

# Inch Cape Offshore Wind Farm

New Energy for Scotland

Offshore Environmental Statement:  
**VOLUME 2H**  
**Annex 19A.4: MGN and Methodology  
Checklist**





# **MCA MGN 371 Checklist**

## **Inch Cape Offshore Wind Farm**

### **(Annex 19A.4)**

Prepared by: Anatec Limited  
Presented to: Inch Cape Offshore Limited  
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**Anatec Aberdeen Office**  
Address: 36 Upperkirkgate, Aberdeen, AB10 1BA, Scotland, UK  
Tel: 01224 633711  
Fax: 0709 2367306  
Email: aberdeen@anatec.com

**Cambridge Office**  
Braemoor, No.4 The Warren, Witchford, Ely, Cambs, CB6 2HN.  
01353 661200  
0709 2367306  
cambs@anatec.com

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## **19A.4.1 Introduction**

This Annex presents the Marine Coastguard Agency (MCA) checklist based on the requirements set out in Marine Guidance Note (MGN) 371 which was the guidance set by the MCA during the Navigational Risk Assessment (NRA) preparation.

Reference notes/remarks made within Table 19A.4.1 in Section 19A.4.2 refer to the relevant sections of the NRA (Environmental Statement (ES) Appendix 19A and Appendix 19B) or other documents, which address the issue noted in the MGN 371 checklist. All cross-references refer to sections within ES Appendix 19A unless stated otherwise.

## 19A.4.2 MGN 371 Compliance Checklist

**Table 19A.4.1 MGN 371 Compliance Checklist for the Wind Farm**

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<b>Annex 1 : Considerations on Site Position, Structures and Safety Zones</b>			
<p><b>1. Site and Installation Co-ordinates:</b> Developers are responsible for ensuring that formally agreed variations in the co-ordinates of site perimeters and individual Offshore Renewable Energy Installations (OREI) structures are made available, on request, to interested parties at all project stages, including application for consent, development, array variation, operation and decommissioning. This should be supplied as authoritative Geographical Information System (GIS) data, preferably in Environmental Systems Research Institute (ESRI) format. Metadata should facilitate the identification of the data creator, its date and purpose, and the geodetic datum used. For mariners' use, appropriate data should also be provided in latitude/longitude formats.</p>			
<b>2. Traffic Survey</b>			
All vessel types	✓		<p><b>Section 19A.7: Marine Traffic Survey Methodology.</b></p> <p><i>AIS, ARPA and visual surveys were undertaken to capture all vessel types.</i></p>
Four weeks duration, within 12 months prior to submission of the ES	✓		<p><b>Section 19A.7: Marine Traffic Survey Methodology.</b></p> <p><i>February and March 2012 collected from the Gargano (piggyback) and July and August 2012 collected from the Shamariah (dedicated survey vessel), and also accounted for a range of tidal conditions.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
Seasonal variations	✓		<p><b>Section 19A.7: Marine Traffic Survey Methodology.</b></p> <p><i>As above winter and summer surveys were undertaken to take account seasonal variations in traffic patterns. Forth and Tay Offshore Wind Developers Group (FTOWDG) data was also used as a base data set and included seasonal fluctuations.</i></p> <p><b>Section 19A.14: Overview of Key Consultation.</b></p> <p><i>Traffic survey discussed by MCA to cover a period of at least 28 days to take seasonal variations in traffic patterns into account.</i></p>
Recreational and fishing vessel organisations	✓		<p><b>Section 19A.7: Marine Traffic Survey Methodology.</b></p> <p><i>Winter and summer surveys were undertaken to take account seasonal variations in fishing and recreational traffic patterns. FTOWDG data was also used as a base data set and included seasonal fluctuations.</i></p>
Port and navigation authorities	✓		<p><b>Section 19A.7: Marine Traffic Survey Methodology.</b></p> <p><i>Winter and summer surveys were undertaken to take account seasonal variations in traffic patterns. FTOWDG data was also used as a base data set and included seasonal fluctuations.</i></p>
<b>Assessment</b>			

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<p>a. Proposed OREI site relative to areas used by any type of marine craft.</p>	✓		<p><b>Section 19A.10.6: Aggregates Dredging Areas.</b></p> <p><i>Examines the dredging license in Scotland and states that the impact of the Inch Cape Project on dredging activities has been screened out of the NRA.</i></p> <p><b>Section 19A.15: Marine Traffic Survey.</b></p> <p><i>Summarises the results of the AIS, ARPA and visual surveys undertaken.</i></p> <p><b>Section 19A.15.7: Recreational Vessel Activity.</b></p> <p><i>Examines recreational vessel activity in the area based on the Maritime Traffic Survey, available desktop information and consultation with the RYA/CA.</i></p> <p><b>Section 19A.15.8: Fishing Vessel Activity.</b></p> <p><i>Reviews fishing vessel activity in the area based on Maritime Traffic Survey data, surveillance (sightings and satellite) data and research work reported in Chapter 18, Commercial Fisheries.</i></p>
<p>b. Numbers, types and sizes of vessels presently using such areas</p>	✓		<p><b>Section 19A.10.6: Aggregates Dredging Areas.</b></p> <p><b>Section 19A.15: Marine Traffic Survey.</b></p> <p><b>Section 19A.15.7: Recreational Vessel Activity.</b></p> <p><b>Section 19A.15.8: Fishing Vessel Activity.</b></p> <p><i>(More details on each section under point a. above)</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<p>c. Non-transit uses of the areas, e.g. fishing, day cruising of leisure craft, racing, aggregate dredging, etc.</p>	✓		<p><b>Section 19A.10.6: Aggregates Dredging Areas.</b></p> <p><b>Section 19A.15.7: Recreational Vessel Activity.</b></p> <p><b>Section 19A.15.8: Fishing Vessel Activity.</b></p> <p><i>(More details on each section under point a. above)</i></p>
<p>d. Whether these areas contain transit routes used by coastal or deep-draught vessels on passage.</p>	✓		<p><b>Section 19A.15: Marine Traffic Survey.</b></p> <p><i>Identifies and assesses the alignment and proximity of the Development Area relative to adjacent shipping lanes, by analysis of Maritime Traffic Survey data.</i></p>
<p>e. Alignment and proximity of the site relative to adjacent shipping lanes</p>	✓		<p><b>Section 19A.15: Marine Traffic Survey.</b></p> <p><i>Identifies and assesses the alignment and proximity of the Development Area relative to adjacent shipping lanes, by analysis of Maritime Traffic Survey data. <b>Section 19A.16.6: Commercial traffic routeing.</b></i></p> <p><i>Analyses the potential alternative routeing options for routes where displacement may occur.</i></p>
<p>f. Whether the nearby area contains prescribed routeing schemes or precautionary areas</p>	✓		<p><b>Section 19A.8.1: Navigational Features.</b></p> <p><i>Based on review of Admiralty Charts.</i></p>



Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
g. Whether the site lies on or near a prescribed or conventionally accepted separation zone between two opposing routes	✓		<p><b>Section 19A.8.1: Navigational Features.</b></p> <p><i>Reviews prescribed zones based on Admiralty Charts.</i></p> <p><b>Section 19A.15: Marine Traffic Survey.</b></p> <p><i>Reviews actual traffic behaviour based on real-time data.</i></p>
h. Proximity of the site to areas used for anchorage, safe haven, port approaches and pilot boarding or landing areas.	✓		<p><b>Section 19A.10.2: Ports and Auxiliary Functions, 19A.10.2.3: Anchoring:</b></p> <p><i>Examines the proximity of the Development Area to areas used for anchorage from analysis of Admiralty Charts and Sailing Directions (NP 54).</i></p>
i. Whether the site lies within port limits, etc. jurisdiction of a port and/or navigation authority.	✓		<p><b>Section 19A.10.2: Ports and Auxiliary Functions.</b></p> <p><i>Examines whether the Development Area lies within the limits of jurisdiction of a port and/or navigation authority using information from Admiralty Charts and Sailing Directions (NP 54).</i></p>
j. Proximity of the site to existing fishing grounds, or to routes used by fishing vessels to such grounds.	✓		<p><b>Section 19A.15.8: Fishing Vessel Activity.</b></p> <p><i>Reviews the fishing vessel activity at the proposed Project based on the maritime traffic survey, Government surveillance (sightings and satellite) data and the research work reported in Chapter 18 Commercial Fisheries.</i></p>
k. Proximity of the site to offshore firing/bombing ranges and areas used for any marine military purposes.	✓		<p><b>Section 19A.8.1: Navigational Features.</b></p> <p><i>Analysis of Admiralty Charts, Admiralty Sailing Directions NP54 and PEXA Charts to determine proximity to military areas.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
l. Proximity of the site to existing or proposed offshore oil / gas platform, marine aggregate dredging, marine archaeological sites or wrecks, or other exploration/exploitation sites.	✓		<p><b>Section 19A.10.5: Oil and Gas Infrastructure.</b></p> <p><i>Uses Admiralty Charts and published oil &amp; gas infrastructure data to assess proximity to oil / gas platforms.</i></p> <p><b>Section 19A.10.6: Aggregates Dredging Areas.</b></p> <p><i>Analyses GIS files based on published data from The Crown Estate to determine proximity to marine aggregate dredging sites.</i></p> <p><b>Section 19A.10.9: Wrecks.</b></p> <p><i>Analysed Admiralty Charts for the positions of wrecks in the area.</i></p>
m. Proximity of the site relative to any designated areas for the disposal of dredging spoil.	✓		<p><b>Section 19A.10.6: Aggregates Dredging Areas.</b></p> <p><i>Analyses GIS files based on published data from The Crown Estate to determine proximity to marine aggregate dredging sites.</i></p>
n. Proximity of the site to aids to navigation and/or Vessel Traffic Services (VTS) in or adjacent to the area and any impact thereon.	✓		<p><b>Section 19A.10.2: Ports and Auxiliary Functions.</b></p> <p><i>Used Admiralty Charts and Sailing Directions (NP54) to determine positions of navigational aids.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<p>o. Researched opinion using computer simulation techniques with respect to the displacement of traffic and, in particular, the creation of ‘choke points’ in areas of high traffic density.</p>	✓		<p><b>Section 19A.17: Collision Risk Modelling and Assessment.</b></p> <p><i>Used computer simulation techniques to assess present-day vessel activity and future-case with proposed wind farm activity, with vessels being displaced following construction. Examined encounters, vessel-to-vessel collisions (with and without the Wind Farm), powered and drifting ship collision with structure, fishing vessel collision and recreational vessel collision.</i></p>
<p>p. Type(s) of simulation used in analysis Limitation of system(s)</p>	✓		<p><b>Section 19A.17: Collision Risk Modelling and Assessment.</b></p> <p><i>Discusses simulations and limitations. All the quantified risk assessments were carried out using Anatec’s COLLRISK software which conforms to the DECC methodology. In line with this, Anatec makes the declaration that the models used within this work have been validated and are appropriate for the intended use.</i></p>
<p><b>3. OREI Structures</b></p>			

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<p>a. Whether any features of the OREI, including auxiliary platforms outside the main generator site and cabling to the shore, could pose any type of difficulty or danger to vessels underway, performing normal operations, or anchoring.</p>	✓		<p><b>Section 19A.9: Design Envelope.</b> <i>Outlines the Design Envelope, including the number of OREI structures and auxiliary platforms (known as Offshore Substation Platforms) outside the Development Area.</i></p> <p><b>Section 19A.9.5: Offshore Export Cable Corridor.</b> <i>Examines the proposed Offshore Export Cable Corridor to shore.</i></p> <p><b>Section 19A.10.1: Navigational Features, 19A.10.2.3. Anchoring.</b> <i>Considers whether any features of the OREI could pose a danger to anchoring vessels.</i></p> <p><b>Section 19A.15.7: Recreational Vessel Activity.</b> <i>Assesses the impact of the OREI on vessels engaged in recreational activities.</i></p> <p><b>Section 19A.15.8: Fishing Vessel Activity.</b> <i>Assesses the impact of the OREI on vessels engaged in fishing or transiting to fishing grounds.</i></p> <p><b>Section 19A.17: Collision Risk Modelling and Assessment, 19A.17.2: Base Case with Inch Cape.</b> <i>Assesses the impact that the OREI will have upon vessel-to-vessel collisions, ship collision with structure (powered, drifting and anchor dragging), fishing vessel collisions and recreational vessel collisions.</i></p> <p><b>Section 19A.17.3: Cable Interaction – Anchoring and Trawling.</b> <i>Examines impact that cabling to the shore will have on vessels.</i></p> <p><b>Sections 19A.17.4: Risk Results Summary and 19A.17.5: Consequences.</b> <i>Presents a summary of results from modelling used to assess whether any features of the OREI could pose any type of difficulty or danger to vessels underway or performing normal operations.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
Clearances of WTG blades above the sea surface <i>not less than 22 metres</i>	✓		<p><b>Section 19A.9: Design Envelope – 19A.9.3: WTG Design.</b></p> <p><i>Recommended minimum safe (air) clearances between sea level conditions at MHWS and WTG rotors will be not less than 22 m and will meet MCA guidance.</i></p>
Least depth of current WTG blades	n/a		<p><i>Not applicable.</i></p>
The burial depth of cabling			<p><b>Section 19A.19.8: Cable Burial and Protection.</b></p> <p><i>Describes the means by which the cable will be trenched and buried or protected with suitable methods to ensure the risk of snagging or anchor interaction is mitigated.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<p>b. Whether any feature of the installation could create problems for emergency rescue services, including the use of lifeboats, helicopters and emergency towing vessels (ETVs)</p>	✓		<p><b>Section 19A.12: Search and Rescue Overview and Assessment.</b></p> <p><i>Summarises the existing Search and Rescue (SAR) resources in the region.</i></p> <p><b>Section 19A.12.1.1: SAR Helicopters:</b></p> <p><i>Summarises SAR helicopter assets in the vicinity of the proposed Development Area.</i></p> <p><b>Section 19A.12.1.2: RNLI Lifeboats.</b></p> <p><i>Summarises RNLI lifeboat stations in the vicinity and response times of their vessels to the proposed Development Area.</i></p> <p><b>Section 19A.12.1.3: Coastguard Stations.</b></p> <p><i>Reviews how modernisation of HM Coastguard will impact upon emergency response in the vicinity of the proposed Development Area.</i></p> <p><b>Section 19A.12.1.4: Salvage.</b></p> <p><i>Examines options for salvage in the vicinity of the proposed Development Area. Determines whether the installation could create problems for salvage vessels.</i></p>
<p>c. With respect to specific OREI devices, how rotor blade rotation, other exposed moving mechanical parts and/or power transmission, etc., will be controlled by the designated services when this is required in an emergency.</p>	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371.</b></p> <p><i>OREI Design adopted by the proposed Project.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<b>4. Assessment of Access to and Navigation Within, or Close to , an OREI:</b> To determine the extent to which navigation would be feasible within the Development Area itself by assessing whether:			
a. Navigation within or close to the site would be safe:			

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
i. by all vessels, or ii. by specified vessel types, operations and/or sizes. iii. in all directions or areas, or iv. in specified directions or areas. v. in specified tidal, weather or other conditions	✓		<p><b>Section 19A.15: Marine Traffic Survey.</b> Analyses the vessels passing within close proximity to the proposed Development Area during the survey periods.</p> <p><b>Section 19A.15.7: Recreational Vessel Activity.</b> Examines recreational vessel activity in the area based on the Maritime Traffic Survey, available desktop information and consultation with the RYA/CA.</p> <p><b>Section 19A.15.8: Fishing Vessel Activity.</b> Assesses the impact of the OREI on vessels engaged in fishing or transiting to fishing grounds.</p> <p><b>Section 19A.17: Collision Risk Modelling and Assessment.</b> Uses a variety of models to assess whether navigation within or close to the Development Area would be safe for different vessel types. The models take into account tidal and weather data for the area.</p> <p><b>Section 19A.20.1: Tides and Tidal Streams.</b> Assesses the areas in close proximity to the proposed Development Area that can prove difficult to navigate in particular tidal conditions.</p> <p><b>Section 19A.22.3: Adverse Weather.</b> Examines the areas of water which are too difficult to navigate in particular tidal and weather conditions.</p> <p><b>Section 19A.20.3: Impacts of Structures on Wind Masking / Turbulence or Shear.</b> Presents information on the potential influence offshore turbines have on vessels under sail when passing through the site.</p> <p><b>Section 19A.22: Cumulative Effects.</b> Impacts on shipping and navigation arising from offshore wind farms have been considered, as well as impacts arising from other marine activities or uses of the sea.</p>



Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
b. Navigation in and/or near the site should be:			
i. prohibited by specified vessels types, operations and/or sizes.  ii. prohibited in respect of specific activities,  iii. prohibited in all areas or directions, or  iv. prohibited in specified areas or directions, or  v. prohibited in specified tidal or weather conditions, or simply  vi. Recommended to be avoided.	✓		<i>Relevant sections are cross-referenced under point a. (above)</i>
c. Exclusion from the site could cause navigational, safety or routing problems for vessels operating in the area e.g. by causing a vessel or vessels to follow a less than optimum route	✓		<p><b><i>Section 19A.16: Future Case Marine Traffic.</i></b></p> <p><i>Presents the future case level of activity in the vicinity of the Wind Farm.</i></p>
Relevant information concerning a decision to seek a “safety zone” for a particular site during any point in its construction, operation or decommissioning should be specified in the ES accompanying the development application	✓		<p><b><i>Section 19A.19.3: Construction and Decommissioning Safety Zones.</i></b></p> <p><i>Presents relevant information concerning a decision to seek 500 m ‘rolling’ safety zones around each WTG being constructed/ decommissioned in order to minimise disruption to mariners and other users of the sea.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<b>Annex 2 : Navigation, collision avoidance and communications</b>			
<b>1. The Effect of Tides and Tidal Streams : It should be determined whether:</b>			
i. Current maritime traffic flows and operations in the general area are affected by the depth of water in which the proposed installation is situated at various states of the tide i.e. whether the installation could pose problems at high water which do not exist at low water conditions, and vice versa.	✓		<p><b>Section 19A.9: Design Envelope.</b></p> <p><i>States the depth of water in which the proposed installation is situated.</i></p> <p><b>Section 19A.11: Metocean Data, 19A.11.5: Tide.</b></p> <p><i>Examines various states of the tide in the area.</i></p> <p><b>Section 19A.15: Marine Traffic Survey.</b></p> <p><i>Assesses current maritime traffic flows and operations in the general area.</i></p> <p><b>Section 19A.17: Collision Risk Modelling and Assessment.</b></p> <p><i>Models take into account tides in the vicinity.</i></p>
ii. The set and rate of the tidal stream, at any state of the tide, has a significant effect on vessels in the area of the OREI site.	✓		<p><b>Section 19A.11: Metocean Data, 19A.11.5: Tide.</b></p> <p><i>Examines various states of the tide in the area.</i></p> <p><b>Section 19A.17: Collision Risk Modelling and Assessment.</b></p> <p><i>Models take into account tides in the vicinity.</i></p>
iii. The maximum rate tidal stream runs parallel to the major axis of the proposed site layout, and, if so, its effect.	✓		<p><b>Section 19A.11: Metocean Data, 19A.11.5: Tide.</b></p> <p><i>Assesses tidal steam in the area.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
iv. The set is across the major axis of the layout at any time, and, if so, at what rate.	✓		<p><b>Section 19A.11: Metocean Data, 19A.11.5: Tide.</b></p> <p><i>Assesses tidal steam in the area.</i></p>
v. In general, whether engine failure or other circumstance could cause vessels to be set into danger by the tidal stream.	✓		<p><b>Section 19A.11: Metocean Data, 19A.11.5: Tide.</b></p> <p><i>Assesses tidal steam in the area.</i></p> <p><b>Section 19A.17: Collision Risk Modelling and Assessment.</b></p> <p><i>Models take into account tides in the vicinity.</i></p>
vi. The structures themselves could cause changes in the set and rate of the tidal stream.	✓		<p><b>Section 19A.11: Metocean Data, 19A.11.5: Tide.</b></p> <p><i>Assesses tidal steam in the area.</i></p>
vii. The structures in the tidal stream could be such as to produce siltation, deposition of sediment or scouring, affecting navigable water depths in the wind farm area or adjacent to the area	✓		<p><b>Section 19A.11: Metocean Data, 19A.11.5: Tide.</b></p> <p><i>Assesses tidal steam in the area.</i></p>
<b>2. Weather:</b> <i>It should be determined whether:</i>			
i. The site, in normal, bad weather, or restricted visibility conditions, could present difficulties or dangers to craft, including sailing vessels, which might pass in close proximity to it.	✓		<p><b>Section 19A.11: Metocean Data</b></p> <p><i>Presents Metocean Statistics in the area.</i></p> <p><b>Section 19A.17: Collision Risk Modelling and Assessment.</b></p> <p><i>Risk Models take into account all-year weather conditions in the vicinity, including probability of fog which historically has been shown to increase collision risk.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
ii. The structures could create problems in the area for vessels under sail, such as wind masking, turbulence or sheer.	✓		<p><b>Section 19A.20.3: Impacts of Structures on Wind Masking/ Turbulence or Shear.</b></p> <p><i>Assesses whether wind masking, turbulence or sheer could create problems in the area for vessels under sail.</i></p>
iii. In general, taking into account the prevailing winds for the area, whether engine failure or other circumstances could cause vessels to drift into danger, particularly if in conjunction with a tidal set such as referred to in 2.1 (v) above	✓		<p><b>Section 19A.17: Collision Risk Modelling and Assessment.</b></p> <p><i>Drifting Ship Collision model assesses whether vessels could drift into danger. The model has been run for different combinations of wind and tide.</i></p>
<p><b>3. Visual Navigation and Collision Avoidance:</b> <i>It should be determined whether:</i></p>			
i. The structures could block or hinder the view of other vessels under way on any route.	✓		<p><b>Section 19A.20.4: Visual Navigation and Collision Avoidance.</b></p> <p><i>Assesses whether the structures could block or hinder other vessels' view.</i></p>
ii. The structures could block or hinder the view of the coastline or of any other navigational feature such as aids to navigation, landmarks, promontories, etc.	✓		<p><b>Section 19A.20.4: Visual Navigation and Collision Avoidance.</b></p> <p><i>Assesses whether the structures could block or hinder the view of navigational aids or landmarks.</i></p>
<p><b>4. Communications, Radar and Positioning Systems :</b> <i>To provide researched opinion of a generic and, where appropriate, site specific nature concerning whether:</i></p>			

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
i. The structures could produce radio interference such as shadowing, reflections or phase changes, with respect to any frequencies used for marine positioning, navigation or communications, including Automatic Identification Systems (AIS), whether ship borne, ashore or fitted to any of the proposed structures.	✓		<p><b>Section 19A.20.6: Impact on Marine Radar Systems.</b></p> <p><i>Determines whether the structures could produce Radar interference.</i></p> <p><b>Section 19A.20.5: Communications and Position Fixing.</b></p> <p><i>Assesses impact of structures upon VHF communications, Navtex, VHF direction finding, AIS, GPS and Loran C.</i></p>
ii. The structures could produce radar reflections, blind spots, shadow areas or other adverse effects:  a. Vessel to vessel;  b. Vessel to shore;  c. VTS radar to vessel;  d. Racon to/from vessel.	✓		<p><b>Section 19A.20.6: Impact on Marine Radar Systems.</b></p> <p><i>Determines whether the structures could produce Radar interference.</i></p>
iii. The OREI, in general, would comply with current recommendations concerning electromagnetic interference.	✓		<p><b>Section 19A.20.5: Communications and Position Fixing.</b></p> <p><i>Noted that the OREI would comply with current recommendations concerning electromagnetic interference.</i></p>
iv. The structures and generators might produce sonar interference affecting fishing, industrial or military systems used in the area.	✓		<p><b>Section 19A.20.7: Structures and Generators affecting Sonar Systems in an Area:</b></p> <p><i>Indicates that it is not believed that there will be any long term subsea acoustic noise generated by the Project that will have a significant effect on sonar systems.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
v. The site might produce acoustic noise which could mask prescribed sound signals.	✓		<p><b>Section 19A.20.8: Noise Impact.</b></p> <p><i>Determines acoustic noise masking sound signals from the Project.</i></p>
vi. Generators and the seabed cabling within the site and onshore might produce electromagnetic fields affecting compasses and other navigation systems.	✓		<p><b>Section 19B.1.43: Electromagnetic Interference on Vessel Navigation Equipment.</b></p> <p><i>Describes the impact anticipated by electromagnetic fields generated by the proposed Offshore Export Cable.</i></p>
<p><b>5. Marine Navigational Marking : It should be determined:</b></p>			
i. How the overall site would be marked by day and by night taking into account that there may be an ongoing requirement for marking on completion of decommissioning, depending on individual circumstances.	✓		<p><b>Section 19A.19.1: Marine Aids to Navigation (AtoN).</b></p> <p><i>Outlines how the overall proposed Development Area will be marked.</i></p>
ii. How individual structures on the perimeter of and within the site, both above and below the sea surface, would be marked by day and by night.	✓		<p><b>Section 19A.19.1: Marine Aids to Navigation (AtoN).</b></p> <p><i>Outlines how the overall proposed Development Area will be marked.</i></p>
iii. If the specific OREI structure would be inherently radar conspicuous from all seaward directions (and for SAR and maritime surveillance aviation purposes) or would require passive enhancers	✓		<p><b>Section 19A.19.1: Marine Aids to Navigation (AtoN).</b></p> <p><i>Contain significant peripheral structures, therefore should be conspicuous.</i></p>
iv. If the site would be marked by one or more radar beacons (Racons)	n/a		<p><i>Not applicable at this stage</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
v. If the site would be marked by an Automatic Identification System (AIS) transceiver, and if so, the data it would transmit.	✓		<p><b>Section 19A.19: Mitigation Measures.</b></p> <p><i>AIS monitoring will be available from the met mast to record the movements of vessels around Inch Cape.</i></p>
vi. If the site would be fitted with a sound signal, and where the signal or signals would be sited	✓		<p><b>Section 19A.19: Mitigation Measures.</b></p> <p><i>No plans for sound signals.</i></p>
vii. If the structure(s) would be fitted with aviation marks, and if so, how these would be screened from mariners or potential confusion with other navigational marks and lights resolved	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371.</b></p> <p><i>OREI Design adopted by Project.</i></p>
viii. Whether the proposed site and/or its individual generators would comply in general with markings for such structures, as required by the relevant General Lighthouse Authority (GLA) or recommended by the Maritime and Coastguard Agency, respectively.	✓		<p><b>Section 19A.19: Mitigation Measures.</b></p> <p><i>Confirm the intention to comply with the markings as required by GLA, i.e., Trinity House, as well as the MCA.</i></p>
ix. The aids to navigation specified by the GLAs are being maintained such that the ‘availability criteria’, as laid down and applied by the GLAs, is met at all times. Separate detailed guidance is available from the GLAs on this matter.	✓		<p><b>Section 19A.19.1: Marine Aids to Navigation (AtoN).</b></p> <p><i>Confirms the Aids to Navigation will be provided in accordance with Trinity House requirements, which will comply with IALA standard O-139 on the Marking of Offshore Wind Farms (IALA, 2008).</i></p>
x. The procedures that need to be put in place to respond to casualties to the aids to navigation specified by the GLAs, within the timescales laid down and specified by the GLAs.	✓		<p><b>Section 19A.19.6: SAR ERCoP and ASMS.</b></p> <p><i>The Emergency Response and Cooperation Plan will be completed following the MCA template and initially in discussion with the MCA Search and Rescue and Navigation Safety Branches.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<p><b>6. Hydrography:</b> In order to establish a baseline, detailed and accurate hydrographic surveys are required to IHO Order 1a standard multibeam bathymetry with final data being supplied as a digital full density data set, and erroneous soundings flagged as deleted but include in the data set. A full report detailing survey methodology and equipment should accompany the surveys.</p>			
<p><b>Annex 3: MCA template for assessing distances between wind farm boundaries and shipping routes</b></p>			
<p><b>Annex 4: Safety and mitigation measures recommended for OREI during construction, operation and decommissioning.</b></p>			
<p>Mitigation and safety measures will be applied to the OREI development appropriate to the level and type of risk determined during the Environmental Impact Assessment (EIA). The specific measures to be employed will be selected in consultation with the Maritime and Coastguard Agency and will be listed in the developer's ES. These will be consistent with international standards contained in, for example, the Safety of Life at Sea (SOLAS) Convention - Chapter V, IMO Resolution A.572 (14)3 and Resolution A.671(16)4 and could include any or all of the following:</p>	✓		<p><b>Section 19A.26.6: Mitigation Measures.</b> <i>Presents a list of mitigation measures adopted by the Project.</i></p> <p><b>Section 19A.19.6: SAR ERCoP and ASMS.</b> <i>Discusses SAR related safety and mitigation measures, and ERCoP presents a list of mitigation measures adopted by the Project.</i></p>
<p>i. Promulgation of information and warnings through notices to mariners and other appropriate media.</p>	✓		<p><b>Section 19A.26.6: Mitigation Measures.</b> <i>Mitigation measures adopted by the Project.</i></p>
<p>ii. Continuous watch by multi-channel VHF, including Digital Selective Calling (DSC).</p>	✓		<p><b>Section 19A.16: Future Case Marine Traffic.</b> <i>Presents the future case level of activity in the vicinity of The Development Area.</i></p>



<b>Issue: OREI RESPONSE</b>	<b>Yes</b>	<b>No</b>	<b>Reference notes/Remarks</b>
iii. Safety zones of appropriate configuration, extent and application to specified vessels	✓		<b>Section 19A.19.3: Construction and Decommissioning Safety Zones.</b>  <i>Presents relevant information concerning a decision to seek 500 m ‘rolling’ safety zones around each WTG being constructed/ decommissioned in order to minimise disruption to mariners and other users of the sea.</i>
iv. Designation of the site as an area to be avoided (ATBA).	n/a		<i>Not Applicable.</i>
v. Implementation of routing measures within or near to the development.	n/a		<i>Not Applicable.</i>
vi. Monitoring by radar, AIS and/or closed circuit television (CCTV).	✓		<b>Section 19A.24.7: Future monitoring of marine traffic.</b>  <i>Details the proposed AIS monitoring to be available from the met mast to record the movements of vessels around Inch Cape.</i>
vii. Appropriate means to notify and provide evidence of the infringement of safety zones or ATBA’s.	✓		<b>Section 19A.19.3: Construction and Decommissioning Safety Zones.</b>
viii. Any other measures and procedures considered appropriate in consultation with other stakeholders.	✓		<b>Section 19A.19: Mitigation Measures.</b>  <i>Mitigation measures adopted by the Project.</i>
ix. Creation of an Emergency Response Cooperation Plan with the relevant Maritime Rescue Coordination Centre (from construction phase onwards)	✓		<b>Section 19A.19.6: SAR ERCoP and ASMS.</b>  <i>The ERCoP will be put in place for the construction, operation and decommissioning phases of any structure in the Wind Farm.</i>
<b>Annex 5: Standards and procedures for WTG shutdown in the event of a search and rescue, counter pollution or salvage incident in or around a wind farm.</b>			

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<p><b>1. Design Requirements:</b> The OREI should be designed and constructed to satisfy the following design requirements for emergency rotor shut-down in the event of a search and rescue (SAR), counter pollution or salvage operation in or around a wind farm or other OREI site:</p>			
<p>i. All WTGs and other OREI individual structures will each be marked with clearly visible unique identification characters which can be seen by both vessels at sea level and aircraft (helicopters and fixed wing) from above.</p>	✓		<p><b>Section 19A.19.1.2: Guidance of the marking of Groups of Structures (Wind Farms).</b></p> <p><i>Describes the planned marking of WTGs and other OREI individual structures.</i></p> <p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371.</b></p> <p><i>Design feature of WTGs and OREI individual structures.</i></p>
<p>ii. The identification characters shall each be illuminated by a low-intensity light visible from a vessel thus enabling the structure to be detected at a suitable distance to avoid a collision with it. The size of the identification characters in combination with the lighting should be such that, under normal conditions of visibility and all known tidal conditions, they are clearly readable by an observer, stationed 3 metres above sea levels, and at a distance of at least 150 metres from the WTG. It is recommended that lighting for this purpose be hooded or baffled so as to avoid unnecessary light pollution or confusion with navigation marks. (Precise dimensions to be determined by the height of lights and necessary range of visibility of the identification numbers)</p>	✓		<p><b>Section 19A.19.1.2: Guidance of the marking of Groups of Structures (Wind Farms).</b></p> <p><i>Describes the identification characters and lighting.</i></p> <p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371.</b></p> <p><i>Design feature of WTGs and OREI individual structures.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<p>iii. For aviation purposes, OREI structures should be marked with hazard warning lighting in accordance with CAA guidance and also with unique identification numbers (with illumination controlled from the site control centre and activated as required) on the upper works of the OREI structure so that aircraft can identify each installation from a height of 500 ft (150 metres) above the highest part of the OREI structure.</p>	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371.</b></p> <p><i>States OREI structures will be marked with hazard warning lighting in accordance with Civil Aviation Authority (CAA) guidance and also with unique identification numbers.</i></p>
<p>iv. WTG shall have high contrast markings (dots or stripes) placed at 10 metre intervals on both sides of the blades to provide SAR helicopter pilots with a hover reference point.</p>	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371.</b></p> <p><i>Design will meet MCA requirements.</i></p>
<p>v. All OREI generators and transmission systems should be equipped with control mechanisms that can be operated from the OREI Central Control Room or through a single contact point.</p>	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371, 19A.19.10: Operational requirements as per MGN 371.</b></p> <p><i>Discusses OREI Central Control Room, manned 24 hours a day.</i></p>
<p>vi. Throughout the design process for an OREI, appropriate assessments and methods for safe shutdown should be established and agreed, through consultation with MCA Navigation safety Branch, Search and rescue Branch and other emergency support services.</p>	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371.</b></p> <p><i>Discusses shutdown methods.</i></p> <p><b>Section 19A.19.11: Operational Procedures as per MGN 371.</b></p> <p><i>Discusses satisfactory testing of shutdown and other procedures.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<p>vii. The OREI control mechanisms should allow the Control Room Operator to fix and maintain the position of the WTG blades, nacelles and other appropriate OREI moving parts to configurations determined by the Maritime Rescue Co-ordination Centre (MRCC). This same operator must be able to immediately affect the control of offshore substations and export cables.</p>	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371, 19A.19.10: Operational requirements as per MGN 371, 19A.19.11: Operational Procedures as per MGN 371</b></p> <p><i>Discusses shutdown methods and maintaining position of WTGs.</i></p>
<p>viii. Nacelle hatches and other OREI enclosed spaces in which personnel are working should be capable of being opened from the outside. This will allow rescuers (e.g. helicopter winch-man) to gain access to the tower if tower occupants are unable to assist and when sea-borne approach is not possible.</p>	✓		<p><b>Section 19A.19.12: SAR Helicopter Procedures and Guidance as per MGN 371.</b></p> <p><i>Lists adopted and under consideration measures for rescue.</i></p>
<p>ix. Access ladders, although designed for entry by trained personnel using specialised equipment and procedures for WTG maintenance in calm weather, could conceivably be used, in an emergency situation, to provide refuge on the WTG structure for distressed mariners. This scenario should therefore be considered when identifying the optimum position of such ladders and take into account the prevailing wind, wave and tidal conditions.</p>	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371.</b></p> <p><i>Design will meet MCA requirements.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
x. Although it may not be feasible for mariners in emergency situations to be able to use wave or tidal generators as places of refuge, consideration should nevertheless be given to the provision of appropriate facilities	n/a		<i>Not applicable to the Wind Farm.</i>
<b>2. Operational Requirements</b>			
i. The Central Control Room, or mutually agreed single point of contact, should be manned 24 hours a day.	✓		<p><b>Section 19A.19.10: Operational requirements as per MGN 371.</b></p> <p><i>Describes the manning of the central control room and the operational feature of the Project.</i></p>
ii. The Central Control Room, or mutually agreed single point of contact, should have a chart indicating the Global Positioning System (GPS) position and unique identification numbers of each of the WTGs in the wind farm, or individual devices in other types of OREI.	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371. Design will meet MCA requirements.</b></p> <p><b>Section 19A.19.10: Operational requirements as per MGN 371. Describes the manning of the central control room.</b></p> <p><b>Appendix 19 A.</b></p>
iii. All MRCCs will be advised of the contact telephone number of the Central Control Room, or mutually agreed single point of contact.	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371, 19A.19.10 Operational requirements as per MGN 371.</b></p> <p><i>States that the Project will meet the MCA's requirements in terms of standards and procedures for generator shutdown and other operational requirements in the event of a search and rescue, counter pollution or salvage incident in or around the Development Area.</i></p>

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
iv. All MRCCs will have a chart indicating the GPS position and unique identification number of each of the WTGs in all wind farms or all devices in other types of OREI.	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371, 19A.19.10 Operational requirements as per MGN 371.</b></p> <p><i>States that the Project will meet the MCA's requirements in terms of standards and procedures for generator shutdown and other operational requirements in the event of a search and rescue, counter pollution or salvage incident in or around the Development Area.</i></p>
v. All search and rescue helicopter bases will be supplied with an accurate chart of all the OREI and their GPS positions.	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371, 19A.19.10 Operational requirements as per MGN 371.</b></p> <p><i>States that the Project will meet the MCA's requirements in terms of standards and procedures for generator shutdown and other operational requirements in the event of a search and rescue, counter pollution or salvage incident in or around the Development Area.</i></p>
vi. The CAA shall be supplied with accurate GPS positions of all OREI structures for civil aviation navigation charting purposes	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371, 19A.19.10 Operational requirements as per MGN 371.</b></p> <p><i>States that the Project will meet the MCA's requirements in terms of standards and procedures for generator shutdown and other operational requirements in the event of a search and rescue, counter pollution or salvage incident in or around the Development Area.</i></p>
<p><b>3. Operational Procedures</b></p>			

Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
<p>i. Upon receiving a distress call or other emergency alert from a vessel which is concerned about a possible collision with a WTG or is already close to or within the wind farm, or when the MRCC receives a report that persons are in actual or possible danger in or near a wind farm and search and rescue aircraft and/or rescue boats or craft are required to operate over or within the wind farm, the MRCC/SC will establish the position of the vessel and the identification numbers of any WTGs which are visible to the vessel. This information will be passed immediately to the Central Control Room, or single contact point, by the MRCC. A similar procedure will be followed when vessels are close to or within other types of OREI site.</p>	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371, 19A.19.10 Operational requirements as per MGN 371.</b></p> <p><i>States that the Project will meet the MCA's requirements in terms of standards and procedures for generator shutdown and other operational requirements in the event of a search and rescue, counter pollution or salvage incident in or around the Development Area.</i></p>
<p>ii. The control room operator, or single point of contact, should immediately initiate the shut-down procedure for those WTGs as requested by the MRCC and maintain the WTG in the appropriate shut-down position, again as requested by the MRCC, or as agreed with MCA Navigation Safety Branch or Search and Rescue Branch for that particular installation, until receiving notification from the MRCC that it is safe to restart the WTG.</p>	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371, 19A.19.10 Operational requirements as per MGN 371.</b></p> <p><i>States that the Project will meet the MCA's requirements in terms of standards and procedures for generator shutdown and other operational requirements in the event of a search and rescue, counter pollution or salvage incident in or around the Development Area.</i></p>



Issue: OREI RESPONSE	Yes	No	Reference notes/Remarks
iii. The appropriate procedure to be followed in respect of other OREI types, designs and configurations will be determined by these MCA branches on a case by case basis, in consultation with appropriate stakeholders, during the Scoping and EIA processes	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371, 19A.19.10 Operational requirements as per MGN 371.</b></p> <p><i>States that the Project will meet the MCA's requirements in terms of standards and procedures for generator shutdown and other operational requirements in the event of a search and rescue, counter pollution or salvage incident in or around the Development Area.</i></p>
iv. Communication procedures should be tested satisfactorily at least twice a year. Shutdown and other procedures should be tested as and when mutually agreed with the MCA	✓		<p><b>Section 19A.19.9: OREI Design Specifications as per MGN 371, 19A.19.10 Operational requirements as per MGN 371.</b></p> <p><i>States that the Project will meet the MCA's requirements in terms of standards and procedures for generator shutdown and other operational requirements in the event of a search and rescue, counter pollution or salvage incident in or around the Development Area.</i></p>



## Offshore Renewable Energy Installations

### Methodology for Assessing the Marine Navigational Safety Risks of Offshore Wind Farms (Compliance with recommended DTI Methodology)

Table 19A.4.2 More General Comments

Section	Yes	No	Reference notes/Remarks
<b>A1: Overview and guidance on navigation safety issues.</b>	✓		<b>Section 19A.2: Guidance and Legislation.</b> <i>Lists the primary guidance documents used during the assessment.</i>
<b>A2: Overview of FSA.</b>	✓		<b>Section 19A.2.2: Formal Safety Assessment Process.</b> <i>This is a structured and synthetic methodology based on risk analysis and cost benefit analysis.</i>
<b>A3: Lessons learned.</b>	✓		<b>Section 19A.6: Lessons Learnt.</b> <i>Details the general considerations included in this NRA of lessons learnt and expert opinion from previous offshore wind farm developments and other sea users.</i>
<b>B1: Base case traffic densities and types.</b>	✓		<b>Section 19A.15: Marine Traffic Survey.</b> <i>Presents 28 days AIS data recorded in February / March 2012 and 18 days AIS recorded in July / August 2012.</i>
<b>B2: Future traffic densities and types.</b>	✓		<b>Section 19A.16: Future Case Marine Traffic.</b> <i>Presents the future case level of activity in the vicinity of Development Area.</i>
<b>B3: The marine environment :</b>			
B3.1 Technical & operational analysis	✓		<b>Section 19A.9: Design Envelope.</b> <i>Wind farm details defined by the Inch Cape Design Envelope.</i>
B3.2 Generic TOA	✓		<b>Section 19A.3: NRA Methodology, Section 19A.7: Marine Traffic Survey Methodology.</b> <i>Overview of methodologies.</i>
B3.3 Potential accidents	✓		<b>Section 19A.18: Formal Safety Assessment.</b>

Section	Yes	No	Reference notes/Remarks
B3.4 Affected navigational activities	✓		<b>Section 19A.15: Marine Traffic Survey.</b> <i>Recreational Vessel Activity, Fishing Vessel Activity.</i>
B3.5 Effects of wind farm structures	✓		<b>Section 19A.18: Formal Safety Assessment.</b> <i>Details the steps by which risk analysis and cost benefit analysis has been applied to this study.</i>
B3.6 Development phases	✓		<b>Section 19A.18: Formal Safety Assessment.</b> <i>Details the steps by which risk analysis and cost benefit analysis has been applied to this study.</i>
B3.7 Other structures & features	✓		<b>Section 19A.10: Baseline Environment, Section 19A.22: Cumulative Effects.</b> <i>Impacts on shipping and navigation arising from offshore wind farms.</i>
B3.8 Vessel types involved	✓		<b>Section 19A.15: Marine Traffic Survey.</b> <i>Identifies types of vessels involved from AIS, ARPA and visual surveys.</i>
B3.9 Conditions affecting navigation	✓		<b>Section 19A.11, 19A.20.6 and 19A.20.</b> <i>Metoccean Data, Impact on Marine Radar Systems and Navigation, Collision Avoidance and Communications.</i>
B3.10 Human actions	✓		<b>Section 19A.18: Formal Safety Assessment.</b> <i>Details the steps by which risk analysis and cost benefit analysis has been applied to this study.</i>
<b>C1: Hazard Identification</b>	✓		<b>Section 19A.18: Formal Safety Assessment.</b> <i>Details the steps by which risk analysis and cost benefit analysis has been applied to this study.</i> <b>Annex 19A.3: Hazard Log.</b>
<b>C2: Risk Assessment</b>	✓		<b>Section 19A.18: Formal Safety Assessment.</b> <i>Details the steps by which risk analysis and cost benefit analysis has been applied to this study.</i> <b>Annex 19A.3: Hazard Log.</b>
<b>C3: Hazard log</b>	✓		<b>Annex 19A.3: Hazard Log.</b>

Section	Yes	No	Reference notes/Remarks
<b>C4: Level of risk</b>	✓		<b>Section 19A.18: Formal Safety Assessment.</b> <i>Details the steps by which risk analysis and cost benefit analysis has been applied to this study.</i> <b>Annex 19A.3: Hazard Log.</b>
<b>C5: Influences on level of risk</b>	✓		<b>Sections 19A.9, 19A.10.2, 19A.12, 19A.15 and 19A.20:</b> <i>Design Envelope, Ports and Auxiliary Functions, Search and Rescue Overview and Assessment, Marine Traffic Survey, and Navigation, Collision Avoidance and Communications.</i>
<b>C6: Tolerability of residual risk</b>	✓		<b>Section 19A.18: Formal Safety Assessment.</b> <i>Details the steps by which risk analysis and cost benefit analysis has been applied to this study.</i> <b>Annex 19A.3: Hazard Log.</b>
<b>D1 : Appropriate risk assessment</b>	✓		<b>Sections 19A.13 Maritime Incidents, 19A.15 Marine Traffic Survey, 19A.15.7 Recreational Vessel Activity, 19A.15.8 Fishing Vessel Activity, 19A.19.3 Construction and Decommissioning Safety Zones, 19A.12 Search and Rescue Overview and Assessment, 19A.20.6 Impact on Marine Radar Systems, 19A.20 Navigation, Collision Avoidance and Communications and 19A.22 Cumulative Effects.</b>
<b>D2 : MCA approval for assessment tools and techniques</b>	✓		<b>Section 19A.18: Formal Safety Assessment.</b> <i>Details the steps by which risk analysis and cost benefit analysis has been applied to this study.</i> <b>Annex 19A.3: Hazard Log.</b>
<b>D3: Demonstration of results</b>	✓		<b>Section 19A.18: Formal Safety Assessment.</b> <i>Details the steps by which risk analysis and cost benefit analysis has been applied to this study.</i> <b>Annex 19A.3: Hazard Log.</b>

Section	Yes	No	Reference notes/Remarks
<b>D4 : Area traffic assessment</b>	✓		<i>Sections 19A.15 Marine Traffic Survey, 19A.18 Formal Safety Assessment, 19A.20 Navigation, Collision Avoidance and Communications, 19A.20.6 Impact on Marine Radar Systems and 19A.22 Cumulative Effects.</i>
<b>D5 : Specific traffic assessment</b>	✓		<i>Sections 19A.9 Design Envelope, 19A.15 Marine Traffic Survey, 19A.18 Formal Safety Assessment, 19A.19.3 Construction and Decommissioning Safety Zones and 19A.20 Navigation, Collision Avoidance and Communications.</i>
<b>E1 : Risk control log</b>	✓		<i>Annex 19A.3: Hazard Log.</i>
<b>E2 : Cost benefit assessment</b>	✓		<i>Section 19A.21: Cost Benefit Analysis. This will be considered in terms of gross cost of averting a fatality (GCAF.)</i>
<b>E3 : Assessment of equity to stakeholders</b>	✓		<i>Section 19A.4.1.1: Equity to Stakeholders. To ensure that all stakeholders and their relevant equities were included within the NRA, a review of the stakeholders' types was undertaken in line with the baseline study.</i>
<b>F1: Tolerability of risk claim</b>	✓		<i>Section 19A.18: Formal Safety Assessment. Details the steps by which risk analysis and cost benefit analysis has been applied to this study.</i>
<b>G1 : Hazard identification checklist</b>	✓		<i>Annex 19A.3: Hazard Log.</i>
<b>G2 : Risk control checklist</b>	✓		<i>Annex 19A.3: Hazard Log.</i>
<b>G3 : MCA MGN 371 compliance checklist</b>	✓		<i>Annex 19A.4 (this Annex): MGN 371 Checklist.</i>