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**STATUTORY
ENVIRONMENTAL
ASSESSMENT
APPROPRIATE
ASSESSMENT
SCREENING
DETERMINATION AND
NIS REVIEW FOR
BARRYROE K SITE
SURVEY**

STATUTORY ENVIRONMENTAL ASSESSMENT BARRYROE K SITE SURVEY

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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 'DCCA') to provide assistance with regards to the statutory assessment of an application by Exola DAC, a wholly owned subsidiary of Providence Resources Plc (referred to herein as the 'applicant'), submitted in respect of a site survey within the Barryroe licence area (SEL1/11) (referred to as the 'Barryroe K' site).

The applicant has submitted an application for consent to carry out a seabed and shallow geophysical survey and an environmental and habitat assessment, encompassing a potential well location at Barryroe K, as well as a single environmental control point located approximately 7 km southeast of the survey area. The survey will cover an area of approximately 9 km², and the greater working area in which the survey vessel may manoeuvre during line turns and equipment deployment and recovery is approximately 22 km².

The competent authority (DCCA) is required to consider the potential 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 Appropriate Assessment (AA) Screening and Natura Impact Statement (NIS) Report submitted by the applicant. An assessment of impacts on Annex IV Species has also been undertaken.

Public consultation on the application has been undertaken by DCCA. All submissions and observations received by the DCCA 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 is required to make a screening determination or carry out an Appropriate Assessment. The applicant provided adequate, up-to-date, best scientific information so as to enable the DCCA to make a screening determination and undertake an Appropriate Assessment to determine whether the integrity of a European site is likely to be adversely affected by the proposed project.

This report determines that the proposed plan or project alone or in combination with any other plan or project will not have an adverse effect on the environment or on the integrity of any European site in view of its conservation objectives and will not cause any significant disturbance to the Annex IV species described, subject to the mitigation measures described in Section 5 of this report.

1. INTRODUCTION

Ramboll UK Limited (herein referred to as 'Ramboll') has been commissioned by the Department for Communications, Climate Action and Environment (herein referred to as 'DCCAÉ') to provide assistance as competent experts for the statutory assessment of an application by Exola DAC, a wholly owned subsidiary of Providence Resources Plc. 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.

This report provides an assessment of the Barryroe K Site Survey Appropriate Assessment (AA) Screening and Natura Impact Statement (NIS) (January and April 2020) and the Barryroe K Site Survey Environmental Impact Assessment Screening Report (March 2020) submitted by the applicant, prepared and approved by Ramboll as competent experts having relevant qualifications and experience.

1.1 Project Background

The competent authority (DCCAÉ) is required to consider the potential 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).

2. TERMS OF REFERENCE

2.1 Legislative context

This report has been prepared having regard to EC Directive 2009/147/EC¹ on the conservation of wild birds (commonly referred to as the Birds Directive) and EC Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (commonly referred to as the Habitats Directive), 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 AA Screening and the NIS confirm that the Project has been screened and assessed having regard to the Birds and Habitats Directives and the Birds and Natural Habitats regulations and relevant jurisprudence of the EU and Irish courts.

2.2 Relevant guidance

This report, AA Screening and NIS review have 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)⁴.

2.3 Consultation

2.3.1 Notified Bodies

Notification of the application was issued to the following organisations:

- National Parks and Wildlife Services;
- Irish Maritime Administration, Department of Transport, Tourism and Sport;
- Ship Source Pollution Prevention Unity Irish Maritime Administration, Department of Transport, Tourism and Sport;
- Irish Coastguard (& 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; and
- Commissioners of Irish Lights.

One response was received as follows:

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)

- Irish Coastguard (& National Maritime Operations Centre), Department of Transport, Tourism and Sport dated 04 February 2020.

The following observations were made:

- As per Sea Pollution (Miscellaneous Provisions) Act 2006 Part 3 Para 20 and 21 refers the operator should include in the submission:
 - A risk assessment re hydrocarbon discharge should be included in submission; and
 - A plan for the prevention and minimisation of any accidental discharge.
- Operations such as the "ship to ship" transfer of fuels or other HNS substances which present a hazard to the marine environment are prescribed operations within the Irish EEZ and as such require a permit for operations from the Irish Coast Guard (DTAS).
- The Operator should update and advise the IRCG of the commencement and suspension or termination of survey operations offshore via the Marine Rescue Coordination Centre (MRCC) Dublin and a Radio Navigational Warning (RNW) should be promulgated via the same.

Appropriate regard has been given to the issues raised in this submission and, provisions are included in the mitigation and management commitments in Section 5 of this report where they are relevant to the AA determination process.

2.3.2 Public Consultation

The application by Providence Resources Plc was received by the DCCAIE on 20 January 2020 after which it was advertised on the DCCAIE website. Invitations for submissions were advertised by DCCAIE to be received by close of business on 21 February 2020 to ensure consideration by the Minister.

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

- Response from a private individual (name withheld for privacy) dated 20 February 2020;
- Response from a private individual (name withheld for privacy) dated 20 February 2020;
- Response from a private individual (name withheld for privacy) dated 20 February 2020;
- Response from a private individual (name withheld for privacy) dated 21 February 2020;
- Response from a private individual (name withheld for privacy) dated 21 February 2020;
- Response from a private individual (name withheld for privacy) dated 21 February 2020;
- Response from a private individual (name withheld for privacy) dated 21 February 2020;
- Response from a private individual (name withheld for privacy) dated 21 February 2020;
- Response from a private individual (name withheld for privacy) dated 21 February 2020;
- Response from a private individual (name withheld for privacy) dated 21 February 2020;
- Response from Not Here Not Anywhere dated 21 February 2020; and
- Response from a private individual (name withheld for privacy) dated 21 February 2020.

Further to a request from the DCCAIE for further information, the applicant submitted further information which was published on the Department's website on 23 April 2020. The public were invited to make submissions in relation to the additional information by 14 May 2020.

One response was received, and the points raised by this have been considered and responded to in the following sections of this report:

- Response from Not Here Not Anywhere dated 14 May 2020.

2.3.3 General Consultation Responses

The following general responses have been received:

- General economic comments
 - The benefits to the people of Ireland are nominal at best, illusory if honest.
 - Offshore drilling is economically costly, particularly when compared to lack of benefit it provides to the Irish economy. The seafood industry, which supports 11,000 jobs, is already suffering due to biodiversity loss, which offshore drilling will only exacerbate. Comparatively, oil and gas extraction in Ireland has only provided 270 long terms jobs. Providence Resources recent layoffs is proof of the industries unstable nature in relation to employment. Furthermore, there is little potential tax benefit to Ireland from the gas industry. Ireland has some of the lowest petroleum extraction tariffs in the world. The Corrib site is yet to pay any taxes to the Irish state despite earning revenues of €734 million in 2018.
- General comments on health safety and environmental issues
 - Fossil fuels have placed us in a pariah category of sovereign states re carbon emissions. We should be urgently pursuing plans to offset the carbon emissions from our farming with rewilding of bogs and public ownership of seaweed beds. The application is disrespectful of our democratically declared climate and biodiversity emergencies and of the Irish people.
 - Fossil fuels are dirty, outdated and morally untenable re our obligations to other low-lying countries.
 - I think at this point it goes without saying the detrimental effects fossil fuels are having on our planet. However, I will say it anyway as this is clearly not being understood in its enormity by those trying to drill for fossil fuels and those who are willing to allow this. It is undisputed by the science and the experts in the fields that we are in the throws of an existential climate crisis and the continued use and exploration of fossil fuels are detrimental to that crisis.
 - I strongly object to this site survey taking place due to my concerns about its impact on climate change. Internationally we need to be cutting down and eliminating the use of fossil fuels if we wish to keep the temperature from rising to a point where it would have a devastating impact on this planet.
 - Any projects intending to continue and expand fossil fuel investment in Ireland are simply not acceptable. As a country ranking amongst with worst in Europe on climate action (2020 Climate Change Performance Index), we must be working to cut down and eliminate fossil fuel and be incentivising progression towards more sustainable alternatives.
 - It is critical that our use of fossil fuels is contained within a wider strategy to minimise the harmful effects such energy sources are having on the environment and climate. Until such a strategy is in place, further drilling and fuel exploration should be curtailed.
 - It is embarrassing that the state is even considering the application following the Taoiseach's grand announcement at last year's United Nations Climate Summit that Ireland would end fossil fuel exploration.
 - We remain convinced that the Department has a moral duty to require considerations of health and safety before permitting any exploration, drilling site surveys or such. We would suggest that this would not be an onerous requirement.

- I do not want this to happen, because I am extremely worried about the climate crisis because it will threaten the human race's survival by causing sea levels to rise, and causing infectious diseases to spread, as well as other problems.
- The Intergovernmental Panel on Climate Change has estimated we cannot use all of the fossil fuel reserves that have been found, without irreversibly damaging the climate, so that means we should not explore to find more fossil fuel reserves.
- Refuse this application and revoke all existing exploration licences under the public interest power in Article 43 of Bunreacht na h'Eireann. The authority has been vested to the State to protect our right to life and right to a healthy environment. Do your duty.
- General comments on legal entities and contractor
 - Providence Resources is very weak financially. After its last CEO resigned over the company's financial difficulties, Providence Resources has recently announced they only have enough funds to last until April. Only companies of financial substance should be allowed to operate in Irish waters. In attempts to save money, Providence Resources laid off most of their technical staff. Although Providence was granted licences for fossil fuel exploration in the past, they do not have the same expertise as now as when those early licences were granted. This lack of expertise increases the risk to health and safety and to marine life that this site survey poses.
 - I also would suggest that a company with a precarious financial situation like Providence Resources should not be granted permission to undertake this site survey. It is vital that if this work has to be done then it is done by companies with the resources to successfully undertake it and with the fully complement of technical staff.
 - I am also concerned that Providence Resources share price has plummeted from £14.925 at the start of last year to £3.00 as of last week. This collapse in share price will doubtless make the organisation desperate to show profitability in any new endeavour they undertaken, I fear they will take shortcuts with health and safety as well as environmental regulations. Such heavy industry needs to be in calm hands who can be expected to follow guidelines and regulation to the letter, not an ailing Plc desperate to stay out of receivership.
 - Exola's parent company, Providence Resources, is in a precarious financial position having been unable to find investors for the project. International investors can see the writing is on the wall for projects like Barryroe and it is clear that Providence no longer have the financial resources or technical expertise required to complete the project.
 - As you may be aware Providence Resources has had a very difficult recent history. In particular it was forced during 2019 to shed a number of its staff including those who appeared to us to be providing the technical resources of the group. We are unable to determine from the public documents what technical expertise remains within the group. We believe that this might be insufficient, we have not seen from them evidence that it does have such staff. We believe that it would be correct for the Department to request from the group a disclosure of its resources. Failing our being able to see what they have by way of such staff (if they have any (we believe it is appropriate to be cautious).
In this context, we note that the Minister may choose to remove exploration licences under terms of Article 52(1)d if there is a material change in the technical competence of the authorisation holder. We respectfully submit that they redundancy program is sufficient grounds to warrant an investigation from the Department as to whether this should now be considered.
 - Providence Resources has had a very difficult 2019 financially which was on top of a year end 31.12.18 position which saw its accounts being qualified on the going concern basis (and also on the value of assets).

We believe that companies should only be allowed to carry out any business whatsoever if there is a reasonable chance of there being able to repay any debts they might accrue or to compensate any party who might be (inadvertently to be sure) damaged.

The survey will not be able to go ahead without money to pay for it. Surely it is reasonable to require that Exola and Providence Resources are of reasonable substance before permission is granted to carry out any work.

Its previous fund raising was when the shares of Providence Resources stood above 5 in value. That was already a large fall since the start of the year. They now stand at under 3. It is an issue whether they will be able to raise the money. They need to be able to take the development further, it is not unreasonable surely for them to demonstrate that they can before being permitted to do anything more.

- Under its previous (failed) farm out agreement it surrendered 50% of the Barryroe licence to a Hong Kong entity that promised to fund the future development. The money was not forthcoming and hence Providence Resources troubles. They have announced that they are seeking the return of their 50% (note Landsdowne Oil and Gas has a minority stake) but that means that they do not have this now. Until this issue is resolved we again believe that approval would be pre-mature.
- Providence Resources has had well known financial difficulties which have led to a substantial fall in share price and having to seek short term funding to survive twice in the last year. The 2019 accounts are not yet published but the 2018 were qualified by their accountant.
- As part of the cost cutting resulting from the financial problems, technical staff were made redundant and it is not clear what technical resources are now available to it.

These comments are in regard to the current economic environment, general comments on legal entities and contractor and more general comments in regard to climate change. Appropriate regard has been given to these 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.

2.3.4 Project Specific Consultation Responses

The following project specific responses have been received:

Consultee	Project specific comments	Response
Private Individual	Offshore drilling can have a profoundly negative impact on the local marine environment too. The seismic booming method used for oil and gas exploration kills zooplankton (the basis for the marine food chain), disrupts migratory patterns and causes internal bleeding in whales and dolphins. The offshore drilling process also produces waste drilling muds full of toxic substances like mercury and lead.	Offshore drilling or airguns are not proposed as part of the site survey.
Private Individual	I am concerned about the environmental impact of offshore drilling on the marine environment.	Offshore drilling is not proposed as part of the site survey.

Consultee	Project specific comments	Response
Private Individual	One blast from oil and gas exploration kills 64% of zooplankton in a region of up to 0.7 miles around the source. These methods have also been found to damage the hearing and health of fish, eventually "disrupting and displacing important migratory patterns and pushing marine life away from suitable habitats" and causing internal bleeding in whales and dolphins.	Airguns are not proposed as part of the site survey.
Private Individual	The offshore drilling process also produces waste drilling muds full of toxic substances like mercury and lead, which "may bioaccumulate and biomagnify in marine organisms, including in our seafood supply".	Offshore drilling is not proposed as part of the site survey.
Private Individual	The potential negative effects on our fishing and tourism sectors (not to mention the reputational damage to Ireland on the international stage) are enormous compared to the tiny benefit of this project in terms of jobs and tax revenues.	This document is a checklist review of the applicant's AA Screening Report and NIS rather than the applicant's EIA Screening Report (which is subject to a separate review), so the consultee's comment is not directly applicable.
Private Individual	<p>We note that all the documents submitted by Exola are by them. Other submissions we have seen are by independent experts. It can of course be argued that experts who are being remunerated by one party are not independent in some sense but that issue does not arise here as independence is not being asserted.</p> <p>As these documents and opinions come to judgements that involve more than mere statement of facts one must ask to what extent the conclusions are valid. There must surely be some grounds for doubt that there is not at least some bias even if that is unconscious.</p> <p>To be clear we are not asserting that anything is untrue merely that we would expect more independence. Exola and Providence Resource's very survival as companies may depend on their ability to develop the Barryroe site. We would</p>	The reports submitted by the applicant are independently reviewed. The results of this review are provided in this report in relation to the AA Screening and NIS. This independent review allows the Environmental Assessment Unit in DCCAE to make the necessary determinations.

Consultee	Project specific comments	Response
	request that the information put forward should be independently verified	
Not Here Not Anywhere	<p>At one point (page 10) it is suggested that sound leaks to the side of the boat will be less powerful than that directly below the boat. This is not in of itself an unreasonable assertion but could (and should) be looked at in more detail. Here are some of the factors that occur to us:</p> <ul style="list-style-type: none"> • How tight are the beams that are emitted (and how can anybody not involved determine this)? • What is the impact of reflection from the sea floor? This will surely depend on the make up of the sea floor which is one of the items of information that the survey is trying to determine. • What effects would there potentially be from wave interference? There could be interference from the base waves emitted, diffusion at the edges and reflection. Could this be constructive interference leading to localised spots of high amplitude? • The paper states a conservative assumption has been made. What assumption is this? How can anyone know whether the assumption is conservative or not without knowing its value? 	It has been deemed that this additional information requested is not required in order to assess the potential effects of the proposed site survey. The conservative approach undertaken in the modelling is considered the worst-case scenario, which in reality is unlikely to be reached.
Not Here Not Anywhere	We believe that the permission from PSE Kinsale to approach with 500 m of the existing infrastructure should have been sought before the application was made. Therefore we believe that permission should not be granted (even if there were no other issues which obviously we believe there are).	The applicant is responsible for obtaining all necessary permissions for the site survey.
Not Here Not Anywhere	We note that there are referenced on page 36 to events due to take place in 2019. This is curious for a document being submitted in 2020. We suggest that Exola should be asked to confirm that this document has been drawn up in 2020 (or shortly before) explicitly for this submission and with current state of knowledge of all issues considered. Were this to be an older document simply resubmitted (or based substantially on one such), we would submit that it was not a valid support of the submission and that a new submission should be required.	The updated information provided by the applicant has corrected this and reflects projects that may occur during 2020 and 2021.
Not Here Not Anywhere	As we have previously mentioned Providence Resources has had difficulties, so much that it would not be unreasonable to state that the	An independent review of the applicant's

Consultee	Project specific comments	Response
	<p>development of the Barryroe field, is existential to the Group. In such circumstances there is a clear incentive to reach conclusions that suit Exola's interests. One would not expect Exola to be completely objective and impartial, indeed it might be unreasonable for this to be expected of them.</p> <p>In such circumstances, it seems to us that it would be sensible to have the "objective" conclusions checked by an independent expert. This is therefore our main contention that the Department should require an independent review of the position.</p>	<p>documentation has been undertaken to enable the DCCAE to undertake an AA determination.</p>
Not Here Not Anywhere	<p>Authorship</p> <p>The documents in question are not attributed to a paid consultant but appear under Exola's name without authorship being attributed. As a result, the academic credentials of those producing the work cannot be examined. We have seen a number of submissions and it is normal practice to commission paid experts in a field to do the work. While such experts are not independent (and do not claim to be) their professional standing does give status to the work. We do not know why this procedure has not been followed on this occasion.</p>	<p>The reports submitted by the applicant are produced on their behalf by Orbis Energy. The applicant's documentation is independently reviewed to ensure it provides enough information to allow the DCCAE to make an AA determination.</p>
Not Here Not Anywhere	<p>References</p> <p>As one would expect there are references listed at the end of the submission. But there is a very long list of references. Too long a list to represent a list of sources used as we would expect from a piece of expert work. Clearly it is not for that purpose. We could imagine that it could be there as window dressing to make the work appear more researched than it is. By contrast although the paper does rely on a paper called Southall et al (2019). This paper does not appear in the references, which is not good practice. Though we were able to find it comparatively easily.</p>	<p>The references used by the applicant are considered appropriate to the information provided in the AA Screening and NIS Report.</p>
Not Here Not Anywhere	<p>Information drawn from sources may be incorrect.</p> <p>We have looked at one of the quote sources in the submission, namely Russell et al (2017). If you read this paper, you will find that this work covered "<i>The tracks of (a) 270 grey seals (1991 to 2016) and (b) 330 harbour seals (2001 to 2016) tagged in the UK and used to generate usage</i></p>	<p>The references used by the applicant are considered up-to-date and appropriate to allow the DCCAE to make an AA determination.</p>

Consultee	Project specific comments	Response
	<p><i>maps</i>". Not the words "<i>tagged in the UK</i>". If you look at the maps on pages 10 and 11 of this paper, it is quite clear that they reflect tagging (which is as you would expect). There is lots of data for close to the UK and less further away. So, application to Irish waters is questionable.</p> <p>Presumably, this paper is the one quoted on page 47 Table 5.3. If this is the case, it appears that this throws some doubt on the figures used. It appears to us that the submission is using data from a paper that is not appropriate for the use made. It could be that this flaw has been accounted for in some way but that this is not evident to us. An independent expert could establish this.</p>	
Not Here Not Anywhere	<p>Minor error could suggest lack of care.</p> <p>The submission suggests that the survey could take place between 01 April and 30 November 2020. The first date is clearly not feasible being in the past. This lack of attention to detail does not give confidence in the rest of the work.</p>	<p>The original submission was received on 22 January 2020 and the initial public consultation closed on 21 February 2020. The potential dates for the survey to be undertaken is considered appropriate in this context.</p>
Not Here Not Anywhere	<p>Lack of workings.</p> <p>The paper referred to above, i.e. Southall et al (2019) is presumably <i>Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects</i>, which was published in <i>Aquatic Mammals</i> 45(2) in 2019.</p> <p>It is publicly available, so we have been able to check that the data given in Table 4.4 of the submission is drawn correctly from Southall et al. However, the next table which is critical to the conclusions drawn by the submission is produced without any workings or data that would permit verification. Independent review could remedy this.</p>	<p>An independent review of the applicant's documentation has been undertaken to enable the DCCAE to undertake an AA determination.</p>

Consultee	Project specific comments	Response
Not Here Not Anywhere	<p>Unsupportable Contention</p> <p>Lastly the paragraph about has a very strong statement "<i>and there is no reasonable scientific doubt in relation to this conclusion</i>". That is a very strong statement and not the sort of statement we expect to see in a document prepared by a scientist. This is particularly clear when you read Southall et al where barely a paragraph goes by without the authors drawing attention to how they have tried to overcome the lack of knowledge or data. They stress how much they do not know. The following is just one of many qualifications in the paper: <i>While strategic research approaches (see Research Recommendations section) will better inform subsequent evolutions in these criteria, many data gaps will remain for the foreseeable future. Given these profound challenges, the derivation of quantitative criteria and their application within regulatory applications came with associated and acknowledged cautions and caveats.</i></p>	<p>Independent review of the applicant's documentation has enabled the DCCAE to draw its own conclusions on whether there will be likely significant effects on Natura 2000 sites and qualifying species, without relying on the applicant's own conclusions.</p>

3. REVIEW OF APPLICANT AA SCREENING REPORT

Table 3.1 provides a summary of the key project information.

Table 3.1: Project Information

Project Title:	Barryroe K Site Survey
Project Type:	Geophysical and Environmental Survey
Applicant:	Exola DAC
Exploration Licence Reference:	SEL 1/11
Date AA Screening Report Received:	20 January 2020

3.1 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 NIS.

3.2 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 AA Checklist

<p>Brief Project Description:</p> <p>The site survey will comprise a seabed and shallow geophysical survey and an environmental baseline and habitat assessment survey at the Barryroe K site, together with a single environmental control point approximately 7 km east-southeast. The survey area is approximately 9 km² and the greater working area, within which the survey vessel may manoeuvre during line turns and during equipment deployment and recovery, which is approximately 22 km².</p> <p>A geophysical acoustic survey will be conducted using the following equipment. It is expected that the geophysical equipment will provide the required data for habitat assessment, an archaeological assessment of the site as well as confirming the site does not have non-archaeological debris or hazards. The side scan sonar and magnetometer will be towed behind the survey vessel. The echosounders and pinger will be hull mounted. The USBL will be utilised to confirm the precise location of underwater equipment. No seismic activity will be conducted and airguns are not proposed.</p> <ul style="list-style-type: none"> • Side scan sonar (expected to be a dual frequency Edgetech 4200 operating at 120 kHz and 410 kHz with an expected pulse interval of approximately 200 ms); • Single beam echosounder (expected to be a Kongsberg EA400 operating at 200 kHz with an expected pulse interval of approximately 200 ms); • Multi beam echosounder (expected to be a Kong; • Pinger sub-bottom profiler; • USBL; and • Magnetometer. <p>Total line kilometers to be surveyed is expected to be 115 km.</p> <p>A habitats assessment and environmental baseline survey will be conducted at the survey area. Any potentially sensitive habitats identified from anomalies in the geophysical survey data will be investigated using high-resolution video or camera stills. Seabed samples will also be taken at approximately 13 seabed sample locations using a day corer, box corer or dual Van Veen grab, as</p>

appropriate, with sampling stations defined by the number of habitats delineated from the geophysical data, or in the absence of different habitats, a standard cruciform pattern centred on a potential future well location. It is estimated that approximately 1 m² of seabed will be disturbed at each location. These samples will be analysed to provide information on benthic faunal community composition and physico-chemical characteristics of the sediments. A habitat assessment and environmental baseline sampling location will also be undertaken outside of the survey area, up to 7 km east-southeast to be used as a control point. One seabed sample location will be used within the control

Operations are proposed to take place between 01 April 2020 and 30 November 2020 subject to regulatory approval and vessel availability. If the survey has not commenced within this timeframe, the operations will be undertaken between 01 February 2021 and 30 November 2021, again subject to regulatory approval and vessel availability. The anticipated duration of the survey is approximately three days, excluding port calls, transit and potential weather delays.

This survey follows on from the site survey operations undertaken in the Barryroe licence area at the proposed A and B well locations during September 2019. Obtaining data from the Barryroe K site location allows for the emplacement of an additional well to the east of the previously surveyed A and B well locations, in order to further appraise the eastern panel of the Barryroe field.

The vessel proposed to be used for the survey is the Gardline vessel MV Kommander. Prior to the commencement of the proposed site survey operations, the applicant may seek approval from the DCCAE to use an alternative equivalent survey vessel. In this event, the DCCAE should expect to see confirmation that the survey equipment and methodology on any replacement vessel are equivalent to that described in the EIA Screening Report and that the description of the development used to inform the EIA Screening Report is still valid.

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, the information provided by the Applicant meets this requirement.
Supporting Infrastructure	Yes, the information provided by the Applicant meets this requirement.
Transportation Requirements	Yes, the information provided by the Applicant meets this requirement.
Physical changes that will result from the project (e.g. from excavation, dredging)	Yes, the information provided by the Applicant meets this requirement.
Emissions and Waste	Yes, the information provided by the Applicant meets this requirement.
Resource Requirements (e.g. water abstraction)	Yes, the information provided by the Applicant meets this requirement.
Duration of each phase e.g. <ul style="list-style-type: none"> • <i>Phase 1 Construction</i> • <i>Phase 2 Operation</i> • <i>Phase 3 Decommissioning</i> 	Yes, the information provided by the Applicant meets this requirement.

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 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"> 2020: Preparation works for the removal of Kinsale Alpha and Bravo platform topsides, located 26 km and 22 km to the NE of the proposed Barryroe K site survey area. Additional platform supply vessel trips are associated with this work. A site survey is additionally planned at Seven Heads, Southwest Kinsale and Ballycotton. Exact timings are unknown. 2021: P&A of 14 platform wells. These activities could be ongoing within the Kinsale Area during Q2/Q3 2021 during which time a semi-submersible drill rig and/or light well intervention vessel and other support vessels will be in the area. <p>Exola are aware of seven other potential projects, none of which will result in LSE:</p> <ul style="list-style-type: none"> Exola, themselves, have consent to survey two more sites at the Barryroe location (C and D sites) between 01 February 2020 and 30 November 2020, although there are currently no operational plans to undertake these surveys, The C&D sites are located approximately 18 km and 4,2 km to the SW respectively; Europa Oil & Gas (Ireland West) Limited plan to conduct two site surveys at Kiely East and Edgeworth prospects between February and November 2020, 346 km and 231 km NW respectively; CNOOC Petroleum Europe Ltd plan to conduct an Edge 2D HR seismic and site survey approximately 378 km NE of Barryroe K. Vermillion E&P Ireland Ltd plan to undertake a geophysical and visual survey of the offshore facilities in the Corrib field approximately 360 km to the NW of the Barryroe K survey area. This work was originally planned to take place in 2020/19, however this has likely been delayed and may take place simultaneously with the planned works; Europa Oil and Gas (Inishkea) Limited plan to undertake a site survey of the Inishkea Prospect (Blocks 18/19 and 18/20), approximately 402 km NW of the Barryroe K survey area. This work was scheduled for 2019, but it is understood to now be taking place between February and November 2020. The Marine Institute is planning to conduct hydrographic and geophysical surveys in the Celtic Sea as part of the INFOMAR Programme (Integrated Mapping for the Sustainable Development of Ireland's Marine Resource) during 2020 using the Celtic Voyager. At its closest point, the Celtic Voyager could be operating approximately 35 km to the southwest of the Barryroe K survey area. Woodside Energy (Ireland) Pty Ltd is proposing to undertake a geotechnical investigation (up to 22 shallow boreholes) in the Irish Atlantic Margin in Q2 or Q3 2020 or 2021. The closed borehole to the proposed survey is 108 km to the northwest. <p>It is stated that Exola DAC do not know of any other projects that may have cumulative impacts with the project. The list of projects detailed above is considered comprehensive.</p>		
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 adequately described the potential extent of the effects of the project in order to correctly determine the envelope of impacts from the project and the receptors that may be affected.
Impact Identification	Yes	The applicant has described the potential impacts arising from the project and

(e.g. noise, chemical emissions etc.)		considered which of the impacts identified are relevant to the determination of Likely Significant Effect (LSE) and have linked these clearly to pathways that might transmit impacts to receptors
Pathway Identification (e.g. via water, air etc)	Yes	The applicant has described the potential impact / pressure pathways and have linked these clearly to determinations of LSE.

3.3 Identification of relevant European sites and species

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

Table 3.4 identifies the relevant European Sites and species that might be impacted by the project.

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

NB. Sites presented in Appendix A of the Applicants AA Screening Report and within the Response to Request for Further Information Addendum 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 Applicant in have been considered below.

Natura site/ Annex IV species identified by assessor	Distance from Project Site (km)	Are the Natura site / Annex IV species identified by the applicant?	Are all the qualifying interests / Annex IV 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. Roaringwater Bay and Islands SAC (site code 000101)	83 km NW	Yes	Yes	Yes	Yes	Yes	Yes	Consideration of the Qualifying Features harbour porpoise and grey seal meets requirements. It should however be noted that the Applicant refers to the site as a cSAC when it is a SAC
2. Lower River Shannon SAC (site code 002165)	134 km NW	Yes	Yes	Yes	Yes	Yes	Yes	Consideration of the Qualifying Feature bottlenose dolphin meets requirements. It should however be noted that the Applicant refers to the site as a cSAC when it is a SAC

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:
3. Saltee Islands SAC (site code 000707)	142 km NE	Yes	Yes	Yes	Yes	Yes	Yes	Consideration of the Qualifying Feature grey seal meets requirements
4. Blasket Islands SAC (site code 002172)	178 km NW	Yes	Yes	Yes	Yes	Yes	Yes	Consideration of the Qualifying Features harbour porpoise and grey seal meets requirements
5. West Connacht Coast SAC (site code 002998)	281 km NW	Yes	Yes	Yes	Yes	Yes	Yes	Consideration of the Qualifying Feature bottlenose dolphin meets requirements
6. Rockabill to Dalkey Island SAC (site code 003000)	267 km NE	Yes	Yes	Yes	Yes	Yes	Yes	Consideration of the Qualifying Feature harbour porpoise meets requirements
7. Annex IV species of cetaceans	Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration of the Annex IV species of cetaceans 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:
8. Annex IV species of marine reptiles	Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration of the Annex IV species of marine reptiles meets requirements
9. Annex IV species of European otter	Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration of the Annex IV species of European otter meets requirements
10. Annex II species of migratory fish	Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration of the Annex II species of migratory fish meets requirements
11. Annex II species of pinniped species	Irish Waters	Yes	Yes	Yes	Yes	Yes	Yes	Consideration of the Annex II species of pinniped meets requirements

3.4 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

Summary of LSE	
<p>The applicant's AA Screening Report identified the following impact sources for further consideration in the determination of LSE:</p> <p>Underwater noise generated from the geophysical survey equipment, as well as from the survey vessel itself on three marine mammal species – harbour porpoise, bottlenose dolphin and grey seal.</p> <p>All other sources of impact (Table 4.1 within the applicant's report) are concluded as no likely significant effects (LSE) and therefore have been screened out.</p>	
Do you agree with the applicant's AA screening assessment? Why?	
<p>Yes, Ramboll agree that a NIS is required as it is not scientifically possible to rule out that:</p> <ul style="list-style-type: none"> • Individual harbour porpoises within the Roaringwater Bay and Island SAC and Blasket Islands SAC will not be impacted by the underwater emissions; • Individual harbour porpoises within the Rockabill to Dalkey Island SAC, East Connacht Coast SAC and Lower River Shannon SAC will not be impacted by the underwater emissions; • Individual grey seals within the Blasket Island SAC, Saltee Islands SAC and Roaringwater Bay and Islands SAC will not be impacted by the underwater emissions; • Individual bottlenose dolphins within the West Connaught SAC and Lower Shannon River SAC will not be impacted by the underwater emissions; and • Annex IV species of cetaceans and marine reptiles will not be impacted by underwater emissions. 	

3.5 Screening Determination

If significant effects are certain, likely or uncertain then the DCCAIE must request the applicant provides a NIS in order for the DCCAIE 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 DCCAIE to make a screening determination.

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 updated NIS submitted by the applicant.
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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.	Yes, AA is required because it cannot be excluded on the basis of the information provided by the applicant that the project either individually or in combination with other plans or projects will have a significant effect on a European site or species.

4. STAGE 2 APPROPRIATE ASSESSMENT

4.1 Natura Impact Statements

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

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

The applicant's AA screening report identified potential LSE associated with underwater acoustic emissions generated by the geophysical survey equipment proposed to be utilised as part of the site survey. The potential for LSE was screened out for Natura 2000 sites with Annex I terrestrial habitats, Annex II terrestrial species, Annex I coastal and marine habitats and Annex I bird species (including seabirds).

Therefore, the potential effects of underwater noise were assessed for marine mammals (harbour porpoise, bottlenose dolphin and grey seal) and marine reptiles listed as Qualifying Interests of designated Natura 2000 site's or listed as Annex IV species to the Habitats Directive. The conclusion of the applicant's AA screening report was that LSE cannot be excluded for these species.

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)	Briefly Explain Answer:
The Conservation Status of relevant Habitats and Species listed under Annex II of the Habitats Directive;	Yes	The conservation status of the relevant species listed under Annex II of the Habitats Directive have been adequately described by the applicant.
The Conservation Status of relevant Species listed under Annex I of the Birds Directive;	Yes	Adequate information has been provided by the Applicant in this regard.
The baseline conditions of any relevant European site(s);	Yes	Adequate information has been provided by the applicant in this regard.

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

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

NIS Content	Does the applicant's NIS provide the following information? (Y/N)	Briefly Explain Answer:
The conservation objectives and qualifying features of any relevant European site(s);	Yes	The conservation objectives and qualifying features of the relevant European sites have been adequately described adequately by the applicant.
Any management plans associated with relevant European site(s);	Yes	The applicant has stated that there are no site management plans for any of the European sites currently screened in.
Details on each species and habitat type for which relevant European site(s) are designated and spatial mapping of the distribution and temporal mapping, including lifestyle stages;	Yes	Adequate information has been provided by the applicant in this regard. The applicant has provided information on the details of each species and habitat type for which Natura 2000 sites are designated, or Annex IV species.
Information on population profile of the species and their conservation status (e.g. size, population structure etc.)	Yes	Adequate information has been provided by the Applicant in this regard. The Applicant has used the most relevant literature resources and has highlighted the areas which have limitations (e.g. harbour porpoise population composition)
Ecosystem structure and functioning of the site and its overall conservation state;	Yes	Adequate information has been provided by the Applicant in this regard. The Applicant has provided a site description and a summary of relevant conservation objectives for each site
The role of the site within the ecosystem region and the Natura 2000 network;	Yes	Adequate information has been provided by the Applicant. The Applicant has included information on breeding, site connectivity and the overall importance of each site for Irish populations of the marine mammal in question.
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 has stated that there are no management plans in place for the sites which it included. Conservation objectives are detailed and the status of individual species when relevant.

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)	Briefly Explain Answer:
A description of size, scale and objectives of the proposed plan or project;	Yes	Adequate information has been provided by the applicant to describe the planned geophysical and environmental survey.
A description of the pressures of the proposed plan or project, its likely impacts on the conservation objectives and local site characteristics;	Yes	Adequate information has been provided by the applicant to describe the pressures of the project and its likely impacts on the conservation objectives and local sites characteristics.
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	The applicant has detailed sites which contain marine mammals. SPAs have also been considered and recent foraging distance literature reviewed, but all SPAs/bird species have been screened out due to the high frequency of shipping activity and fishing vessels that pass through the area.
Methodologies, analysis and data sources utilised to demonstrate use of best scientific knowledge;	Yes	Adequate information and recent literature has been used demonstrating that the applicant is using up to date sources in its assessments.
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	The applicant has provided 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.
Details of any appropriate mitigation measures undertaken, or proposed to be undertaken by the applicant to mitigate any significant effects on the environment or on the European site(s) and/or species, and the period within which any such measures shall be carried out by the developer;	Yes	The Applicant has detailed sufficient mitigation measures which will allow for the minimisation of the potential effects of man-made sound sources on the natural ecology of marine mammal species. The Applicant has highlighted that the mitigation measures proposed will be included within the Operational Scope of Work which is to be used by the chosen survey contractor.
An assessment of the scope and scale of residual effects after mitigation (including direct, indirect, cumulative and in combination effects);	Yes	The applicant has provided an assessment of the scope and scale of residual effects after mitigation (including direct, indirect, cumulative and in combination effects)

NIS Content	Does the applicant’s NIS provide sufficient detail to inform an Appropriate Assessment? (Y/N)	Briefly Explain Answer:
<p>A conclusion in relation to whether or not the project would adversely affect the integrity of any European site (either individually or in cumulation with other existing or consented developments)</p>	<p>Yes</p>	<p>The applicant prepared the NIS since it could not be ruled out with scientific certainty that the survey operations would not have a LSE on Natura 2000 sites or Annex IV species.</p> <p>The NIS prepared and submitted by the applicant examined and analysed the potential for LSE to adversely affect (either directly or indirectly) the integrity of Natura 2000 sites, either alone or in-combination with other plans or projects. Mitigation measures were identified to ensure that any effects will be avoided.</p> <p>With the proposed mitigation measures as detailed in Section 5 of this report, it can be concluded that the proposed Barryroe K site survey is not likely to have an adverse effect (either directly or indirectly) on the integrity of any Natura 2000 Site or Annex IV species either alone or in-combination with other plans or projects, and there is no reasonable scientific doubt to this conclusion.</p>

4.2 Stage 2: Appropriate Assessment Determination

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

Table 4.3: Stage 2 Appropriate Assessment Determination Checklist

<p>Does the NIS (and supporting documentation) contain adequate information to complete an AA and to prepare an AA Conclusion Statement?</p>	<p>Yes</p>
<p>Does the NIS conclude that the proposed project or plan is likely to have an adverse residual effect on the integrity of any European sites or species?</p>	<p>No—the project has the potential to impact harbour porpoise, bottlenose dolphin and grey seals, which are qualifying interest species of the Roaringwater Bay and Islands SAC, Lower River Shannon SAC, Saltee Islands SAC, Blasket Islands SAC, West Connacht Coast SAC and Rockabill to Dalkey Island SAC. The applicant concludes that following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts from the proposed site survey</p>

	<p>operations and with the implementation of the mitigation measures proposed, that the proposed Barryroe K site survey is not likely to adversely affect (either directly or indirectly) the integrity of any European site, either alone or in combination with other plans or projects, and there is no reasonable scientific doubt in relation to this conclusion.</p>
<p>Do you agree with the conclusion(s) of applicant’s NIS? (Briefly explain answer)</p>	<p>Yes. The Applicant has provided all additional information that was required from the initial review of the NIS, and has included up to date literature/references. Due to the short duration of the survey, the existing activity in the area and the mitigation measures proposed, the reviewer agrees with the NIS conclusion.</p>

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 alone or in combination with any other plan or project will not have an adverse effect on the environment or on the integrity of any European site in view of its conservation objectives and will not cause any significant disturbance to the Annex IV species described.</p>	<p>This report determines that the proposed plan or project alone or in combination with any other plan or project will not have an adverse effect on the environment or on the integrity of any European site in view of its conservation objectives and will not cause any significant disturbance to the Annex IV species described, subject to the mitigation measures described in Section 5 of this report.</p>

5. MITIGATION AND MANAGEMENT COMMITMENTS

The following mitigation and management commitments, directly applicable to the AA have been made by the applicant in the documentation reviewed, along with additional measures required to address the issues raised in observations following the consultation with prescribed bodies and the general public. Table 5.1 documents the commitments made by the applicant.

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

Discipline	Commitment proposed
General	<p>The applicant must seek approval from the DCCAE to use an alternative equivalent survey vessel or equipment from that described in the AA Screening and NIS report. In this event, the DCCAE would seek confirmation that the survey equipment and methodology on any replacement vessel are equivalent to that described in the AA Screening and NIS reports and that the description of the development used to inform the AA Screening and NIS is still valid.</p> <p>With regard to the environmental sampling equipment, the applicant must update the proposed equipment to be used prior to commencement.</p>
Underwater Noise	<p>Exola and its survey contractor will adhere to the DAHG Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters (DAHG, 2014), which provides mitigation measures for the protection of Annex IV species from geophysical acoustic surveys as well as a number of other offshore operations. Of note is that these measures apply specifically to marine mammals, however, observations shall also be undertaken for marine reptiles and the same procedures applied</p>
	<p>Two qualified Marine Mammal Observers (MMOs) will be appointed to monitor marine mammals and log all data according to the standardised forms provided in the DAHG Guidance and provide an MMO report to the regulatory authorities.</p>
	<p>Acoustic surveying will not commence if marine mammals are detected within a 500 m radius around the acoustic sources (referred to as the Monitored Zone).</p>
	<p>Sound-producing survey activities will only be commenced in daylight hours where effective visual monitoring, as determined by the MMO, can be achieved.</p>
	<p>For sound-producing activities, as water depths across the proposed survey area are less than 200 m, pre-start-up monitoring will be conducted by the MMO at least 30 minutes before any activity using the acoustic sources is due to commence. Sound-producing survey activity using the acoustic sound sources will not commence until at least 30 minutes have elapsed with no marine mammals detected within the Monitored Zone by the MMO. This pre-start monitoring will be followed by the soft-start 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 1µPa at 1 metre. The build-up of acoustic energy output will occur in consistent stages to provide a steady gradual increase in power (over a period of 20 minutes). 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 a period of 20 minutes prior to commencement of the full necessary output.</p>
	<p>Where a soft-start procedure has commenced, there is no requirement to halt or discontinue the procedure at night or in poor weather or visibility conditions or if marine mammals are sighted within the Monitored Zone.</p>

Discipline	Commitment proposed
	<p>Where there is a break in sound output (e.g. in the event of equipment failure, shut-down etc.) from the acoustic sources for more than 30 minutes, all soft-start procedures must be undertaken before activity can recommence.</p> <p>If a break in sound output occurs during the hours of darkness, the survey will be suspended until daylight when effective visual monitoring, as determined by the MMO, can be completed before start-up.</p> <p>Full reporting on MMO operations and mitigation measures undertaken must be provided to the relevant regulatory authorities.</p>
Discharges to the Sea	<p>As per Sea Pollution (Miscellaneous Provisions) Act 2006 Part 3 Para 20 and 21 the operator will provide:</p> <ul style="list-style-type: none"> • A risk assessment re hydrocarbon discharge; and • A plan for the prevention and minimisation of any accidental discharge. <p>Operations such as the "ship to ship" transfer of fuels or other HNS substances which present a hazard to the marine environment are prescribed operations within the Irish EEZ and as such require a permit for operations from the Irish Coast Guard (DTTAS).</p> <p>The Operator should update and advise the IRCG of the commencement and suspension or termination of survey operations offshore via the Marine Rescue Coordination Centre (MRCC) Dublin and a Radio Navigational Warning (RNW) should be promulgated via the same.</p>