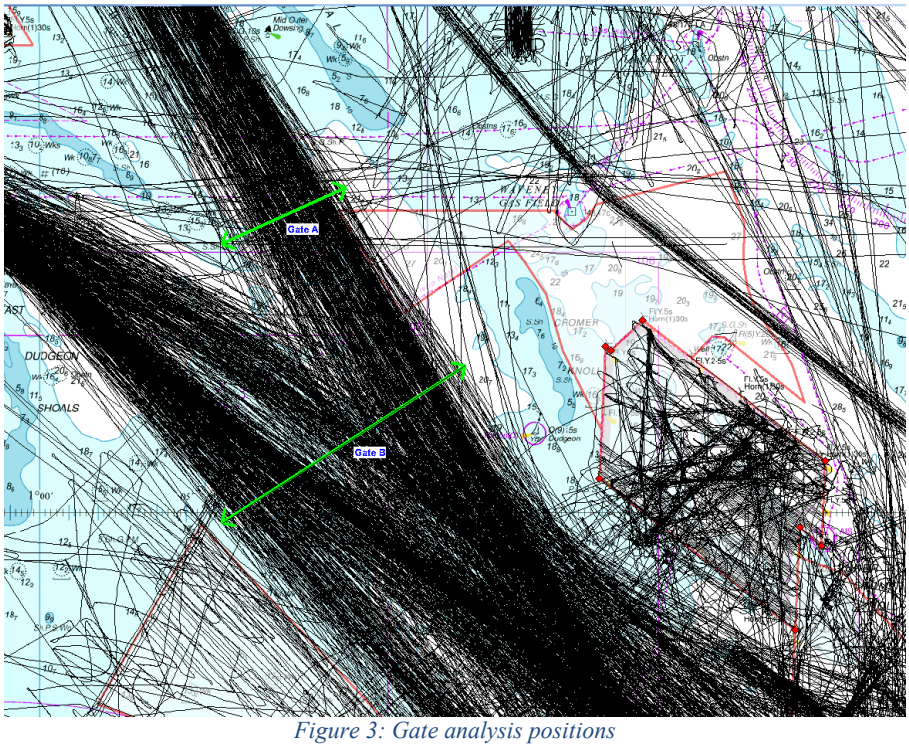

Figure 3: Gate analysis positions

2. AIS DATA ANALYSIS

When assessing our data we generated similar results to the Applicant's, which are reported in the Navigation Risk Assessment [APP-198]. These showed an average of 33 vessels a day passing between the existing windfarms through Gate B shown in figure 3 and 13 a day passing the proposed DEP northwest boundary (Gate A in figure 3).

The traffic patterns show that the majority of traffic passing the DEP boundary is bound between the northerly British ports and mainland European ports as laid out in APP-198 by the Applicant.

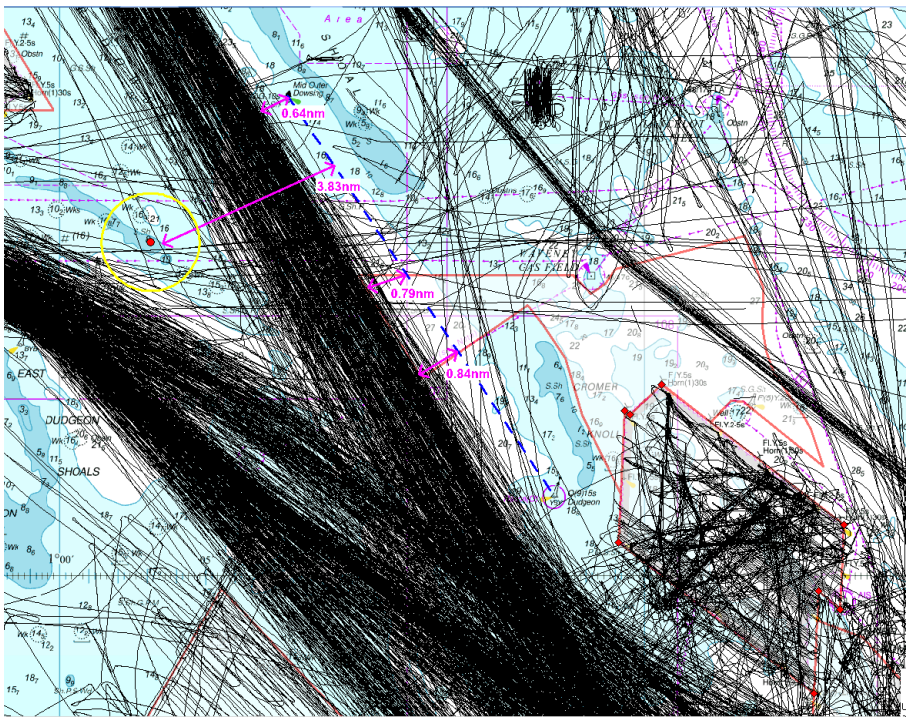

Figure 4: Buoy to Buoy Line and distances maintained

The traffic analysis also shows that the majority of the traffic is maintaining a distance of between 0.6nm and 0.8nm clear of a line between the Mid Outer Dowsing Buoy and the Dudgeon Buoy which are Trinity House assets placed to delineate the banks in that area (Figure 4).

Figure 4 also shows that the vast majority of vessels are clearly maintaining a distance of 1.0nm from the shallow patch at the south eastern point of Triton Knoll.
The major shipping appears to be maintaining a distance of 1.0nm from the boundaries of all the windfarms in the area, which aligns with the views expressed by the MCA in its submission [REP1-117].

3. LENGTH OF PERCEIVED CORRIDOR

The MCA's position that the corridor should be measured up to the East Dudgeon Buoy [REP1-117], instead of to the end of the proposed Sheringham Extension, could be the preferred solution when assessing the compression of the traffic given the DEP North Westerly boundary encroaches on the shipping lane. However, in this instance, as can be seen in figures 2 and 3, the traffic appears to already have moved to the sides of the available sea room to progress up the Outer Dowsing Channel or west of Triton Knoll windfarm. Trinity House would suggest that the additional length of the channel when considered in calculations would not bring additional mitigation to this area.

4. NORTH WEST DEP BOUNDARY CONSIDERATION

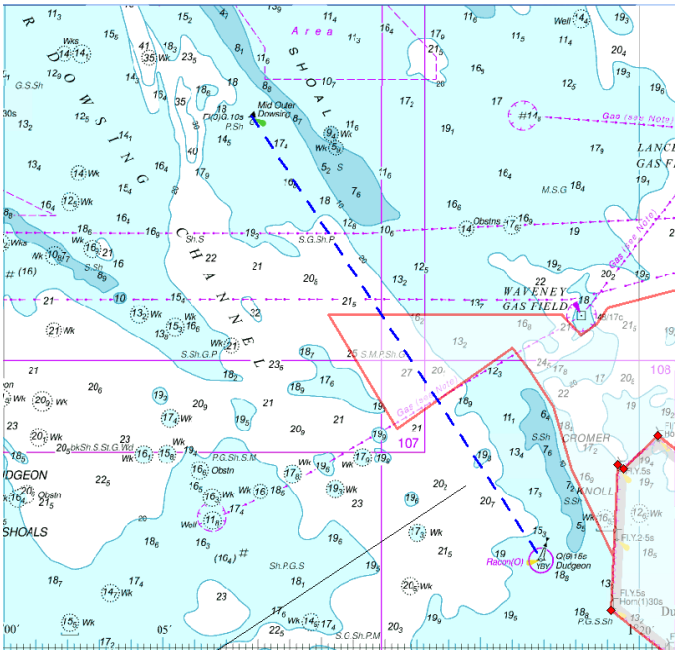

Figure 5: Proposed DEP Boundary and buoy to buoy line

When viewed alongside the existing buoy to buoy line which marks the extremities of the current shipping route (figure 5), the proposed boundary of the windfarm encroaches into the shipping route by around 0.84nm. As a percentage of the existing Outer Dowsing channel this is approximately a 22% reduction in available sea space.

However when viewed with the current traffic pattern (figure 6) the proposed boundary goes right up to the current limits of the shipping. If shipping routes were to be adjusted to stay 1.0nm clear of the windfarm this would reduce the usable sea space by around 50%.

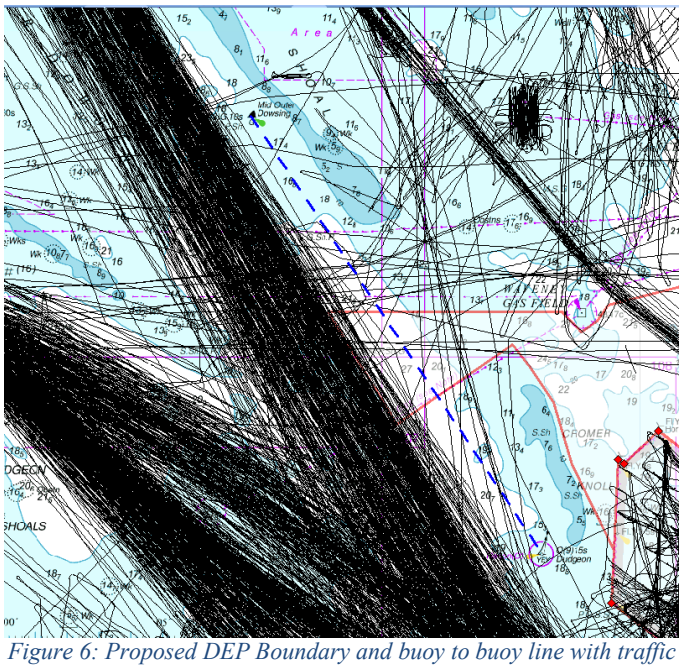

Figure 6: Proposed DEP Boundary and buoy to buoy line with traffic

As can be seen from Figure 6 this does present an enhanced risk of collision by compressing the traffic into a channel which could be approximately only 2 miles wide when passing the end of the Triton Knoll. Vessels are currently allowing a safe passing distance of 1nm from the bank so it could be argued the effective sea space is now only about 1nm. If consideration is then given to fishing activity in the area, and to additional vessels servicing the windfarm, then the enhanced risk of collision could become significant.

In the NRA [APP-198] Sec 20.1 Safety Zones Para 402 the Applicant lays down its expectation for safety zones during all phases of the project and these include “500m around any structure where construction is ongoing, as denoted by the presence of a construction vessel” and “500m around any structure where major maintenance is ongoing during the operational phase, where major maintenance is as defined within the Electricity Regulations (2007).” If these areas were to extend beyond the proposed redline boundary / order limits this would reduce the available sea space further and would be considered unacceptable around the western side of the DEP Northern boundary.

During the construction phase any buoyage used to delineate the windfarm area could also have the effect of reducing sea space if not placed within the development zone. This would be the same for all boundaries in the project aligning with the shipping route.
When considering the proposed boundary in conjunction with the existing NPS EN-3 2.6.168 and 2.6.16 Trinity House would conclude that the effects on the shipping lane could be an obstruction to navigation. We are aware that these are the worst case scenarios and without knowing the final number and layout of turbines in the area we cannot fully assess these impacts.

5. SOUTHERLY TRAFFIC ROUTES

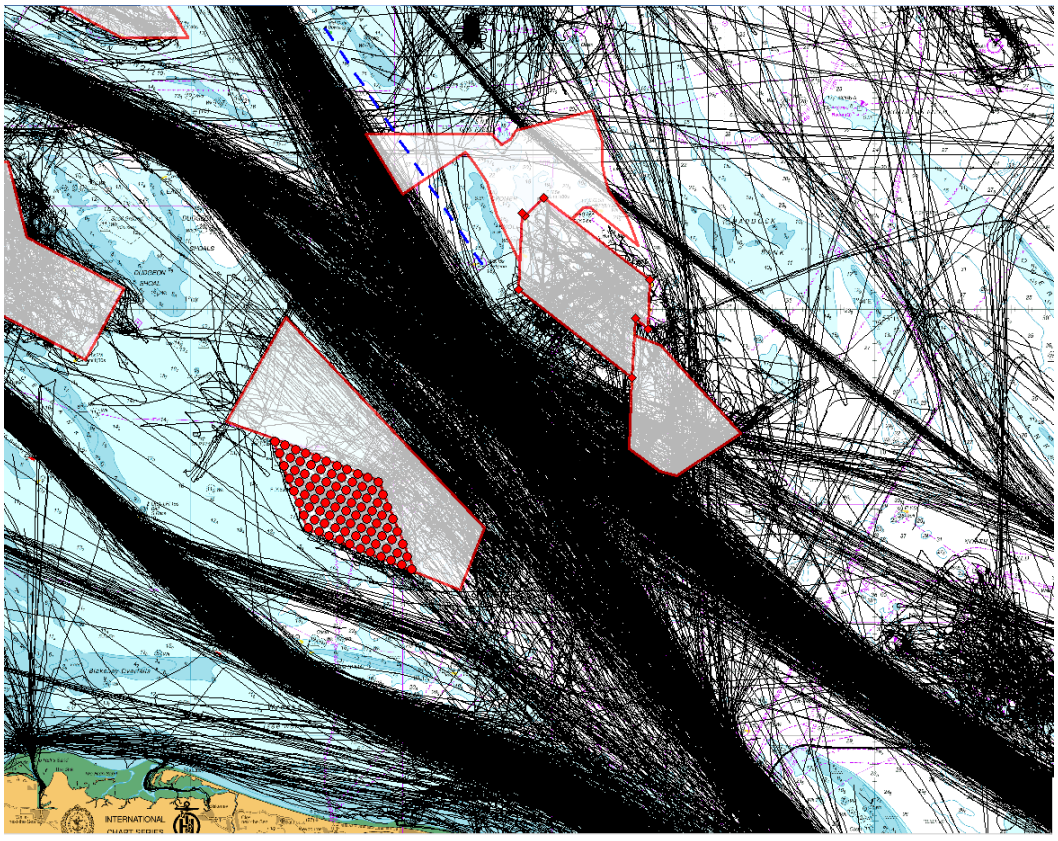

Figure 7: Overview of traffic routeing

The traffic pattern shows that vessels using the area from the north are already having to consider their routes for passing the Haisborough Sand and Hewett Gas Fields to the south east. When approaching from the south, vessels will have planned for passing between the windfarms and exiting for the northern ports. As such, the compression of available sea space will be a larger consideration for these vessels.

6. CONCLUSIONS

1. The proposed DEP North west boundary will cause shipping to navigate in a more compressed area increasing the risk of collision between vessels.
2. This risk would be increased further when allowing for vessels fishing and servicing the new structures in the area.
3. COLREGS will still need to be followed by vessels and the area available to vessels to alter course will have been reduced.
4. If the project goes ahead with the current boundaries and turbines built to the extremities of the area, the buoy to buoy line between the Mid Outer Dowsing Buoy and the Dudgeon buoy will become irrelevant and Trinity House would need to reassess the requirements for general aids to navigation in the area.
5. The area at the DEP north west boundary is the area of greatest concern as the reduction in sea space could possibly lead to grounding on the Triton Knoll for some vessels and this would need mitigating if the project is consented and builds out to the red line.
6. Safety zones and buoyage used during the construction phase and future maintenance could further restrict the sea space outside of the red line boundary.

7. SUMMARY

In response to the question, we consider the risks to navigational safety, particularly to the west of the DEP north boundary, to be considerable and complex to mitigate with aids to navigation. These risks could be alleviated if the full area within the redline boundary was not utilised as vessels are currently staying clear of the buoy to buoy line which is why the Applicant has drawn the red line to this point in our opinion.

Allowing for the volume of marine traffic, and an assumption that fishing activity will continue between the windfarms, the compression of traffic through the rest of the site will increase the risk of collisions as with all sites and will likely be mitigated by aids to navigation, correct charting and proper bridge watchkeeping on the vessels.

The use of safety zones during construction and maintenance could further restrict available sea space outside of the red line boundary. This is a concern along the main shipping route between the project's and the DEP north westerly boundary.

Finally, despite the assessment made above, Trinity House would defer to the MCA, as the primary navigational safety body, when defining shipping routes/lanes and assessing the appropriate widths of corridors as per MGN654.

[redacted]

Captain Trevor B Harris.
Navigation (Examiner) Manager.