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Subject: Spirit Energy ISH 1 Submission - Spirit Energy [BRO-D.FID4510105]
Date: 14 December 2018 23:57:15
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Dear Sirs

Please find attached Post-ISH 1 Submissions on behalf of Spirit Energy. Appendices have followed under separate cover

Your sincerely

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SPIRIT ENERGY



POST-ISSUE SPECIFIC HEARING 1 SUBMISSIONS



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EXECUTIVE SUMMARY

1. This is the Written Representation of Spirit Energy ("**SE**") following the Issue Specific Hearing 1 ("**ISH 1**") on 4th December 2018 ("**SE ISH 1 Submission**") in the application for a Development Consent Order ("**DCO**"), known as the Hornsea Project 3 ("**HP3**"), by Orsted Limited. This Representation amplifies the Written Representation of SE dated 7th November 2018 and is to assist the Examining Authority ("**ExA**") as requested by it at the ISH1. **[See SE ISH 1 Appendix ZA]**
2. In summary, SE exploits gas from the UK Continental Shelf ("**UKCS**") of the North Sea near to the border with the Netherlands. Exploitation is undertaken through offshore infrastructure including but not limited to subsea wells, pipelines and platforms that together process and transport the gas to the EU mainland. The platforms include one that is permanently manned ("**J6A**") situated in the Netherlands, and that controls others that are normally unmanned (Chiswick and Grove), and subsea wells (including the Grove G5 well). Pipes convey the exploited gas from below the sea bed, up and down each installation between a structural framework, and then to the mainland. **[See SE ISH 1 Appendices A & ZD, Figure 1]**
3. A number of the wells and platforms will have been decommissioned before construction of HP3 so the only existing infrastructure discussed in this Representation is that associated with: the J6A, Chiswick and Grove platforms, the G5 subsea well and their associated connections to one another and the mainland. **[See SE ISH 1 Appendix ZD, Figure 1]**
4. Access to the SE subsea wells is by vessel and access to the platforms is by helicopter (type AW139). The helicopters travel about 730 times a year (twice daily) to J6A and about 120 times a year to each of Chiswick and Grove. The Civil Aviation Authority ("**CAA**") approved Operational Manual ("**OM**") for AW139 requires specified procedures to be executed by which safe flights are able to be undertaken. The procedures include requirements for a standard approach over a specified distance of 7.5 nautical miles ("**nm**") to a platform mounted helideck during a landing reliant on instruments and a further clear airspace beyond the platform that allows the choice for undertaking a Missed Approach ("**MAP**") in the event that a pilot cannot land. The MAP procedure enables a pilot to safely fly past the helideck and to climb back to the minimum safe altitude before circling around to repeat the standard approach so as to effect a safe landing. To allow operation irrespective of wind direction, these procedures require a 7.5nm radius of unobstructed space around each platform in which a helicopter can safely fly. Without the space for a stabilized approach and subsequent MAP, helicopters cannot safely fly in adherence to OM procedures. **[See SE ISH 1 Appendices ZJ and ZK]**
5. The CAA's CAP 764, paragraph 3.32, recognises that obstacles within 9 NM of an offshore destination would potentially impact upon the feasibility to conduct some helicopter operations (namely, low visibility or missed approach procedures) at the associated site. Where emergency procedures are predicated on the use of helicopters to evacuate the installation, impaired safe flight has the potential to threaten the integrity of offshore platform or drilling unit safety cases.



Authorisation of the DCO for HP3 for erection of turbines within a 7.5nm radius of Chiswick, Grove and J6A platforms would materially change the approved safety cases for those platforms but the Protective Provisions advanced by SE to preclude obstacles within such radii would negate such effects by enabling safe flights to be maintained and so enable the Secretary of State to grant the DCO in accordance with statutory guidance EN-3, paragraphs 2.6.183 – 186. The Provisions ensure successful co-existence whilst maximizing resource exploitation. **[See SE ISH 1 Appendices M & ZB]**

6. The introduction of wind turbines within the HP3 area would engender vessel displacement that is likely to increase the risk of vessel allusion with SE platforms Chiswick and Grove. A vessel allusion with a kinetic energy of greater than 5 mega joules with the structure of either platform would have potential catastrophic consequences for life and lost gas resource to the UK economy. Statutory guidance EN-3, paragraphs 2.6.163 and 2.6.183, together with MGN 543, Annex 2, paragraph 3(c) require ALARP and recognise that this may be executed in stages as part of a Navigational Risk Assessment where actual proposed layout is not known. Authorisation of the DCO subject to the Protective Provisions requiring a 2nm diameter safety zone around each such platform, pending conclusion of an ALARP assessment to ensure sufficient sea room remains available around those platforms and platform allision risk can be ALARP would negate and reduce the effects on such offshore infrastructure so as to enable authorisation of the DCO in line accordance with EN-3, paragraph 2.6.186.

7. The Secretary of State has authorised two recent DCOs subject to potential exploration and exploitation of hydrocarbons in authorised fields. **[See SE ISH 1 Appendices Q & S]** Figure 1 of SE's Written Representations identifies C6 and C7 as exploration wells expected to be exploited by installation of subsea wellheads and associated subsea pipelines and equipment. **[See SE ISH 1 Appendix ZA]** Further exploitation of the Chiswick field was publicly announced in January 2018 and is currently underway with the drilling of the C5 well. The C6 well was categorised by Spirit as contributing to its contingent resource base in December 2016. Authorisation of the DCO subject to the Protective Provisions would be in accordance with statutory guidance EN-3, paragraph 2.6.181, for successful co-existence of other users of the sea and also with the Secretary of State's Central Objective in his UK MER Strategy by which resource exploitation be maximized. **[See SE ISH 1 Appendix ZB]**

THE WRITTEN REPRESENTATION OF SPIRIT ENERGY (7TH NOVEMBER 2018)

1. The Written Representation of SE was submitted in this process on 7 November 2018. This submission is "**SE ISH1 Submission**" and amplifies that Written Representation [**See SE ISH 1 Appendix ZA**] as requested by the Ex A on 4th December 2018 in light of the difference between SE and the Applicant that emerged starkly between the parties during that ISH 1. [**See SE ISH 1 Appendix ZO**]
2. In essence, the Applicant disagreed with the correct approach set out in the Written Representation by which the Applicant was required to undertake an environmental impact assessment and an ALARP of the potential affects of its proposed introduction of some 300 turbines in close proximity to the pre-existing offshore infrastructure for gas exploitation operated by SE. The Applicant contended in the ISH1 that the SE approach was equivalent to the introduction of "HSE-style" requirements to the DCO regime and that such matters should not see the "light of day". The Applicant's contention is in error (EN-3, paragraph 2.6.183 and 186).
3. In law, section 104(3) of the Planning Act 2008 requires the application to be determined in accordance with relevant national policy statements ("**NPSs**"). The relevant NPSs here are EN-1 and EN-3. EN-1 creates a presumption in favour of authorising a DCO in certain situations subject to EN-3. EN-3 requires the execution of ALARP by the Applicant in respect of potential affects of its development on offshore infrastructure and activities as an assessment discrete from environmental impact assessment. EN-3, paragraph 2.6.184 prevents the presumption engaging in circumstances applicable here. Paragraph 2.6.185 requires the likely affects on safety to be attributed substantial weight in decision making and paragraph 2.6.186 enables the IPC to grant consent only where effects on offshore infrastructure or activities have been negated, or reduced sufficiently. Here, the grant of the DCO subject to the Protective Provisions proposed by SE in its Written Representations would negate unacceptable risks to safety of helicopter flights integral to operational safety of offshore infrastructure and reduce to an acceptable level the increased risk of vessel allusion with offshore infrastructure. Thereby, the presence of the Protective Provisions in the draft DCO would enable a grant of the DCO in line with the subsequent engagement of the presumption in EN-1.
4. The current draft of the Protective Provisions accompanied the Written Representations and will be updated following consultation with the Marine Management Organisation and any Applicant comments. [**See SE ISH 1 Appendix ZB**]
5. The orthodox approach of SE aligns with that of: the Civil Aviation Authority's Guidance CAP 764, paragraphs 3.31 to 3.32 [**See SE ISH 1 Appendix M**]; the Maritime & Coastguard Agency's Guidance MGN 543 Annex 2, paragraph 3(c) [**See SE ISH 1 Appendix N**]; and the Secretary of State for Business, Energy & Industrial Strategy ("**SoSBEIS**") guidance "The Maximising Economic Recovery Strategy for the UK", Central Obligation, under section 9G of the Petroleum Act 1998 (as amended by the Infrastructure Act 2015). [**See SE ISH 1 Appendix O**]



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1 The existing offshore infrastructure installations and activities of Spirit Energy that would be affected by the proposed development

1.1 As set out in the SE Written Representation, Figure 2 page 9, SE owns and operates assets ("**the Assets**") comprising offshore infrastructure installations by which it exploits gas from the UK Continental Shelf ("UKCS"). The details of the Assets are set out in tables on pages 6-8 of that Representation. **[See SE ISH 1 Appendix ZA]**

1.2 The Assets comprise essentially (so far as relevant here):

1.2.1 Offshore infrastructure in the form of installations:

1.2.1.1 (Permanently Manned) Installation Platform called "J6A";

1.2.1.2 (Normally Unmanned) Installation Platforms:

1.2.1.2.1 "Chiswick";

1.2.1.2.2 "Grove";

1.2.1.3 Subsea well Installations:

1.2.1.3.1 Grove G5;

1.2.2 Licensed Blocks from which gas is, or is currently authorised to be, exploited under exclusive and subsisting licences to search for and bore and get petroleum:

1.2.1.4 (partly within the area of dDCO Works No. 1):

1.2.1.4.1 Block 49/4a, Licence P.468;

1.2.1.4.2 Block 49/9a, Licence P.132;

1.2.1.4.3 Block 49/4b, Licence P.1186;

1.2.1.4.4 Block 49/9c, Licence P.901;

1.2.1.5 (near to the area of dDCO Works No.1):

1.2.1.5.1 Block 49/4c, Licence 1186;

1.2.1.5.2 Block 49/5a, Licence P.455;

1.2.1.5.3 Block 49/5b, Licence P.1186;

1.2.1.5.4 Block 49/5c, Licence P.1186; and

1.2.1.5.5 Block 49/10a, Licence P.83;

1.2.3 Fields below the seabed for which the Secretary of State has granted approval for development (including the installation of facilities and production of petroleum therefrom):

1.2.1.1 (partly within the area of dDCO Works No. 1):

1.2.1.1.1 Chiswick;

1.2.1.2 (near to the area of dDCO Works No.1):

1.2.1.2.1 Markham (UK); and

1.2.1.2.2 Grove.

1.3 The Assets are inter-related:

1.3.1 J6A is a manned installation platform and to which normally unmanned installation satellite platforms are connected below the sea bed by pipes for gas transportation from the satellites to J6. Thus, gas is exploited from below the sea bed in the vicinity of, and by each of, Chiswick and Grove platforms and is then conveyed under pressure to J6. See Figure 2, page 9, of the Written Representations; **[See SE ISH 1 Appendix ZA]**

1.3.2 Figure 1 on page 3 of the Written Representations show Quadrant 49. The green outlines in the north east corner of the Quadrant identify SE's Licence Blocks. Within some of these Blocks lies a Gas Field shown in red. A network of gas pipelines, shown as red lines, links the Fields. J6A is situated over the Markham Field. The Markham Field is bisected by the border between the UK and The Netherlands. That Field is subject to an international Agreement. **[See SE ISH 1 Appendix B]** .

1.4 The interrelationship of the Platforms and Blocks is shown diagrammatically in Figure 2, page 9, of the Written Representations: the Blocks are shown outlined in blue on Figure 2; the Platforms are shown as red dots on that Figure 2; the pipelines are shown as orange lines. **[See SE ISH 1 Appendix ZA]**

1.5 The interrelationship of the Assets with the geographical area of the dDCO Works No1 is also shown on Figure 2, with the dDCO area of Works No1. Being shown in red outline immediately west of the Assets. The Dutch border is shown as a dark blue line bisecting between ST-1 and J6A such that J6A is situated in The Netherlands and pipes extend between it and Chiswick and Grove NUIs by which gas is borne to the EU. J6A exploits itself the Markham Field which is situated partly in the UKCS and The Netherlands. The situation of J6A results from the Agreement between the United Kingdom and the Kingdom of the Netherlands relating to the Exploitation of the Markham Field Reservoirs and the Offtake of Petroleum therefrom (The Hague, May 1992), SI Treaty Series No. 38 (1993) ("the Agreement"). The Agreement is an internal agreement and contains obligations. Article 8 provides for Installations and paragraph (2) requires that neither

Government "shall hinder the free movement of personnel and materials between the Markham Installations and landing facilities shall be freely available to vessels and aircraft of either State". The purpose of this provision is stated as being "for the purposes of exploiting" the Markham Field and it is "subject to the requirements of safety". Article 10 provides for the safety of the Markham System and paragraph (1) entitles the Government to determine, in accordance with its own laws, the safety measures which govern the parts of the Markham System". Paragraph (2) requires the Governments to consult one another with a view to ensuring that there are appropriate safety measures for the Markham System". Article 11 provides for Markham System Inspectors and, under paragraph (2), the Governments affirmed that "it has sole responsibility for all inspections of the part of the Markham System" appertaining to it ...". Paragraph (4) requires the competent authorities of the two Governments to consult each other "to agree practical measures for the implementation of" Article 11. Article 17 provides for Environmental Protection and that each Government "undertakes to make every endeavour, subject to its own laws, to ensure as far as possible that the exploitation of the Markham Field ... and the use of the ... System shall not cause pollution of the marine or coastal environment, or damage facilities onshore or offshore, amenities, vessels or fishing gear". Article 24 provides for jurisdiction and paragraph (2) provides that the Agreement shall not be interpreted as prejudicing or restricting the application of the laws of either State. **[See SE ISH 1 Appendix B]**

1.6 Figure 2 also shows 2 Blocks inside the dDCO area: Blocks 49/4b and Block 49/9a. Figure 1: Planned Future Well Locations in Licence P" (page 5 of the Written Representations) shows at "NUI" the existing Chiswick Platform with red lines representing **existing well trajectories** gas exploitation pipes extending in 3 dimensions (in plan and section) from that Platform. The naturalistic black lines of varying width are faults below the sea bed. Overlaid on this can be seen an orthogonal outline. West of the "NUI" the Figure shows two circles each around a cross and identified as "C6" and "C7". C6 and C7 are the seabed locations of planned wells and show purple lines representing a plan view of the three-dimensional well trajectories planned to get petroleum from two subsurface locations at the western side of Block 49/4a to the sea floor where there will be wellheads (denoted C6 and C7 respectively) connecting via subsea pipelines to the Chiswick installation. **[See SE ISH 1 Appendix ZA]**

1.7 Licence P.468 (Chiswick) was granted by the Secretary of State for Energy under the Petroleum (Production) Act 1934 and the Continental Shelf Act 1964 to "Search and Bore for and get petroleum in block No. 49/4". The Right to Search and bore for and get petroleum is set out in Clause C: **[See SE ISH 1 Appendix A]**

In consideration of the payments and royalties hereinafter provided and the performance and observance by the Licensee of all the terms and conditions hereof, the Minister, in exercise of the powers conferred upon him by the Act of 1934 and the Act of 1964, hereby grants to the Licensee EXCLUSIVE LICENCE AND LIBERTY during the continuance of this Licence and subject to the provisions hereof to search and bore for, and get, petroleum in the seabed and subsoil under the seaward area comprising an area of 243.8 square kilometers more particularly described in Schedule 1 to this Licence being the area comprising block No. 49/4 on the reference map

deposited at the principal office of the Department of Energy Provided that nothing in this Licence shall affect the right of the Minister to grant a methane drainage Licence in respect of the whole or any part of the licenced area or affect the exercise of any rights so granted.

1.8 Licence P.468 subsists. SE is the licence holder. Clause C entitles, under statute, SE to "search and bore for, and get, petroleum in the seabed and subsoil". Figure 1 on page 5 of the SE Written Representations show locations "C6" and "C7" (to the west of the Chiswick "NUI") where SE will "search and bore for" and expects to "get" petroleum from part of the Chiswick field beneath the seabed. **[See SE ISH 1 Appendix A]**

1.9 Each of the existing Platforms is required by section 21 of the Petroleum Act 1987 to have a safety zone of 500m diameter around it.

2 Operation of the installations and access to the platforms and subsea wells

2.1 The J6A manned installation platform is staffed by personnel who reside periodically on that platform. Access to J6A pilots and passengers is primarily by helicopter flights typically from the Netherlands occurring twice daily.

2.2 The normally unmanned installations of Chiswick and Grove are regularly visited by personnel who are transported, as passengers, usually from J6A to each installation by helicopter typically in the morning and are then collected from each of those platforms at the end of the day typically around 12 hours later. Between these times helicopters will return to shore. If the weather is forecast to close in such that flights may not be possible at the end of the planned shift, then a helicopter would be mobilised earlier to collect personnel from the Chiswick and Grove installations before the weather prevents flights.

2.3 Unlike a permanently manned installation such as J6A the normally unmanned installations such as Chiswick and Grove have accommodation that is only intended to be used in exceptional circumstances, hence the importance of collecting personnel from the installation.

2.4 The operator of the helicopters is currently CHC Scotia Limited.

2.5 There are no personnel at subsea well locations except when a vessel is used to conduct operations such as subsea inspection, repair and maintenance (carried out by remotely operated vehicle or divers) or drilling.

2.6 The normally unmanned installations of Chiswick and Grove platforms are staffed by personnel who are transported, as passengers, daily from England to each installation by helicopter and are subsequently collected from each of those platforms. If the weather is forecast to close in, then helicopters will collect personnel from Chiswick and Grove beforehand.

2.7 The subsea well is not ordinarily staffed. It is primarily attended by vessel.

2.8 The Civil Aviation Authority ("**CAA**") is the UK specialist regulator and it regulates the conditions by which helicopters can fly. The safety of those who rely on offshore helicopter flights is the Civil Aviation Authority's (CAA) absolute priority. **[See SE ISH 1 Appendices I, L, M, P]** Offshore helicopter services provide a vital link to ensure the viability of the UK's oil and gas industry. They transfer the majority of the workforce to and from offshore installations in an open sea environment that is both challenging and hazardous. There were a total of 25 UK offshore helicopter accidents between 1992 and 2013, equating to 1.35 accidents per 100,000 flying hours; seven involved fatalities (see CAP 1145, Executive Summary). The conditions are set out in the terms of Flight Operational Manuals ("**Operational Manuals**"). Operational Manuals contain vital procedural and performance related information for a particular aircraft or aircraft Type. Manuals must be kept up to date - inaccurate information could compromise the safety of the aircraft. The CAA delegates to Appointed Officers in helicopter companies the CAA regulation of different helicopter types. A helicopter company develops a series of Operational Manuals by which each type of helicopter must be flown: **[See SE ISH 1 Appendix ZE]**

2.8.1 Operation Manual A;

2.8.2 Operational Manual B;

2.8.3 Operational Manual C; and

2.8.4 Operational Manual D.

2.9 A particular type of helicopter is required to travel between points by the execution of a series of manoeuvres all of which are specified in the Operational Manual for that helicopter type. The type AW 139 currently serves the SE platforms of J-6A, Chiswick and Grove offshore infrastructure and also its drilling rigs. The operator of the helicopters serving the SE Assets is CHC Scotia Limited ("CHC"). It is the responsibility of the aircraft owner or operator to ensure that the correct Flight Manual standard is maintained at all times.

2.10 The Environmental Statement ("**ES**"), Volume 2, Chapter 8, Aviation (PINS Reference A6.2.8)(May 2018) explains the role of helicopters in the situation of flying towards SE's offshore infrastructure and exploitation activities:

8.7.4.1 Three UK helicopter companies, Bristow Helicopters Ltd; Bond Offshore Helicopters Ltd; and CHC Scotia Ltd, operate approximately 95 aircraft in support of the oil and gas industry around the UK. The main operating bases are: Aberdeen; Sumburgh; Scatsta; Norwich; Humberside; and Blackpool. Three other UK helicopter companies regularly operate to offshore locations on a much smaller scale in support of renewable energy projects and marine navigation facilities...

8.7.4.2 A network of [Helicopter Main Routes] HMRs is established to support the transport of personnel and equipment to offshore oil and gas installations. The HMR system is shown in Figure 8.3 [of the ES]. The purpose of an HMR as detailed in CAP 764 is to provide a network of offshore routes as used by civilian helicopters and to effectively provide an obstacle free zone for safe flight

when VFR cannot be used. The HMR structure therefore provides both an identification of common flight paths and a safe means of flying to and from offshore locations outside the coverage of air traffic control...

8.7.4.3 HMRs have no lateral dimensions, with only the route centre-lines charted (CAA, 2016c¹). CAP 764 states that there should be no obstacles within 2 nm either side of HMRs but where planned should be consulted upon with the helicopter operators and ANSP. This distance is based upon operational experience, the accuracy of navigation systems and practicality. The 2 nm distance provides time and space for helicopter pilots to descend safely to an operating height below the icing level should such conditions arise...

8.7.4.6 Compliance with the HMR structure is not compulsory. In the general interests of flight safety, however, civil helicopter pilots are strongly encouraged to plan their flights using HMRs wherever possible (NATS 2017b). It should be noted however that the Offshore Renewables Aviation Guidance (ORAG) (RenewableUK, 2016) advises that the HMR routes in the southern North Sea are rarely followed

8.7.4.7 Helicopters must avoid persons, vessels, vehicles and structures by a minimum distance of 500 ft. In visual conditions, pilots may use HMRs or they may opt to fly direct to their destination in open air space. When operating within Instrument Flight Rules (IFR), helicopters require a Minimum Safe Altitude (MSA) of 1,000 ft. height clearance from obstacles within 5 nm of the aircraft. Whilst following an HMR the helicopters operate IFR under Anglia Radar service provision.

- 2.11 As the helicopters fly closer to the SE offshore infrastructure and activities (such a drilling rig vessels) and are about to reach their respective helipads, different procedures are required to be adhered to. The Operations Manual specifies the manoeuvre required to be followed by a helicopter Type. The manoeuvres include an Offshore Airborne Radar Approach ("ARA"). **[See SE ISH 1 Appendices Y & ZE]**
- 2.12 The AviateQ International Limited Report (October 2018) **[See SE ISH 1 Appendix Y]** includes, in its Appendix 1, a diagram of the ARA Approach in relation on offshore platform. The diagram shows, in illustrative form, the terms of the requirements of the Operational Manual B. The diagram comprises two illustrations: a plan; and a section, and includes arrows specifying flight directions in degrees and distances in nautical miles ("nm"). Notations mirroring the requirements of the Manual also appear on the diagram. These include "Missed Approach: initiate a climbing turn of minimum 30o in the same direction as the offset and continue to climb to MSA". A further note states at (b) to "reference radar to ensure approach and missed approach avoid any radar identified obstacles by at least 1nm". The diagram includes a section specifying the heights of the ARA that mirrors the plan above. The notation "MAP" means "Missed Approach Point" and the diagram point "1" equates to the point by where the pilot must decide to execute a Missed Approach Procedure ("MAP") or continue with the landing manoeuvre. A decision to execute MAP aborts the landing (or take off) onto the platform and results in the helicopter diverting to the left or

¹ The Applicant's reference to "CAA, 2016c" is understood to be the Applicant's characterisation of the CAA Guidance CAP 764.

right of the platform landing area and instead then climbing and turning through a specified series of manoeuvres to return to perform an ARA for a subsequent time by following the ARA procedure as shown in Appendix 1.

- 2.13 An ARA can only be commenced on a straight line towards the destination helipad on a heading that makes an angle of no more than 30° to a line directly downwind of the destination. The MAP would commence from this heading. Depending on the wind direction, a MAP may need to be executed from any plan direction in relation to each Platform. The wind in the vicinity of the Platforms is illustrated in Figure 7.6 and paragraphs 7.4.4.2-3 on page 24 of ES Volume 5, Annex 8.1, Aviation (PINS Reference A6.5.8.1).
- 2.14 In order to adhere to the specification of the Operational Manual for the MAP, a helicopter requires an unobstructed notional column of air in which to both execute the required turns and to climb back up to the start point for the ARA shown in Appendix 1, being the required 7.5nm "Lead in" distance to the Final Approach Track ("FAT"). The ARA is then repeated and may (again) result in a MAP. See paragraph 10.4.3 of the AviateQ International Limited Report (October 2018) where the trajectories for a paths are shown diagrammatically.
- 2.15 CAA, CAP 764, paragraph 3.31(1) provides that a basic requirement is provision of an unobstructed volume of airspace in which to execute safely necessary helicopter certain manoeuvres. Paragraph 3.32 explains how the absence of that unobstructed airspace can have consequences that threaten safe operation of offshore infrastructure installations. **[See SE ISH 1 Appendix M]** The result of the Operational Manual requirements for ARA including MAPs is to require a spatial column around each Platform of 7.5nm diameter. The plan, reference Figure 7.10 on page 33 of ES Volume 5, Annex 8.1, Aviation (PINS Reference A6.5.8.1) shows in relation to each platform the area of a vertical column of airspace unobstructed between sea level and 1,500 feet required for a helicopter type AW139 to execute a MAP following an ARA made in relation to the Platforms: Chiswick, Grove and ST-1 and J6/J6A-CT of SE. The red circles on that plan are shown as 7.0nm diameter (and not 7.5nm as required by the CAA Operational Manual in Appendix 1 to the AviateQ International Limited Report (October 2018)) and so can only be illustrative of the Operational Manual requirement. Within the circles are areas shaded red and green. The green area of each circle shows the westward extent of the MAP and this area correctly assumes an approach by a helicopter from the eastwards and towards each of the given platforms.
- 2.16 The Operational Manuals, and the physical distances that they engender, establish safe helicopter flying for pilots and passengers. Between 1976 and 2013, 73 helicopter accidents occurred in the UK's offshore sector. Thirteen of those accidents resulted in fatalities. In August 2013, a helicopter crashed into the sea while on approach to Sumburgh Airport on Shetland. Four passengers were killed. That was the fifth helicopter accident since 2009 involving the transfer of oil and gas industry personnel to and from offshore installations in the North Sea. The Sumburgh crash prompted the CAA to launch a wide-ranging review into offshore helicopter safety. In September 2013 the CAA initiated a review to examine the risks and hazards of offshore helicopter operations in the UK, which was conducted in conjunction with the European Aviation Safety Agency (EASA) and the

Norwegian Civil Aviation Authority. The CAA review uncovered a worrying statistical trend that shows Norway reporting far more incidents which could endanger life than in the UK. See the Transport Committee's Second Report on Offshore Helicopter Safety (July 2014)) **[See SE ISH 1 Appendix K]**.

- 2.17 In February 2014, the CAA published its review of offshore helicopter safety, which made strong recommendations on safety governance, airworthiness and equipment. **[See SE ISH 1 Appendix I]**
- 2.18 A report was entitled CAP1145: Safety review of offshore public transport helicopter operations in support of oil and the exploitation of oil and gas and made strong recommendations on safety governance, airworthiness and equipment. The CAA published two further reports:
- 2.18.1 CAP1243 Safety review of offshore public transport helicopter operations in support of the exploitation of oil and gas - Progress report (January 2015); and **[See SE ISH 1 Appendix L]**
- 2.18.2 CAP1386 Safety review of offshore public transport helicopter operations in support of the exploitation of oil and gas - Progress report (September 2016). **[See SE ISH 1 Appendix P]**
- 2.19 An action from the review was to set up a CAA-led safety governance body for offshore operations, with representation from key organisations from across the industry, named the Offshore Helicopter Safety Action Group (OHSAG). **[See SE ISH 1 Appendix R]**
- 2.20 Membership of OHSAG includes CHC Scotia Limited.
- 2.21 The current situation is that helicopter access to the SE offshore infrastructure and activities can be undertaken in unobstructed airspace within a diameter of 7.5nm of each of the said infrastructure installations and activities of SE, together with a 5nm diameter unobstructed airspace volume for MAPs.

3 Vessel activity near to the Platforms

- 3.1 In addition to helicopters, vessels traverse the vicinity of the Platforms and the subsea wells of SE.
- 3.2 Save for the Platforms, the only existing navigation feature near to the Platforms is the Off Botney Ground Traffic Separation Scheme ("**TSS**") to their south and southeast. The TSS is aligned at a 45o angle to the Platforms. See Figure 10.1 of ES Volume 5, Annex 7.1, Navigational Risk Assessment (PINS Reference A6.5.7.1). The main routes for transiting appear in Figure 7.4 of ES Volume 2, Chapter 7, Shipping and Navigation (PINS Reference A6.2.7). Table 7.6 identifies the (average) daily traffic using the 16 routes (see page 18 of ES Volume 2, Chapter 7, Shipping and Navigation (PINS Reference A6.2.7)). Route 1 passes between Chiswick and ST1 Platforms and carries some 3 to 4 vessels daily. Route 10 traverses to the north of Chiswick Platform and carries about 1 vessel per day.

- 3.3 Figures 15.4 to 15.7, and 15.9 and 15.11 of ES Volume 5, Annex 7.1, Navigational Risk Assessment (PINS Reference A6.5.7.1) shows the types of vessel that transit in the vicinity of the Platforms.
- 3.4 These vessels currently comprise, essentially, two categories:
- 3.4.1 Third party vessels transiting along sea routes (see Figures 15.5 (Cargo), 15.6 (Tanker), 15.14 (Ferries), 15.15 (Recreational), and 15.16 (Fishing) of ES Volume 5, Annex 7.1, Navigational Risk Assessment (PINS Reference A6.5.7.1); and
 - 3.4.2 SE vessels manned by third parties servicing the Platforms (Figure 15.7 of ES Volume 5, Annex 7.1, Navigational Risk Assessment (PINS Reference A6.5.7.1).
- 3.5 Accidents occur in the area of sea around the Platforms. See Figure 7.7 and paragraphs 7.7.2.25, and 7.7.2.27-29 of ES Volume 2, Chapter 7, Shipping and Navigation (PINS Reference A6.2.7). Civil helicopters are required to assist in the event of a distress call and it is safe to do so.

Third Party Vessels

- 3.6 The existing situation of vessels transiting near to the SE Platforms is shown in Figures 15.9 (page 43) and 15.11 (page 45) of ES Volume 5, Annex 7.1, Navigational Risk Assessment.
- 3.7 Figures 15.14 and 15.15 show how currently commercial ferry vessels traverse from east to west between Immingham and Cuxhaven and recreational vessels reflect that east to west passage passing just between Chiswick and ST1/JT6A Platforms. In addition, Figure 7.11 of ES Volume 2, Chapter 7, Shipping and Navigation (PINS Reference A6.2.7) shows the adverse weather routes, standard routes and AIS tracks of DFDS Seaways that includes a route passing east to west between Chiswick and ST1 Platforms.
- 3.8 Figure 15.16 of ES Volume 5, Annex 7.1, Navigational Risk Assessment shows how currently fishing vessels pass from east to west and vice versa but transit between Grove and ST1/JT6A Platforms.

SE Vessels

- 3.9 There is currently sufficient sea room around each of the SE offshore infrastructure installations for SE vessels to safely approach SE platforms.

4 Legislation affecting the Assets

- 4.1 The operation of, and exploitation of gas by, each of the Assets is itself subject to obligations including under: **[See SE ISH 1 Appendix ZA]**
- 4.1.1 Sections 2 and 3 of the Health and Safety at Work Act 1974;
 - 4.1.2 Section 21 of the Petroleum Act 1987;

- 4.1.3 Section 9A(2) of the Petroleum Act 1998, SE is subject to the Central Obligation (7) of the "Maximising Economic Recovery Strategy for the UK ("**MER Strategy**"). The MER Strategy is published by the Secretary of State for Business, Energy and Industrial Strategy ("**BEIS**"); and
- 4.1.4 Regulation 17(1) of the Offshore Installations (Offshore Safety Directive) (Safety Case etc) Regulations 2015 (SI215/398, in force from 19th July 2015) ("**the OIR 2015**").
- 4.2 A feature of these provisions is that they impose obligations on SE and not on a third party.
- 4.3 In particular, the OIR 2015 require the maintenance of a safety case that includes provisions requiring risks to be subject to the UK concept of "ALARP". A change in the basis of the safety case provisions can result in the suspension of exploitation by the safety case holder and require inspection by the competent authority.

Petroleum Act 1998 and the MER Strategy

- 4.4 The Secretary of State for Business, Energy and Infrastructure Strategy is the decision maker in relation to this Application for a development consent order under the Planning Act 2008.
- 4.5 By section 9A(2) of the Petroleum Act 1998, the SoSBEIS has published, by his delegate the Oil and Gas Authority, the terms of the Central Obligation which states: **[See SE ISH 1 Appendix O]**

7. Relevant persons must, in the exercise of their relevant functions, take the steps necessary to secure that the maximum value of economically recoverable petroleum is recovered from the strata beneath relevant UK waters.

- 4.6 The MER Strategy defines terms including "relevant persons", "relevant functions", and "infrastructure". Infrastructure means "terminals and, upstream of a terminal, equipment, pipelines, platforms, production installations and subsea and subsurface facilities".
- 4.7 The MER Strategy also includes:

Development

13. Relevant persons must plan, commission and construct infrastructure in a way that meets the optimum configuration² for maximising the value of economically recoverable petroleum that can be recovered from the region in which the infrastructure is to be located...

Asset Stewardship

15. The owners and operators of infrastructure must ensure that it is maintained in such a condition and operated in such a manner that it will achieve optimum levels of performance, including production efficiency³ and cost efficiency, for the expected duration of production, taking into consideration the stage of field and asset development, technology and geological constraints...

Technology

18. *Relevant persons must ensure that technologies, including new and emerging technologies, are deployed to their optimum effect, as set out in a plan produced under paragraph 23, in maximising the value of economically recoverable petroleum that can be recovered from relevant UK waters, including in relation to decommissioning...*

Decommissioning

20. *Before commencing the planning of decommissioning of any infrastructure in relevant UK waters, owners of such infrastructure must ensure that all viable options for their continued use have been suitably explored, including those which are not directly relevant to the recovery of petroleum such as the transport and storage of carbon dioxide.*

21. *Relevant persons must decommission infrastructure located in relevant UK waters in the most cost effective way that does not prejudice the maximising of the recovery of economically recoverable petroleum from a region. This includes ensuring due regard is given to the obligations in paragraph 18 insofar as they apply to decommissioning.*

- 4.8 MER Strategy paragraphs 30 to 34 provide limited exceptions where the Central Obligation need not be met. Those exceptions do not apply in relation to the Application.

Safety and "Safety Case"

- 4.9 The Assets are required to be operated and maintained safely. Each platform is subject to requirements in a "safety case". **[See SE ISH 1 Appendix ZC]**
- 4.10 The regulation of safety in the marine environment is fragmented. The marine environment (including that of the UK) is subject to three Directives whose requirements abut: Directive 2008/56/EC; 2012/18/EU; and 2013/30/EU. The coverage of the Directives does not impose obligations on the situation of this Application for a development consent order but required measures to be taken by the State. **[See SE ISH 1 Appendix ZF]** In line with Directive 2008/56/EU, the UK enacted the Marine and Coastal Access Act 2009 provisions for the Marine Plan provide measures for "clean, healthy, safe, productive and biologically diverse oceans and seas", and published the UK Marine Policy (March 2011) (see paragraph 2.5.8-9 of that Statement) as a framework for the Marine Plans. **[See SE ISH 1 Appendices E & J]**
- 4.11 Each of SE's relevant installations is subject to a Safety Case. So far as relevant, there is a Safety Case for each of: Chiswick; Grove; and J6A. **[See SE ISH 1 Appendices ZG & ZC]**

5 Development consent orders concerned with safe operation of offshore installations

- 5.1 The Secretary of State has recently granted development consent orders that included protective provisions concerned with the "continuing safety and operational viability" of offshore situations. Two examples show his approach in line with the requirements of paragraphs 2.6.181 (successful

co-existence), 2.6.183 (ALARP), and 2.6.185 (safety and viability) of EN-3 and in line with the guidance of the Marine Plan. **[See SE ISH 1 Appendices Q & S]** See below the relevant guidance.

- 5.2 In the Hornsea Two Offshore Wind Farm Order 2016, No. 0000, (in force from 7th September 2016), Article 6(1) authorises development of an offshore wind farm subject to protective provisions in Schedule 12: paragraphs 5(a) of each of Parts 8, 9 and 10, entitle the protected party to require reasonable requirements to ensure continuing safety and operational viability of a pre-existing pipeline. The terms of the paragraph reflect those of EN – 3, paragraph 2.6.185.
- 5.3 In the more recent East Anglia Three Offshore Wind Farm Order 2017, No. 826 (in force from 29th August 2017), Article 3(1) authorises development of an offshore wind farm subject to protective provisions in Schedule 8, Part 7, For the Protection for Oil and Gas Licences, paragraphs 75-87. The scope of those provisions encompasses, in paragraphs 76-77 provisions requiring a Proximity Agreement in relation to potential exploration, appraisal, development and/or decommissioning of hydrocarbon resources in "the Protected area". The latter area is defined as an area coloured green on a plan. Paragraph 82 address the potential for "realistic oil and gas resources". **[See SE ISH 1 Appendices Q & S]** The use of the phrase "successfully co-exist" in paragraph 86 reflects the same phrase in EN- 3, paragraph 2.6.181.

6 Meetings between spirit energy and the Applicant

- 6.1 There have been a series of meetings between SE and the Applicant about the proposals envisaged for development of the area west of the Platforms for wind turbines.
- 6.2 On 16th September 2016, SE discussed the proximity of the proposal to Chiswick Platform and the associated impracticalities regarding helicopter access/egress to/from that Platform and any future exploration vessels". See Table 11.4 of ES Volume 2, Chapter 11, Infrastructure and Other Uses (PINS Reference A6.2.11).
- 6.3 On 5th December 2016, SE discussed the recently acquired licence P2286 covering Blocks 49/3, 49/9d and 49/4d and that a drill or drop licence with a well was required to be drilled before September 2019. See Table 11.4 of ES Volume 2, Chapter 11, Infrastructure and Other Uses (PINS Reference A6.2.11).
- 6.4 On 12th December 2016, SE discussed the Radar Early Warning System ("**REWS**") on the J6A platform. See Table 11.4 of ES Volume 2, Chapter 11, Infrastructure and Other Uses (PINS Reference A6.2.11).
- 6.5 On 20th September 2017, SE discussed: REWS and the impediment to "collision risk with platforms or attendant vessels"; Proximity and crossing of assets and the "potential need for exclusion zones"; "Risk assessment methodology: Discussion is needed on the approach and conclusions reached. [SE] concerns that what is considered intolerable from a safety perspective are incorrectly evaluated as not posing a significant impact"; Maximising Economic Recovery: steps are necessary to be taken to secure the maximum value of economically recoverable

petroleum from the strata beneath UK waters. See Table 11.4 of ES Volume 2, Chapter 11, Infrastructure and Other Uses (PINS Reference A6.2.11).

- 6.6 In May 2018, the Applicant then undertook an ES. Paragraph 11.7.16.1 bullets 1 – 4 of ES Volume 2, Chapter 11, Infrastructure (PINS Reference A6.2.11) asserted that services associated with the oil and gas industry (helicopters for personnel transfer and emergency evacuation) and vessels for supply and support and REWS to prevent vessel collision, were properly addressed in ES Volume 2, Chapters 8 and 11.
- 6.7 The Applicant responded to the concerns above by asserting: collision risk had been assessed in the ES; REWS had been assessed and displaced shipping had been assessed in ES Volume 2, Chapter 7, Shipping and Navigation; safety has been assessed in ES Volume 2: Chapter 8, Aviation; and Chapter 7, Shipping; and in Chapter 11, Infrastructure.
- 6.8 In fact:
- 6.8.1 Table 11.2 of the ES Volume 2, Chapter 11, Infrastructure and Other Uses (PINS Reference A6.2.11) set out a summary of EN-3, paragraphs 2.6.183-184 and 186-188 (but not paragraph 185) and directed the reader to other Chapters within the ES;
- 6.8.2 Table 11.2 of the ES Volume 2, Chapter 11, Infrastructure and Other Uses (PINS Reference A6.2.11) expressly refers to the EN-3, paragraph 2.6.183 statutory guidance test of "as low as reasonably practicable", the Table itself refers back to other Chapters in the ES and the ES itself contains no ALARP methodology nor any discrete ALARP assessment in relation to paragraph 2.6.183 matters despite the stated concern of SE on 20th September 2017;
- 6.8.3 ES Volume 2, Chapter 12, Inter-related Effects (PINS Reference A6.2.12) includes no ALARP assessment of the inter-related risk of vessel allusion with a Platform nor of helicopter and turbine conflicts. At its highest, the summary conclusions in Table 12.15 on page 34 go so far as to accept that "potential exists" for interactions comprising "disruption of vessel access to oil and gas platforms and disruption of helicopter access to oil and gas platforms", and that there is "potential for wind turbines to deviate vessels nearer the platforms" and that an "effect will" arise during operation in respect of the wind farm. But there is no ALARP assessment of that potential affect from vessel allusion with a platform or of the affect upon safe helicopter flights arising from the intervention of wind turbines near to the platforms; and
- 6.8.4 Table 11.2 of ES Volume 2, Chapter 11, Infrastructure and Other Uses (PINS Reference A6.2.11) refers alone to siting of "Hornsea Three" whereas a lawful EN-3 application of paragraph 2.6.184 requires evidence of and consideration of "site design" and not the siting of "Hornsea Three" area alone. There is currently no evidence of any secured micro-piling "site design" nor the situations of ay associated installations before the Examining Authority.

7. The Application

The Application for a Development Consent Order under the Planning Act 2008

- 7.1 The Applicant has been granted an agreement for licence by the Crown Estate from March 2016 (see paragraph 1.4.1.4 of the ES, Volume 1, Chapter 1, Introduction (PINS Reference A6.1.1)(May 2018)).
- 7.2 The Applicant proposes to interpose within this pre-existing situation an entitlement to erect up to 300 wind turbines in a diamond-shaped area immediately west of the Assets.
- 7.3 The publisher of the MER Strategy is the decision maker on the Application. **[See SE ISH 1 Appendix O]**
- 7.4 Pursuant to sections 14(1)(a) and 15(2) and (3) of the Planning Act 2008 ("**PA 2008**"), the Applicant has applied to the **SoSBEIS** for consent under sections 114 and 120 for a development² consent order ("**the dDCO**") authorising the construction of a windfarm of a capacity of least 100MW within a circumscribed c.696km diamond shaped area of seabed of c. 696km identified in Offshore Order Limits and Grid Co-ordinates Plan, PINS Document Reference A2.2.1 (May 2018)) for "up to 300 turbines". Within that area, "Works No. 1" is identified and that is the particular area in which turbines are envisaged to be situated ("**the Application Area**") (PINS Document Reference A2.4.1, Sheet 1). The easternmost edge of the Application Area comprises a straight line between the ETRS89 (Degree Minutes Seconds) co-ordinates at Development Area Node Points 66/61 and 68/63 shown on that plan and the accompanying table in Document A2.4.1 ("**the Eastern Boundary of the Application Area**"/ "**the Eastern Boundary**").
- 7.5 The Assets of SE lie immediately east of the Eastern Boundary. See the Table on pages 6-7 of the Written Representations. In particular, the proposed Eastern Boundary would lie:
- 7.5.1 1.5nm west of the Chiswick Platform;
- 7.5.2 2.4nm west of the Grove Platform;
- 7.5.3 6.9nm west of the Markham J6A Platform; and
- 7.5.4 1.5nm west of the subsea Grove G5 subsea well.
- 7.6 The dDCO, Article 3(1) would authorise the Applicant to carry out within the Application Area Works No1., subject to the requirements. dDCO, Part 3, Requirements, provides for "Detailed offshore design parameters". Paragraph 2(1)(a)(i) caps the height of the turbines to 325m if there are less than 160 and paragraph 2(b)(i) caps the turbine height to 250m if 300 turbines are actually built. The terms of paragraph 2(1)(b) and (c) are not mutually exclusive. Therefore, there can be erected 160 turbines of 325m height and a further 140 of 250m in height up to 300 in total.

² By section 235(1), "development" is defined by section 32. "Land" includes buildings, and land covered by water. By subsection (2), a reference to a right over land includes a right to do, or to place and maintain anything on, on or under land or in the air-space above its surface.

- 7.7 No Works Plan section limits the height of the Application Area nor its depth below the sea bed. The Application Form, paragraph 5, refers to a maximum potential number of 321 turbines in the Application Area. No Design Parameter regulates turbine dimensions where the number erected exceeds 300. Therefore, there is no upper height cap on the 21 turbines explained by the Application Form to be proposed.
- 7.8 Paragraph 2(1)(c) requires that there be a minimum of 1km, in all directions, between each of the authorised turbines. Therefore, this requirement engenders a minimum area of a notional grid layout (comprising a notional net of 1km squares with 1 turbine at each node) applied within the Application Area. Conversely, the 1km minimum distance could be expanded in any direction so as to enable the turbines to be actually sited across the whole extent of the Application Area.
- 7.9 ES, Volume 2, Chapter 11, Infrastructure (PINS Reference A6.2.11)(May 2018), paragraph 11.8.1.2 categories included "oil and gas operations". However, this was in the context that the "spatial programme is not yet known". See Table 11.20, (page 40 column 3, row 1) of ES Volume 2, Chapter 11, Infrastructure (PINS Reference A6.2.11). See also pages 43-44 and Table 11.20 (column 1). Further, paragraphs 11.9.2.6-9 did not consider the "potential impacts" on oil and gas activity. Table 11.27 includes certain measures concerning REWS and advisory distances. No other measures were included as part of the application proposals.
- 7.10 Within the Application Area, the actual number beyond the minimum to supply the 100MW capacity applied for (i.e. about 11 turbines), and the siting of, turbines cannot be known in the Examination because the Applicant orally confirmed at ISH1 that the Application project scale remains contingent on a final funding decision by its Board yet to be made. The Examining Authority cannot be in a better position than the Applicant. The Applicant also accepts that the application for "up to 300" turbines assumes that less than that number may be erected. For example, constraints may inhibit the number actually able to be built.
- 7.11 Understandably, therefore, the Applicant has adopted a "*Rochdale* Envelope" approach to its Application. Consistent with the current state of its affairs, the Applicant is unable to provide Design Parameters fixing numbers or micro-siting and, instead, has provided a variety of pictorial illustrations envisaging siting ("**Indicative Plans**") for the Application Area whilst understanding that its pictures are no more than that. Advice Notes provide the appropriate approach to ensure that the potentially understandable desire for flexibility is not abused. For example, where the need for protective provisions cannot be addressed by counter-veiling objective justification.
- 7.12 The Environmental Statement, Chapter 3, Project Description (PINS Reference A6.1.3)(May 2018), Figure 3.9 shows the "Indicative Layout" envisaged as one example of how dDCO, Part 3, paragraph 2(1)(b) might be laid out ("**Layout A**"). Layout A shows 300 'points' on the plan following a notional regular grid and with a continuous line of turbines along the boundary of the Application Area set at an apparently closer distance to each other. Applying the scale on that Figure, the boundary turbines appear to be at 1km intervals in line with paragraph 2(3) of Part 3, whereas the turbines shown within the Application Area are shown apart at a distance greater than the minimum required by that paragraph. That is, Layout A shows an area tolerance, or actual

capacity, in which the spacings between the turbines illustrated can be contracted to the minimum required by paragraph 2(3) so that not all of the Application Area can be required for either the minimum 100MW capacity sought nor the area for the capacity generated by "up to 300" turbines. Figure 3.10 shows a "Layout B" ("**Layout B**") to similar effect but with 160 turbines. There is no evidence of a layout for either 160 or up to 300 turbines applying the minimum requirement of dDCO, Part 3, Requirements paragraph 2(1)(c) nor evidence of a seabed constraint precluding a more contracted layout than illustrated in the ES Layouts A and B.

- 7.13 Paragraph 2(5) of the dDCO, Part 3, "Detailed offshore design parameters" describes the maximum area of the seabed that can be occupied by all of the turbine foundations.
- 7.14 The Environmental Statement, Chapter 3, Project Description, Figure 3.10, describes the foundations of each turbine and Table 3.6 provides parameters.

Construction of the Turbines

- 7.15 Construction of 300 turbines would require the presence of 3,200 vessels. See Table 3.8 of ES Chapter 3, Project Description (PINS Reference A6.1.3). Each turbine would be attached to a foundation and have associated structures including 12 offshore substations. See Tables 3.9-3.15 and 3.39 of ES Chapter 3, Project Description (PINS Reference A6.1.3).

Application for a Deemed Marine Licence

- 7.16 The Applicant has also sought consent of a Marine Licence. See dDCO Schedule 11. Paragraph 2(1) and 3 describe the activities of construction, maintenance and operation of Works No.1 on the sea bed of "up to 300" turbines fixed to the sea bed, and also any "necessary or expedient" associated development, within the Application Area also described in paragraph 5 by grid co-ordinates. Part 2 of the proposed Marine Licence, paragraphs 1(1) and (5), mirror paragraphs 2(1) and (5) of the terms of the dDCO, Part 3, "Detailed offshore design parameters".

Timing of the Application Development

- 7.17 The dDCO, Article 3(1) would authorise the Applicant to carry out within the Application Area Works No1., subject to the requirements. dDCO, Part 3, Requirements, provides for "Detailed offshore design parameters", and paragraph 1 requires the authorised project to be *commenced* no later than the expiry of 7 years from the date on which the dDCO would come into force. Assuming the order was confirmed in late 2019, that would require commencement (not completion) by a date in late 2026. The Environmental Statement, Chapter 3, Project Description, paragraph 3.6.3.10 explains that installation would take about 30 months. Therefore, once commenced and assuming all 300 turbines were chosen to be erected, completion may take another 2 ½ years.

Need for the Application

- 7.18 There is no evidence of the need for the particular extent of the development (between about 11 turbines with a capacity of at least 100mw and “up to 300” turbines) that the Application would permit beyond reliance by the Applicant on paragraphs 3.1.3-3.1.4 of EN-1. It relies on general need.

8 Domestic legal framework

- 8.1 The Application must be determined by the application of section 104 of the PA 2008. The Application comprises two applications:

8.1.1 an application for a DCO; and

8.1.2 an application for a Marine Licence.

The first is subject to section 104. The second is subject to section 104(2)(aa) and section 120(3).

- 8.2 Section 104 (2) requires the Secretary of State ("**SoS**") to have regard to:

8.2.1 Any NPS that has effect in relation the Application;

8.2.2 The appropriate marine policy documents pursuant to section 59 of the Marine and Coastal Access Act 2009 ("**MACA 2009**"); and

8.2.3 Any other matters which the SoS thinks are "both important and relevant" to his decision.

- 8.3 Section 104(3) requires the SoS to decide the application in accordance with any relevant NPS, except to the extent that subsections (4) to (8) apply.

The Marine Policy Documents

- 8.4 Section 104(2)(aa) of the PA 2008 requires that regard be had to the appropriate marine policy documents. Those documents derive from the Marine Policy Statement and reflect its approach.

- 8.5 The Government published the Marine Policy Statement in 2001. It includes: (Emphasis added) **[See SE ISH 1 Appendix E]**

2.3.1.5 Marine Plans should reflect and address, so far as possible, the range of activities occurring in, and placing demands on, the plan area. The Marine Plan should identify areas of constraint and locations where a range of activities may be accommodated. This will reduce real and potential conflict, maximise compatibility between marine activities and encourage co-existence of multiple uses. In addition the involvement of stakeholders and local communities in the marine planning process will help to maximise adherence to plan-led proposals, identify opportunities for compatible uses and minimise potential conflicts. Should conflicts arise, the

marine plan authority in reaching a decision must integrate economic, social and environmental considerations in conformity with the MPS and draw on other considerations, evidence or supplementary guidance where appropriate. This process will be aided by the sustainability appraisal for a Marine Plan, as it will examine the degree to which conflicts are being addressed through mitigating actions...

2.3.1.2 Marine Plans will be based on a sound evidence base, as far as possible. This will identify issues to be addressed in the plan and inform plan development. The evidence base will be developed from a wide range of sources including existing plans²⁸, the plan area community, science advisors, statutory and other advisors, industry and other marine users. Where evidence is inconclusive, decision makers should make reasonable efforts to fill evidence gaps but will also need to apply precaution within an overall risk-based approach²⁹, in accordance with the sustainable development policies of the UK Administrations. This will apply equally to the protection of the natural marine environment, impacts on society and impacts on economic prosperity.

2.3.2.1 Enforcement or authorisation decisions that affect or might affect the UK marine area must be made in accordance with the relevant marine policy documents³⁰ unless relevant considerations, such as advances in scientific knowledge and technology for example, indicate otherwise. This means that decisions on activities in the UK marine area will be plan led once Marine Plans are in place...

2.3.2.2 There are a number of principles that should also be taken into account, specifically that decisions should:

- ...
- *Be conducted in a way that takes into account all of the relevant UK Administrations' policy objectives affecting the marine area; ...*
- *Be taken using a risk-based approach that allows for uncertainty, recognising the need to use sound science responsibly, as set out in the high level objectives; ...*
- *Look to avoid and then mitigate negative impacts where possible at various stages of development, including appropriate conditions in line with legal obligations, in a manner that is proportionate to the potential impacts of the proposal under consideration. ...*

The Marine Plan

- 8.6 Pursuant to section 59 of MACA 2009, the East Inshore and East Offshore Marine Plan (April 2014) ("**the Marine Plan**") comprises the appropriate marine policy documents. Figure 1 shows Area 4: East Offshore. The Application Area falls within Area 4. Paragraph 33 summarises Area 4 and that it contains 39% of the oil and gas licence blocks in England which are anticipated to continue into the foreseeable future, together with exploration for new oil and gas reserves. It also

contains "high levels of shipping traffic passing through the offshore area" and also coming into busy ports on the Humber, Felixstowe and other smaller ports. **[See SE ISH 1 Appendix J]**

- 8.7 The Marine Plan was formulated in light of the Marine Policy Statement (2011) ("**the Marine Policy Statement**"). **[See SE ISH 1 Appendix E]** The Marine Policy Statement states that the Government's vision for the marine area is for: "clean, healthy, safe, productive and biologically diverse oceans and sea" and the Marine Plan plays a part in delivering that high level vision and by 20234 there will be new infrastructure developments and improved co-ordination of existing activities in the East Plan areas "as a result of an integrated approach that respects other sectors and interests". See paragraphs 50-51 of the Marine Plan.
- 8.8 The Marine Plan is required to be read as a whole. See paragraph 49, 56, 60, 79, and 492.
- 8.9 Chapter 4 address Implementation of the Marine Plan. This includes: paragraphs: 494, In implementing the plans, the relevant public authorities, including the Marine Management Organisation, will need to apply precaution within an overall risk-based approach²⁷⁶ (see below for Footnote 276). In accordance with the sustainable development policies of the United Kingdom Administrations²⁷⁷ (see below for Footnote 277). This will apply equally to the protection of the natural marine environment, impacts on society and impacts on economic prosperity.
- 8.10 Paragraph 495 states: When decisions are made under the precautionary principle in situations of uncertainty, the uncertainty that is being responded to should be made explicit, as should the precautionary measures that are being taken. This will ensure transparency, and also provide a clear basis for monitoring and feedback to future decision-making and management.
- 8.11 Paragraph 496 states: The precautionary principle covers those specific circumstances where: scientific evidence is insufficient, inconclusive or uncertain, and there are indications through preliminary objective scientific evaluation that there are reasonable grounds for concern that potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the requirements of protection. Ultimately, the precautionary principle requires a balancing exercise in which the risks of an activity, in the light of imperfect evidence, must be balanced against the need for sustainable development. In having recourse to the precautionary principle, the aim is to identify (and where possible quantify) the plausible risks, reduce uncertainty (to the extent possible) and then employ management measures that are proportionate to the activity in question and the level of plausible risk.
- 8.12 Footnote 276 states: This means that if the risks from an activity are uncertain preventative measures may be required if there is concern that human activities may harm human health, living resources and marine ecosystems or interfere with other legitimate uses of the sea or have other social and economic impacts. This would need to be considered based on risk.
- 8.13 Footnote 277 cross refers to paragraph 2.3.1.2 of the Marine Policy Statement:

Marine Plans will be based on a sound evidence base, as far as possible. This will identify issues to be addressed in the plan and inform plan development. The evidence base will be developed

from a wide range of sources including existing plans²⁸, the plan area community, science advisors, statutory and other advisors, industry and other marine users. Where evidence is inconclusive, decision makers should make reasonable efforts to fill evidence gaps but will also need to apply precaution within an overall risk-based approach²⁹, in accordance with the sustainable development policies of the UK Administrations. This will apply equally to the protection of the natural marine environment, impacts on society and impacts on economic prosperity.

The Objectives of the Marine Plan

- 8.14 The Application Planning Statement appears to rely exclusively on Objective 3 and WIND 2 of the Marine Plan. See Planning Statement (PINS Reference A8.3(May 2018), page 8, paragraphs 3.4.4.7 and 3.4.4.8 and has failed to have regard to other relevant Marine Plan Objectives and Policies notwithstanding the requirement of section 104(2)(aa) of the PA 2008. The Application documentation appears to be silent on the express consideration and application of relevant Marine Plan policies and Objectives. This is a gap.
- 8.15 Objective 1 is to promote the sustainable development of economically productive activities, taking account of spatial requirements of other activities of importance to Area 4.
- 8.16 Objective 2 is to support activities that create employment at all skill levels, taking account of the spatial and other requirements of activities in Area 4. Paragraph 68 amplifies this Objective by explaining that it relates to "the need to ensure that local people can access the jobs being created in" Area 4.
- 8.17 Objective 11 is to continue to develop the marine evidence base to support implementation, monitoring and review of the East marine plans. Paragraphs 77-80 amplify this Objective by explaining that it is critical that marine plans are based on the best available evidence in accordance with the Marine Policy Statement and the Objective highlights the importance of continuing to develop the evidence base beyond the marine plans publication.

Relevant Marine Policy

- 8.18 In addition to WIND 2, other Marine Plan Policies are relevant but not addressed by the Applicant's evidence. These are:
- 8.18.1 GOV2;
 - 8.18.2 GOV3;
 - 8.18.3 OG1; and
 - 8.18.4 WIND 2. **[See SE ISH 1 Appendix J]**

GOV2

8.19 GOV2 states:

Opportunities for co-existence should be maximized wherever possible.

- 8.20 The reasoned justification in paragraphs 264-268 amplifies what this policy means. GOV2 has been drawn up "to ensure co-existence is put into practice" and because Area 4 is "extremely busy and may become more so in the future". Co-existence (including activities in the same area, but vertically or laterally separated, and co-location in the same space) "is particularly pertinent to the busy East marine plan areas including Area 4. GOV2 is required to be implemented by the SoS "when assessing new development and other activities" and there is a need to better understand the positive and negative, direct and indirect, permanent and temporary effects, "and the mechanism for enabling co-existence to happen" (see Objective 11 also).
- 8.21 The Government recognises that "co-existence is already considered to some degree" (and therefore, not exclusively) for development subject to EIA. However, "Proposals should demonstrate the extent to which they will co-exist with other existing or authorised (but yet to be implemented) activities and how this will be achieved". Paragraph 268 explains that "technical feasibility/opportunities and constraints analysis help to identify co-existence opportunities and provide a mechanism for informing decision-taking". It gives an example of a pipeline "in close proximity" to each other in relation to an under seabed storage facility to reduce impact on other marine users. That is, the contraction of infrastructure into a smaller space enables successful co-existence by others.
- 8.22 The Applicant has not addressed this policy in its application for a Marine Licence. The evidence of Spirit Energy shows that, subject to the proposed Protective Provisions of Spirit Energy in the draft DCO, then Policy Gov 2 can be satisfied because the Application seeks authorisation for "up to 300" turbines and the ultimate scale of that degree of turbines cannot at this time be known.

GOV3

8.23 GOV3 states that:

Proposals should demonstrate in order of preference:

- 8.23.1 That they will avoid displacement of other existing or authorised (but yet to be implemented) activities;
- 8.23.2 How, if there are adverse impacts resulting from displacement by the proposal, they will minimize them;
- 8.23.3 How, if the adverse impacts resulting from displacement by the proposal cannot be minimized, they will be mitigated against; or

- 8.23.4 The case for proceeding with the proposal if it is not possible to minimize or mitigate the adverse impacts of displacement.
- 8.24 "Displacement" is a defined term in the Marine Plan Glossary and means: "The action of causing the moving of a development, or activity from its current place or position, eg shipping traffic can no longer occur in an area due to the placement of built infrastructure".
- 8.25 The reasoned justification in paragraphs 269-273 amplifies what this policy means. Marine planning seeks to manage competing demands, reduce conflict and promote compatibility in the marine area. The converse of co-existence is displacement. The need to promote co-existence (GOV2) "is essential in minimising or mitigating the negative impacts of displacement". The East marine plan promotes consideration of the impacts of displacement in individual proposals to ensure that impacts are minimized, conflicts reduced and "compatibility is maximized".
- 8.26 The Applicant has not addressed this policy in its application for a Marine Licence. The evidence of Spirit Energy shows that, subject to the proposed Protective Provisions of Spirit Energy in the draft DCO, then Policy Gov 3 can be satisfied because the Application seeks authorisation for "up to 300" turbines and the ultimate scale of the degree of turbines (between c. 11 and up to 300) cannot at this time be known.

OG1

- 8.27 OG1 states:
- Proposals within areas with existing oil and gas production should not be authorised except where compatibility with oil and gas production and infrastructure can be satisfactorily demonstrated.***
- 8.28 The reasoned justification in paragraphs 290-294 amplifies what this policy means. Figure 14 identifies the Spirit Energy fields and infrastructure. The justification includes:
- 290. Oil and gas production in the East marine plan areas is currently the largest sector in terms of economic output. The spatial footprint of individual developments is relatively small, but there is exclusivity over the area occupied by the infrastructure, including statutory safety zones of 500 metres around platforms and certain subsea infrastructure, (eg subsea manifolds) and consultation requirements for areas up to nine nautical miles¹⁷⁰ around a platform for any activities that may interfere with helicopter approaches (such as wind turbines). The safety zones are in place for the protection of personnel, the infrastructure and other users of the sea. For existing infrastructure the impact of these exclusions is known and accommodated, for example it is factored into windfarm developments through discussion between licence applicants, oil and gas operators and the relevant regulators. For a map of current infrastructure relating to oil and gas, see figure 14 ...*
- 291. Plan policy OG1 clarifies that, where existing oil and gas production and infrastructure are in place, the areas should be protected for the activities authorised under the production licence*

consent until the licence is surrendered, (including completion of any relevant decommissioning activity), or where agreement over co-located use can be negotiated. The policy will be implemented by the public authorities responsible for authorising the oil and gas activities and all other developments, including co-located activities...

293. This policy adds value to existing policy as it gives clarity on how national policy is applied where other activities may want to use the same space. It builds upon national policy, for example, the Marine Policy Statement (3.3.4): 'The United Kingdom's policy objective to maximise economic development of the United Kingdom's oil and gas resources' and 'Maximising the economic recovery of United Kingdom oil and gas resource sustainably is therefore a priority in the United Kingdom's energy supply and energy security strategies' (3.3.8). This policy is more specific, as it takes account of the relative importance of gas production in the East marine plan areas to the United Kingdom, reflecting national policy and current practice.

294. The responsibility for implementing policy OG1 will lie with relevant public authorities, including the Marine Management Organisation, working in conjunction with the Department for Energy and Climate Change.

- 8.29 The Applicant has not addressed this policy in its application for a Marine Licence. The evidence of Spirit Energy shows that, subject to the proposed Protective Provisions of Spirit Energy in the draft DCO, then Policy OG1 can be satisfied because the Application seeks authorisation for "up to 300" turbines and the ultimate scale of that degree of turbines cannot at this time be known.

OG2

- 8.30 OG2 states:

Proposals for new oil and gas activity should be supported over proposals for other development.

- 8.31 The reasoned justification in paragraphs 295-299 amplifies what this policy means. This includes:

295. *All oil and gas activity is spatially restricted to the areas where the resource is found, or likely to be found. Although some of these are known, the total extent and recoverability of the reserves is not, therefore exploration and appraisal activity is ongoing. This creates uncertainty as to the future location and spatial extent of exploration and potential production activity. Future oil and gas activity has the potential to require access to the same area of seabed as other activities. In most cases, the consequence of this will be insignificant due to the small footprint of oil and gas production infrastructure. In some cases this may not be the case, such as where another user of the sea bed has a lease in place. Where a lease has been agreed for a co-located activity, there may be a requirement for negotiation between parties involved. Where a lease has been agreed for a co-located activity, there may be a requirement for negotiation between parties involved. More detail on how such issues may be resolved between offshore wind and oil and gas can be found elsewhere, for example in the written ministerial statement made by the Secretary of State for Energy and Climate Change to Parliament on the 12th July 2011.*

296. *In situations where there is potential conflict between alternative development opportunities, the relevant public authority considering the proposals would be expected to consider any impact on existing proposals or developments in its decision. Public authorities will need to look at the full range of impacts and benefits when making decisions which could affect oil and gas developments, or when considering oil and gas activities that could affect other developments.*

297. *Oil and gas operators can apply for seaward exploration licences to undertake seismic activity in areas of the United Kingdom Continental Shelf not covered by a seaward production licence and these can be awarded outside of Licensing Rounds...*

298. *This policy adds value by clarifying the role of public authorities and oil and gas applicants when dealing with potential future conflicts with other users of the marine area.*

- 8.32 The Applicant has not addressed this policy in its application for a Marine Licence. The evidence of Spirit Energy shows that, subject to the proposed Protective Provisions of Spirit Energy in the draft DCO, then Policy OG2 can be satisfied because the Application seeks authorisation for "up to 300" turbines and the ultimate scale of that degree of turbines cannot at this time be known.

WIND 2

- 8.33 Wind 2 is preceded by a Context that includes paragraph 303. That paragraph provides that EN-1 and EN-3 provide the primary basis for decision-making in relation to section 15(1)(a) PA 2008 Offshore Windfarms.

- 8.34 WIND2 states:

Proposals for Offshore Windfarms inside Round 3 zones, including relevant supporting projects and infrastructure, should be supported.

- 8.35 The reasoned justification in paragraphs 310-314 amplifies what this policy means. This includes:

311... Proposals should draw on the findings [of the Zone Appraisal Planning Process] of these assessments and should demonstrate how other activities and the environment have been taken account of in proposals as well as taking into account GOV2.

313. Other policies should be taken into account when applying the support outlined in WIND2. This includes where OG2 is applicable which would take precedence over WIND2. Once an agreement for lease has been granted by The Crown Estate then these areas will be covered by WIND1. This policy enables development of offshore wind in Round 3 wind farm zones in preference to other conflicting activities but does not preclude co-location of Offshore Wind Farms with other activities in accordance with GOV3. The policy will be applied by public authorities determining proposals for non- Offshore Wind Farm developments or activities within Round 3 wind farm zones as well as public authorities that license Offshore Wind Farm and supporting projects brought forward from Round 3 wind farm zones. These authorities should work in conjunction with the offshore wind farm developer, the Department for Energy and Climate

Change's Secretary of State (who will determine Offshore Wind Farm proposals over the 100Megawatts threshold)¹⁸¹ and/or the National Infrastructure Directorate.

- 8.36 The Applicant has not addressed this policy in its application for a Marine Licence. The evidence of Spirit Energy shows that, subject to the proposed Protective Provisions of Spirit Energy in the draft DCO, then Policy WIND2 can be satisfied because the Application seeks authorisation for "up to 300" turbines and the ultimate scale of that degree of turbines cannot at this time be known

9 National Planning Statements

- 9.1 EN-1 and EN-3 are the relevant NPS in this Application. Section 104(3) requires that SoSBEIS decide the Application in accordance with any relevant NPS. Here, the relevant NPS's are EN-1 and EN-3.

EN-1

- 9.2 EN-1 was approved by Parliament in July 2011 and, therefore, recognised the Government's Marine Policy Statement of March 2011 (see above). EN-1 is cast in general terms. Part 3, Section 3.3 provides for the need for new NSIPs, including, under Section 3.4 the role of renewable electricity generation as part of the energy mix. Part 4, Section 4.11, provides for Safety.
- 9.3 Paragraph 3.1 provides for IPC decision making:

3.1.3. The IPC should therefore assess all applications for development consent for the types of infrastructure covered by the energy NPSs on the basis that the Government has demonstrated that there is a need for those types of infrastructure and that the scale and urgency of that need is as described for each of them in this Part.

3.1.4 The IPC should give substantial weight to the contribution which projects would make towards satisfying this need when considering applications for development consent under the Planning Act 2008¹⁶.

- 9.4 The Application is for "up to 300" turbines and so attracts "substantial weight" in relation to all of that capacity, or any degree above about 10 turbines (providing at least) up to the total as a contribution by the Application project towards satisfying the scale and urgent of the need identified by the Government. The Application documents do not evidence any additional particular need engendered by the Application as opposed to a reliance on a generalized need to contribute to future targets.
- 9.5 Paragraphs 4.1.2 to 4.1.3 and 4.1.7 then provide:

4.1.2. Given the level and urgency of need for infrastructure of the types covered by the energy NPSs set out in Part 3 of this NPS, the IPC should start with a presumption in favour of granting consent to applications for energy NSIPs. That presumption applies unless any more specific and relevant policies set out in the relevant NPSs clearly indicate that consent should be refused. The

presumption is also subject to the provisions of the Planning Act 2008 referred to at paragraph 1.1.2 of this NPS.

4.1.3 In considering any proposed development, and in particular when weighing its adverse impacts against its benefits, the IPC should take into account:

- *its potential benefits including its contribution to meeting the need for energy infrastructure, job creation and any long-term or wider benefits; and*
- *its potential adverse impacts, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.*

4.1.7 The IPC should only impose requirements⁷² in relation to a development consent that are necessary, relevant to planning, relevant to the development to be consented, enforceable, precise, and reasonable in all other respects.

9.6 In this Application, of particular importance, is Section 4.2, Environmental Statements. Paragraph 4.2.3 adverts to the contingent coverage of Section 4.2. Paragraph 4.2.11 states:

4.2.11. In this NPS and the technology-specific NPSs, the terms 'effects', 'impacts' or 'benefits' should be understood to mean likely significant effects, impacts or benefits.

9.7 The scope of paragraph 4.2.11, therefore, applies alone to the terms: effects, impacts, and benefits, and not to any other terms.

9.8 Part 4, Section 4.11, Safety, requires in paragraph 4.11.1 the Applicant to consult with the HSE "on matters relating to safety".

9.9 For offshore oil and gas infrastructure, the relevant part of the HSE is its Energy Division. There is no apparent response from that Division in relation to the potential affects on SE's offshore infrastructure arising from the Application development.

EN-3

9.10 EN-3 provides nationally policy approved by Parliament in relation to Renewable Energy Infrastructure. It was approved also in July 2011 after its presentation on 2nd. It too, thereby, recognised the Government's Marine Policy Statement (March 2011).

9.11 EN-3, paragraph 1.3.2 states that it is "specific to the energy infrastructure covered" by it. Paragraph 1.5.1 applies EN-3 to the territorial sea of England and so to the Application Area and to the areas of the Assets of Spirit Energy. Paragraph 2.1.2 requires the IPC to consider EN-1 and EN-3 "together". In particular, this results in the direct application of EN-1 paragraph 4.2.11 to the terms of the statutory guidance of EN-3.

9.12 Section 2.6 applies to Offshore Wind. Paragraph 2.6.2 provides that offshore wind structures can be built in UK territorial waters or in a "Renewable Energy Zone" declared under the Energy Act

2004. Footnote 16 states that an REZ was designated under SI 2004/2668 under section 8(4) of the EA 2004. However, that SI was repealed under SI 2013/3161 on 31st March 2014 and it established instead the "UK Economic Zone". [See SE ISH 1 Appendices F & G] By section 42(1)(b) of MACA 2009, the area of sea within the UK Exclusive Economic Zone is in the "UK Marine Area" and that area includes the bed and subsoil of the sea.

- 9.13 Paragraphs 2.6.42 to 2.6.45 address "Flexibility in the project details" and "Micrositing". The Applicant has applied for a DCO over the Application Area within which it cannot yet know the micrositing of the proposed authorised turbines. Therefore, the EIA is required to assess a "maximum adverse case scenario as far as reasonably possible" and to ensure that the project as it may be constructed has been properly assessed ("**the Rochdale Envelope**" approach). Guidance on the use of the Rochdale Envelope is given in Advice Notes Nine and updated in Advice Note Twelve. [See SE ISH 1 Appendices D & V]
- 9.14 EN-3 then provides a series of sections concerning particular situations. These include: a) Offshore Wind Farm Impacts – Navigation and shipping; and b) Offshore Wind Farm Impacts – Oil, gas and other offshore infrastructure and activities.
- 9.15 As set out in the SE Written Representation 7th November 2018, paragraph 1.7, [See SE ISH 1 **Appendix ZA**] the Application does not accord with EN-3, paragraph 2.6.181 because it has failed to provide for successful co-existence with SE's existing offshore infrastructure and activities, and its subsisting entitlement to search and get petroleum, and also it has failed to assessment accepted potential affects on that infrastructure and activities ALARP, being in breach of EN-3, paragraphs 2.6.163 and 2.6.183. These breaches of EN - 3 remain because, on a plain reading of EN-3, pages 53-54 and 55-56, it is self-evident that the approach approved by Parliament introduces, in addition to assessment by an EIA methodology, the additional domestic concept of "as low as reasonably practicable" ("**ALARP**"), and additional assessment by application of that additional concept to, the potential situation created by the introduction of the turbines and related infrastructure of an offshore wind farm to a pre-existing situation where oil and gas infrastructure are present. That is so here.
- 9.16 For navigation, the relevant test in in paragraph 2.6.163:
- 2.6.163. Where a proposed offshore windfarm is likely to affect less strategically important shipping routes, a pragmatic approach should be employed by the IPC. For example, vessels usually tend to transit point to point routes between ports... Many of these routes are important to the shipping and ports industry as it their contribution to the UK economy. In such circumstances the IPC should expect the applicant to minimize negative impacts to as low as reasonably practicable (ALARP) ...*
- 9.17 Therefore, in paragraph 2.6.163, an ALARP assessment is applied an extension of the EIA process.

- 9.18 For safety of offshore installations, the relevant and different test is in paragraph 2.6.183 (and is cast on Parliament's approval) in different terms to 2.6.163):

2.6.183. Where a proposed offshore wind farm potentially affects other offshore infrastructure of activity, a pragmatic approach should be employed by the IPC. Much of this infrastructure is important to other offshore industries as is its contribution to the UK economy. In such circumstances the IPC should expect the applicant to minimise negative impacts and reduce risks to as low as reasonably practicable.

- 9.19 By contrast with application of the ALARP concept in paragraph 2.6.163, within paragraph 2.6.183 ALARP is applied a discrete assessment separate from and in addition to an EIA assessment process. In this respect, this is because applying the EN-1 amplified meaning in paragraph 4.2.11 of "impacts" to the term "impacts" in 2.6.183, the phrase: "*the IPC should expect the applicant to minimise negative impacts*" reads "*the IPC should expect the applicant to minimise likely significant negative impacts*". However, the prior phrase "potentially affects" and the subsequent phrase "reduce risks" cannot be amplified by paragraph 4.2.11 because they are terms not covered by that paragraph. In particular, paragraph 4.2.11 attaches to "effects" and not to "affects". Similarly, paragraph 4.2.11 makes no reference to "risks". The absence of "affects" and "risks" from the scope of interpretative paragraph 4.2.11 connotes that "affect" and "risks" are freestanding criteria.
- 9.20 The use of 'ALARP' in the same guidance (EN-3) in different ways (paragraphs 2.6.163 and in 2.6.183 also recognises two different situations in which the ALARP test is engaged: it is engaged in 2.6.163 where there is a "likely significant negative impacts" which are required to be reduced by ALARP; whereas ALARP is engaged in 2.6.183 where there proposed offshore wind farm "potentially affects" other offshore infrastructure. Thus, the reach of ALARP in 2.6.163 is an extension of the prior test and so assumes an EIA methodology; whereas the reach of ALARP in 2.6.183 is free-standing and encompasses "affects" that are then required to be subject to ALARP.
- 9.21 The 2.6.163 test is triggered where the threshold of a "likely significant adverse impact" is satisfied.
- 9.22 The 2.6.183 has a lower threshold, being where the proposed wind farm "potential affects other offshore infrastructure or activity". Further, 2.6.183 includes the term "and" (not "to") which shows that that paragraph expressly provides an additional test consisting of ALARP.
- 9.23 In either 2.6.163 or 2.6.183, "the IPC expects the Applicant": a) (under 2.6.163) to minimize likely significant negative impacts to as low as reasonably practicable (i.e. to apply ALARP pursuant to an EIA assessment); and b) (under 2.6.183) to reduce potential affect risks to ALARP. Consequently, where, as here, there is or are potential affects, EN-3, paragraph 2.6.183 creates and casts the ALARP obligation onto the Applicant to assess and to discharge and in respect of related paragraphs.

- 9.24 Here, the ES, Chapter Vol 1, Chapter 5 – Environmental Impact Assessment Methodology, includes Figure 5.1 that illustrates the application of an EIA methodology. A word search of Chapter 5 discloses no use of the phrase "ALARP" anywhere in the Applicant's methodology. The term "practicable" appears in isolation in two paragraphs 5.3.4.2 and 5.4.3.26 in the context of EIA methodology. Paragraph 5.3.5.5 identifies that the EIA process (excluding ALARP) was applied to Offshore Shipping and Navigation; Aviation; and Infrastructure and Other Uses.
- 9.25 A word search of ES Volume 2 for "ALARP":
- 9.25.1 In Chapter 7, Navigation and Shipping, discloses the use of the phrase "ALARP" in: line 2 of the Acronyms; Table 7.2, row 3, (referring to EN-3, paragraph 2.6.183); paragraphs 7.9.2.2; 7.11.1.20; 7.11.1.39; 7.11.1.50; 7.11.2.30; 7.11.2.34; 7.11.2.66; 7.11.2.77; 7.11.2.79; 7.11.3.15; 7.11.3.21; 7.13.2.41; 7.13.3.30; 7.13.4.7; 7.16.13 and 7.16.1.5; but, by contrast,
- 9.25.2 In Chapter 8, Aviation, discloses no use of the phrase "ALARP" in its assessment; and
- 9.25.3 In Chapter 11, Infrastructure, discloses no use of the phrase "ALARP" in its assessment.
- 9.26 A word search of ES, Volume 5, Annex 8.1, Aviation (PINS Reference A6.5.8.1) for "ALARP" discloses no use of that phrase. It is also absent from the Acronyms on page iv.
- 9.27 It is apparent from the evidence before the Ex A that the Applicant has, to date (14 December 2018), addressed to an extent ALARP as an extension of the EIA methodology, under Navigation, cognisant of paragraph 2.6.163. However, on analysis of the evidence, the reach of the Shipping and Navigation Assessment falls short of an assessment of in-combination risks arising from collision of shipping with the Assets of SE. See below.
- 9.28 By contrast, the Applicant has failed to take any account of the discrete application of ALARP provided for under paragraph 2.6.183 of the two assessments required by that paragraph.
- 9.29 The Applicant has undertaken alone an assessment pursuant to an EIA methodology (which operates at a generic level) in relation to Aviation in contrast with the different and particular requirements of ALARP.
- 9.30 The Applicant has also failed to undertake an in-combination, or inter-related, assessment of the effect on the safe operation of the Assets as a result of the proposed introduction of its turbines having the effect of reducing available unobstructed space in which helicopters serving Assets may fly safely and so as to preclude the necessary availability of the Missed Approach Procedure ("**MAP**") as part of the standard approach to an Asset platform by which the flight of the helicopter is made safe for human health of pilots and passengers. This has a consequence for the safety

case that is accepted in paragraph 8.7.4.13 of ES Volume 2, Chapter 8, Aviation (PINS Reference A6.2.8)(May 2018).

10 The Applicant's Approach to the Assessment of Potential Affects of its Development on Helicopters

10.1 Section 8.9.2 Impact Assessment Criteria, ES, Volume 2, Chapter 8, Aviation (PINS Reference A6.2.8)(May 2018), states at paragraph 8.9.1.1 that: "The aviation, military and communication EIA has followed the methodology set out in volume 1, chapter 5: Environmental Impact Assessment Methodology." Paragraph 8.9.2.1 states that: "At the present time, there is no recognised industry best practice with regard to the assessment of impact of offshore wind farms upon aviation operations." In fact, EN-3, paragraph 2.6.183 supplies the relevant test here. ES, Chapter 8, paragraph 8.9.2.2 further states that the Applicant instead used a combination of an EIA methodology and its own bespoke methodology that does not apply ALARP. However, EN-3, paragraph 2.6.183 does not admit of a subjective test. It requires a minimisation of negative likely significant impacts and in addition an ALARP test. There is a gap in the justification for the Application.

10.2 The ES, Volume 2, Chapter 8, Aviation (PINS Reference A6.2.8)(May 2018) explains the role of helicopters in the situation of SE's offshore infrastructure:

8.7.4.13 Wind turbines are considered to be physical obstructions and helicopter operators must observe the minimum obstacle clearance criteria of 1,000 ft. during IFR (when all helicopters must maintain a vertical separation of 1,000 ft. from any obstacle). Furthermore, during the approach to an installation, all radar contacts (including radar contacts that are turbines) have to be avoided laterally by at least 1 nm. The combined effects of maintaining the required distances from any obstacles within the 9 nm consultation zone of an offshore installation may impair the safety of instrument approaches and MAP to and from an offshore installation. This may result in a restriction on helicopter operations to an installation in certain weather conditions, which may have safety implications. Safety implications include a potential impact upon the integrity of offshore platform Safety Cases that are based on the use of helicopters to facilitate evacuation procedures.

10.3 "For obvious safety reasons, a [Missed Approach Procedure] MAP involving a climb from the minimum descent height needs to be conducted in an area free of obstructions." (ES Volume 5, Annex 8.1, Aviation (PINS Reference: A6.5.7.1)(May 2018), paragraph 7.4.3.1). Further (see ES Volume 5, Annex 8.1, Aviation (PINS Reference: A6.5.7.1) :

7.4.3.1 In the event a helicopter may not be able to land at its destination platform, it would be required to execute a MAP. Should the airspace that is required to fly a MAP not be available due to the presence of turbines, then this would restrict helicopter operations. Upon initiating a MAP, the helicopter turns away from the destination structure by up to 45° laterally and climbs to the MSA; the anticipated rate of climb during the missed approach phase is based upon the one engine inoperative performance criteria and could be quite shallow. For obvious safety reasons, a

MAP involving a climb from the minimum descent height needs to be conducted in an area free of obstructions.

- 10.4 In ES Volume 5, Annex 8.1, Aviation (PINS Reference: A6.5.7.1), the Applicant (applying its own EIA methodology) says this about helicopters approaching Offshore installations: (Emphasis added)

1.3.1.1 The effects of wind turbines on aviation interests have been widely publicised but the primary concern is one of safety. There are various subtleties in the effects but there are two dominant issues:

- *Physical obstruction – turbines under construction or decommissioning (and associated cranes) and operational turbines can present a physical obstruction at or close to aircraft airspace routings (e.g. HMRs or an aerodrome/helicopter offshore platform); ...*

7.4.1.3 There are nine platforms with 9 nm of the Hornsea Three array area as shown in Table 7.2. The Cutter platform has no helideck and so no further assessment has been undertaken. 7.4.1.4 Wind turbines are considered as physical obstructions and infringe the minimum obstacle clearance criteria of 1,000 ft. Furthermore, during the approach to an installation, all radar contacts (including radar contacts that are turbines) must be avoided laterally by at least 1 nm. These combined effects within a 9 nm consultation zone of an offshore installation may impair the safety of air operations to that installation and affect the installation operators' regulatory requirements with regard to safety of operation.

7.4.2.1 Instrument approach procedures are used as a low-visibility approach procedure to the platforms, and rely upon an on-board weather radar for obstacle detection and navigation. Helicopters which operate to and from offshore platforms are fitted with airborne weather radar which can be used to conduct an instrument approach in poor visibility. The radar is designed to display weather phenomena, such as rain, as well as obstacles such as oil or gas platforms, or wind turbines. In IMC and in certain wind conditions, which dictate the area of approach to the platform, a standard instrument approach procedure might not be possible due to the proximity of wind turbine structures to the flight approach path...

7.4.2.3 When the helicopter is operating below the MSA and conducting an instrument approach it must also maintain a horizontal separation of 1 nm from all radar contacts seen by the pilots, using the helicopter's on-board radar. If it is assumed that an acceptable rate of descent is a 3.5° glide path, then this means that the minimum distance that a 325 m high turbine can be constructed from the centre of a helicopter consultation zone is 8 nm before instrument approach procedures may become restricted. If it is assumed that an acceptable rate of descent is a 3.5° glide path, then this means that the minimum distance that a 325 m high turbine can be constructed from the centre of a helicopter consultation zone is 8 nm before instrument approach procedures may become restricted. An example approach profile for a 325 m turbine is shown in Figure 7.5. The helicopter descends from the MSA at 8.4 nm avoiding all radar contacts by 1 nm but flying in any wind direction, to the Fixed Approach Point at 7nm (the procedural value set by the helicopter

operator and ranging typically from 5 to 7 nm). The helicopter then flies a straight line approach (up to 30 degrees out of wind in either direction) to a minimum descent height of 200 to 300 ft typically at 2 nm (CAA, 2016c). The helicopter then flies to the Missed Approach Point at 0.75 nm where a decision is made either to land or to fly past and conduct a Missed Approach Procedure....

7.4.3.1 In the event a helicopter may not be able to land at its destination platform, it would be required to execute a MAP. Should the airspace that is required to fly a MAP not be available due to the presence of turbines, then this would restrict helicopter operations. Upon initiating a MAP, the helicopter turns away from the destination structure by up to 45° laterally and climbs to the MSA; the anticipated rate of climb during the missed approach phase is based upon the one engine inoperative performance criteria and could be quite shallow. For obvious safety reasons, a MAP involving a climb from the minimum descent height needs to be conducted in an area free of obstructions. When the surface wind is such that an instrument approach might be flown directly towards the Hornsea Three array area, utilising an approach path offset by up to 30° should ensure that helicopters would have sufficient airspace to complete a MAP...

[On the Applicant's assumptions] 7.4.4.11 The results shown in Table 7.4 indicate that the impact of the Hornsea Three array area would be to prevent instrument approach procedures for the following calculated number of days per year to each of the platforms: ...

- Chiswick platform: 3.49 days per year; ...
- J6/J6A-CT platform: 0.45 days per year; ... [and]
- Grove platform: 2.18 days per year; ...

Chiswick Platform

[On the Applicant's assumptions] 7.4.4.14 The results shown in Table 7.6 indicate that the impact of the Hornsea Three array area would be to prevent instrument approaches to the Chiswick Platform on approximately 0.17 to 0.4 days per month (up to 3.49 days per year). The greatest impact is seen in the month of April when 1.35% of flights may be precluded. The least impact is seen in August when 0.56% of flights may be precluded...

J6/J6a-CT Platform

[On the Applicant's assumptions] 7.4.4.16 The results shown in Table 7.8 indicate that the impact of the Hornsea Three array area would be to prevent instrument approaches to the J6/J6a-CT Platform on approximately 0.01 to 0.06 days per month (up to 0.45 days per year). The greatest impact is seen in the month of April when 0.21% of flights may be precluded. The least impact is seen in August when 0.05% of flights may be precluded.

Grove Platform

[On the Applicant's assumptions] 7.4.4.17 The results shown in Table 7.9 indicate that the impact of the Hornsea Three array area would be to prevent instrument approaches to the Grove Platform on approximately 0.12 to 0.25 days per month (up to 2.18 days per year). The greatest impact is seen in the month of April when 0.83% of flights may be precluded. The least impact is seen in August when 0.39% of flights may be precluded...

- 10.5 In ES Volume 5, Annex 8.1, Aviation (PINS Reference A6.5.8.1)(May 2018)), Figure 7.10 shows, on the Applicant's evidence, to scale and assuming a 7.0 nautical mile approach, the geographical extent of the "constrained approach areas" to the: Chiswick Platform; Grove Platform; and J6A/J6A-CT Platforms.
- 10.6 The Applicant's evidence, at Figure 7.10 of, and paragraph 7.4.1.4 of, ES Volume 5, Annex 8.1, Aviation (PINS Reference A6.5.8.1)(May 2018), and paragraphs 8.7.4.13 and 8.11.2.4 of ES Volume 2, Chapter 8, Aviation (PINS Reference A6.2.8)(May 2018), accepts that there is a potential affect on the offshore infrastructure ad activities of SE.
- 10.7 The Applicant has not itself assessed the "potential affect" of its Application development on offshore infrastructure and activities by application of discrete ALARP methodology. Instead, the Applicant has persisted in maintaining an EIA methodological approach. This is despite SE highlighting the matter, for example, on 20th September 2017 (see page 8, ES, Volume 2, Chapter 8, Aviation): (Emphasis added)

Helicopter operations to operational platforms within 5 km of the edge of Hornsea Three are identified in the PEIR as impacted, though the extent to which this would be a significant restriction needs to be thoroughly evaluated by helicopter operators.

Evacuation protocols may be compromised without suitable mitigation due to helicopters being the primary method of transporting personnel in the event of an emergency.

Chiswick and Grove platforms: not normally manned, helicopter transported maintenance interventions take place on each for over 40 days per year.

Risk assessment methodology: Discussion is needed on the approach and conclusions reached. Concerns that Centrica [SE] may consider intolerable from a safety perspective are incorrectly evaluated as not posing a significant impact.

- 10.8 The response of the Applicant was to (see page 8, ES, Volume 2, Chapter 8, Aviation):

Helicopter access to the Spirit Energy operated platforms is assessed in paragraph 8.11.2.29 et seq.

Consultation was held on the methodology used to assess access requirements to Spirit Energy operated platforms with Centrica and CHC (the helicopter service provider to these platforms for Centrica) as detailed in this table below.

10.9 On 31st October 2017, the helicopter operator is summarised as expressing the view that:

CHC noted that MAP may be an issue with Chiswick and Grove platforms.

10.10 The response of the Applicant was to reiterate (see page 8, ES, Volume 2, Chapter 8, Aviation):

Helicopter access to the Spirit Energy operated platforms is assessed in paragraph 8.11.2.29 et seq.

MAPs are discussed in the assessment to Spirit Energy operated platforms in paragraph 8.11.2.29 et seq.

10.11 In the absence of the Applicant undertaking an ALARP based assessment, as the Ex A and SoS "should expect the Applicant to" have done, the Applicant has not itself assessed the risk (the "potential affect" of its proposed turbines on other offshore infrastructure or activity).

10.12 Instead, SE has itself identified the real hazards and risks to safety and viability of SE operations and activities that would be engendered by the Application development. **[See SE ISH 1 Appendices W, Y, ZB, ZD, and ZE]**

11 Section 104(3), PA 2008 and EN-3 paragraphs 2.6.163 and 2.6.183 requirements to reduce risks to as low as reasonably possible (ALARP)

11.1 ALARP Principle

11.1.1 The principle of As Low As Reasonably Practicable ("**ALARP**") is a means of assessing tolerability of risk. The term embodies the key concept which is "reasonably practicable" a key part of the general duties of the Health and Safety at Work etc Act 1974 which apply to offshore installations and is incorporated within many offshore health and safety regulations. ALARP describes the level to which the relevant risk must be controlled.

11.1.2 In terms of the ALARP principle, a risk has to be weighed against the trouble, time and money needed to control it. Making sure a risk has been reduced to ALARP is about weighing the risk against the sacrifice needed to further reduce it. The decision is weighted in favour of health and safety because the presumption is that the dutyholder should implement the risk reduction measure. Not every control measure will require to be implemented however, for example if it can be shown by the dutyholder that implementing the measure would be grossly disproportionate to the risk reduction which would be achieved, i.e. if the cost of reducing a risk outweighs the benefit, and the severity of potential consequence is low enough to permit the activity/operation.

- 11.1.3 Broadly the related risk assessment process involves three stages –
 - 11.1.3.1 Hazard identification;
 - 11.1.3.2 Risk assessment, and
 - 11.1.3.3 Risk Control.
- 11.1.4 The risk assessment methodology applied should be efficient (cost-effective) and of sufficient detail to enable the ranking of risks in order, for subsequent consideration of risk reduction.
- 11.1.5 The level of detail of assessment should be proportionate to the complexity of the problem and the magnitude of risk, and may be either:
 - 11.1.5.1 Qualitative – (frequency and severity are determined purely qualitatively);
 - 11.1.5.2 Semi-Quantitative – (frequency and severity are approximately quantified within ranges); and
 - 11.1.5.3 Quantitative Risk Assessment – (in which full quantification occurs).
- 11.1.6 The choice of approach needs to take account of:
 - 11.1.6.1 The level of estimated risk (and its proximity to the limits of tolerability).
 - 11.1.6.2 The complexity of the problem and/or difficulty in answering the question of whether more needs to be done to reduce the risk.
- 11.1.7 HSE suggests that following levels of risk assessment would be proportionate to the magnitude of risk as follows (see HSE, Guidance on Risk Assessment for Offshore Installations (Offshore Information Sheet No. 3/2006, p3) :
 - 11.1.7.1 Broadly acceptable risk level = qualitative assessment.
 - 11.1.7.2 ALARP region = semi-quantitative assessment.
 - 11.1.7.3 Intolerable = quantitative risk assessment.
- 11.1.8 This may be contrasted with a standard environmental impact assessment methodology which involves –
 - 11.1.8.1 Defining the sensitivity of receptors;
 - 11.1.8.2 Defining Magnitude of Change, and
 - 11.1.8.3 Determining significance of effect.

11.2 Relevance of ALARP to the Application

- 11.2.1 As detailed above, the ALARP principle is embodied in National Planning Statement EN-3, paragraphs 2.6.163 and 2.6.183, thus placing a statutory national policy statement requirement on the Applicant to reduce navigational and safety risks to ALARP. [See **SE ISH 1 Appendices W, Y, ZB, ZD, and ZE**]
- 11.2.2 Separately, as detailed above, the UK safety case regime incorporates the ALARP principle. Where a duty holder, such as SE, carries out an activity which significantly increases the risk of a major accident, the duty holder must take steps to reduce the risk to ALARP. The relevant duties are contained within the Offshore Installations (Offshore Safety Directive) (Safety Case etc) Regulations 2015 ("**the Safety Case Regulations**") which transpose Directive 2013/30/EU into UK law. As is set out above, SE as duty holder is subject to the obligations within the Safety Case Regulations.
- 11.2.3 In the absence of ALARP by the Applicant, the SE proposed Protective Provisions allow a grant of the DCO subject to those Provisions in lieu of discharge of the ALARP requirement by the Applicant.

11.3 Spirit Energy's Concerns

- 11.3.1 As outlined within **SE ISH Appendix ZA**, and in **SE ISH 1 Appendices W, Y, ZB, ZD, and ZE**, Spirit Energy's key concerns relate to –
- 11.3.1.1 Helicopter transportation -
- 11.3.1.1.1 Risk to life of pilots and personnel;
- 11.3.1.1.2 Risk to structural integrity of platforms, and
- 11.3.1.2 Vessel Allision -
- 11.3.1.2.1 Risk of Spirit Energy's vessels (NUC) alliding with the wind farm infrastructure;
- 11.3.1.2.2 Risk of the Applicant's vessels (NUC) alliding with Spirit Energy's infrastructure, and
- 11.3.1.2.3 Risk of displaced third party (commercial or fishing) vessels alliding with Spirit Energy's infrastructure.
- 11.3.2 "Helicopter transportation" and "ship collision" [allision] are classed as a major accident hazards within Spirit Energy's relevant safety cases (as referred to at **SE ISH Appendix ZC**).

11.4 The Applicant's Assessment of Risk

11.5 The following sections of this Submission consider the nature and extent of the assessment work carried out by the Applicant in support of the Application as contained within the Environment Statement (ES) with a view to determining whether the necessary ALARP based risk assessments have been carried out by the Applicant.

Navigational Risk Assessment ("NRA") (ES, Vol. 5, Annex 7.1, PINS Ref. A6.5.7.1)

11.6 The NRA was conducted as part of the EIA process in terms of the EIA Directive, and (it is said) following Maritime and Coastguard Agency methodology. The NRA is said to present information on the "proposed development relative to the existing and future case navigational activity" (paragraph 1.1.1.1).

11.7 The NRA includes (paragraph 3.1.1.1) –

11.7.1 Overview of base case environment;

11.7.2 Marine traffic survey;

11.7.3 Implications of offshore wind farms including position of turbines;

11.7.4 Assessment of navigational risk pre and post development of Hornsea Three;

11.7.5 Formal Safety Assessment (FSA);

11.7.6 Implications for marine navigation and communication equipment;

11.7.7 Identification of mitigation measures;

11.7.8 Emergency response; and

11.7.9 Any required monitoring.

11.8 The formal safety assessment process adopted within the NRA, described at section 3 of the NRA, is summarised as follows –

11.8.1 Step 1 – Identification of hazards (a list of all relevant accident scenarios with potential causes and outcomes);

11.8.2 Step 2 – Assessment of risks (evaluation of risk factors);

11.8.3 Step 3 – Risk control options (devising measures to control and reduce the identified risks);

11.8.4 Step 4 – Cost Benefit Analysis (CBA) (determining cost effectiveness of risk control measures); and

- 11.8.5 Step 5 – Recommendations for decision-making (information about the hazards, their associated risks and the cost effectiveness of alternative risk control measures).
- 11.9 On the face it, this would appear to be an exercise in keeping with the EIA/ALARP assessment required by EN-3, paragraph 2.6.163.
- 11.10 However, while the existence of oil and gas infrastructure and activity (including that of SE) is noted within the NRA (for example at sections 8.1 and 10.5), the NRA has not assessed the risks of vessel allision with SE infrastructure as noted above.
- 11.11 At paragraph 10.5.1.6, the NRA states -
- "There are not anticipated to be any impacts on shipping and navigation receptors associated with oil and gas platforms, however routeing to these installations is considered as part of the baseline within section 15 and as part of cumulative routeing in section 22.7."
- 11.12 Section 17 of the NRA deals with Future Case Marine Traffic. Paragraph 17.5.1.1 notes that during the construction period there may be as many as 10,774 return trips made by vessels involved in the installation of the wind farm, and that during the operation and maintenance period there may be up to 2,433 CTV return trips per year, along with many return trips from supply vessels and other support vessels.
- 11.13 Paragraph 17.6.1.2 then notes that -
- "The potential increase in vessel activity levels would increase the probability of vessel to structure allisions (both powered and drifting)."
- 11.14 Section 18 deals with Collision and Allision Risk Modelling and Assessment. The assessments undertaken are said to include, amongst other things –
- 11.14.1 Additional vessel to structure allision risk;
- 11.14.2 Additional fishing vessel to structure allision risk;
- 11.14.3 Additional recreational craft (sailing/cruisers) allision risk, and
- 11.14.4 Additional risk associated with vessels Not Under Command (NUC).
- 11.15 However it appears from section 18 that the risk of vessel allision (whether by powered or NUC vessels, and whether commercial or fishing vessels) with SE's infrastructure – in particular the Chiswick and Grove NUIs and NMI J6A – were not modelled or assessed.
- 11.16 Section 21 of the NRA deals with Cumulative Overview. Paragraph 21.4.1.1 notes that there "are no oil or gas surface platforms located within the Hornsea Three array area or

offshore cable corridor. However the Schooner A platform located to the north of the Hornsea Three array area has been screened into the CEA given its proximity to the Hornsea Three array area and its location to the north of the proposed navigational corridor. Cumulative impacts are then considered in section 22."

- 11.17 The risk of vessel allision with SE's infrastructure does not form part of that cumulative assessment. Instead it is stated that the impact to the oil and gas industry is assessed in volume 2, chapter 11: Infrastructure and Other Users.
- 11.18 As is noted below, the risk of vessel allision with SE's infrastructure does not form part of the Chapter 11 assessment either (see below).
- 11.19 Accordingly while the Applicant has carried out a formal safety assessment of shipping and navigation risks in the form of the NRA, it either is incomplete in that its consideration of vessel allision does not extend to vessel allision with SE infrastructure, or it is flawed in that the hazard of such allision has not been identified within stage 1 of the formal safety assessment process. To the extent that the failure to identify this hazard flows from the Applicant's assumptions in respect of vessel displacement, reference is made to **SE ISH Appendix ZD** which highlights the weaknesses in these assumptions.
- 11.20 On either analysis the requirement set out in EN-3 paragraph 2.6.163 is not met, or is not met in full.

Infrastructure and Other Users Chapter (ES, Vol. 2, Chapter 11, PINS Ref. A6.2.11)

- 11.21 An assessment of impacts on infrastructure and other users was carried out as part of the EIA.
- 11.22 The receptors considered include -
- 11.22.1 Oil and gas operations (including pipelines) (paragraph 11.1.1.2), and
- 11.22.2 REWS and Closest Point of Approach (CPA) alarms.
- 11.23 In terms of the scope of the assessment, paragraph 11.1.1.4 states –
- "Many of the potential impacts upon infrastructure and other users are related to navigational safety and collision risk. To avoid duplication, navigational safety and risk to all vessel types from Hornsea Three is considered in volume 2, chapter 7: Shipping and Navigation. Therefore the following assessment only considers impacts that will potentially affect the undertaking of a marine activity or the operational effectiveness of marine infrastructure in the relevant infrastructure and other users study area. "
- 11.24 It continues at paragraph 11.1.1.6 –

"Impacts upon oil and gas activities may also arise from modifications to helicopter routes or helicopter access to platforms, and interference with microwave communication links. These impacts are assessed in volume 2, Chapter 8: Aviation, Military and Communication."

11.25 Accordingly it is clear from this scope that Chapter 11 does not contain an ALARP safety assessment of the risks constituting major accident hazards which concern Spirit, being helicopter transportation and vessel allision.

11.26 Moreover, the methodology set out in section 11.9 of Chapter 11 is clearly an EIA methodology as described above. Paragraph 11.9.2.1 states –

"The criteria for determining the significance of effects is a two stage process that involves defining the sensitivity of the receptors and the magnitude of the impacts. This section describes the criteria applied in this chapter to assign values to the sensitivity of receptors and the magnitude of potential impacts. The terms used to define sensitivity and magnitude are based on those used in the DMRB methodology, which is described in further detail in volume 1, chapter 5: Environmental Impact Assessment Methodology".

11.27 Paragraph 11.9.2.4 states –

"The significance of the effect upon infrastructure and other users is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The particular method employed for this assessment is presented in Table 11.26. Where a range of significance of effect is presented in Table 11.26, the final assessment for each effect is based upon expert judgement."

**Aviation, Military and Communication Technical Report ("AMC Technical Report")
(ES, Annex 8.1, PINS Ref. A6.5.8.1)**

11.28 As is stated at paragraph 1.2.1.1 of the AMC Technical Report, it provides the technical information and modelling results relating to the EIA set out within Volume 2, Chapter 8 of the ES.

11.29 It considers baseline aviation activity within 9nm of the proposed wind farm; includes radar line of sight analysis of relevant radar installations, and assesses operational impacts on Helicopter Main Routes and offshore operations, including at Chiswick and Grove NUIs and J6A NMI.

11.30 The AMC Technical Report does not comprise an ALARP based risk assessment in line with the methodology described above. For example there is no consideration of tolerability of risk. Rather, the AMC Technical Report simply supports and informs the aviation element of the EIA assessment contained within Volume 2, Chapter 8 and carried out on the basis of standard EIA methodology as set set out at section 8.9.

Inter-related Effects (ES, Vol. 2, Chapter 12, PINS Ref. A6.2.12)

11.31 An assessment of the inter-related effects of the offshore elements of the wind farm was carried out as part of the EIA. Paragraph 12.1.1.1 of the Chapter states that it considers "the potential impacts of Hornsea Three seaward of Mean High Water Springs (MHWS) during its construction, operation and maintenance, and decommissioning phases." Paragraph 12.1.1.2 states that -

"The detailed technical information which underpins the impact assessments presented in this chapter is contained within volume 1, chapter 3: Project Description, volume 2, chapters 1 to 11 and their supporting annexes in volume 5. "

11.32 Paragraph 12.2.1.4 states that –

"The impact assessment presented within this chapter has taken into account other relevant impact assessments and their associated annexes in this Environmental Statement including:

Volume 2, chapter 1: Marine Processes;

Volume 2, chapter 2: Benthic Ecology;

Volume 2, chapter 3: Fish and Shellfish Ecology;

Volume 2, chapter 4: Marine Mammals;

Volume 2, chapter 5: Offshore Ornithology;

Volume 2, chapter 6: Commercial Fisheries;

Volume 2, chapter 7: Shipping and Navigation;

Volume 2, chapter 8: Aviation, Military and Communication;

Volume 2, chapter 9: Marine Archaeology;

Volume 2, chapter 10: Seascape and Visual Resources; and

Volume 2, chapter 11: Infrastructure and Other Users."

11.33 Therefore it is clear that the assessment of inter-related effects focusses on the interplay of effects which have been identified and assessed within other topic chapters of the ES.

11.34 As the relevant topic chapters do not contain any ALARP based risk assessment of vessel allision with Spirit Energy's infrastructure, then it follows that Chapter 12 also does not contain such an assessment.

- 11.35 Similarly, as Annex 8.1 of Volume 8 of the ES does not contain any ALARP based risk assessment of loss of life to pilots and Spirit Energy personnel in consequence of impacts on helicopter transportation to and from Spirit Energy's platforms (specifically the Chiswick and Grove NUIs and J6A NMI), then it follows that Chapter 12 also does not contain such an ALARP based assessment.

Safety case

- 11.36 This gap in the Applicant's assessment process is significant because the risks which have not been assessed are categorised as major accident hazards within the Applicant's safety cases for the Chiswick and Grove NUIs, and the J6A NMI. Reference is made to **SE ISH Appendix ZC**.
- 11.37 Helicopter transportation is a primary means of evacuation from the platforms. Moreover helicopter transportation is a mitigant relied upon in reducing other major accident hazards identified within the safety cases to ALARP. Any material reduction in the availability of that mitigant (namely, helicopter transportation) in consequence of the wind farm will necessitate a revisal of the safety case. Reference is made to **SE ISH Appendix ZG**.
- 11.38 Separately, changes to –
- 11.38.1 the anticipated frequency and consequent risk of vessel allision, and
- 11.38.2 helicopter transportation hazards would constitute changes to the underlying basis of the relevant risk assessments.

Implications

- 11.39 Aviation and Marine experts appointed by SE have considered the risks arising to SE's personnel and pilots (loss of life) and infrastructure in consequence of the windfarm. Their respective conclusions are set out within the AviateQ International Limited Flight Evaluation Report (November 2018) and **SE ISH Appendix ZE**, and the Noble Denton Marine Services – Hornsea 3 Wind Farm Review of Marine Hazards (November 2018) and **SE ISH Appendix ZD**.
- 11.40 The aviation evidence concludes that the windfarm will introduce obstructions to the available airspace that impact on the ability to safely conduct essential instrument flight procedures by helicopter to these facilities in low visibility conditions.
- 11.41 The marine evidence concludes that the wind farm will increase the risk of vessel allision with Spirit Energy's infrastructure.
- 11.42 Accordingly it is considered that revisal of the relevant safety cases and the approval of the Competent Authority of those revisals would be required.

12 Decision-making under Section 104(3), Planning Act 2008

- 12.1 In light of EN-1, paragraph 4.1.2 requiring the IPC to "start" with a presumption in favour of granting consent "unless any more specific and relevant policies" "clearly indicate that consent should be refused", and in circumstances where paragraph 3.1.4 applies at most "substantial weight" to the Application proposals for increased generation capacity at one end of that presumption, the following is evident. EN-3, paragraph 2.6.184 proceeds from an assumption that the Applicant has assessed "potential affects" and applied ALARP. Here, the Applicant has not undertaken the expected assessment expected from its acceptance that there is a potential affect.
- 12.2 Paragraph 2.6.184 continues from 2.6.184 and, thereby, assumes the prior paragraph assessments (plural). In this regard, 2.6.184 requires two matters to be addressed by the IPC: 1) it should be satisfied about aspects of site selection and design and their purpose. Here, however, the design is in outline and subject only to parameters in paragraph 2(2) of Part 3, Requirements, in the dDCO. Absent a conclusion on funding of the project, the purpose of the design of the layout cannot yet be known. Therefore, the IPC cannot at this time be satisfied about the purpose of "site design"; 2) the IPC "should not consent applications which pose unacceptable risks to safety after mitigation measures have been considered".
- 12.3 In this context, paragraph 2.6.185 categorises a "likely affect" upon "safety of an existing or approved/licensed offshore infrastructure or activity" as "adverse significant effects" ("these"). Applying EN-2, paragraph 4.2.11, to paragraph 2.6.185, results in it reading as "Where a proposed development is likely to affect the future ... safety of an existing or approved/licensed offshore infrastructure or activity, then the IPC should give these likely significant adverse effects substantial weight in its decision-making".
- 12.4 The outcome of paragraphs 2.6.183-2.6.185 is that the presumption of consenting the Application is removed by the clear words of paragraph 2.6.184 and the resulting balanced approach to the decision (as opposed to a presumption in favour of grant) includes: a) the "substantial weight" attributed by EN-1 paragraph 3.1.4 to the *whole* of the Application capacity; versus b) the "substantial weight" required to be attributed to the "likely significant adverse effect" on future safety of the proposed offshore wind farm on other offshore infrastructure or activity.
- 12.5 Paragraph 2.6.186 raises a bar ("to enable consent") whereby "mitigation measures" may make it "possible" to "negate or reduce effects "on other offshore infrastructure or operations" to a level sufficient to enable the IPC to grant consent. That is, paragraph 2.6.186 appears to raise a high bar to prevent the IPC granting consent unless and until relevant risks in paragraph 2.6.185 (here, safety) have been either negated or reduced. And if they are not so, then paragraph 2.6.186 clearly indicates that the IPC is 'unable' to grant consent absent such mitigation measures.