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ENVIRONMENTAL
ASSESSMENT
APPROPRIATE
ASSESSMENT
SCREENING AND NIS
REVIEW FOR IOLAR
APPLICATION (WELL
52/01-A)

ENVIRONMENTAL ASSESSMENT
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REVIEW FOR IOLAR APPLICATION (WELL 52/01-A)

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EXECUTIVE SUMMARY

Ramboll UK Limited (herein referred to as Ramboll) has been commissioned by the Department for Communications, Climate Action and Environment (herein referred to as DCCAE) to provide assistance with regards to the statutory assessment of applications for consent submitted in respect of offshore geophysical and seismic survey acquisition applications and exploratory drilling.

CNOOC Petroleum Europe Ltd (formally known as Nexen Petroleum UK Ltd) (referred to herein as the applicant) has submitted an application for consent pursuant to the provision of Section 5(2) of the Continental Shelf Act 1968 (as amended) to carry out proposed exploration drilling on well 52/01-A (Iolar) under Frontier Exploration Licence (FEL) 3/18. This will entail placing a temporary wellhead and associated infrastructure on the seabed. The competent authority (DCCAE) is required to give consideration to the potential significant effects of such activities on European Site(s), with respect to Article 6(3) of Council Directive 92/43/EEC, which is transposed in to Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011-15 as amended (the Habitats Regulations).

This report provides an assessment of the Iolar Exploration Well Appropriate Assessment Screening and Natura Impact Statement (NIS) submitted by the applicant.

Public consultation on the application has been undertaken by the DCCAE. All submissions and observations received by the DCCAE have been taken into consideration in the preparation of this report.

Ramboll confirms that the information provided by the applicant is considered to be adequate, up to date and that no other information was required in order to make this screening determination or carry out the Appropriate Assessment. The applicant provided adequate, up-to-date, best scientific information so as to enable the DCCAE to make a screening determination and undertake an Appropriate Assessment to determine whether the integrity of a European site is likely to be adversely affected by the proposed project.

1. INTRODUCTION

Ramboll UK Limited (herein referred to as Ramboll) has been commissioned by the Department for Communications, Climate Action and Environment (herein referred to as DCCAE) to provide advice as competent experts for the statutory assessment of applications for consent submitted in respect of offshore geophysical and seismic survey acquisition applications and exploratory drilling.

CNOOC Petroleum Europe Ltd (formally known as Nexen Petroleum UK Ltd) (referred to herein as the applicant) has submitted an application for consent to carry out proposed exploration drilling on well 52/01-A (Iolar) under Frontier Exploration Licence (FEL) 3/18. This will entail placing a temporary wellhead and associated infrastructure on the seabed.

This report provides an assessment of the Iolar Exploration Well Appropriate Assessment Screening, Natura Impact Statement and Article 12 Assessment Screening submitted by the applicant, prepared and approved by Ramboll as competent experts having relevant qualifications and experience.

1.1 Project Background

The competent authority (DCCAE) is required to consider the potential effects of such activities on European Site(s), with regard to Article 6(3) of Council Directive 92/43/EEC, which is transposed in to Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011-15 as amended (the Habitats Regulations).

2. TERMS OF REFERENCE

2.1 Legislative context

This report has been prepared having regard to Directive 2009/147/EC¹ on the conservation of wild birds (commonly referred to as the Birds Directive) and Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (commonly referred to as the Habitats Directives), the European Communities (Birds and Natural Habitats) Regulations 2011-15 (the birds and habitats regulations) as amended and relevant jurisprudence of the EU and Irish courts.

The application documents under review confirm that the Appropriate Assessment Screening, the NIS and the Article 12 Assessment Screening Report confirm that the Project has been screened having regard to the Birds and Habitats Directives, the birds and habitats regulations and relevant jurisprudence of the EU and Irish courts.

2.2 Relevant guidance

This report has been prepared having regard to guidance on appropriate assessment for planning authorities, published by the Department for Environment, Heritage and Local Government (DEHLG) in 2009². In addition, the structure and content of this report is based upon methodology published by the European Communities in 2002³ and Commission notice C (2018)⁴.

2.3 Public consultation

The application was advertised by DCCAE on their website following receipt of the application on 21 December 2018. Submissions were advertised by the DCCAE to be received by close of business on 21 January 2019 to ensure consideration by the Minister.

The following consultation responses were received:

- Consultation response received from An Taisce dated 13 December 2018.
- Consultation response received from An Taisce dated 21 January 2019.
- Consultation response from Friends of the Irish Environment to DCCAE (undated).
- Consultation response from Gluaiseacht to DCCAE dated 21 January 2019.

Following the provision of additional information in relation to the EIA Screening on the 21 February 2019, a further letter was received from An Taisce to DCCAE dated 7 March 2019.

As requested by DCCAE, the applicant has provided additional information. This additional information was advertised by DCCAE on their website following receipt of the application on 9 April 2019. Submissions were advertised by the DCCAE to be received by close of business on 29 April 2019 to ensure consideration by the Minister.

The following consultation responses were received:

- Consultation response received from An Taisce dated 29 April 2019.

¹ Amending Directive 70/409/EEC

² DEHLG (2009) Appropriate Assessment of Plans & Projects - Guidance for Planning Authorities, Revision Notes added 2010, URL: <https://www.npws.ie/protected-sites/guidance-appropriate-assessment-planning-authorities> (accessed 15/03/2019)

³ European Communities (2002) Assessment of Plans and Projects significantly affecting Natura 2000 sites, Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EE, URL: http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm (accessed 15/03/2019)

⁴ C (2018)⁴ 7621 final "Managing Natura 2000 sites The provisions of Article 6 of the Habitats Directive 92/43/EEC. URL: http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/Provisions_Art_.nov_2018_endocx.pdf (accessed 17/05/2019)

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- Consultation response from a private individual dated 26 April 2019.

The points raised in these consultation responses have been considered and responded to as provided in the following sections.

2.3.1 General Consultee Observations

The following general responses have been received.

- Regulatory process: concern raised in regard to the lack of regulatory process of assessing exploration and development applications. The involvement of Department officials in the commercial and licensing aspects as well as environmental assessment provides a perceived lack of objectivity and bias in the decision-making process;
- Regulatory process: concern raised that the public consultation has not engaged directly with bodies specified under SI No 134/2013 – European Union (EIA) (Petroleum Exploration) Regulations 2013.
- Regulatory process: All future applications need to determine how Ireland will meet its commitment under the Paris Agreement and provisions of Climate Action and Low Carbon Development Act 2015 are to be met.
- Regulatory process: The status of the consultation with regard to the Environmental Impact Assessment and Habitats Directive is unclear, including the process for notification of decisions by the Department to parties making submissions, and procedures for Judicial Review of any decision by the Department.
- Public consultation process: The public notification is not widely publicised on other media, such as newspapers or social media platforms and the current process of publicising public consultation is currently not transparent. Separate public notification and scientific peer review of the Habitats Directive process should be undertaken;

These general responses are in regard to the current regulatory process that exists within Ireland and since they are not project specific are not responded to by this report.

2.3.2 Project Specific Consultee Observations

The following specific responses have been received:

Objector	Project specific objection	Response
An Taisce	It is clear from information in the Appropriate Assessment Screening Report that a Natura Impact Statement and Stage 2 Appropriate Assessment is required. The Appropriate Assessment screening, Natura Impact Statement and Appropriate Assessment should meet in full the requirements of Irish law, CJEU judgments and Advocate General opinions in relation to the Habitats Directive. The current report and recommendations therein does not meet Irish and European law requirements and protections.	The adequacy of the AA Screening Report has been reviewed and recommendations for the DCCAIE to adopt have been provided in an earlier version of this report. Subsequently, an updated AA Screening and NIS has been compiled by the applicant for the Project in order to inform a Stage 2 Appropriate Assessment. This report provides recommendations for the DCCAIE to consider in their determination.
	The Archaeological Assessment Summary Report is inadequate for the purposes of an EIA screening. It is not acceptable that the results of the ROV	The adequacy of the Archaeological Assessment is reviewed in the EIA Screening Report produced by Ramboll.

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Objector	Project specific objection	Response
	survey will not be available for assessment at EIA screening stage.	
	An Environmental Impact Assessment Report should be prepared for this development and an Environmental Impact Assessment conducted in accordance with all relevant European directives. The current EIA screening report fails to meet the requirements of several European laws including inter alia Council Directive 2011/92/EU amended by 2014/52/EU, Council Directive 92/43/EEC, Council Directive 2008/56/EC and Commission Decision 2017/848.	The EIA Screening Report produced by Ramboll confirms whether the application meets the requirements of the relevant European Directives.
	The international significance of the fishing resource in the area of drilling is clear from the report, as is the fact that the migratory path of tuna, which follow the Gulf Stream, could possibly be active in the area and that there is a likelihood of interaction between the drilling and tuna fishing operations. An Taisce submits that there is insufficient information on the presence of tuna and other fish species in the zone of drilling and that any consideration of the impact on fish is premature and should at least await the outcome of fisheries surveys by the Marine Institute programmed for later this year. The pre-drilling fisheries study is lacking in any assessment of risk to fish from a blowout, or other form of leak of petroleum during the drilling operation.	The applicant notes that ‘interaction with, and potential impacts upon, a number of other receptors (e.g. fisheries, marine reptiles including turtles) are possible but these are not relevant to the requirements of the Habitats and Birds Directives and are not discussed in this Stage 1 Appropriate Assessment Screening report’. This report provides a conclusion on whether we agree with the applicant’s screening assessment in section 3.6.
	There has been no proper assessment of cumulative impacts and effects on habitats, species and the environment of other offshore exploration and drilling, either the cumulative impacts of previous exploration within this NEXEN site or the cumulative impacts of this site with other off shore exploration sites.	Further details on the cumulative assessment were requested from the applicant. The appropriateness of this response is reviewed in the EIA Screening Report and this report produced by Ramboll.
	There has been no proper assessment of climate change impacts and effects.	The adequacy of the assessment of effects of climate change is reviewed in the EIA Screening Report produced by Ramboll.
It has not been possible to consult fully on this application as key documents within the application have been withheld from public scrutiny including the generic well proposal, permits for use and discharge of added chemicals,	The adequacy of the consultation is a matter for the DCCAE. These documents were not required for the review of the AA Screening Report.	

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Objector	Project specific objection	Response
	and the Financial Responsibilities Assessment	
	<p>The NIS fails to provide the level of certainty beyond reasonable scientific doubt as to the absence of effects on conservation objectives of European Sites. The broad reliance on historical event frequencies to determine the likelihood of accidental events is not appropriate and the mitigation measures proposed do not result in the level of scientific certainty that is required to protect the habitats and species concerned.</p>	<p>The applicant identifies that there is a risk of a blow out and that this has the potential to have an adverse effect on the integrity of European sites (in the absence of mitigation). The information provided by the developer states that although this is a significant risk, this is not a likely risk. In our opinion the applicant's analysis that this risk is unlikely is correct. We also note that the Irish Offshore Strategic Environmental Assessment (IOSEA) 5 Appropriate Assessment identified that the risk of major hydrocarbon spill would lead to potentially significant effects for Natura 2000 sites; however it notes that the risk is 'very low' and therefore 'unlikely'. IOSEA5 confirms that further assessment is required at an individual project level to determine the potential for adverse effects on the integrity of any relevant Natura 2000 sites. Our advice is provided having regard to the judgement by Barneville J in Kelly v An Bord Pleanala and Aldi [2019] IEHC 84 at 66 that it is the possibility of a likely significant effect that is the relevant test. We consider that such risks (associated with accidental events) are inherent in all projects of this nature. We consider that all practicable and best practice mitigation measures have been identified and proposed to prevent or minimise this risk.</p>
	<p>The transfer of mitigation measures for underwater noise from the screening stage to the NIS and AA does remove scientific doubt that is inherent in these measures. For example, the presence of a marine mammal observer on board the vessel does not guarantee that vulnerable species are certain to be observed and avoided.</p>	<p>Our advice is provided having regard to the judgement by Barneville J in Kelly v An Bord Pleanala and Aldi [2019] IEHC 84 at 66 that it is the possibility of a likely significant effect that is the relevant test. We consider that all practicable and best practice mitigation measures have been identified and proposed to prevent or minimise this risk.</p>
<p>There has been no proper assessment of cumulative effects with other projects.</p>	<p>Cumulative effects have been considered by the applicant in the updated NIS report. This report confirms whether this assessment is considered adequate to enable DCCAE to make a determination.</p>	
	<p>It is submitted that this application requires a Stage 2 Appropriate Assessment and Environmental Impact</p>	<p>An earlier version of this report confirms whether the information provided meets the requirements to allow a decision to</p>

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Objector	Project specific objection	Response
<p>Friends of the Irish Environment</p>	<p>Assessment Report as the screening reports are inadequate.</p>	<p>be made on whether a NIS is required to enable DCCAE to undertake an AA. The adequacy of the EIA Screening Report has been reviewed and reported separately to this report. Subsequently, a revised AA Screening and NIS has been submitted by CNOOC (formerly Nexen) for the Project in order to inform a Stage 2 Appropriate Assessment. This report confirms whether the information provided by these revised reports submitted by the applicants meets the requirements to allow an AA to be undertaken by the DCCAE.</p>
	<p>The seabed area of the Porcupine Basin includes cold water coral reefs which are a priority habitat under the Habitats Directive. The current level of marine protection designation in Porcupine Basin area is inadequate to reflect the importance of sea bed habitat. The impact of the activity proposed on marine mammals and on a range a range of fish species including tuna migration paths requires assessment.</p>	<p>The potential effects on the ecology of the baseline environment are considered in the review of information provided by the applicant.</p>
<p>Gluaiseacht</p>	<p>Increasing effects of climate change for the benefits of the few.</p>	<p>The adequacy of the assessment of effects of climate change is reviewed in the EIA Screening Report produced by Ramboll.</p>
	<p>The Porcupine Seabight is a very important ecological area and we are just finding out how important the area is for blue and fin whales. We shouldn't be threatening these habitats by oil and gas drilling and seismic surveys.</p>	<p>The potential effects on the ecology of the baseline environment are considered in the review of information provided by the applicant.</p>
<p>Private Individual</p>	<p>None of the documents or assessments refer to the chronic risks resulting from climate change caused by fossil fuel burning. While this is exploratory drilling, should the drill be a success the logical next step would be extraction of fossil fuels. The IPCC 1.5 degrees Celsius report of October 2018 cites the urgent need for all countries to immediately reduce greenhouse gas emissions. The report cites risks to marine environments if these cuts are not made. While this may not be a specific requirement of the assessments provided it seems incomplete that the impacts of climate change would not be considered in assessments of risk to marine environments and species.</p>	<p>The adequacy of the assessment of effects of climate change is reviewed in the EIA Screening Report produced by Ramboll.</p>

3. REVIEW OF APPLICANT AA AND ARTICLE 12 SCREENING REPORT

3.1 Project Details

Table 3.1 provides a summary of the key project information.

Table 3.1: Project Information

Project Title:	Iolar Exploration Well
Project Type:	Offshore Exploration Drilling
Applicant:	CNOOC Petroleum Europe Limited (formally known as Nexen Petroleum UK Limited)
Exploration Licence Reference:	FEL 3/18
Date AA Screening Report Received:	9 April 2019 (superseding previous AA Screening Report dated 14 November 2018).

3.2 Determining whether a Project should be subject to an Appropriate Assessment

Under Paragraph 42(6) of the Habitats Regulations, the DCCAE (as the relevant competent authority) shall determine that an AA is required, where it cannot be excluded, on the basis of objective scientific information following screening, that the project, either individually or in combination with other plans and projects, will have a significant effect on a European Site.

Where it is determined that AA is required for a proposed development or project, the applicant must submit a Natura Impact Statement (NIS).

3.3 Description of the Project

The AA screening process involves describing the individual elements of the project that are likely to give rise to impacts on the conservation objectives and/or qualifying features of a Natura site.

Table 3.2 provides a review of the applicant's description of the project.

Table 3.2: Description of Project

<p>Brief Project Description:</p> <p>The proposed well is located in FEL 3/18, approximately 232 km southwest of the Irish mainland in the Porcupine Basin in water depths of approximately 2.2 km. A spud date of May 2019 has been assumed since this is the earliest window for drilling operations and is likely to be favourable in terms of weather. The total duration of drilling is expected to be between 100 and 150 days. The weather window for drilling activities is between 1 April and 30 September.</p> <p>A safety exclusion zone of 500 m around the drill ship whilst on station is proposed. The proposed drill ship (IceMAX) will maintain its position over the drilling location for the duration of the drilling activities using a dynamic positioning system. Drilling equipment is installed on the deck of the vessel, with the derrick normally placed in the middle of the ship. The well will be drilled through a moon pool that extends to the water's surface below the derrick.</p> <p>Helicopters will be used to transfer personnel to and from the drill ship for the duration of the drilling period. Helicopters may also be used to occasionally supply the drill ship with equipment required at short notice and would also be used in the event of an emergency situation. Otherwise all transport of drilling equipment, supplies, water, fuel and food will be undertaken by supply vessels, which will also return waste and surplus equipment to shore. These vessels will also perform safety standby operations.</p> <p>A single deviated well is proposed although should the well be deemed a success then there is potential for a short side track for coring purposes. The Iolar well will be drilled to either 6.31 km total vertical depth subsea in the success case or 5.923 km in the dry hole case. The drilling will consist of a number of phases:</p>
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1. Spudding: drilling or jetting of a 36" hole through the surface of the seabed into which a 36" conductor pipe will be cemented (a Remotely Operated Vehicle (ROV) will be used to minimise the amount of cement discharged to the seabed and provide visual monitoring);

2. Drilling: well sections of decreasing diameter (from 26" to 8.5") are drilled and casings installed and cemented to provide stability. Drilling fluid will be used and will be circulated back to the drill ship. Both Water Based Muds (WBM) and Oil Based Muds (OBM) are anticipated to be used depending on the down hole conditions.

The first two sections of the well will be drilled before the installation of a marine riser and therefore drilling fluids, rock cuttings and residual cement returns will be discharged directly onto the seabed. The sections will be jetted/drilled using seawater and WBM. Thereafter OBM will be used which will be circulated back to the drill ship, where drill cuttings and residual OBM will be placed in waste skips and shipped to shore for treatment, recycling or disposal. None of the OBM from the deeper sections will be discharged at sea.

Vertical Seismic Profiling (VSP) may be required and is used to establish the geological structure of the formations through which the well passes. VSP uses a small air gun array with receivers positioned inside the well. Typical VSP operations can take 6 to 12 hours to complete. The VSP source is expected to generate a maximum noise level of 235 dB re 1uPa @ 1 m (zero-peak), with the majority of noise concentrated at low (< 100 Hz) frequencies. These operations will be undertaken from the drill ship.

Once all operations are complete, the well will be permanently plugged and abandoned. Mechanical and cement plugs will be placed along the well at points where hydrocarbons could enter the well, thus isolating them from the surface. The wellhead will be severed and removed a minimum of 3 m below the seabed.

Project Element	Have these features of the project been identified by the applicant? (If not, please provide details)
Spatial Extent (size, scale, area etc)	Yes
Supporting Infrastructure	Yes
Transportation Requirements	Yes
Physical changes that will result from the project (e.g. from excavation, dredging)	Yes
Emissions and Waste	Yes
Resource Requirements (e.g. water abstraction)	Yes
Duration of each phase e.g. <ul style="list-style-type: none"> • Phase 1 Construction • Phase 2 Operation • Phase 3 Decommissioning 	Yes

The AA screening must consider the effects of the proposed development in combination with other plans and other projects in making the screening assessment.

Table 3.3 provides a review of the in-combination assessment undertaken by the applicant.

Table 3.3: In-combination Assessment

<p>Brief Description of identified plans / projects that might act in-combination (Operational, Consented and Proposed projects) with the proposed project:</p> <p>The applicant's AA screening report states that there are no other projects in the Porcupine Basin nor any other known plans for future exploration or seismic activities during 2019 with the region.</p>

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Project Element	Is the predicted magnitude / extent of identified likely in-combination effects considered by the applicant?	Summary
Spatial Extent (define boundaries for examination of in-combination effects)	Yes	The applicant has described the potential extent of the effects of the project in order to correctly determine the envelope of impacts from the project and the receptors that may be affected in combination with other projects.
Impact Identification (e.g. noise, chemical emissions etc.)	Yes	The applicant has described the potential impacts arising from the project and considered which of the impacts identified are relevant to the determination of LSE (specifically, underwater sound and pressure emissions and well blowout) and has linked these clearly to pathways that might transmit impacts to receptors.
Pathway Identification (e.g. via water, air etc)	Yes	The applicant has described the potential impact / pressure pathways and have linked these clearly to determinations of LSE.

3.4 Identification of relevant European sites and species

The applicant’s AA screening report and Article 12 screening report considers the designated European sites and Annex IV species that may be impacted by the project, including consideration of direct, indirect and in combination effects. As projects that lie out with European sites may still have an impact upon their integrity, particularly in a marine environment where the environment is extremely dynamic and species may be highly mobile, identifying potential zones of influence surrounding the European sites is a key component.

Table 3.4 identifies the relevant European Sites and species, as well as Annex IV species that might be impacted by the project.

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Table 3.4: Identification of Relevant European Sites/Species AA Screening Checklist

NB Sites presented in Appendix A of the Applicants AA Screening Report have been cross referenced against current lists of Natura sites – no omissions of relevant sites have been determined. On this basis the list of sites presented by the Application in Appendix A have been considered below.

Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
1. Achill Head [002268]	400	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
2. Akeragh, Banna and Barrow Harbour [00332]	286	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
3. Anton Dohrn Seamount [UK0030387]	713	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
4. Ballinskelligs Bay and Inny Estuary [00335]	238	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
5. Barley Cove to Ballyrisode Point [001040]	258	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
6. Belgica Mound Province [002327]	119	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
7. Black Head-Poulsallagh Complex [00020]	359	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
8. Blasket Islands [002172]	224	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
9. Broadhaven Bay [000472]	435	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
10. Carrowmore Dunes [002250]	334	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
11. Carrowmore Point to Spanish Point and Island [001021]	336	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
12. Connemara Bog Complex [002034]	360	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
13. East Rockall Bank [UK0030389]	647	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
14. Erris Head [001501]	434	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
15. Glenamoy Bog Complex [00500]	445	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
16. Haig Fras [UK0030353]	385	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
17. Hovland Mound Province [002328]	135	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
18. Inishbofin and Inishshark [00278]	366	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
19. Inisheer Island [01275]	355	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
20. Inishkea Islands [00507]	415	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
21. Inishmaan Island [0000212]	353	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
22. Inishmore Island [000213]	345	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
23. Kenmare River [IE02158]	230	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
24. Kerry Head Shoal [02263]	278	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
25. Kilkee Reefs [02264]	317	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
26. Kilkeran Lake and Castlefreke Dunes [01061]	315	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
27. Kilkeran Bay and Islands [02111]	354	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
28. Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment [00365]	243	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
29. Lough Hyne Nature Reserve and Environs [00097]	291	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
30. Lower River Shannon [02165]	290	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
31. Magharee Islands [002261]	277	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
32. Mount Brandon [00375]	255	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
33. Mullet/Blacksod Bay Complex [000470]	419	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
34. North-West Porcupine Bank [02330]	289	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
35. Omev Island Machair [001309]	365	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
36. Porcupine Bank Canyon [003001]	155	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
37. Roaringwater Bay and Islands [000101]	268	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
38. Slyne Head Islands [00328]	350	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
39. Slyne Head Peninsula [002074]	354	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
40. South East Rockall Bank [03002]	533	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
41. South-West Porcupine Bank [02329]	141	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
42. Three Castle Head to Mizen Head [00109]	254	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
43. Tralee Bay and Magharees Peninsula, West to Cloghane [IE0002070 - No site code presented in report]	266	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
44. Valencia Harbour/Portmagee Channel [002262]	231	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
45. West Connacht Coast [IE02998]	357	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
46. Beara Peninsula [004155]	230	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
47. Bills Rocks [004177]	394	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
48. Blasket Islands [004008]	227	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
49. Cliffs of Moher [004005]	350	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
50. Cruagh Island [004170]	362	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
51. Deenish Island and Scariff Island [004175]	234	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
52. Dingle Peninsula [004153]	241	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
53. Galley Head to Duneen Point [004190]	316	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
54. High Island, Inishshark and Davillaun [004144]	362	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
55. Illanmaster [04074]	457	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
56. Inishglora and Inishkeeragh [04084]	427	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
57. Inishkea Islands [04004]	415	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
58. Inishmore [004152]	347	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
59. Iveragh Peninsula [004154]	231	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
60. Kerry Head [004189]	290	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
61. Loop Head [004119]	300	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
62. Magharee Islands [004125]	278	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
63. Mid-Clare Coast [04182]	334	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
64. Old Head of Kinsale [04021]	345	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
65. Puffin Island [04003]	229	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
66. Seven Heads [04191]	328	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
67. Sheep's Head to Toe Head [IE0004156 - No site code presented in report]	254	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
68. Skelligs [04007]	218	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
69. Slyne Head to Ardmore Point Islands [04159]	351	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
70. Termoncarragh Lake and Annagh Machair [004093]	433	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
71. The Bull and The Cow Rocks [04066]	226	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
72. Tralee Bay Complex [004188]	274	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
73. Five marine turtle species (specifically leatherback turtle) (Annex IV species)	Present in Irish waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
74. European sea sturgeon (Annex IV species)	Present in Irish waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
75. Marine mammal species (Annex IV species)	Present in Irish waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV species listed by the applicant?	Are direct impacts to the Natura Site / Annex IV species considered by the applicant?	Are indirect impacts to the Natura Site / Annex IV species considered by the applicant?	Are Potential Zones of Influence on the Natura Site / Annex IV species considered by the applicant?	Are in combination effects considered by the applicant?	Briefly summarise whether the applicant's consideration of relevant Natura sites / Annex IV species which may be affected by the proposed project, meets the requirements for a screening opinion:
76. European otter (Annex IV species)	Present in Irish waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

3.5 Screening for Appropriate Assessment of Likely Significant Effects on Natura sites and adverse effects on Annex IV species

Table 3.5 provides a summary of the likely significant effects effects identified for the project alone and in combination with other projects considering, *inter alia*, the characteristics and specific environmental conditions of the sites concerned by the relevant project and the project location.

Table 3.5: Assessment of Likely Significant Effects “LSE”

Summary of LSE
<p>The applicant’s AA and Article 12 screening reports identify the following impact sources for further consideration in the determination of effects:</p> <ul style="list-style-type: none"> • Underwater sound; and • Accidental releases.
Do you agree with the applicant’s AA and Article 12 screening assessment? Why?
<p>Yes. Ramboll do agree with the applicant’s conclusion in their revised Appropriate Assessment Screening Reports for the following reasons:</p> <ul style="list-style-type: none"> • Connectivity between designated features of the European sites has been identified and it is not possible to exclude the potential for the identified impact pathways to have a significant effect on European sites and their designated features. Accordingly, the following European sites have been screened into the Stage 2 assessment: <ul style="list-style-type: none"> • Achil Head SAC; • Akeragh, Banna and Barrow Harbour SAC; • Anton Dohrn Seamount SAC; • Ballinskelligs Bay and Inny Estuary SAC; • Barley Cove to Ballyrisode Point SAC; • Beara Peninsula SPA; • Bills Rocks SPA; • Black Head-Poulsallagh Complex SAC; • Blasket Islands SAC and SPA; • Broadhaven Bay SAC; • Carrowmore Dunes SAC; • Carrowmore Point to Spanish Point and Island SAC; • Cliffs of Moher SPA; • Connemara Bog Complex SAC; • Cruagh Island SPA; • Deenish Island and Scariff Island SPA; • Dingle Peninsula SPA; • East Rockall Bank SAC; • Erris Head SAC; • Galley Head to Duneen Point SPA; • Glenamoy Bog Complex SAC; • High Island, Inishshark and Davillaun SPA; • Illanmaster SPA; • Inishbofin and Inishshark SAC; • Inisheer Island SAC; • Inishglora and Inishkeeragh SPA; • Inishkea Islands SAC and SPA;

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- Inishmaan Island SAC;
- Inishmore SPA;
- Inishmore Island SAC;
- Iveragh Peninsula SPA;
- Kenmare River SAC;
- Kerry Head SPA;
- Kerry Head Shoal SAC;
- Kilkee Reefs SAC;
- Kilkeran Lake and Castlerefere Dunes SAC;
- Kilkeran Bay and Islands SAC;
- Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC;
- Loch Hyne Nature Reserve and Environs SAC;
- Loop Head SPA;
- Lower River Shannon SAC;
- Magharee Islands SAC and SPA;
- Mid-Clare Coast SPA;
- Mount Brandon SAC;
- Mullet/Blacksod Bay Complex SAC;
- North-West Porcupine Bank SAC;
- Old Head of Kinsale SPA;
- Omey Island Machair SAC;
- Puffin Island SPA;
- Roaringwater Bay and Islands SAC;
- Seven Heads SPA;
- Sheep's Head to Toe Head SPA;
- Skelligs SPA;
- Slyne Head Islands SAC;
- Slyne Head to Ardmore Point Islands SPA;
- Slyne Head Peninsula SAC;
- Termoncarragh Lake to Annagh Machair SPA;
- The Bull and The Cow Rocks SPA;
- Three Castle Head to Mizen Head SAC;
- Tralee Bay and Magharees Peninsula, West to Cloghane SAC;
- Tralee Bay Complex SPA;
- Valencia Harbour/Portmagee Channel SAC; and
- West Connacht Coast SAC.
- The applicant's Article 12 Screening Report has concluded on the basis of objective scientific information following screening that it can be excluded that the Project, individually or in combination with other plans or projects, will have a significant effect on any European site. The lack of significant effects has been concluded as a result of:
 - Noise propagation from the project activities is at a level unlikely to cause injury and, at worst, minor disturbance in the area, consequently no adverse effect on the conservation status of cetaceans is predicted;
 - Assessment of accidental spillages concluded no adverse effect on the conservation status of cetaceans because of low sensitivity of these species to surface oil in the offshore environment; and
 - Assessment of the potential for accidental release to result in significant adverse effects on European otter is considered unlikely as a result of the implementation of mitigation measures and remote likelihood of occurrence. It is agreed that there is a risk of catastrophic blow out,

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but the information provided by the applicant concludes that this is not a *likely* risk. This conclusion is also supported by IOSEA5 which also concludes that there is a low probability of major accidental release of hydrocarbons occurring from any exploration well and associated planned vessel operations. Acting on the basis of the judgement by Barneville J in *Kelly v An Bord Pleanala and Aldi* [2019] IEHC 84 at 66 that it is the possibility of a *likely* effect that is the relevant test. This report has analysed the mitigation measures proposed and confirms that the measures proposed by the applicant are consistent with contemporary best practice and have been identified and proposed by the applicant to prevent or minimise this risk as far as practicable.

- The applicant has screened out effects on marine reptiles and fish on the basis of these not occurring within the FEL 3/18 area. Effects on these species may be possible as a result of accidental releases, however, as discussed above for European otter the risk of catastrophic blowout occurring is considered to be unlikely. Therefore no adverse effects on these Annex IV species can be concluded.
- In combination effects are ruled out due to the distance of other offshore applications (the only activity identified as having the potential to result in in-combination effects) and low likelihood of occurrence.

3.6 Screening Determination

If significant effects are certain, likely or uncertain then the DCCAE must request the applicant provides a NIS in order for the DCCAE to undertake an AA as the competent authority. The applicant may also choose to recommence the screening process with a modified project that removes or avoids elements that posed risks of LSE.

Table 3.6 and 3.7 provide a summary of Ramboll’s recommendation to enable DCCAE to make a screening determination.

Table 3.6: Summary of Applicant’s Screening Report Review

Is the plan or project is directly connected with or necessary to the nature conservation management of the Natura site?	No
Is the project or plan likely to have significant effects on the environment?	Yes.
Is an AA required? (Yes / No / More Information Required?)	Yes
What further information is required to inform AA Screening Opinion (if any)?	No additional information is required to inform the AA Screening Opinion following submission of the updated AA Screening report by the applicant. In the previous version of the AA Screening Report, the information provided by the applicant states that Vertical Seismic Profiling (VSP) is expected to generate a noise level <i>around</i> 220 dB re 1uPa @ 1 m. In preparing the NIS, the Applicant was asked for confirmation of maximum sound levels. The applicant has subsequently confirmed maximum sound levels and included these in the updated AA Screening Report. Given the spatial effects of some of the impacts the applicant was asked to confirm if there are any other projects further inshore or elsewhere off the other coasts of Ireland that may interact to give rise to LSE in combination with the proposed project. Additional information in relation to other projects was provided

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	<p>by the applicant in the updated AA Screening Report and NIS.</p> <p>The applicant NIS must confirm that:</p> <ul style="list-style-type: none"> • the entirety of habitat types and species for which a site is protected have been considered; and • the implications of the proposed project for the species present on that site and for which that site has not been listed are identified and examined – as well as the implications for habitat types and species outside the boundaries of that site, insofar as those implications are liable to affect the conservation objectives of the site. <p>Confirmation has been received from the applicant in the updated AA Screening Report to confirm that all relevant habitat types and species have been considered in the assessment.</p>
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Table 3.7: Recommendation of Screening Determination

Outcome of Stage 1 Appropriate Assessment	Stage 1 Appropriate Assessment Determination
Likely or Potentially Likely Significant Effects on Natura Sites identified, and project is not directly connected with or necessary to the nature conservation management of the Natura site.	Appropriate Assessment is required. Proceed to Phase 2 Appropriate Assessment (See Section 4)
No Likely Significant Effects on Natura sites identified, or project is directly connected with or necessary to the nature conservation management of the Natura site	Appropriate Assessment is not required.

4. STAGE 2 APPROPRIATE ASSESSMENT

4.1 Natura Impact Statements

A NIS⁵ is a scientifically robust examination of a proposed plan or project, which is used to characterise any possible implications of the project on the conservation objectives of any relevant European site(s). The primary purpose of the NIS is to provide the competent authority with the information required to complete an Appropriate Assessment (AA).

Following the receipt of a NIS, the DCCAE (as the competent authority) will undertake an AA to determine whether the proposed project is likely to have an adverse effect on the integrity⁶ of any relevant European sites with regards to their conservation objectives, both individually and in combination with other plans or projects. On completion of the AA, the DCCAE will produce an AA Conclusion Statement.

Table 4.1 provides a checklist of information that should be provided by the applicant's NIS (or supporting documents), with regards to European site(s) and/or species that may be affected by the proposed project, in order for the DCCAE to undertake an AA.

Table 4.1: Summary of European site information to be included in a NIS (or supporting documentation)

NIS Content	Does the applicant's NIS provide the following information? (Y/N/Unsure)	Briefly Explain Answer:
The Conservation Status of relevant Habitats and Species listed under Annex II of the Habitats Directive;	Yes	For each Natura site assessed, there is adequate information on each of the relevant features (habitats and species designated under Annex II) for designation, including their conservation objectives and current condition/status
The Conservation Status of relevant Species listed under Annex I of the Birds Directive;	Yes	For each Natura site assessed, the applicant's NIS lists every bird species (designated under the Birds Directive) and their conservation status
The baseline conditions of any relevant European site(s);	Yes	Adequate information has been provided by the applicant in this regard.
The conservation objectives and qualifying features of any relevant European site(s);	Yes	The conservation objectives and qualifying features of the relevant European sites have been adequately described by the applicant.

⁵ Note - Natura Impact Statement (NIS) is an Irish specific term used following transposition of the Birds and Habitats Directives into national legislation.

⁶ Ecological integrity has been defined in as 'the coherence of the site's ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or populations of species for which it is classified' (Managing Natura 2000 sites, EC, 2000)

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NIS Content	Does the applicant's NIS provide the following information? (Y/N/Unsure)	Briefly Explain Answer:
Any management plans associated with relevant European site(s);	No	No management plans associated with the relevant European sites have been made or identified by the applicant. However there are no current management plans associated with the relevant Natura 2000 sites.
Details on each species and habitat type for which relevant European site(s) are designated and spatial mapping of the distribution and temporal mapping, including lifestyle stages;	Yes	Adequate information has been provided by the applicant in this regard.
Information on population profile of the species and their conservation status (e.g. size, population structure etc.)	Yes	Adequate information has been provided by the applicant on the conservation status of the species. Furthermore, where the population on the site is data deficient, this is described by the applicant.
Ecosystem structure and functioning of the site and its overall conservation state;	No	There is no specific information on the ecosystem structure or function of each Natura site. Though each feature of the site is described, there is no description of the site as a whole.
The role of the site within the ecosystem region and the Natura 2000 network;	No	A review of the document has not revealed any information on the role of each of the relevant sites within the ecosystem region and the Natura 2000 network.
Any other aspects of the site or its wildlife that is likely to have an influence on its conservation status and objectives (e.g. current management activities, other developments etc.)	Yes	Adequate information has been provided by the applicant.

Table 4.2 provides a checklist of information that should be provided in the NIS (or supporting documents), in order for the DCCAE to complete an AA.

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Table 4.2: Summary of information to be included in a NIS (or supporting documentation) for consideration in AA

NIS Content	Does the applicant's NIS provide sufficient detail to inform an Appropriate Assessment? (Y/N/Unsure)	Briefly Explain Answer:
A description of size, scale and objectives of the proposed plan or project;	Yes	The applicant's NIS provides adequate detail on the spatial extent of the operations of the project, expected duration and timing of the project, and the objectives of the project, as well as a detailed methodology
A description of the pressures of the proposed plan or project, and its likely impacts on the conservation objectives and local site characteristics;	Yes	<p>The applicant's NIS identifies that there are two impact pathways for which it was not possible to exclude impacts arising on European site (as part of the AA Screening). These are underwater noise and unplanned accidental releases. The pathway for these impacts to arise on each feature of each relevant Natura 2000 site is displayed in Table 4.1 of the applicant's NIS. A detailed impact assessment of each pathway is presented.</p> <p><u>Underwater noise</u></p> <p>An assessment has been made by the applicant against the conservation objective of the species for which there may be an impact (Harbour porpoise) and referenced the species-specific Natura sites which have been taken into account.</p> <p><u>Unplanned accidental releases</u></p> <p>A description of the potentially significant impacts in each Natura site is displayed in Table 4.12. Assessment has been undertaken by the applicant for all groups of species and habitats, as all can be impacted by such an event.</p>
Identification of all European sites located within the zone of influence of the proposed plan or project, together with qualifying interests and conservation objectives;	Yes	SACs and SPAs have been screened in for assessment if they are within a maximum of 457 km. The qualifying features and their respective conservation objectives are listed for each site. Adequate information has been provided by the applicant in this regard.

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NIS Content	Does the applicant's NIS provide sufficient detail to inform an Appropriate Assessment? (Y/N/Unsure)	Briefly Explain Answer:
Methodologies, analysis and data sources utilised to demonstrate use of best scientific knowledge;	Yes	<p><u>Underwater noise</u></p> <p>The applicant's assessment of underwater noise has followed best practice in that assessment has been made by using two industry-standard reports (Southall et al., 2007; NOAA, 2018) to inform the noise level threshold at which PTS and TTS occur, followed by noise propagation modelling of three sources of underwater noise (including maximum sound levels of underwater noise of VSP, as requested by DCCAE), in order to determine the zone of influence of the impacts. Worst-case scenarios, in terms of most sensitive cetacean species, and maximum zone of influence, have been used. Adequate information is therefore provided by the applicant in this regard.</p> <p><u>Unplanned accidental releases</u></p> <p>A thorough review has been undertaken by the applicant and reported in their NIS to inform the assessment of frequency of unplanned accidental releases, citing multiple sources. OSCAR oil spill modelling has been undertaken, in conjunction with BEIS guidance (industry-standard). Worst-case scenarios have been used by the applicant to assess the impact, which is considered appropriate. Each species and habitat has been assessed separately with regards to unplanned accidental releases, and several pathways by which the feature could be impacted by such an event have been identified. Adequate information has been provided by the applicant in this regard.</p>
A scientific assessment, analysis and statement of the significant effects including direct, indirect, cumulative and in combination effects of the	Yes	<p><u>Underwater noise</u></p> <p>A scientific assessment using underwater noise modelling of the sound sources and using worst-case environment- and</p>

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NIS Content	Does the applicant's NIS provide sufficient detail to inform an Appropriate Assessment? (Y/N/Unsure)	Briefly Explain Answer:
<p>relevant European site(s) and/or species which are expected to occur as a result of the development;</p>		<p>species-specific parameters, have been used by the applicant to determine the maximum zone of influence of underwater noise on the marine mammal species receptor. Direct and indirect impact mechanisms have been identified, specifically behavioural change, acoustic response, and physiological effects. Adequate information is therefore provided by the applicant in this regard.</p> <p><u>Unplanned accidental releases</u></p> <p>A thorough assessment has been conducted by the applicant using the best scientific sources available. Two sources for release have been identified, well blowout and drill ship spills, leading to three effect scenarios. OSCAR spill modelling has been conducted for three scenarios, with the results from the worst-case spill volume used to inform screening of Natura sites. Spill effects have been considered for birds, marine mammals, marine habitats, fish and freshwater pearl mussels, and otters. Each receptor has been individually assessed for direct and indirect effects. For each receptor, it has been concluded that there is a low risk of adversely affecting the Natura sites for which it is a designated feature (prior to mitigation). Adequate information has been provided by the applicant in this regard.</p>
<p>Details of any appropriate mitigation measures undertaken, or proposed to be undertaken by the applicant to mitigate any significant effects on the environment or on the European site(s) and/or species, and the period within which any such measures shall be carried out by the developer;</p>	<p>Yes</p>	<p><u>Underwater noise</u></p> <p>Appropriate mitigation measures of underwater noise have been identified by the applicant, specifically the NPWS - Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters (NPWS, 2014). These measures are listed below:</p> <ul style="list-style-type: none"> • A qualified and experienced marine mammal observer (MMO) shall be appointed to monitor for marine

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NIS Content	Does the applicant's NIS provide sufficient detail to inform an Appropriate Assessment? (Y/N/Unsure)	Briefly Explain Answer:
		<p>mammals and to log all relevant events using standardised data forms;</p> <ul style="list-style-type: none"> • Sound producing activities shall only commence in daylight hours where effective visual monitoring, as performed and determined by the MMO, has been achieved. Where effective visual monitoring, as determined by the MMO, is not possible, the sound-producing activities shall be postponed until effective visual monitoring is possible; • Pre-start-up monitoring shall be conducted at least 60 minutes before the activity is due to commence. Sound-producing activity shall not commence until at least 60 minutes have elapsed with no marine mammals detected within the Monitored Zone by the MMO; • Pre-start-up monitoring shall be subsequently followed by a Ramp-Up Procedure (where possible) which should include continued monitoring by the MMO. Airguns utilised in VSP generally fire for approximately two minutes and then stop for 5-10 minutes before repeating the pattern. To ensure that marine mammals are given the opportunity to move away from the airguns as the commence firing, energy would be slowly increased to the maximum level over a period of 40 minutes, in a process called 'soft-start'; • If there is a break in sound output for a period of 5-10 minutes (e.g. due to equipment failure, shut-down), MMO monitoring must be undertaken to check that no marine mammals are observed within the Monitored Zone prior to recommencement of the sound source at full power; and • If there is a break in sound output for a period greater than 10 minutes (e.g., due to equipment failure, shut-down or station change) then all pre-start-monitoring and a subsequent Ramp-Up Procedure (where

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NIS Content	Does the applicant's NIS provide sufficient detail to inform an Appropriate Assessment? (Y/N/Unsure)	Briefly Explain Answer:
		<p>appropriate following pre-start-monitoring) will be undertaken.</p> <p><u>Unplanned accidental releases</u></p> <p>Appropriate mitigation measures for unplanned accidental released have been identified by the applicant, many of which are incorporated into the design and operation of the project. These measures are listed below:</p> <ul style="list-style-type: none"> • Crew of the drill ship will undergo environmental awareness and safety training. Incident response training will form part of the induction for any crew joining the drill ship or Project vessels. The drill ship has an approved safety case and will be class certified by a recognised certifying authority; • A full risk assessment will be performed as part of well planning; • CNOOC Engineering Standards will be implemented; • The well will be designed to CNOOC Well Control Standards ECN-DR-STD-00067; • While drilling a two-barrier well control policy will be implemented at all times. The primary well control will be the mud hydrostatic and secondary well control will be the blow-out preventers or BOPs, which will be maintained throughout the drilling of the well. A full risk assessment was performed during well design; • While drilling, the primary well control barrier in the main conduit will be the hydrostatic pressure imparted by correctly weighted drilling fluid and secondary well control measures will include the BOP and cut-off valves on all machinery, pipelines and hoses; • Outside the main conduit, previous casings in the next annulus also have barriers, i.e. seal assemblies in casing hangers, and cement isolation between reservoir and surface – there may be one or more cement seals set in each annulus;

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NIS Content	Does the applicant's NIS provide sufficient detail to inform an Appropriate Assessment? (Y/N/Unsure)	Briefly Explain Answer:
		<ul style="list-style-type: none"> • Well design, materials and drilling procedures will combine to ensure that the surface environment can be isolated from the wellbore by at least two independent barriers during all stages of well construction and abandonment; • The BOP rated design pressure will comfortably exceed the anticipated reservoir pressure and the BOP will undergo maintenance and inspection prior to use; • Barriers will be tested prior to use, during installation and post-installation; • In the event of a blowout during drilling activities, with the primary Blowout Prevention Equipment has failed, a capping device will be deployed. The full description of the containment and recovery process is described in the Iolar Oil Spill Contingency Plan (OSCP), ECI-HS-PRP-00014. The OSCP was approved by the Irish Coast Guard on 12 February 2019 and was prepared in accordance with the Sea Pollution (Amendment) Act 1999. Details of the OSCP are provided in Section 4.3.4.2 of the applicant's NIS. This capping and containment system is a one of two-source control strategy, the other being a relief well drilling; • Shallow hazards (from shallow gas or over-pressured shallow formation water) have been assessed by seismic survey prior to drilling, and the results have been incorporated into the well design; and • The plug and abandonment plan will be reviewed and approved by CNOOC, in accordance with Oil and Gas UK Well Decommissioning Guidelines. <p>Adequate information has been provided by the applicant to confirm that the mitigation measures are capable of avoiding or reducing any significant effects.</p>

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NIS Content	Does the applicant's NIS provide sufficient detail to inform an Appropriate Assessment? (Y/N/Unsure)	Briefly Explain Answer:
<p>An assessment of the scope and scale of residual effects after mitigation (including direct, indirect, cumulative and in combination effects);</p>	<p>Yes</p>	<p><u>Underwater noise</u></p> <p>The noise modelling that was conducted for the primary impacts was also conducted for the residual impacts. The revised zones of influence from the residual impacts have been detailed. Direct (injury) and indirect (disturbance) impacts have been taken into account. Adequate information is therefore provided by the applicant in this regard.</p> <p><u>Unplanned accidental releases</u></p> <p>Natura sites and features that have the potential to have residual impacts have been listed. The applicant's NIS has concluded no adverse effect on the integrity of the Natura sites and features, due to the extensive mitigation measures and remote likelihood of occurrence. In combination effects are ruled out due to the distance of other offshore applications (the only activity identified as having the potential to result in in-combination effects) and low likelihood of occurrence.</p> <p>It is agreed that there is a risk of catastrophic blow out, but the information provided by the applicant concludes that this is not a <i>likely</i> risk. This conclusion is also supported by IOSEA5 which also concludes that there is a low probability of major accidental release of hydrocarbons occurring from the exploration well and associated planned vessel operations.</p> <p>Acting on the basis of the judgement by Barneville J in <i>Kelly v An Bord Pleanala and Aldi</i> [2019] IEHC 84 at 66 that it is the possibility of a <i>likely</i> significant effect that is the relevant test. The risks identified by the applicant are inherent to all projects of this nature. It is considered that all practicable and best practice mitigation measures have been identified</p>

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NIS Content	Does the applicant's NIS provide sufficient detail to inform an Appropriate Assessment? (Y/N/Unsure)	Briefly Explain Answer:
		<p>and proposed proposed by the applicant to prevent or minimise this risk</p> <p>It is therefore considered that adequate information has been provided by the applicant in this regard.</p>
<p>A conclusion in relation to whether or not the project would adversely affect the integrity of any European site (either individually or in cumulation with other existing or consented developments)</p>	<p>Yes</p>	<p><u>Underwater noise</u></p> <p>The applicant's NIS concludes that, following the implementation of mitigation measures described above, there will be no adverse effect on the integrity of the Harbour porpoise populations of the Blasket Islands, Roaringwater Bay and Islands and West Connacht Coast SACs and that the integrity of these sites would not be affected in view of their Conservation Objectives.</p> <p>Adequate information has been provided by the applicant to conclude that there will be no adverse effect on the integrity on the European sites of Blasket Islands, Roaringwater Bay and Islands and West Connacht Coast SACs either individually or in combination with existing, consented or proposed schemes.</p> <p><u>Unplanned accidental releases</u></p> <p>The applicant's NIS concludes that the Project will have no adverse effects, individually or in-combination with other plans or projects, on the integrity of this site. As described above, this is appropriate based on the evidence contained in the NIS on the remote probability of unplanned accidental release, the mitigation measures which further reduce the probability, and the management measures to be implemented in the case of the event occurring.</p> <p>Adequate information has been provided by the applicant in this regard.</p>

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4.2 Stage 2: Appropriate Assessment Determination

Tables 4.3 and 4.4 provide a summary of Ramboll's recommendation to enable DCCAE to undertake an AA to determine whether the integrity of a European site is likely to be adversely affected by the proposed project.

Table 4.3: Stage 2 Appropriate Assessment Determination Checklist

<p>Does the NIS (and supporting documentation) contain sufficient information to complete an AA and to prepare an AA Conclusion Statement?</p>	<p>Yes</p>
<p>Does the NIS conclude that the proposed project or plan is likely to have an adverse residual effect on the integrity of any European sites or species?</p>	<p>No</p>
<p>Do you agree with the conclusion(s) of applicant's NIS? (Briefly explain answer)</p>	<p>Yes</p> <p>The applicant concludes that there will be no adverse effect on the integrity of European sites in view of their conservation objectives. Ramboll concludes however that the risk of significant effects occurring remains.</p> <p>However, having regard to the judgement by Barneville J in <i>Kelly v An Bord Pleanala and Aldi</i> [2019] IEHC 84 at 66 that it is the possibility of a <i>likely</i> significant effect that is the relevant test. It is considered that the risks identified by the applicant are inherent in all projects of this nature and that all practicable and best practice mitigation measures have been identified and proposed to prevent or minimise this risk. Therefore, it can be concluded that significant adverse effects are unlikely to occur.</p> <p>There are two aspects of the Natura sites identified which are not discussed in the NIS:</p> <ul style="list-style-type: none"> • Ecosystem structure and functioning of the site and its overall conservation state; and • The role of the site within the ecosystem region and the Natura 2000 network. <p>However, given the conclusion that significant adverse effects on the integrity of the designated features are unlikely, it follows that effects on ecosystem structure, function, overall conservation state and the wider Natura 2000 network are also unlikely.</p>
<p>What further information is required to complete an AA (if any)?</p>	<p>No further information is required.</p>

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Table 4.4: Summary of Stage 2 Appropriate Assessment

Outcome of Stage 2 Appropriate Assessment	Stage 2 Appropriate Assessment Determination
AA determines that the proposed plan or project is likely to have an adverse effect on the integrity of a European Site(s) or species	Refuse or proceed to Stage 3 AA: Alternative Solutions (See Section 6)
The applicant's NIS does not contain sufficient information to determine whether the proposed plan or project is likely to have an adverse effect on the integrity of a European Site(s) or species	Request further information from the Applicant
AA determines that the proposed plan or project is unlikely to have an adverse effect on the environment.	

5. MITIGATION AND MANAGEMENT COMMITMENTS

The following mitigation and management commitments have been made by the applicant in the documentation reviewed. Table 5.1 documents the commitments made by the applicant.

Table 5.1: Mitigation and management measures committed to by the applicant.

Discipline	Commitment Proposed	Additional Notes
Underwater Noise	A qualified and experienced marine mammal observer (MMO) shall be appointed to monitor for marine mammals and to log all relevant events using standardised data forms.	None
	Sound producing activities shall only commence in daylight hours where effective visual monitoring, as performed and determined by the MMO, has been achieved. Where effective visual monitoring, as determined by the MMO, is not possible, the sound-producing activities shall be postponed until effective visual monitoring is possible.	If a break occurs in the hours of darkness, then sound-producing activities will not commence until hours of daylight and when effective visual monitoring is possible.
	Pre-start-up monitoring shall be conducted at least 60 minutes before the activity is due to commence. Sound-producing activity shall not commence until at least 60 minutes have elapsed with no marine mammals detected within the Monitored Zone by the MMO.	It is recommended that pre-start-up monitoring is undertaken irrespective of water depths of mitigate effects on marine mammals. In addition, it is recommended that the Monitored Zone is clarified to be 1,000 m.
	Pre-start-up monitoring shall be subsequently followed by a Ramp-Up Procedure (where possible) which should include continued monitoring by the MMO. Airguns utilised in VSP generally fire for approximately two minutes and then stop for 5-10 minutes before repeating the pattern. To ensure that marine mammals are given the opportunity to move away from the airguns as the commence firing, energy would be slowly increased to the maximum level over a period of 40 minutes, in a process called 'soft-start'.	None
	If there is a break in sound output for a period of 5-10 minutes (e.g. due to equipment failure, shut-down), MMO monitoring must be undertaken to check that no marine mammals are observed	The airguns proposed generally fire for approximately two minutes then stop for 5-10 minutes before repeating this pattern. It is recommended that the break between firing is reduced as much

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Discipline	Commitment Proposed	Additional Notes
	<p>within the Monitored Zone prior to recommencement of the sound source at full power.</p>	<p>as possible and that monitoring is undertaken by the MMO throughout the break during the use of the airgun and shall not recommence within the hours of darkness when visual monitoring is ineffective.</p>
	<p>If there is a break in sound output for a period greater than 10 minutes (e.g., due to equipment failure, shut-down or station change) then all pre-start-monitoring and a subsequent Ramp-Up Procedure (where appropriate following pre-start-monitoring) will be undertaken.</p>	<p>If a break of greater than 10 minutes occurs in the hours of darkness, then sound-producing activities will not commence until hours of daylight and when effective visual monitoring is possible.</p>
<p>Unplanned accidental releases</p>	<p>Crew of the drill ship will undergo environmental awareness and safety training. Incident response training will form part of the induction for any crew joining the drill ship or Project vessels. The drill ship has an approved safety case and will be class certified by a recognised certifying authority</p>	<p>None</p>
	<p>A full risk assessment will be performed as part of well planning</p>	<p>None</p>
	<p>CNOOC Engineering Standards will be implemented</p>	<p>None</p>
	<p>The well will be designed to CNOOC Well Control Standards ECN-DR-STD-00067</p>	<p>None</p>
	<p>While drilling a two-barrier well control policy will be implemented at all times. The primary well control will be the mud hydrostatic and secondary well control will be the blow-out preventers or BOPs, which will be maintained throughout the drilling of the well. A full risk assessment was performed during well design</p>	<p>None</p>

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Discipline	Commitment Proposed	Additional Notes
	<p>While drilling, the primary well control barrier in the main conduit will be the hydrostatic pressure imparted by correctly weighted drilling fluid and secondary well control measures will include the BOP and cut-off valves on all machinery, pipelines and hoses</p>	<p>None</p>
	<p>Outside the main conduit, previous casings in the next annulus also have barriers, i.e. seal assemblies in casing hangers, and cement isolation between reservoir and surface – there may be one or more cement seals set in each annulus</p>	<p>None</p>
	<p>Well design, materials and drilling procedures will combine to ensure that the surface environment can be isolated from the wellbore by at least two independent barriers during all stages of well construction and abandonment</p>	<p>None</p>
	<p>The BOP rated design pressure will comfortably exceed the anticipated reservoir pressure and the BOP will undergo maintenance and inspection prior to use</p>	<p>None</p>
	<p>Barriers will be tested prior to use, during installation and post-installation</p>	<p>None</p>
	<p>In the event of a blowout during drilling activities, with the primary Blowout Prevention Equipment has failed, a capping device will be deployed. The full description of the containment and recovery process is described in the Iolar Oil Spill Contingency Plan (OSCP), ECI-HS-PRP-00014. The OSCP was approved by the Irish Coast Guard on 12 February 2019 and was prepared in accordance with the Sea Pollution (Amendment) Act 1999. Details of the OSCP are provided in Section 4.3.4.2 of the applicant’s NIS. This capping and containment system is a one of two-source control strategy, the other being a relief well drilling</p>	<p>None</p>

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Discipline	Commitment Proposed	Additional Notes
	Shallow hazards (from shallow gas or over-pressured shallow formation water) have been assessed by seismic survey prior to drilling, and the results have been incorporated into the well design	None
	The plug and abandonment plan will be reviewed and approved by CNOOC, in accordance with Oil and Gas UK Well Decommissioning Guidelines	None