

Ms Casey
Mr. Morrissey
Mr. Collins
Rúnaí Aire Stáit

Decision Sought:

That the Minister of State:

- **Grant approval for Exola DAC to undertake a seabed debris clearance, environmental baseline and habitat assessment site survey on the Barryroe Field, within Standard Exploration Licence 1/11 (SEL 1/11)**

Background:

1. The 2015 White Paper “*Ireland’s Transition to a Low Carbon Energy Future 2015-2030*” sets out Government energy policy in respect of Ireland’s transition to a low-carbon, climate resilient and environmentally sustainable economy. It notes that the development of Ireland’s indigenous oil and gas resources has the potential to deliver significant and sustained benefits, particularly in terms of enhanced security of supply, import substitution, fiscal return, national and local economic development and technology learning¹.
2. The White Paper was followed by the development and approval of Ireland’s first National Mitigation Plan (‘NMP’)² and National Adaptation Framework (‘NAF’)³ in 2017 and 2018 respectively, in accordance with Section 5 of the Climate Action and Low Carbon Development Act 2015. The government’s Climate Action Plan was published earlier in 2019 and puts Ireland on a trajectory to meet our 2030 target for carbon emissions.⁴
3. SEL 1/11 is held by Exola DAC (40%) (Operator), APEC Energy Enterprise Limited (50%) and Lansdowne Celtic Sea Limited (10%). Exola DAC is a wholly owned subsidiary of Providence Resources Plc. The licence which includes the Barryroe Field comprises an area of 613.9969

¹ White Paper

<https://www.dccae.gov.ie/documents/Energy%20White%20Paper%20-%20Dec%202015.pdf>

² National Mitigation Plan,

<https://www.dccae.gov.ie/documents/National%20Mitigation%20Plan%202017.pdf>

³ National Adaptation Framework

<https://www.dccae.gov.ie/documents/National%20Adaptation%20Framework.pdf>

⁴ Climate Action Plan

<https://www.dccae.gov.ie/documents/Climate%20Action%20Plan%202019.pdf>

kms² covered by part blocks 48/22, 48/23, 48/24, 48/27, 48/28, 48/29 and 48/30 in the North Celtic Sea. The licence period is from 14 July 2011 to 13 July 2021. An application for a lease undertaking in respect of SEL1/11 has been received and is under consideration by the Department.

Application:

4. An application for consent to undertake a seabed debris clearance, environmental baseline and habitat assessment site survey over the area of the Barryroe field within SEL 1/11, situated in the North Celtic sea Basin approximately 43 kilometres south east of the closest coastline at Ballymacshoneen, Butlerstown North, County Cork was received by the Petroleum Affairs Division (“PAD”) from Exola DAC on 21 February 2019. The proposed survey consists of a seabed and shallow geophysical survey and an environmental baseline and habitat assessment survey to be conducted over three survey areas, encompassing four potential well locations, within two separate survey vessel activity areas at Barryroe, together with a single environmental control point approximately 10 km to the east-south east. The two survey vessel activity areas cover a total area of approximately 99 km² (25 km² and 74 km² respectively) and allow for a 1 km buffer around the survey areas within which the survey vessels may manoeuvre during line turns and during equipment deployment and recovery.

5. The following documents (**Tab A1-A4**) were received as part of the application:
 - Application for approval to Conduct a Seabed Debris Clearance, Environmental Baseline and Habitat Assessment Site Survey;
 - Environmental Impact Assessment Screening Report;
 - Combined Appropriate Assessment Screening Report and Natura Impact Statement;
 - Pre-survey Fisheries Assessment;

Regulatory Context:

6. SEL 1/11 was granted under Section 8(1) of the Petroleum and Other Minerals Development Act 1960 (‘POMDA’). Section 8(2) of the POMDA provides that every Exploration Licence shall be granted upon such terms and conditions as the Minister thinks fit and specifies

therein. Paragraph 4 of SEL 1/11 requires adherence to the Licensing Terms for Offshore Oil and Gas Exploration, Development and Production 2007. Section 53 of the said Licensing Terms provides that applications for activities under a licence shall be in the form described in the Rules and Procedures Manual for Offshore Petroleum Exploration and Appraisal Operations ('Rules and Procedures'). The European Union (Environmental Impact Assessment) (Petroleum Exploration) Regulations 2013 (S.I. No 134/2013), as amended by the European Union (Environmental Impact Assessment) (Petroleum Exploration) (Amendment) Regulations 2019 (S.I. No 124/2019) provides for applications to the Minister for permission to undertake activities under an Exploration Licence.

7. The application has therefore been considered in accordance with the above legislation, terms and rules, and in accordance with the following European and Irish legislation:

Environmental Impact Assessment ("EIA")

- Directive on the assessment of the effects of certain public and private projects on the environment (Directive 2011/92/EU) as amended by Directive 2014/52/EU ('the EIA Directive')
- European Union (Environmental Impact Assessment) (Petroleum Exploration) Regulations 2013 (S.I. No 134/2013), as amended by the European Union (Environmental Impact Assessment) (Petroleum Exploration) (Amendment) Regulations 2019 (S.I. No 124/2019).

Appropriate Assessment ("AA")

- Directive 2009/147/EC on the conservation of wild birds (commonly referred to as the Birds Directive);
- 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 as amended;

Ministerial considerations in assessing the application:

8. The EIA Screening Determination (**Tab B1-B2**) of 23 July 2019, made by the Environment Advisory Unit of the Department ('EAU'), which has concluded that the application to undertake a seabed debris clearance, environmental baseline and habitat assessment site survey over the Barryroe field, within SEL 1/11, can be completed without significant effects on the environment, subject to attachment of specified conditions.

9. The AA Determination (**Tab C1-C2**) of 22 July 2019, made by the EAU, which has concluded that the seabed debris clearance, environmental baseline and habitat assessment site survey within over the Barryroe field, within SEL 1/11, can be completed without adverse effects on the integrity of Natura 2000 sites with respect to Articles 6(3) and 12 of the Habitats Directive (specifically Regulation 42 of the European Communities (Bird and Habitats) Regulations 2011), subject to attachment of specified conditions.
10. The policy objectives in respect of offshore oil and gas exploration, as stated in the Government's White Paper "*Ireland's Transition to a Low Carbon Economy Future 2015-2030*⁵" which commits Ireland to achieve a transition to a low-carbon, climate resilient and environmentally sustainable economy, underpinned by a secure and competitive energy supply in the period to 2050. The White Paper states that:
- "Even with the demand reduction, energy efficiency efforts and a greater use of low carbon fuels, the IEA forecasts that oil and natural gas will remain significant elements of the global energy mix out to 2035, especially in transport. In this context the development of Ireland's indigenous oil and gas resources has the potential to deliver significant and sustained benefits, particularly in terms of enhanced security of supply, import substitution, fiscal return, national and local economic development and technology learning".*
- The government's Climate Action Plan was published earlier in 2019 and puts Ireland on a trajectory to meet our 2030 target for carbon emissions. Until then fossil fuels may be required to secure and energy supply when renewables are unavailable.
11. A technical assessment of the application was undertaken by Petroleum Affairs Division Technical Section, who indicated that the technical elements of the proposed activities are acceptable and that the proposals by Exola DAC meets the Department's requirements, subject to specified conditions(**Tab D**).

Environment Assessment Review

Considerations of the Environment Advisory Unit ('EAU') regarding environmental impacts of the proposed activity under the EIA and Birds and Habitats Directives:

⁵ White Paper "Ireland's Transition to a Low Carbon Economy Future 2015-2030
<https://www.dccae.gov.ie/documents/Energy%20White%20Paper%20-%20Dec%202015.pdf>

12. Article 9a of the EIA Directive provides as follows:

“Member States shall ensure that the competent authority or authorities perform the duties arising from this Directive in an objective manner and do not find themselves in a situation giving rise to a conflict of interest.

Where the competent authority is also the developer, Member States shall at least implement, within their organisation of administrative competences, an appropriate separation between conflicting functions when performing the duties arising from this Directive.”

13. The European Union (Environmental Impact Assessment) (Petroleum Exploration) (Amendment) Regulations 2019 (S.I. No 124/2019) amended the European Union (Environmental Impact Assessment) (Petroleum Exploration) Regulations 2013 (S.I. No 134/2013), so that environmental assessment functions have been delegated to the Environment Advisory Unit of the Department.

Public consultation:

14. Although public participation is not required during the screening process under either the EIA Directive or Birds and Habitats Directives, the Department, mindful of the requirements of the Aarhus Convention and the public participation requirements in Article 6 of the EIA Directive, conducted a thirty day public consultation period, on receipt of the application.

15. The application and associated environmental documentation were published on the Department’s website on the homepage (under ‘Latest Consultations’) on 27 February 2019 and one submission was received by the final date for submissions on 1 April 2019. This submission from Harrington & Co. Solicitors on behalf of An Taisce was then forwarded to the EAU, and was considered by independent expert advisor to the EAU, Ramboll Environment and Health UK Limited (Ramboll) and by the EAU in their screening determinations (**Tab E**).

16. Two further public consultation processes were undertaken at the request of the EAU;

➤ Further information was provided by Exola DAC on 8 May 2019 as required by the EAU to enable them to make an EIA Screening determination. A period of public consultation on this further information was facilitated from 9 May 2019 until 23 May 2019. No submissions were received.

➤ Following an AA Screening Determination (**Tab F1-F2**) which was published on the Department’s website on 1 May 2019 and in the Irish Independent newspaper (**Tab**

G), further information was received on 16 May 2019 and a period of public consultation on this document was facilitated to 6 June 2019 to allow submissions be received on the Natura Impact Statement. Due to a technical issue which arose which may or may not have caused a difficulty for the public in accessing the documents on the Department's website, the consultation period was extended to 13 June 2019. No further submissions were received during this period. The AA determination was published on the Department's website on 22 July 2019 and in the Irish Independent newspaper on 25 July 2019 (**Tab H**).

17. The EIA Screening Determination of the EAU of 23 July 2019, concluded that the request by Exola DAC to undertake a seabed debris clearance, environmental baseline and habitat assessment site survey over the Barryroe field, within SEL 1/11, is not likely to have a significant effect on the environment and, consequently, an Environmental Impact Assessment was not required in respect of the application. The decision was contingent on the mitigation measures proposed by the Applicant being included as conditions in any consent that may be granted by the Minister in respect of the Application.

18. The AA Determination of the EAU of 22 July 2019, made under the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011), as amended, concluded that the application by Exola DAC to undertake a seabed debris clearance, environmental baseline and habitat assessment site survey over the Barryroe field, within SEL 1/11 would not adversely affect the integrity of a European site (whether individually or in combination with other plans or projects), subject to the mitigation measures proposed by the applicant.

Technical Review in accordance with Rules and Procedures:

19. PAD Technical has considered all the technical elements of the site survey application in order to establish the validity of the survey, and have concluded that this survey will provide an improved image of the seabed and shallow subsurface over the survey area. The contractor, Gardline Ltd is a reputable contractor and will utilise industry standard equipment and accurate positioning for this survey.

20. The acoustic source for this type of survey is significantly less than the energy source associated with conventional 2D and 3D seismic surveys and the duration of the survey is short. No seismic cable is required.

Consultation:

Consultation with state bodies:

21. The following bodies have been notified of the proposed seabed debris clearance, environmental baseline and habitat assessment site survey within the Barryroe licence area activities by Exola DAC in accordance with the *Rules and Procedures*;

- Petroleum Affairs Division – Technical Section, Department of Communications, Climate Action and Environment
- Irish Coast Guard, Department of Transport, Tourism and Sport
- National Maritime Operations Centre (NMOC) of the Irish Coast Guard, Department of Transport, Tourism and Sport
- Marine Radio Affairs Unit of the Maritime Safety Directorate, Department of Transport, Tourism and Sport
- Sea Fisheries Protection Authority
- Sea Fisheries Policy Division, Department of Agriculture, Food and the Marine
- Marine Survey Office (MSO), Department of Transport, Tourism and Sport
- Maritime Safety Policy Division, Department of Transport, Tourism and Sport
- Maritime Services Division, Department of Transport, Tourism and Sport
- Marine Institute
- Department of Defence

22. The following bodies provided observations to the Petroleum Affairs Division (**Tab I1-I3**);

Department of Culture, Heritage and the Gaeltacht:

Outlined below are heritage-related observations/recommendations of the Department under the stated heading(s).

Archaeology

Underwater Archaeology

The Department notes the intention to carry out an Underwater Archaeological Impact Assessment (UAIA) and this is to be welcomed. As identified in the previous response of

August 2018, the submitted EIS Scoping Report does not include any section on the Underwater Cultural Heritage (UCH).

The Department has no objections to this application once the following is included as a CONDITION of any permit issued.

- The services of a suitably qualified and suitably experienced maritime archaeologist, to include experience in the interpretation of marine geophysical data, shall be engaged in advance of any such survey to undertake the UAIA so as to inform on the cultural potential of the area and advise on the known or potential location of any shipwrecks or other UCH within the specified survey area. This is particularly relevant where grab samples, etc. are being carried out.
- The Underwater Archaeological Impact Assessment (UAIA) that comprised detailed desktop study and archaeo-geophysical interpretation of all geophysical survey results as well as assessment of the results of all sampling.
- The UAIA shall be licensed by this Department and a detailed method statement shall accompany the licence application by the archaeologist.

Ideally the archaeologist would be on board the survey vessel to view the geophysical data in real time and identify known or potential UCH as it is encountered. If this is not possible the results of all marine geophysical survey undertaken shall be made available to the archaeologist for assessment and interpretation, and to inform on any potential submerged cultural heritage or submerged palaeo-landscape evidence.

The UAIA report shall be forwarded to the Underwater Archaeology Unit of this Department for consideration and further comment in advance of any site investigation/sampling works taking place.

The Underwater Archaeology Unit is happy to liaise with the applicant's archaeologist, once engaged, to assist with discussions on archaeological assessment already carried out and any new areas requiring assessment for the current application.

Nature Conservation

Marine Science and Biodiversity

The Department has reviewed the documentation submitted and is satisfied that, in relation to marine mammals, effective mitigation of any significant impacts on the SAC network or on Annex IV species can be achieved by adherence to the Department's Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters (DAHG, 2014).

While this submission was received by PAD, it was considered that as it was pertinent to the EAU's deliberations regarding environmental matters it was forwarded to the EAU for consideration on 4 April 2019 and is reflected in their considerations and conditions of EAU's EIA Screening Determination.

Maritime Safety Policy Division, Department of Transport, Tourism and Sport

“In this regard, I wish to inform you 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”.

Compliance with the MARPOL Convention is a requirement of conditions applied by the EAU regarding Atmospheric Emissions and Discharges to Sea in Table 1: Mitigation measures.

Maritime Services Division, Department of Transport, Tourism and Sport

“Any vessel operating to and from an Irish port in connection with this activity must have the appropriate Irish certification for domestic voyages. Vessel operators should contact the MSO in good time beforehand in case of need to arrange surveys”.

Maritime Services Division requirements have been reflected in the PAD Technical conditions.

Reasoned Recommendation:

23. A comprehensive due diligence exercise has been carried out by the Department on the application including environmental and technical assessments and the carrying out of public consultation, as described above. Taking account of all such considerations, it is recommended that the Minister of State grant the consent sought, subject to the applicant’s adherence to eight conditions for the following reasons:
24. As set out in detail in the EIA Screening Determination of 23 July 2019, the proposed activity to undertake a seabed debris clearance, environmental baseline and habitat assessment site survey over the Barryroe field, within SEL 1/11, can be completed without significant effects on the environment, subject to attachment of specified conditions.
25. As set out in detail in the AA Determination of 22 July 2019, the application to undertake a seabed debris clearance, environmental baseline and habitat assessment site survey over

the Barryroe field, within SEL 1/11, would not adversely affect the integrity of a European site (whether individually or in combination with other plans or projects), subject to attachment of specified conditions.

26. The technical elements of the proposals are acceptable and meet the Department's requirements. It is considered that information derived from such activity will provide an improved image of the seabed and shallow subsurface over the survey area.

27. The development of Ireland's indigenous oil and gas resources has the potential to deliver significant and sustained benefits, particularly in terms of enhanced security of supply, import substitution, fiscal return, national and local economic development and technology learning. The government's Climate Action Plan puts Ireland on the path towards a meeting our 2030 target for carbon emissions. Until then hydrocarbons will be required to secure Ireland's energy supply.

Approval Sought

28. The Minister of State confirms that:

- a) Having considered this submission, including the TABs attached to it;
- b) Having considered the EIA Screening/AA Determinations made by the EAU with contingent conditions;
- c) Having considered the technical review by the Petroleum Affairs Division Technical Section;
- d) Having regard to any observations made by State Body consultees;

That the Minister of State:

- **Grant Approval for Exola DAC to undertake the seabed debris clearance, environmental baseline and habitat assessment site survey over the area of the Barryroe field, within SEL 1/11, situated in the North Celtic sea Basin approximately 43 kilometres south east of the closest coastline at Ballymacshoneen, Butlerstown North, County Cork;**

In granting such consent it is recommended that the Minister of State require it to be contingent on adherence to the following conditions:

1. Compliance with the conditions outlined in the attached Table 1: Mitigation measures required to be specified in any Consent that may be granted, following the EAU's EIA Screening Determination.
2. Compliance with the conditions outlined in the attached Table 2: Mitigation and Management Measures required to be specified in any Consent that may be granted, following the EAU's AA Determination.
3. All operations shall be conducted in compliance with the provisions of the Rules & Procedures for Manual Offshore Petroleum Exploration Operations (RPM) and shall be carried out between 1st August and 30th November 2019 or between 1st February and 30th November 2020.
4. In accordance with Section 2.2.4 of the RPM a Fisheries Liaison Officer (FLO) and Marine Mammal Observer (MMO) must be on board the vessel for the duration of the survey.
5. Gardline Ltd is required to arrange for a radio navigational warning to be broadcast and ensure that daily position reports are sent to the Irish Coast Guard, MRCC Dublin along with a notification of number of persons on board. The Irish Coast Guard, MRCC Dublin, the Marine Survey Office of the Department of Transport, Tourism and Sport and the Department of Communications, Climate Action & Environment (DCCAIE) must be notified on the start and completion of operations.
6. The Department is to be informed on the commencement and completion of the survey. Daily progress reports should be sent to DCCAIE via secure website or by posting to a designated secure website or by emailing (addresses to be advised separately). Gardline Ltd is required to make the daily progress reports available to DCCAIE before noon each day for the duration of the survey. The final progress report should be sent to the DCCAIE.
7. The Department is to be provided with tabulated data on impulsive noise events to be added to the Department of Housing, Planning and Local Government (DHPLG) Impulsive Sound Register. Data to include;
 - Source properties (Hz; SPL, dB re 1 μ Pa @1m; SEL, dB re 1 μ Pa²s @1m);
 - Cumulative hours of active source;
 - Daily/weekly acquisition details (to include line number and date of acquisition);
 - Daily acquisition maps (to include line numbers).
8. Consented activities are to be carried out within the working areas as delineated by a blue line in Figure 1 and as set out in the application documents and maps submitted by Exola DAC on February 21st, 2019. This is with the exception of the control point marked K.

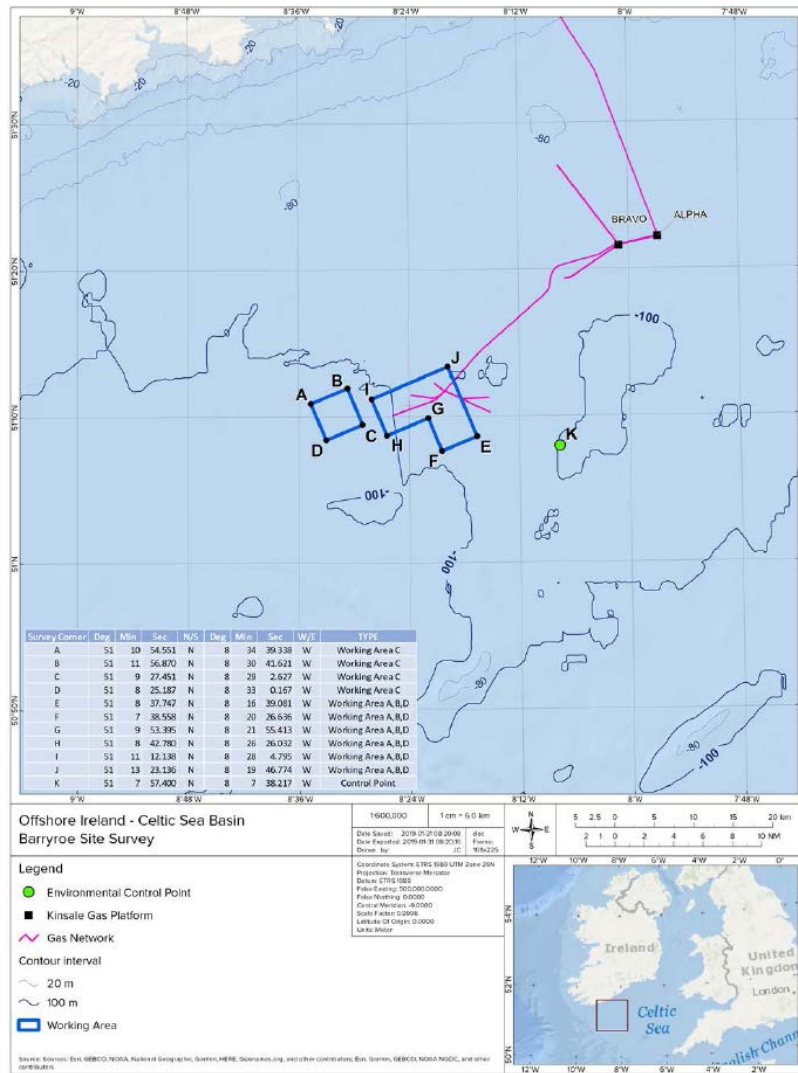


Figure 1: North Celtic Sea Basin Site Survey Location Map

Aoife O'Connor

Petroleum Affairs Division

1 August 2019

Table 1: Mitigation measures required to be specified in any Consent that may be granted

Discipline	Mitigation Measure Proposed	Industry Standard	Project Specific Condition Recommended
Physical Presence	<p>Risk of collision with vessels reduced through the use of positioning and automatic identification systems, notice to mariners also. Contractors with good HSE performance will be used.</p> <p>Benthic sample stations will be investigated prior to sampling using high-resolution video or stills photography.</p>		<p>X</p> <p>X</p>
Interactions with Other Sea Users	<p>For interactions with fishermen, the project proposes the use of a Fisheries Liaison Officer (FLO), submitting a notification to “regular runners” and Notice to Mariners.</p> <p>In the Fishery Assessment it is recommended that a French speaking person ashore with a working knowledge of both the fishing industry and offshore operations should be available if liaison with foreign vessel owners is required. It would be envisioned that this person would work in conjunction with the FLO</p>		<p>X</p> <p>X</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). 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 where possible.</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>X</p> <p>X</p> <p>X</p> <p>X</p>

Discipline	Mitigation Measure Proposed	Industry Standard	Project Specific Condition Recommended
Underwater Noise	<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> <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>		<p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p>
Atmospheric Emissions	<p>Compliance with the Merchant Shipping (Prevention of Air Pollution from Ship) (Amendment) Regulations 2014 and the MAPROL Convention 73/78 Appendix VI on atmospheric emissions.</p> <p>Operations will be planned to minimise duration, and vessel movements, and ensure efficient operations.</p>	<p>X</p> <p>X</p>	
Discharges to the Sea	<p>Solid waste stored on-board and handled 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.</p> <p>Adherence to IMO and Irish Regulations and guidance on ballast water management.</p> <p>All discharges will be treated and discharged according to the MARPOL Convention and any additional IMO requirements.</p> <p>Survey vessel will have a SOPEP in place in accordance with Annex I of MARPOL.</p> <p>Spill kits on board the vessel deck to clean-up spills of utilities hydrocarbons or chemicals before they can enter the sea.</p> <p>Refuelling of the survey vessel to be undertaken in port, thus reducing potential for collision or spillage at sea</p>	<p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p>	

Discipline	Mitigation Measure Proposed	Industry Standard	Project Specific Condition Recommended
Archaeology	<p>Using geophysical data to ensure no marine archaeology sites are disturbed.</p> <p>Investigation of benthic grab sample sites using video/photos The services of a suitably qualified and suitably experienced maritime archaeologist, to include experience in the interpretation of marine geophysical data, shall be engaged in advance of any such survey to undertake the UAIA so as to inform on the cultural potential of the area and advise on the known or potential location of any shipwrecks or other UCH within the specified survey area. This is particularly relevant where grab samples, etc. are being carried out.</p> <p>The Underwater Archaeological Impact Assessment (UAIA) should comprise detailed desktop study and archaeo-geophysical interpretation of all geophysical survey results as well as assessment of the results of all sampling.</p> <p>The UAIA shall be licensed by the Department of Culture, Heritage and the Gaeltacht and a detailed method statement shall accompany the licence application by the archaeologist.</p> <p>Ideally the archaeologist would be on board the survey vessel to view the geophysical data in real time and identify known or potential UCH as it is encountered. If this is not possible the results of all marine geophysical survey undertaken shall be made available to the archaeologist for assessment and interpretation, and to inform on any potential submerged cultural heritage or submerged palaeo-landscape evidence.</p> <p>The UAIA report shall be forwarded to the Underwater Archaeology Unit of the Department of Culture, Heritage and the Gaeltacht for consideration and further comment in advance of any site investigation/sampling works taking place.</p>		<p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p>

Discipline	Mitigation Measure Proposed	Industry Standard	Project Specific Condition Recommended
General	<p>Should the applicant change the survey vessel or equipment they should be required to seek approval from DCCAE and that as part of that process DCCAE should expect to see evidence that the vessel, equipment and methodology proposed are not materially different from the assumptions used to inform the applicant's assessment of potential effects.</p> <p>Appropriate steps will be taken regarding the use and handling of substances that could be harmful to human health or the environment, in accordance with Regulations and best practice.</p> <p>Solid waste will be stored appropriately on the vessel and returned to shore for handling in accordance with the Sea Pollution (Prevention of Pollution by Garbage from Ships) Regulations 2012.</p> <p>Garbage Management Plan will be in place in accordance with MARPOL Annex V.</p>	<p>X</p> <p>X</p> <p>X</p>	X

Table 2: Mitigation and Management Measures

Commitment proposed	Additional notes
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).	None
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	None
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)	None
Sound producing survey activities will only be commenced in daylight hours where effective visual monitoring, as determined by the MMO, can be achieved	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.
For sound producing activities, as water depths across the	None

<p>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 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 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 at 1 metre. The build-up of acoustic energy output will occur in consistent stages to provide a steady and gradual increase in power (over a period of 20 minutes). Where the power of the acoustic noise source 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>	None
<p>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</p>	None
<p>Where there is a break in sound output (i.e. 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 the activity can recommence</p>	None
<p>Full reporting on MMO operations and mitigation measures must be provided to the Relevant Authorities in accordance with the DAHG Guidance</p>	None
<p>Should the applicant change the survey vessel or equipment they should be required to seek approval from the DCCAE and that as part of that process DCCAE should expect to see evidence that the vessel, equipment and methodology proposed are not materially different from the assumptions used to inform the applicant's assessment of potential effects.</p>	None
<p>The services of a suitably qualified and suitably experienced maritime archaeologist, to include experience in the interpretation of marine geophysical data, shall be engaged in advance of any such survey to undertake the Underwater Archaeological Impact Assessment (UAIA) so as to inform on the cultural potential of the area and advise on the known or potential location of any shipwrecks or other underwater cultural heritage (UCH) within the specified survey area. This is particularly relevant where grab samples, etc. are being</p>	None

carried out.	
The (UAIA) should comprise detailed desktop study and archaeo-geophysical interpretation of all geophysical survey results as well as assessment of the results of all sampling.	None
The UAIA shall be licensed by DAHG and a detailed method statement shall accompany the licence application by the archaeologist.	None
Ideally the archaeologist would be on board the survey vessel to view the geophysical data in real time and identify known or potential UCH as it is encountered. If this is not possible the results of all marine geophysical survey undertaken shall be made available to the archaeologist for assessment and interpretation, and to inform on any potential submerged cultural heritage or submerged palaeo-landscape evidence.	None
The UAIA report shall be forwarded to the Underwater Archaeology Unit of DAHG for consideration and further comment in advance of any site investigation/sampling works taking place.	None
The Underwater Archaeology Unit is happy to liaise with the applicant's archaeologist, once engaged, to assist with discussions on archaeological assessment already carried out and any new areas requiring assessment for the current application.	None