

Intended for

Department for Communications, Climate Action and Environment

Date

March 2020

Project Number

1700003678

**STATUTORY
ENVIRONMENTAL
ASSESSMENT
APPROPRIATE
ASSESSMENT
SCREENING
DETERMINATION AND
NIS REVIEW FOR
EUROPA INISHKEA**

STATUTORY ENVIRONMENTAL ASSESSMENT APPROPRIATE ASSESSMENT SCREENING DETERMINATION AND NIS REVIEW FOR EUROPA INISHKEA

Project No. **1700003678**
Issue No. **10**
Date **23/03/2020**
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Version Control Log

Revision	Date	Made by	Checked by	Approved by	Description
10	23/03/2020	OH/KM	PB	PB	Issue to Client

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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 an application by Europa Oil & Gas (Inishkea) Limited (referred to herein as the applicant).

The applicant has submitted an application to carry out a geophysical and environmental survey (seabed and shallow soils) and environmental baseline survey to inform a habitats assessment in the Inishkea area in Blocks 18/19 and 18/20.

The competent authority (DCCAE) is required to consider the potential significant effects of such activities on the integrity of Natura 2000 sites, 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 Birds and Natural Habitats Regulations).

This report provides an assessment of the Inishkea Survey Appropriate Assessment Screening and Natura Impact Statement Report submitted by the applicant to enable the DCCAE to undertake an Appropriate Assessment.

Public consultation on the application has been undertaken by 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 to allow the DCCAE to make a Screening Determination that an Appropriate Assessment is required. The applicant provided a stage 2 Natura Impact Statement (NIS). Ramboll confirms that the information provided in the NIS (submitted 15th May 2019), including Additional Information (submitted 23rd January 2020) is adequate, up to date and provides best scientific information so as to enable the DCCAE to undertake an Appropriate Assessment. Having regard to the likely significant effects of the project, individually and in combination with other plans and projects, Ramboll concludes that the project would not adversely affect the integrity of the relevant European sites concerned, in view of the sites' conservations objectives and it will not cause any significant disturbance to the Annex IV species described , subject to the mitigation measures outlined in this report.

1. INTRODUCTION

Ramboll UK Limited (herein referred to as Ramboll) has been commissioned by the Department for Communication, Climate Action and Environment (herein referred to as DCCAE) to provide assistance as competent experts for the statutory assessment of an application for consent submitted by Europa Oil & Gas (Inishkea) Limited (referred to herein as the applicant) to carry out proposed geophysical and environmental site survey over Licensing Blocks 18/19 and 18/20 at "Inishkea" well location.

This report provides an assessment of the Inishkea Survey combined Appropriate Assessment Screening and Natura Impact Statement Report submitted by the applicant, prepared and approved by Ramboll as competent experts having relevant qualifications and experience. The authors hold undergraduate and postgraduate qualifications in environmental science (or related disciplines), professional qualifications including chartered status with the Society for the Environment and full membership of the Institute of Environmental Management and Assessment (MIEMA) and have long standing experience as expert practitioners within the fields of offshore development, environmental impact assessment and the appraisal of applications in the context of the Birds and Natural Habitat regulations.

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 into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011-15 as amended (the Birds and Natural 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 Natural Habitats Regulations) as amended and relevant jurisprudence of the EU and Irish courts.

The NIS confirms that the project has been assessed having regard to the Birds and Habitats Directives, the Birds and Natural 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 the methodology published by the European Communities in 2002³ and Commission notice C (2018) 7621⁴.

2.3 Consultation

2.3.1 Prescribed Bodies

Notification of the application was issued to the following organisations:

- National Parks and Wildlife Service;
- Irish Maritime Administration, Department of Transport, Tourism and Sport;
- Ship Source Pollution Prevention Unit Irish Maritime Administration, Department of Transport, Tourism and Sport;
- Irish Coast Guard (& National Maritime Operations Centre), Department of Transport, Tourism and Sport;
- Sea Fisheries Protection Authority;
- Sea Fisheries Policy Division, Department of Transport, Tourism and Sport;
- Department of Defence;
- Mission Support Facility, Irish Air Corps;
- Naval Headquarters;
- Marine Institute;
- Commissioners of Irish Lights

One of the prescribed bodies responded with observations on the application as outlined below.

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)

- Response email from Maritime Safety Policy Division, Department of Transport, Tourism and Sport dated 13/05/19;
 - The Maritime Safety Policy Division, wish to inform [the Applicant] that (prospective) licensees and their employees and contractors are reminded that they should be aware of ship-source pollution prevention provisions which are in place to protect human health and the marine environment, and apply to all shipping activity. These provisions are obligatory independently of particular licence terms and conditions. Under the MARPOL Convention and EU law, as applicable in national law, ships may not cause pollution either by discharge to water or emissions to air, when at sea or when at berth in port. Ships include Floating Production, Storage and Offloading vessels (FPSOs), also called a "unit" or a "system"; and Floating Storage Units, (FSUs). Ships berthed at terminals at sea are also obliged to conform to the law.
 - Management of ship waste (mainly oil, hazardous and polluting substances, sewage, garbage and polluting emissions to air) and of all cargo residues must be ensured as required under international (IMO), EU and national law. Under existing provisions ships are obliged to discharge waste and cargo residues at port and ports are obliged to provide adequate facilities for their reception from ships.

Appropriate regard has been given to the issues raised in this submission, with appropriate mitigation measures incorporated into Table 5.2 in response.

2.3.2 Public Consultation

The application by the applicant was advertised by DCCAE on their website following receipt of the application on 15 May 2019. Submissions were advertised by the DCCAE to be received by close of business on 14 June 2019.

Six responses were received, and the points raised by these have been considered and responded to as provided in the following sections of this report:

- Response letter from Irish Whale and Dolphin Group (IWDG) dated 19/05/19;
- Response letter from private individual (name withheld for privacy) dated 12/06/19;
- Response email from Gluaiseacht for Global Justice dated 14/06/19;
- Response email from private individual (name withheld for privacy) dated 14/06/19;
- Response letter from Gas Networks Ireland dated 14/06/19; and
- Joint response letter from Not Here, Not Anywhere, Futureproof Clare, Love Leitrim and Friends of the Earth Ireland undated.

Further to a request from DCCAE for further information, the applicant submitted additional information which was published on the department website on 23 January 2020. The public were invited to make submissions in relation to the additional information by 13 February 2020. No further submissions were received.

2.3.3 General Consultation Responses

The following general responses have been received:

- General economic comments
 - It will be extra hard for countries who have a history of benefiting financially from oil and gas developed in their territory to cease exploration and development of fossil fuels. But fortunately (due to previous dodgy deals) Ireland has only minimally benefitted from any gas development in its territory. As an example of this in November when Vermilion took over as operator of the Corrib, they declared that "we do not expect to pay income taxes

related to cash flows generated from the Corrib project”.

<https://www.independent.ie/business/irish/corrib-operator-eyes-expansion-and-taxfree-cash-37575461.html>

- Brian O Cathain who is currently a director with Europa and formerly MD of the Corrib project has also previously said that "Corrib will never pay tax" - <http://www.shelltosea.com/content/news-release-corrib-will-never-pay-tax-says-projects-former-md>. Europa CEO Hugh Mackay has previously commented on Ireland's oil and gas terms: "The geological ingredients here are good. The fiscal terms are fantastic" <https://www.rte.ie/news/business/2013/0218/368394-europa-oil-ireland/>. So while everyone will have to deal with the consequences of these oil & gas fields being developed only the company shareholders are benefitting. If you truly believe that climate disruption is upon us then this application would not be even entertained.
- Companies like Europa Oil & Gas risk not only the destruction of fish stocks, tourism industry and marine life, but their own investments. Shell Oil recently left the Corrib gas field with losses of up to a billion. The millions that it costs to set up a new fossil fuel infrastructure represent "stranded assets". Even if oil and gas reserves are found, the benefit to Ireland would be minimal. In the event that Europa does end up paying tax on the Inishkea licence, it would be one of the lowest rates in the world. Petroleum extraction tariffs are only 25% - 40%, paltry compared to a 78% tax rate for oil companies in Norway.
- Seismic testing for oil and gas has serious consequences for the marine ecosystem and those whose livelihoods depend on it. In Ireland, the seafood industry provides 11,000 jobs and has a GDP of €1.1 billion. In contrast, the oil and gas industry has provided only 270 long-term jobs and in the case of some operators, has never paid tax as we will discuss further on.
- Companies like Corrib have paid no tax to the Irish state at all, despite running for over 3 years and earning €734m in revenue in 2018. Their current operator Vermillion have said that "we do not expect to pay income taxes related to cash flows generated from the Corrib project". Brian O'Cathain, former MD of the Corrib project and current director of Europa, has publicly said that "Corrib will never pay tax".
- As for buying fuel, there is no obligation for Europa to sell any oil that might be found in Inishkea to the Irish people, or even to land the oil in Ireland. As there are no oil refineries in Ireland, it is likely that it will be cheaper to ship the oil to other countries.
- Environmental legislation is ignored by the government Minister and department promoting oil and gas development to the loss of the Irish tax payer.
- General climate change comments
 - When you became Minister for Climate Action you said that we would require "a revolution in how we live" well this is a test for you, to see if they were just nice words or is climate change something that you actually believe in and can act bravely on. You have also said that "We need to step-up our response to climate disruption. The window for opportunity is closing. The decisions we take now will define the next century,". One of these important decisions is to stop developing new sources of fossil fuel. The consequence of this decision could be still in the atmosphere in 200 years' time, in the year 2219 and could be still causing climate disruption then. You attended a school strike for climate action on the 15th March this year. This has been inspired by the Greta Thunberg who has previously written. "You say nothing in life is black or white. But that is a lie. A very dangerous lie. Either we prevent 1.5C of warming or we don't. Either we avoid setting off that irreversible chain reaction beyond human control or we don't. Either we choose to go on as a civilisation or we don't. That is as black or white as it gets. There

are no grey areas when it comes to survival." Well, here you have a black and white choice to show are you on the side that will choose to fight for our future civilisation or choose short-term profit for oil companies. A report from Oil Change International Gas entitled "Burning The Gas: 'Bridge Fuel' Myth" found that gas is not a viable bridge fuel between fossil fuels and renewables, nor is it clean, inexpensive, or necessary. http://priceofoil.org/content/uploads/2019/05/gasBridgeMyth_web-FINAL.pdf

- The Earth is in a state of climate emergency. For the planet to remain a safe operating space for humanity, global temperatures must be maintained at less than 2°C above pre-industrial levels. To do this, 80% of the known fossil fuels need to stay in the ground. Even at 1°, we are already experiencing serious effects, with India reaching an unprecedented 51° in June 2019. Even countries like Ireland with a temperate oceanic climate will be severely affected. According the Department's website, the more immediate impacts predicted include:
 - Sea level rise;
 - More intense storms and rainfall events;
 - Increased likelihood and magnitude of river and coastal flooding;
 - Water shortages in summer;
 - Increased risks of new pests and diseases;
 - Adverse impacts on water quality; and
 - Changes in distribution and phenology (the timing of lifecycle events) of plant and animal species on land and in the oceans.

Ireland's performance on climate action is among the worst in Europe and projections from the Environmental Protection Agency indicate that the government will manage to reduce greenhouse gas emissions by at best 1% by 2020, falling far short of its 20% commitment under the Paris agreement.

- Minister of State Sean Canney recently stated in the Dáil that "In 20 years' time, we will have transitioned away from this type of fuel [gas] but we cannot do it overnight." If this is the Department plan we shouldn't be supporting search for more oil or gas for companies that have fought the energy transition tooth and nail.
- Of course the knock-on effects of burning those oil and gas reserves, i.e. climate change, will have a far more serious consequence on our economy. The government predicts that costs from direct damages from flooding alone will rise to €1.15 billion per year by 2050.
- General contractual comments
 - Europa have signed a site survey contract with Fugro. The Minister should not allow Fugro to operate in Irish waters. Fugro have previously carried out illegal seismic surveys off the coast of occupied Western Sahara in violation of international law as established by the UN Legal Council. <https://www.somo.nl/wp-content/uploads/2010/05/Fugro-Overview-of-controversial-business-practices-in-2009.pdf>
 - Fugro, the seismic survey firm that Europa plan to use, have already violated international law and ethical norms in conducting tests offshore of Western Sahara.
- General regulatory process comments
 - PAD as a facilitator of oil and gas exploration fails as a regulator due to a conflict in interest and is unable to protect the marine environment. .

Appropriate regard has been given to the issues raised in these submissions, however the observations are not considered to be relevant to the scope of this report and therefore are not addressed further.

The DCCAE have noted the observation regarding potential conflict of interest. This EIA Screening assessment report has been prepared by Ramboll on behalf of the DCCAE as an independent competent expert. Ramboll reports to the Environmental Advisory Unit at the DCCAE (not PAD). Robust institutional arrangements have been made to address conflict of interest concerns. The screening assessment process is carried out by persons who have no involvement in PAD and who are required to be independent in the exercise of their functions.

2.3.4 Project Specific Consultation Responses

The following project specific consultation responses have been received:

Consultee	Project Specific Comments	Response
IWDG	Nowhere in the documentation are lines to be acquired stated so it assumed that this will be a continuous acquisition. This would be best stated clearly and the reasons why this is necessary or permissible should be given or else the lines declared.	An anticipated line plan was included in the further information submitted by the applicant.
IWDG	It can be argued that line turns will be short but in the event of this not being the case what will happen? Given that there are no lines described in the documentation it is impossible to assess the extent of the impact of the survey.	Proposed working methods and mitigation proposed in relation to line turns was included by the applicant in the further information submission.
IWDG	The Survey Technical report paragraph 1 is titled "Application for approval to conduct a seismic and site survey". Seismic surveys generally include airguns however no airguns are listed in the equipment of this document. Therefore, I am led to conclude the author has a different view of what constitutes a seismic survey. However, in the EIA and NIS report the equipment listed included on page 43 a 10 cubic inch airgun which is described as having a peak source level of 196 dB re 1 μ Pa @ 1 m, this is indeed news to me and I would welcome a source or reference for this assertion. I note that none of the equipment information is referenced and since the source of a small airgun (10 cubic inches also) is given by Richardson (1995) in Marine Mammals and Noise as 222 dB. re 1 μ Pa @ 1 m, I see no reason to change this figure unless someone can provide a reference to this effect.	The survey includes the use of a 10 cu inch airgun as described by the applicant's EIA Screening Report. Details of this equipment including peak source levels and references for these have been included.
IWDG	The Chirp Sub Bottom Profilers (SBPs) use frequencies of 2-15 kHz (Edgetech 3300) and 1-16 kHz (Edgetech 2205) as describe on page 43 on the AA Screening and NIS document. The Edgetech 3300 is described on page 10 as having a 1-16 kHz range in common with the 2205. This is a very minor oversight but given the lack of references the numbers given, source levels of this equipment should be checked. The source level given for the chirper system (page 43) is 200 and 195 dB re 1 μ Pa (peak). This is considerably lower than the source level of naval sonar. However military sonar using frequencies of 1 to 10 kHz (Wensveen et	The applicant was requested to provide consistency between documents in regard to the equipment proposed and its output sound levels. This has been provided in the further information submitted. The applicant has confirmed what would happen should a break of

Consultee	Project Specific Comments	Response
	<p>al., 2019) and commercial chirpers use the same frequency range, with the same frequency modulation or CHIRP (Compressed High Intensity Radiated Pulse) technology, that are known to have considerable impact on beaked whales at extensive distances at much lower received levels (Wensveen et al., 2019) than the source level of the commercial chirp systems in the report. The argument that these systems will have minimal impact seems without evidence and it seems unlikely that beaked whales will be able to tell the difference between commercial CHIRP signals and naval CHIRP sonar. Given the recent large number of strandings of both Cuviers and sperm whales in Ireland in this area and since strandings represent a small sample (8% according to a French study) of whales killed at sea, with many carcasses simply sinking at sea. It would be prudent to operate a shut down for these species should they occur within the operational area. The area is a known location for beaked whales and it would seem prudent to apply precautionary measures. The impact of naval sonar occurs over a very wide area and commercial CHIRP systems are likely to have a much more limited impact, nevertheless a shutdown for animals detected should be considered given the limited range that both visual observers and acoustic detections will operate to. PAM systems generally are believed to have a maximum detection range for beaked whales of 2 to 3 km but in all likelihood this range will be much less due to vessel noise, while sperm whales can be detected over a greater area. However, given the location on the shelf edge a 24-hour PAM operation should be maintained with a clear authority to stop operations and restart based on PAM operations alone. Without a shutdown behavioural responses of cetaceans to a sound source can lead to fatalities in an area where significant acoustic effects (probable) have already taken place.</p>	<p>sound occur during the hours of darkness. It should be noted that should any marine mammals enter the operational area whilst surveying is underway, then it is accepted that they have entered the area with knowledge of the noise levels and therefore a shutdown of equipment is not required.</p>
IWDG	<p>PAM should be operated by at least one person capable of identifying beaked and sperm whale acoustics as well as localisation using acoustic signals.</p>	<p>Proposed mitigation has been reviewed as part of the NIS review and has taken account of this submission.</p>
IWDG	<p>I think it only prudent given recent mortalities in deep diving species (beaked and sperm whales) due to what is probably naval sonar and given the similarity of acoustic characteristics of commercial chirper systems which operate in the same frequency range, albeit with lower source levels and different directionality, that a precautionary approach to chirper should be undertaken. If no animals are present extra mitigation measures will have little or no impact on the survey. Beaked whales appear to show fidelity to locations of high food availability (Southall et al, 2019). There are no studies of the impact of commercial CHIRP systems on whales but there is no basis to assume they have no impact. Therefore I would urge you to consider the</p>	<p>The recommendation for an enforced shut down of equipment should marine mammals enter the operational zone is included as an example in Irish guidelines. However, this is used for areas of high residency. Proposed mitigation has been reviewed as part of the NIS review.</p>

Consultee	Project Specific Comments	Response
	potential impact of a system that in many ways mimics mid-frequency naval sonar and to mitigate accordingly.	
Private Individual (name withheld for privacy)	<p>While the Inishkea Survey will provide information that may be of significance to future exploration and potential production activities, it is a standalone project and not part of a larger programme of development that will create a requirement or imperative for future developments to be licensed. Any future plans or projects (developments) will be subject to separate/new authorisations. Any potential indirect, secondary or cumulative effects (including climate change) associated with future developments (i.e. further exploration or appraisal phase / oil and gas production) should any future developments arise, will be considered when any necessary consents for the activities are bring sought.</p> <p>The paragraph above is sufficient to refuse this application for the following reasons:</p> <p>It goes against common sense and is unacceptable that any reasonable person that this application can first, be described and second, assessed as a 'standalone' project; it can claim no rationale other than as part of proposed/planned fossil fuel development/production – there can be no 'may' about it. Should that be claimed, against all logic, then why it is taking place at that specific location – why not in an area that is not a potential fossil fuel prospect?</p> <p>The stated aim of the survey is set out below:</p> <p>Accurately determine water depths and seabed/subsurface geology at the site (<i>This should already be established or establishable – through Marine Survey Ireland for example, without recourse to this particular proposed action which is not a plan/project in and of itself</i>)</p> <p>Identify any seabed obstructions and confirm the locations of any existing infrastructure (such as pipelines, wellheads) (<i>Only pipelines, wellheads out there are Corrib's, again unnecessary</i>)</p> <p>Assist in the identification of all geo-hazards and geological conditions that may be of significance to future drilling activities [Drilling activities do not form part of this project and are therefore not assessed in this report]. This may include shallow gas, channelling, faulting and other geological features that may be of significance (<i>can be read as admission of future drilling intent, otherwise this 'standalone survey' wouldn't be happening; note shown in [] above is arrogant, dismissive and contemptuous of Irish and EU environmental law as well as contrary to common sense</i>)</p> <p>Provide information on the cultural potential of the survey area, including the location of any shipwrecks or other underwater cultural heritage features (<i>can</i></p>	<p>The aims and objectives of the Inishkea survey are considered reasonable for the following reasons:</p> <p>Higher resolution data will be available from the site survey compared to the more general data sets.</p> <p>The seabed conditions may have changed since the more general data sets were completed.</p> <p>Infrastructure is not always located where they are meant to be and therefore it is important that these are accurately located.</p> <p>New anthropogenic or natural seabed obstructions need to be identified and accurately located.</p> <p>The spatial extent of Annex I habitats will change over time and requires accurate positioning to ensure protection.</p>

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Consultee	Project Specific Comments	Response
	<p><i>wait, not essential for anything other than, in this instance, intended fossil fuel exploration/production)</i></p> <p>Identify and delineate Annex I habitats (as defined in the EC Habitats Directive 92/43/EC) or other sensitive habitats and identify any areas of environmental interest (<i>surely these habitats are already identified and delineated, otherwise they would be habitats and, in the alternative, it is not the function of a fossil fuel company to do so</i>)</p> <p>Establish environmental baseline to establish a benchmark for ongoing environmental monitoring as per OSPAR guidelines (<i>as above plus no need for baseline and/or benchmark activities other than fossil fuel 'development' related</i>)</p> <p>Acquire sediment samples for determination of physico-chemical baseline conditions (<i>can be done in any comparable area but again not necessary other than with purpose of plan/project which is much more than stated</i>)</p>	
Private Individual (name withheld for privacy)	Extract Table 2.12 Screening for EIA and ERA Report. The proposed survey GWA overlaps the western-most end of the Corrib gas pipeline. Pipeline inspection survey. Vermillion intend to undertake pipeline inspection survey at the Corrib Gas Field pipeline and infrastructure in 2019. The proposed survey programme involves a geophysical and visual survey on the subsea infrastructure between the Corrib Field and the landfall. The information provided above is incomplete – the full range of applied-for works is accessible at [link to DCCA website provided].	The application has been reviewed to ensure that documentation submitted is accurate and complete. The applicant has responded to a further information request with up to date information in regard to the proposed survey operations by schemes proposed for 2019/2020 and these have been considered in combination with the proposed survey.
Private Individual (name withheld for privacy)	Table 2.3 Fish Species of Conservation Concern which may be present in the vicinity of the proposed Inishkea Survey. Applying the Precautionary Principle, the list above should, of itself, be sufficient to refuse this application – the frightening status of so many species is horrendous; no amount of assessment, mitigation or conditioning can alter that status unless fossil fuels are, as of now, left in the ground. The paradigm has indeed shifted.	This report concludes that the project would not adversely affect the integrity of the relevant European sites concerned, in view of the sites' conservation objectives, subject to the mitigation measures outlined in this report.
Private Individual (name withheld for privacy)	Both the EIA and AA Screening Reports are essentially similar and, in my view, presented in an attempt to tick legally required 'boxes' together with impressing through bulk rather than pertinent content those who may not be familiar with such documents. I note there is no non-technical summary and offer the view that it may not have been possible to produce such a document while attempting to maintain the fiction that this application is for a standalone plan/project.	There is no requirement to provide a non-technical summary with the documentation submitted by the applicant. The adequacy of the documentation submitted by the applicant is reviewed and reported by this series of reports to

Consultee	Project Specific Comments	Response
		inform screening opinions and Appropriate Assessment (as applicable).
Gluaiseacht for Global Justice	<p>According to a 2017 journal paper published in Nature Ecology and Evolution has shown that seismic surveys can cause a two to three-fold increase in mortality in plankton populations and could kill zooplankton at a distance of 1.2 km (https://www.nature.com/articles/s41559-017-0195). The site survey application has said that it will employ Marine Mammal Observers (MMOs) and that "Airgun operations will not commence if marine mammals are detected within 1,000 m radius of the sound source". However, the Applicant hasn't stated anything about Zooplankton observers and what will happen if zooplankton is in the radius of 1.2km of the sound source. There is also widespread further anecdotal evidence of the damage that these seismic surveys cause to marine life in the area of the survey such as this interview with a Norwegian fisherman on the after effects of seismic surveys on the area that he fished: https://www.youtube.com/watch?v=nGfoZ7WkxIM</p> <p>No mitigation measures have been put in place for the zooplankton decimation that will occur if this seismic survey is allowed to proceed.</p> <p>The EIA quotes a study supported by the Joint Industry Program of the Oil and Gas Producers Association to justify their conclusion that there was "No likely significant effects" on the different species types but even quote that study as saying "zooplankton and ichthyoplankton can be killed within a distance of less than 2 m and sub lethal injuries expected within 5 m."</p>	The requirement for, adequacy and methodology of proposed mitigation has been reviewed as part of this report.
Gluaiseacht for Global Justice	It has been shown that seismic surveys disrupt fish also, yet there is no mention of a Fish Observer in the application. The Pre-survey Fishery Assessment states that "Recommendations have been made to mitigate any possible adverse interaction between the survey and fisheries." But no recommendations have been made to mitigate any possible adverse interaction between the survey and fish. The applicant hasn't provided a list of species or quantities that it is willing to decimate for profit and which ones not. Therefore, the application is incomplete.	The applicant's assessment concludes that the proposed survey activity will not result in likely significant effects (LSE) on migratory fish species. Ramboll agree that there would be no LSE.
Not Here, Not Anywhere, Futureproof Clare, Love Leitrim and Friends of the Earth Ireland	The seafood industry is already suffering from biodiversity loss with key species like Atlantic Cod, Atlantic Salmon and Bluefin Tuna in Irish seas now on the International Union for the Conservation of Nature endangered list. Nature Journal has shown that one blast from oil and gas exploration alone kills 64% of zooplankton – the basis of the marine ecosystem – for up to 0.7 miles.	A Fisheries Assessment has been undertaken and submitted by the applicant. The requirement for, adequacy and methodology of proposed mitigation has been reviewed as part of this report.

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Consultee	Project Specific Comments	Response
	To carry out such surveys, ships tow multiple airgun arrays that emit thousands of high decibel explosive impulses to map the seafloor. The auditory assault from seismic surveys has been found to damage or kill fish eggs and larvae and impair the hearing and health of fish, making them vulnerable to predators and leaving them unable to locate prey or mates or communicate with each other. These disturbances disrupt and displace important migratory patterns, pushing marine life away from suitable habitats like nurseries and foraging, mating, spawning and migratory corridors. In addition, seismic surveys have been implicated in whale beaching and stranding incidents.	Multiple air guns are not being proposed by the applicant.
Not Here, Not Anywhere, Futureproof Clare, Love Leitrim and Friends of the Earth Ireland	The routine operations associated with offshore drilling produce many toxic wastes and other forms of pollution. Each drill well generates tens of thousands of gallons of waste drilling muds (materials used to lubricate drill bits and maintain pressure) and cuttings. Drilling muds contain toxic metals such as mercury, lead and cadmium that may bioaccumulate and biomagnify in marine organisms, including in our seafood supply. The water that is brought up from a given well along with oil and gas, referred to as "produced water", contains a toxic brew of benzene, arsenic, lead, toluene and varying amounts of radioactive pollutants. Each oil platform can discharge hundreds of thousands of gallons of produced water daily, contaminating both local waters and those down current from the discharge. An average oil and gas exploration well spews roughly 50 tons of nitrogen oxide, 13 tons of carbon monoxide, 6 tons of sulphur oxides and 5 tons of volatile organic chemicals. The seismic disturbance from drilling can also cause deafness and internal bleeding in whales and dolphins.	This application does not include any drilling (exploratory or otherwise). Any such subsequent application for drilling by the applicant would be subject to separate review under the relevant EIA and Habitats Directives. Furthermore, the potential effects of future drilling (exploratory or otherwise) has been considered in the Irish Offshore Strategic Environmental Assessment (IOSEA) 5 Appropriate Assessment.
Not Here, Not Anywhere, Futureproof Clare, Love Leitrim and Friends of the Earth Ireland	Oil spills have disastrous economic and environmental consequences and volume is a limited measure of damage or impact. Even smaller spills have already proven disastrous to ecosystems, such as the Exxon Valdez oil spill which spilled 10.8 million US gallons of crude oil into Alaskan waters. This eventually impacted 1,300 miles of coastline and killing hundreds of thousands of animals including seals and orcas. In 2011 a serious spill took place in an oilfield majority owned by the state-owned China National Offshore Oil Corporation (CNOOC), in the Bohai sea of North East China. This caused total economic losses of CNY 12.56 billion (€1.6bn) and polluted 840 square km of clean water.	This application does not include any drilling (exploratory or otherwise) and therefore there is no risk of significant oil spills as a result of the surveys proposed. Any such subsequent application for exploratory drilling by the applicant would be subject to separate review under the relevant EIA and Habitats Directives. Furthermore, the potential effects of future drilling (exploratory or otherwise) has been considered in the Irish Offshore Strategic Environmental

Consultee	Project Specific Comments	Response
		Assessment (IOSEA) 5 Appropriate Assessment.
Private Individual (15 June 2019)	<p>Comments provided relating to applications from Europa, Vermillion and CNOOC: PAD routinely accept Environmental reports concluding that there will be no significant impact based on the information available. If baseline data is not commissioned by developers how can any assessment be made of significant effect. Any assessment on a lack of data to assess a significant effect is worthless and un-scientific. A BACI survey is required in both footprints to assess the abundance and density of beaked and baleen whales in the Slyne basin prior to imposing and an oil and gas development footprint. If baseline data is not available how can a conclusion stating, "in relation to the proposed surveys there will be no significant effects on the environment"? A cetacean survey on a basin scale/project footprint is required prior to licensing further oil and gas exploration/Corrib/Europa.</p>	<p>The adequacy of information available upon which to base the Appropriate Assessment is reviewed in this report. Ramboll confirms that the information provided in the NIS is adequate, up to date and provides best scientific information so as to enable the DCCAE to undertake an Appropriate Assessment. Having regard to the likely significant effects of the project, individually and in combination with other plans and projects, Ramboll concludes that the project would not adversely affect the integrity of the relevant European sites concerned, in view of the sites' conservations objectives, subject to the mitigation measures outlined in this report</p> <p>A specific cetacean survey is not required in order to conclude the AA Screening and NIS review for the proposed survey works.</p>
	<p>Will PAD explain what evidence they have to continue their policy of ignoring the question which must be asked, how can whales and dolphins, which depend on acoustics for communication, food and reproduction, not be significantly affected by a seismic survey? Particularly when a leading cetacean scientist has called the use of airguns "the most severe acoustic insult to the marine environment short of naval warfare." Can PAD explain why no EIA has ever been done for a seismic survey in Ireland? The precautionary principle and the polluter pays principle are ignored by PAD.</p> <p>In case C-323/17 People Over Wind and Peter Sweetman v Coillte, the CJEU ruled that mitigation measures could not be taken into account at screening stage of an appropriate assessment. The mitigation proposed does not implement a strict protection regime for cetaceans and no evidence is provided of efficacy. Mitigation which has no effect cannot be used</p>	<p>This report provides a review of the applicant's request for Appropriate Assessment screening and reviews the adequacy of the Natura Impact Statement (NIS) for the proposed survey. Where further information was required to support the Appropriate Assessment the DCCAE has made requests for further information. Ramboll confirms that the information provided in the NIS is adequate, up to date and provides best scientific information so as</p>

Consultee	Project Specific Comments	Response
	<p>to justify licensing oil and gas development. Baseline data is not available, has never been collected/commissioned to make assessments on several species including baleen and beaked whales off Ireland’s west coast in to Corrib gas and Europa oil footprint .</p>	<p>to enable the DCCAIE to undertake an Appropriate Assessment. Having regard to the likely significant effects of the project, individually and in combination with other plans and projects, Ramboll concludes that the project would not adversely affect the integrity of the relevant European sites concerned, in view of the sites’ conservations objectives, subject to the mitigation measures outlined in this report.</p>
	<p>Figure 2.4 EIA and ERA Screening Report shows the proximity of the Inishkea prospect/LO to the Corrib production infrastructure. Given, as stated – and not by accident – that the closest point of the Inishkea LO area is just 4 km from Corrib but 63 km from Inishkea South, this is extremely worrying. Any reasonable, but uninformed, person would easily conclude that, rather than build a 63 km pipeline and all associated works on Inishkea South, why not just hook into the Corrib infrastructure. Not that simple and not that allowable under EU environmental law. The Corrib Gas Project is a standalone plan/project and, it is my belief, claimed consents were assessed for just Corrib alone, which is now extant and therefore not retrospectively assessable – and some of these consents continue to be challenged through the superior courts</p>	<p>The application in hand is for geophysical and environmental survey (seabed and shallow soils) and environmental baseline survey. The comments regarding potential future production and export of gas via the existing Corrib gas pipeline are beyond the scope of this report.</p>

3. REVIEW OF APPLICANT AA SCREENING REPORT

3.1 Project Details

Table 3.1 provides a summary of the key project information.

Table 3.1: Project Information

Project Title:	Inishkea Site Survey
Project Type:	Geophysical Survey and Environmental Baseline Survey
Applicant:	Europa Oil & Gas (Inishkea) Limited
Exploration Licence Reference:	Licensing Option Blocks 18/19 and 18/20
Date AA Screening Report Received:	15 May 2019
Date Response to Request for NIS Information Received	23 January 2020

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, would have a significant effect on a European Site.

Where it is determined that AA is required for the 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>Europa Oil & Gas (Inishkea) Limited propose to undertake a geophysical and environmental baseline survey to inform a habitats assessment in the Inishkea area in Blocks 18/19 and 18/20, located approximately 63 km off the west coast of County Mayo, Ireland.</p> <p>The survey area would comprise an 80 km² working area within which all survey activities would take place and includes the currently proposed location of a future well, though no drilling forms part of this licence application. The working area also includes space for vessel manoeuvring, survey line turns and equipment deployment/recovery. Water depths within the greater working area range from around 350 m to 700 m below mean sea level.</p> <p>The geophysical survey is expected to comprise the following activities:</p> <ul style="list-style-type: none"> • Vessel-mounted or vessel-towed equipment: <ul style="list-style-type: none"> - Dual Frequency Side Scan Sonar (towed fish, Edgetech EM400 or similar, 100 kHz/500 kHz or similar) - Single-beam Echosounder (hull-mounted Kongsberg EA400 or similar, 35 kHz to 200 kHz or similar) - Multi-beam Echosounder (hull-mounted Swathe Multibeam Kongsberg EM710 or similar, 70 kHz to 100 kHz or similar) - Sub-Bottom Profiler (hull-mounted pinger or chirp system, Edgetech 3300 or similar, 1 kHz to 16 kHz or similar) - Sub-bottom profiler (1 x 10 cu. in. airgun) - Ultra-short baseline (USBL) (topside, hull mounted HiPAP 502 USBL or similar)
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	<ul style="list-style-type: none"> - Magnetometer (towed fish, Geometrics G882 caesium vapour or similar) • Autonomous or Hybrid Underwater Vehicle (UAV) mounted equipment: <ul style="list-style-type: none"> - Multi-beam Echosounder (AUV-mounted Simrad EM2040 or similar, 300 kHz or similar) - Sub-bottom profiler (AUV-mounted Edgetech 2205 Chirp or similar, 1 kHz to 16 kHz or similar) - Side Scan Sonar (AUV-Mounted Tritech Seaking, Dual frequency, 200 kHz/550 kHz or similar) - USBL (seabed, HiPAP 502 USBL or similar) • Seabed Sampling Equipment: <ul style="list-style-type: none"> - AUV-mounted stills/video camera • Seabed Imaging Equipment: <ul style="list-style-type: none"> - Box corer/Grab sampler/Gravity corer <p>The environmental baseline survey will comprise the following activities:</p> <ul style="list-style-type: none"> • Benthic sampling using a box corer and/or grab sampler at approximately 20 stations within the site survey area. Approximately five reference stations will also be sampled located at least 2 km from the proposed site. Macrofaunal samples will be processed and preserved on recovery ahead of onshore analysis. Sediment sample will be prepared and stored in preparation for onshore analysis to include: particle size analysis, total organic carbon, total organic matter, hydrocarbons and metals. • Gravity cores will be acquired to ground-truth shallow soils and for basic offshore geotechnical testing (including pocket penetrometer). Cores will be recovered and cut offshore in preparation for storage and potential future geotechnical testing. • Benthic sampling using core and grab samples will result in disturbance to the seabed. This disturbance will be temporary and limited to the footprint of the core and grab samples. The footprint of the grab and corer samplers to be used will be 0.1 m² to 1 m², with maximum sediment penetration of 0.5 m. The footprint of the gravity corer is relatively small and limited to the core barrel that has a diameter of 110 mm. Sediment penetration of the gravity corer is approximately 2 m to 4 m. • Prior to undertaking sediment sampling, the stations will be visually inspected using AUV mounted cameras and/or drop down camera systems to ensure the area to be sampled does not support sensitive habitats. Sampling will not be undertaken where sensitive habitats are identified. • Mapping of known shipwrecks and geophysical data gathered during the survey will ensure that no seabed sampling activities will occur in the vicinity of any features of historic or cultural importance. <p>During survey operations, the vessel will be required to maintain position at stations for periods of time or will be travelling at approximately 3.5 to 5 knots along rectilinear routes. To maintain the integrity of the survey and positioning of the survey equipment, the vessel will be limited in its ability to manoeuvre. However, should it be required the vessel will be able to move away on short notice.</p> <p>The estimated duration of the survey is 14 working days and is expected to take place in the period between May and late November 2019. If the survey has not commenced or concluded in 2019, operations will be undertaken sometime between early February 2020 and late November 2020. Final timings and durations of the survey will be communicated to PAD of DCCAE in advance of operations commencing. The survey will be undertaken by Fugro Survey Limited.</p>
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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

Brief Description of identified plans / projects that might act in-combination (Operational, Consented and Proposed (but not yet approved) projects) with the proposed project:		
<p>The applicant’s AA screening report considers the following projects that might act in-combination with the proposed project:</p> <ul style="list-style-type: none"> • Vermillion – Corrib Gasfield pipeline inspection survey • CNOOC – Site survey over the Slyne/Erris Basin and surrounding continental shelf • Europa – Site surveys in the Porcupine Basin • CNOOC – Drilling operations at Iolar prospect. Note it is understood that at the time of writing this report, this survey is now complete • ENI Ireland BV – Site surveys in the Porcupine Basin • Kinsale Energy and PSE Seven Heads Limited – Decommissioning gasfield infrastructure • Marine Institute – Acoustic fisheries survey 		
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 defined the spatial extent of the effects of the project (specifically, underwater noise emissions) in order to determine potential in-combination effects with other projects.
Impact Identification (e.g. noise, chemical emissions etc.)	Yes	The applicant has identified the potential impacts arising from the project and considered which of the impacts identified are relevant to the determination of in-combination LSE (specifically, underwater acoustic emissions) and has linked these clearly to pathways that might transmit impacts to receptors.

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Pathway Identification (e.g. via water, air etc)	Yes	The applicant has identified potential impact / pressure pathways (specifically, underwater acoustic emissions) between the proposed development and other projects.
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3.4 Identification of relevant European sites and species

The applicant's AA screening report considers the designated European sites and 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 provides a summary of the European Sites and species that might be impacted by the project, as was provided by the applicant in the original AA screening determination request submitted 15 May 2019. This table does not take account of additional information submitted in January 2020 submitted as part of stage NIS update.

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

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 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. West Connacht Coast SAC [002998]	61	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirements
2. Inishkea Islands SAC [000507]	62	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirements
3. Clew Bay Complex SAC [001482]	100	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirements
4. Blasket Islands SAC [002158]	247	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirements
5. River Moy SAC [002296]	106	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirements
6. Cumeen Strand / Drunmcliff Bay [000627]	156	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirements
7. Glenamoy Bog Complex [000500]	80	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirement

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 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:
8. Blackwater River SAC [0032171]	Not specified	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Additional information required
9. Blacksod Bay/ Broadhaven SPA [004037]	68	No	No	No	No	No	No	Site is no longer listed in revised documentation and no justification provided for removal. ⁵
10. Duvillaun Islands SPA [004111]	68	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirements
11. Inishglora and Inishkeeragh SPA [004084]	65	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirements
12. Inishkea Islands SPA [004004]	63	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirements
13. Mullet Peninsula SPA [004227]	68	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirements

⁵ This site was originally included in the pre-application version of the AA screening determination request. No justification has been provided for screening this site out of consideration, therefore further information was requested from the applicant to be provided as part of the Stage 2 NIS update. This information was subsequently provided in January 2020.

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 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. Termoncarragh Lake and Annagh Machair SPA [004093]	69	Yes	Unknown	Yes	Yes	Yes	Yes	Consideration meets requirements
15. Cetacean species (Annex IV species)	Present in Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
16. Marine reptile species (Annex IV species)	Present in Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
17. European otter (Annex IV species)	Present in Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
18. Migratory fish (Annex II species)	Present in Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
19. Pinniped species (Annex II 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 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 AA Screening

<p>Summary of LSE</p> <p>The applicant’s AA screening report only identified potential interactions of underwater acoustic emissions generated by geophysical equipment (single beam echo sounder, multi beam echo sounder, side scan sonar and sub bottom profiler) and the USBL positioning equipment with marine mammals (harbour porpoise, common bottlenose dolphin, grey seal and harbour seal), birds (various species) and fish listed as Qualifying Interests of designated Natura 2000 Sites or listed as Annex II or IV species to the Habitats Directive. The applicant has subsequently screened out the effects of noise on birds, fish, low frequency cetaceans, European otter and turtles.</p>
<p>Do you agree with the applicant’s AA screening assessment? Why?</p> <p>Yes. Ramboll agree that a NIS is required to support the application, however it should be noted that:</p> <ul style="list-style-type: none"> • The applicant has relied on the implementation of mitigation and monitoring measures, such as application of separation distances with other projects to avoid in-combination effects among others to arrive at their conclusion that there would be no LSE on the Natura Sites. • Ramboll agrees that the measures specified are appropriate and represent current good practice. It is noted that the applicant references National Parks and Wildlife Services (NPWS) guidance⁶ and the PAD Rules and Procedures Manual⁷ and states that risk of direct effects to the designated Annex II and IV species can be successfully reduced through the implementation of the mandatory statutory measures listed within these references. • It is noted that in accordance with relevant jurisprudence, mitigation must be disregarded at the AA screening stage. While this report acknowledges that some of the measures proposed may be considered to be ‘embedded’ or inherent to the project design, other aspects are considered to be mitigation and are specified or required due to the sensitive receptors identified and the potential LSE (for example, the use of marine mammal observers and soft start procedures). • This report concludes that it is not possible, as a matter of scientific certainty, to rule out the risk of a LSE (without mitigation). As such an AA is required and the applicant must provide a NIS to allow the AA to be prepared to consider the potential adverse effects on the integrity of European sites, taking account of their relevant conservation objectives.

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.

⁶ NPWS (National Parks and Wildlife Services), 2014. Guidance to Manage the Risk to Marine Mammals from Man-Made Sound Sources in Irish Waters

⁷ PAD (Petroleum Affairs Division), 2007 [Draft 2014 edition]. Rules and Procedures for Offshore Petroleum Exploration and Appraisal Operations.

Table 3.6: Summary of Applicant’s Screening Report Review

Is the plan or project 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, as described by the applicant’s documentation.
Is an AA required? (Yes / No / More Information Required?)	Yes, there is potential for likely significant effects of the Project on European sites and species. Therefore, a NIS is required to assess the likely significant effects in view of the European sites and species and their conservation objectives.
What further information is required to inform AA Screening Opinion (if any)?	None. Information was provided by the applicant to be able to conclude that a NIS is required to support the application. Additional information was requested to be included in the NIS submitted by the applicant.

Table 3.7: Recommendation of Screening Determination

Outcome of Screening Report Assessment	Overall Screening Opinion / AA Required?
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 because it cannot be excluded on the basis of the information provided by the applicant that the project will have likely significant effects either individually or in combination with other plans or projects on a European site or species.
No 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 not required.

4. STAGE 2 APPROPRIATE ASSESSMENT

4.1 Natura Impact Statements

A NIS⁸ 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 integrity⁹ 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.

The applicant's AA screening report identified potential likely significant effects (LSE) associated with underwater acoustic emissions generated by:

- geophysical equipment (single beam echo sounder;
- multi beam echo sounder;
- side scan sonar and sub bottom profilers;; and
- the USBL positioning equipment.

The potential for LSE was screened out for European Sites with Annex I terrestrial habitats, Annex II terrestrial species, Annex I coastal and marine habitats, and Annex I bird species (not including seabirds).

Therefore the potential effects of underwater noise were assessed for marine mammals (harbour porpoise, common bottlenose dolphin, grey seal and harbour seal), migratory fish, seabirds (various species) and offshore reef habitats listed as Qualifying Interests of designated Natura 2000 Sites or listed as Annex IV species to the Habitats Directive. The conclusion of the applicant's screening report was that LSE cannot be excluded for marine mammals. LSE was however excluded for migratory fish, seabirds and offshore reef habitats. The potential for LSE on fish was screened out on the basis that noise levels would be below the threshold for injury to be caused. The potential for LSE on seabirds was excluded by the applicant on the basis that the survey work would be highly unlikely to materially prevent or reduce access for foraging activity based on the mobility of the species concerned. The potential for LSE of reefs was discounted based on distance and lack of connectivity between the protected sites and the survey activities. Ramboll agrees with the screening rationale provided for fish, seabirds and reefs. As such an NIS has been provided by the applicant to assess the potential for the underwater noise to adversely affect the integrity of the relevant European sites concerned, in view of the sites' conservation objectives and to assess the potential to cause any significant disturbance to the Annex IV species.

The applicant submitted further information to supplement the NIS on 17th January 2020 confirming an updated list of projects that might act in combination with the proposed project:

- Vermillion – Corrib Gasfield pipeline inspection survey
- CNOOC – Site survey over the Slyne/Erris Basin and surrounding continental shelf

⁸ Note - Natura Impact Statement (NIS) is an Irish specific term used following transposition of the Birds and Habitats Directives into national legislation.

⁹ 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)

- Europa – Site surveys in the Porcupine Basin
- Exola – North Celtic Sea site survey
- HAVFRUE – Construction of HAVFRUE telecommunications cable (cable-laying operations)
- Kinsale Energy and PSE Seven Heads Limited – Decommissioning gasfield infrastructure

As part of the NIS, the applicant provided an updated screening table listing all of the European sites considered to be relevant to the AA. Table 4.1 provides a summary of the updated list of sites considered as part of the AA determination.

NB Sites presented in Table A3 and A7 of the applicants further information (submitted 17th January 2020) 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.

Table 4.1: Identification of Relevant European Sites/Species - Updated List for Stage 2 AA Checklist

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 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. West Connacht Coast SAC [002998]	82	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
2. Inishkea Islands SAC [000507]	57	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
3. Clew Bay Complex SAC [001482]	101	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
4. Blasket Islands SAC [002172]	240	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
5. River Moy SAC [002298]	130	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 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:
6. Cumeen Strand / Drunmcliff Bay (Sligo Bay) [000627]	162	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
7. Glenamoy Bog Complex SAC [000500]	93	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
8. Aughrusbeg Machair and Lake SAC [001228]	95	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
9. Ballinskelligs Bay and Inny Estuary SAC [000335]	272	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
10. Ballysadare Bay SAC [000622]	161	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
11. Belgica Mound Province SAC [002327]	318	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
12. Bellacorick Bog Complex SAC [001922]	106	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement

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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 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:
13. Blackwater River (Cork/Waterford) SAC [002170]	292	Yes	No ¹⁰	Yes	Yes	Yes	Yes	Consideration meets requirement
14. Blackwater River (Kerry) SAC [002173]	273	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
15. Broadhaven Bay SAC [00472]	76	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
16. Carrowmore Lake Complex SAC [000476]	88	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
17. Castlemaine Harbour SAC [000343]	247	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
18. Clare Glen SAC [000930]	246	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement

¹⁰ In relation to 13. Blackwater River (Cork/Waterford) SAC [002170], not all qualifying interests are listed however this is not considered critical to the assessment conclusions, as impacts on fish and all other qualifying interests are screened out.

STATUTORY ENVIRONMENTAL ASSESSMENT

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 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:
19. Clare Island Cliffs SAC [002243]	83	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
20. Connemara Bog Complex SAC [002034]	132	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
21. Cross Lough (Killadoon) SAC [000484]	95	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
22. Duvillaun Islands SAC [000495]	62	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
23. Donegal Bay (Murvagh) SAC [000133]	194	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
24. Erris Head SAC [001501]	67	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
25. Galway Bay Complex SAC [000268]	175	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement

STATUTORY ENVIRONMENTAL ASSESSMENT

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 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:
26. Glengarriff Harbour and Woodland SAC [000090]	292	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
27. Horn Head and Rinclevan SAC [000147]	226	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
28. Hovland Mound Province SAC [002328]	253	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
29. Inishbofin and Inishark SAC [000278]	87	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
30. Kenmare River SAC [002158]	286	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
31. Kilkieran Bay and Islands SAC [002111]	137	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
32. Killala Bay/Moy Estuary SAC [000458]	124	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement

STATUTORY ENVIRONMENTAL ASSESSMENT

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 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:
33. Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC [000365]	266	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
34. Kingstown Bay SAC [002265]	100	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
35. Lackan Saltmarsh and Kilcummin Head SAC [000516]	119	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
36. Lough Cahasy, Lough Baun and Roonah Lough SAC [001529]	94	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
37. Lough Corrib SAC [000297]	151	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
38. Lough Hoe Bog SAC [000633]	137	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
39. Lower Shannon River SAC [002165]	212	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement

STATUTORY ENVIRONMENTAL ASSESSMENT

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 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:
40. Maumturk Mountains SAC [002008]	121	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
41. Moneen Mountain SAC [000054]	182	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
42. Monivea Bog SAC [002352]	184	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
43. Mullet/Blacksod Bay Complex SAC [000470]	67	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
44. Mweelrea/Seeffry/Erriff Complex SAC [001932]	108	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
45. Omev Island Machair SAC [001309]	97	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
46. Ox Mountains Bogs SAC [002006]	145	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement

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 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:
47. Roaring Bay and Islands SAC [000101]	322	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
48. Rusheenduff Lough SAC [001311]	97	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
49. Rutland Island and Sound SAC (002283)	188	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
50. Slieve Fyagh Bog SAC (000542)	91	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
51. Slieve Tooley/Tormore Island/Loughros Beg Bay SAC [000190]	170	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
52. Slyne Head Islands SAC [000328]	105	Yes	No ¹¹	Yes	Yes	Yes	Yes	Consideration meets requirement

¹¹ In relation to site 52.Slyne Head Islands SAC [000328] The following features of interest are omitted: Reefs [1170]. This is not considered material due to include due to lack of pathway for connectivity.

STATUTORY ENVIRONMENTAL ASSESSMENT

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 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:
53. Slyne Head Peninsula SAC [002074]	107	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
54. The Twelve Bens/Garraun Complex SAC [002031]	110	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
55. Tully Mountain SAC [000330]	99	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
56. Unshin River SAC [001898]	169	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
57. West of Ardara/Maas Road SAC [000197]	185	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
58. Blacksod Bay/ Broadhaven SPA [004037]	73	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirement
59. Duvillaun Islands SPA [004111]	62	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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 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:
60. Inishglora and Inishkeeragh SPA [004084]	61	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
61. Inishkea Islands SPA [004004]	57	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
62. Mullet Peninsula SPA [004227]	68	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
63. Termoncarragh Lake and Annagh Machair SPA [004093]	65	Yes	No ¹²	Yes	Yes	Yes	Yes	Consideration meets requirements
64. Ardboline Island and Horse Island SPA [004135]	155	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
65. Aughris Head SPA [004133]	152	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

¹² In relation to Termoncarragh Lake and Annagh Machair SPA [004093], the following feature of interest is omitted: Wetland and Waterbirds [A999]. This is not considered material to the AA conclusions, as impacts to seabirds are screened out.

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 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:
66. Ballintemple and Ballygilgan SPA [004234]	159	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
67. Ballysadare Bay SPA [004129]	161	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
68. Beara Peninsula SPA [004155]	297	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
69. Bills Rocks SPA [004177]	81	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
70. Blackwater Callows SPA [004094]	304	Yes	No ¹³	Yes	Yes	Yes	Yes	Consideration meets requirements
71. Blackwater Estuary SPA [004028]	329	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

¹³ In relation to 70.Blackwater Callows SPA [004094] the following feature of interest is omitted: Wetland and Waterbirds [A999]. This is not considered material to the AA conclusions, as impacts to seabirds are screened out.

STATUTORY ENVIRONMENTAL ASSESSMENT

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 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:
72. Blasket Islands SPA [004008]	240	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
73. Carrowmore Lake SPA [004052]	84	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
74. Castlemaine Harbour SPA [004029]	246	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
75. Clare Island SPA [004136]	83	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
76. Cliffs of Moher SPA [004005]	191	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
77. Connemara Bog Complex SPA [004181]	130	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
78. Cruagh Island SPA [004170]	95	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

STATUTORY ENVIRONMENTAL ASSESSMENT

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 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:
79. Cummeen Strand SPA [004035]	164	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
80. Dalkey Islands SPA [004172]	352	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
81. Deenish Island and Scariff Island SPA [004175]	225	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
82. Derryveagh and Glendowan Mountains SPA [004039]	207	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
83. Dingle Peninsula SPA [004153]	229	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
84. Donegal Bay SPA [004151]	299	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
85. Drumcliff Bay SPA [004013]	162	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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 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:
86. Falcarragh to Meenlaragh SPA [004149]	211	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
87. Fanad Head SPA [004148]	244	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
88. Greers Isle SPA [004082]	236	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
89. High Island, Inishark and Davillaun SPA [004144]	87	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
90. Horn Head to Fanad Head SPA [004194]	348	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
91. Howth Head Coast SPA [004113]	348	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
92. Illancrone and Inishkeeragh SPA [004132]	350	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

STATUTORY ENVIRONMENTAL ASSESSMENT

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93. Illanmaster SPA [004074]	94	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
94. Inishbofin, Omev Island and Turbot Island SPA [004231]	97	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
95. Inishkeel SPA [004116]	180	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
96. Inishmore SPA [004152]	165	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
97. Inner Galway Bay SPA [004031]	175	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
98. Ireland's Eye SPA [004117]	348	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
99. Iveragh Peninsula SPA [004154]	260	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

STATUTORY ENVIRONMENTAL ASSESSMENT

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 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:
100. Kerry Head SPA [004189]	215	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
101. Killala Bay/Moy Estuary SPA [004036]	123	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
102. Killarney National Park SPA [004038]	267	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
103. Lambay Island SPA [004069]	342	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
104. Loop Head SPA [004119]	199	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
105. Lough Conn and Lough Cullin SPA [004228]	121	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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 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:
106. Lough Corrib SPA [004042]	148	Yes	No ¹⁴	Yes	Yes	Yes	Yes	Consideration meets requirements
107. Lough Fern SPA [004060]	231	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
108. Lough Mask [004062]	143	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
109. Lough Nillan Bog SPA [004110]	190	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
110. Lough Ree SPA [004064]	226	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
111. Lough Swilly SPA [004075]	241	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

¹⁴ In relation to 106.Lough Corrib SPA [004042] the following features of interest are omitted: : Black-headed Gull (*Chroicocephalus ridibundus*) [A179]; Common Gull (*Larus canus*) [A182]; Common Tern (*Sterna hirundo*) [A193]; Arctic Tern (*Sterna paradisaea*) [A194];Greenland White-fronted Goose (*Anser albifrons flavirostris*); [A395]Wetland and Waterbirds [A999]. This is not considered material to the AA conclusions, as impacts to seabirds are screened out.

STATUTORY ENVIRONMENTAL ASSESSMENT

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 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:
112. Magharee Islands SPA [004125]	238	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
113. Malin Head SPA [004146]	266	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
114. North Bull Island SPA [004006]	345	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
115. Puffin Island SPA [004003]	269	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
116. Rathlin O'Birne Island SPA [004120]	151	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
117. River Shannon and River Fergus Estuaries SPA [004077]	217	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
118. Rockabill SPA [004014]	345	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

STATUTORY ENVIRONMENTAL ASSESSMENT

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 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:
119. Saltee Islands [004002]	390	Yes	No ¹⁵	Yes	Yes	Yes	Yes	Consideration meets requirements
120. Skelligs SPA [004007]	274	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
121. Sheskinmore Lough SPA [004090]	177	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
122. Slievefelim to Silvermines Mountains SPA [004165]	251	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
123. Slyne Head to Ardmore Point SPA [004159]	121	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
124. Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA [004161]	245	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

¹⁵ In relation to 119.Saltee Islands [004002] the following feature of interest is omitted: Puffin (*Fratercula arctica*) [A204]. This is not considered material to the AA conclusions, as impacts to seabirds are screened out.

STATUTORY ENVIRONMENTAL ASSESSMENT

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125. Stags of Broad Haven [004072]	86	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
126. South Dublin Bay and River Tolka Estuary SPA [004024]	344	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
127. The Bull and Cow Rocks SPA [004066]	298	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
128. The Sheep's Head to Toe Head SPA [004156]	314	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
129. Tory Island SPA [004073]	211	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
130. Tralee Bay Complex SPA [004188]	246	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
131. Trawbreaga Bay SPA [004034]	256	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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 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:
132. West Donegal Coast SPA [004150]	168	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
133. West Donegal Islands SPA [004230]	168	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
134. Wicklow Mountains SPA [004040]	343	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
135. Cetacean species (Annex II and IV species)	Present in Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
136. Marine reptile species (Annex IV species)	Present in Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
137. European otter (Annex II and IV species)	Present in Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements
138. Migratory fish (Annex II species)	Present in Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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 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:
139. Pinniped species (Annex II species)	Present in Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration meets requirements

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	InformationI on the conservation objectives is provided for each Natura site assessed.
The Conservation Status of relevant Species listed under Annex I of the Birds Directive;	N/A	Species listed under Annex I of the Birds Directive are not considered within the Stage 2 NIS (as they were screened out at stage 1) and are therefore not included within the review below.
The baseline conditions of any relevant European site(s);	Yes	A description of the relevant European sites is provided.
The conservation objectives and qualifying features of any relevant European site(s);	Yes	It is stated that the Applicant has reviewed the conservation objectives of all the relevant sites. All relevant qualifying interests (QIs)/ features of the European sites have been detailed in the NIS.
Any management plans associated with relevant European site(s);	Yes	The applicant has confirmed that there are no management plans for the European sites identified.
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	No habitats are considered within the Stage 2 NIS Assessment. The Stage 2 NIS considers four species common bottle nose dolphin, harbour porpoise, grey seal and harbour seal (Annex II species), two of which are also annex IV species (harbour porpoise and common bottle nose dolphin). For each of these species the relevant Natura site is detailed.
Information on population profile of the species and their conservation status (e.g. size, population structure etc.)	No	The required information about designated sites and the relevant QIs is provided and it is considered that a conclusion on the Appropriate Assessment and assessment of disturbance to annex IV species can be

NIS Content	Does the applicant's NIS provide the following information? (Y/N/Unsure)	Briefly Explain Answer:
		made based on the information provided by the applicant
Ecosystem structure and functioning of the site and its overall conservation state;	Yes	There is a description of each designated site provided in Appendix A to the Response to Request For Information 02.
The role of the site within the ecosystem region and the Natura 2000 network;	Yes	The survey location is described in terms of the Annex II and IV species present in the area and the relationship with Natura 2000 sites.
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	The applicant meets this requirement as it is deemed that no additional information is missing.

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.

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 description of the physical characteristics of the project and the location of the project as adequately described. Information provided includes: <ul style="list-style-type: none"> • The specifics of all the equipment that will potentially be used; • The location of the project; • The physical environment; • The biological environment; • The socio-economic environment; • Anticipated number of seabed samples and how much sediment will be removed.
A description of the pressures of the	Yes	The screening process identified that the only source of impact that has the potential

NIS Content	Does the applicant's NIS provide sufficient detail to inform an Appropriate Assessment? (Y/N/Unsure)	Briefly Explain Answer:
proposed plan or project, its and likely impacts on the conservation objectives and local site characteristics;		to result in significant effects is underwater noise generated by the geophysical survey and positioning equipment. Physical presence of the vessel, physical changes to the seabed, noise of the vessel, atmospheric emissions, marine discharges, solid/liquid waste, and accidental spills of hydrocarbons have all be screened out due to the offshore survey location.
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	Specifically with regards to marine mammal species screened in for Stage 2, all the relevant European sites have been identified. It is stated that the conservation objectives have been reviewed.
Methodologies, analysis and data sources utilised to demonstrate use of best scientific knowledge;	Yes	In order to determine the zone of influence of the impacts the assessment of underwater noise has followed best practice in that assessment has been made by using the most recent industry-standard report (NOAA, 2018) to inform the noise level threshold at which PTS/TTS occurs. Worst-case scenarios, in terms of most sensitive cetacean species, and maximum zone of influence, have been used by the applicant to determine potential significance of effect.
A scientific assessment, analysis and statement of the significant effects including direct, indirect, cumulative and in combination effects of the relevant European site(s) and/or species which are expected to occur as a result of the development;	Yes	For the four species that the survey may result in a potential effect, the relevant Nature 2000 sites are all listed and the potential effects, including in-combination, are explored.
Details of any appropriate mitigation measures undertaken, or proposed to be undertaken by the	Yes	Mitigation measure are detailed and these comply with DAHG, 2014. Mitigation

NIS Content	Does the applicant's NIS provide sufficient detail to inform an Appropriate Assessment? (Y/N/Unsure)	Briefly Explain Answer:
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;		Commitments are specified in section 5 of this report.
An assessment of the scope and scale of residual effects after mitigation (including direct, indirect, cumulative and in combination effects);	Yes	It is concluded that, given strict adherence to the NPWS Guidance (NPWS, 2014), PAD/ NPWS recommendations and Licence conditions, the proposed survey will not have an adverse effect on the integrity of a European site in view of the conservation objectives of the qualifying interests (marine mammals).
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)	Yes	See previous comments

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

Does the NIS (and supporting documentation) contain sufficient information to complete an AA and to prepare an AA Conclusion Statement?	Yes
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?	No
Do you agree with the conclusion(s) of applicant's NIS? (Briefly explain answer)	Yes. The applicant provides sufficient information to inform the conclusion of the NIS.
What further information is required to complete an AA (if any)?	None

Table 4.4: Summary of Stage 2 Appropriate Assessment

Outcome of Stage 2 Appropriate Assessment	Stage 2 Appropriate Assessment Determination
<p>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</p>	<p>Refuse planning consent or proceed to Stage 3 AA: Alternative Solutions (See Section 6)</p>
<p>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</p>	<p>Request further information from the Applicant</p>
<p>AA determines that the proposed plan or project is unlikely to have an adverse effect on the environment.</p>	<p>Ramboll confirms that the information provided in the NIS is adequate, up to date and provides best scientific information so as to enable the DCCAE to undertake an Appropriate Assessment. Having regard to the likely significant effects of the project, individually and in combination with other plans and projects, Ramboll concludes that the project would not adversely affect the integrity of the relevant European sites concerned, in view of the sites' conservations objectives and will not cause any significant disturbance to the Annex IV species described , subject to the mitigation measures outlined in this report.</p>

5. MITIGATION AND MANAGEMENT COMMITMENTS

Table 5.1 provides a summary of the mitigation commitments to be included as conditions of any consent issued. The Appropriate Assessment determination should be made with reference to implementation in full of all mitigation measures specified in the applicant’s NIS (including the supplementary information received in the response for additional information).

Table 5.1: Mitigation Commitments

Discipline	Mitigation Measure Proposed	Additional Notes
Physical Presence	In line with current recommendations from PAD and NPWS, Europa will maintain a 100 km separation distance between concurrent acoustic surveys that may be operating. Implementing the 100 km separation zone between concurrent acoustic survey operations will ensure in-combination effects from noise generating equipment are avoided. Europa are in regular communication with operators proposing to undertake operations offshore Ireland in 2020. Survey operations will be coordinated to ensure a 100 km separation is maintained between surveys during concurrent geophysical operations.	
	Final details of the timing and duration of the survey, including proposed survey vessel, will be communicated to PAD of DCCAE in advance of operations commencing.	
	Final survey lines and transects will be confirmed to PAD DCCAE prior to survey.	
	The location of environmental seabed sampling stations, including reference stations, have yet to be identified. Once locations have been confirmed details will be provided to PAD DCCAE.	A final seabed monitoring strategy will be submitted for the agreement of DCCAE including details of total sediment volume removal and reference stations prior to commencement.
	Prior to undertaking seabed sampling operations, a visual inspection will be undertaken using AUV mounted cameras and/or drop down video to ensure the areas to be sampled do not support sensitive habitats (including Annex I habitats).	
Annex I Habitats	Details of any previously unknown Habitats Directive Annex I Habitats will be recorded and shared with the NPWS of the DCHG.	
Underwater Noise	It is recommended that the survey vessel should be particularly mindful of Rule 18 of the IMO Convention on the International Regulations for Preventing Collisions at Sea 1972 (COLREGs) which covers “Responsibilities between vessels”.	

Discipline	Mitigation Measure Proposed	Additional Notes
	<p>DAHG (2014) protective measures will be implemented during the Inishkea Survey. DAHG (2014) measures include the use of Marine Mammal Observers (MMOs) and operational protocols. Qualified MMOs to be appointed to monitor marine mammals and operator's implementation of the DAHG guidance.</p>	
	<p>Seismic surveying shall not commence if marine mammals are detected within a 1,000 m radial distance of the sound source.</p>	<p>Airgun operations will not commence if marine mammals are detected within 1,000 m of the sound source, and within 500 m in the case of the MBES, SBES, SSS, SBP and USBL.</p> <p>Air guns are to be treated as SBP with regards to clearance zone.</p>
	<p>Pre-start monitoring will only be undertaken when visual conditions are conducive to effective monitoring and outside the hours of darkness. Sound producing activities will only commence where the pre-start monitoring periods have elapsed with no marine mammals detected within the monitored zone by the MMO.</p>	
	<p>Sound-producing activities will only commence in daylight hours where effective visual monitoring by the MMOs is achieved.</p>	
	<p>Operations in waters <200 m and >200 m, the MMO will conduct pre-start-up constant effort monitoring for 30 and 60 minutes respectively before the sound producing activity is due to commence. Sound producing activity will not commence until monitoring period have elapsed with no marine mammals detected within the monitored zones by the MMO.</p>	
	<p>In the case of site survey operations in <200 m survey operations the MMO will conduct pre-start-up constant effort monitoring for 30 minutes before the sound producing activity is due to commence.</p>	
	<p>Pre-start up monitoring shall subsequently be followed by a Ramp-Up Procedure</p>	
	<p>Commencement of sound producing survey activities will be undertaken using a 'soft-start' (ramp up and gradual increase in energy/noise source) procedure for any equipment where the output peak SPL exceeds 170 dB re 1 µPa @ 1 m. The build-up of acoustic energy output will occur in consistent stages to provide a steady</p>	

Discipline	Mitigation Measure Proposed	Additional Notes
	and gradual increase in power over a period of 40 minutes in the case of 10 cu in. seismic airgun operation and 20 minutes in the case of site survey activity. Where the power of acoustic noise sources cannot be increased gradually, due to operational parameters of the device, the device will be switched on and off in a consistent sequential manner for the duration of the defined ramp up period prior to commencement of the full necessary output.	
	Where a soft start procedure is employed, the delay between the end of the soft start and the start of the survey will be minimised to prevent unnecessary high level sound introduction.	
	In all cases the delay between the end of ramp up (i.e. the necessary full seismic output) and the start of a survey line or station will be minimised to prevent unnecessary high level sound introduction into the environment.	
	Once the ramp up procedure commences, there is no requirement to halt or discontinue the procedure at night time, nor if weather or visibility conditions deteriorate nor if marine mammals occur within 1,000 m radial distance of the sound source.	
	Where the duration of a survey line or station change will be greater than 40 minutes the activity shall, on completion of the line/station being surveyed, either: shut down and undertake full pre-start Monitoring, followed by a Ramp Up Procedure for recommencement; or Undergo a minor reduction in seismic energy output to a lower energy state where the output peak sound pressure level from any operating source is 165-170 dB re: 1 µPa @ 1 m and then undertake full Ramp Up Procedure on recommencement.	
	Where the duration of the survey line or station changes is less than 40 minutes the activity may continue as normal (i.e. under full seismic output).	Equipment would be switched off in the event that line turns take longer than 40 mins as per NPWS guidance
	If there is a break in sound output for a period of 5-10 minutes (e.g. due to equipment failure, shut-down, survey line or station change), MMO monitoring will be undertaken to check that no marine mammals are observed within the Monitored Zone (i.e. within the 1,000 m radius) prior to recommencement of the sound source at full power	
	Where a marine mammal is observed within the Monitored Zone during such a break of 5-10 minutes, then all Pre-start Monitoring and Ramp Up Procedure (where	

Discipline	Mitigation Measure Proposed	Additional Notes
	appropriate following Pre-start Monitoring) shall recommence as in normal start-up operation.	
	If any case, if there is a break in sound output for a period greater than 10 minutes (e.g. due to equipment failure, shut-down, survey line or station change) then all Pre-start Monitoring and a subsequent Ramp Up Procedure (where appropriate following Pre-start Monitoring) will be undertaken.	
	Full reporting on MMO operations and mitigation undertaken will be provided to the Regulatory Authority.	
	In addition to the above measures, MMOs will use of passive acoustic monitoring (PAM) to optimise marine mammal detection around the survey.	PAM equipment must be operated by dedicated and suitably trained/experienced operators. A detailed monitoring plan setting out how the PAM will be used will be submitted for approval prior to survey commencement.
	Sound producing equipment on the AUV will be switched on at surface following pre-start monitoring and ramp up procedures. Monitoring at depth will be undertaken using PAM.	Other than in the event of a planned or unplanned break of less than 10 minutes all equipment start-up will be at surface to allow for adequate visual monitoring, in addition PAM will be used prior to AUV equipment start-up.
Discharges to the Sea	Treated grey and black water will be discharged in line with MARPOL 73/78 Annex IV	
	Food waste will be macerated in line with MARPOL 73/78 requirements, and no discharges will be made within 12 nm of the coastline.	
	Discharge of bilge water from the survey vessel will comply with standards set out in the 1973/78 MARPOL Convention with no discharge occurring within the 12 nm limit.	
	Solid waste stored onboard and handled to comply with the Waste Management Hierarchy, MARPOL and the Sea Pollution (Prevention of Pollution by Garbage from Ships). Garbage Management Plan will be developed. Contractors must use authorised waste contractors.	

Discipline	Mitigation Measure Proposed	Additional Notes
	Survey vessel will have a SOPEP in place in accordance with Annex I of MARPOL.	
	Spill kits on board the vessel deck to clean-up spills of utilities hydrocarbons or chemicals before they can enter the sea.	
	Refuelling of the survey vessel to be undertaken in port, thus reducing potential for collision or spillage at sea	
	Ballast water discharges may be required during operations and will be managed through a Ballast Management Plan	