ENVIRONMENTAL IMPACT ASSESSMENT (EIA) SCREENING DETERMINATION

Project Proposal

On 5th June, 2019 Europa Oil & Gas (Ireland East) Limited (a wholly owned subsidiary of Europa Oil & Gas (Holdings) PLC) (Europa) submitted an application to the Department of Communications, Climate Action and Environment (DCCAE) seeking approval to carry out a geophysical and environmental site survey under frontier exploration licence (FEL) 1/17. The name of the proposed survey is the “Edgeworth Survey” and will focus on the FEL 1/17 ‘Edgeworth’ prospect, located in licensing blocks 54/7 and 54/8, along the eastern flanks of the Porcupine Basin, offshore Ireland.

It is proposed that survey operations will be undertaken by a single survey team between June and late November 2019. Excluding weather and technical downtime, survey operations are expected to take a total of 14 survey working days. If the survey has not commenced or concluded in 2019, operations will be undertaken sometime between early February 2020 and late November 2020.

The aim of the geophysical and environmental baseline survey is to:

- Accurately determine water depths and seabed/subsurface geology at the site.
- Identify any seabed obstructions and confirm the location of any existing infrastructure (such as pipelines, wellheads).
- Assist in the identification of all geo-hazards and geological conditions that may be of significance to future drilling activities. This may include shallow gas, channelling, faults and other geological features that may be of significance.
- Provide information on the cultural potential of the survey area, including the location of any shipwrecks or other underwater cultural heritage features;
- Identify and delineate Annex I habitats (as defined in the EC Habitats Directive 92/43/EC) or other sensitive habitats and identify any areas of environmental interest.
- Establish environmental baseline to establish a benchmark for ongoing environmental monitoring as per OSPAR guidelines.
- Acquire sediment samples for determination of physico-chemical baseline conditions

Assessment Process

The Environment Advisory Unit (EAU), a functionally separate and independent unit of the Department (DCCAE) is responsible for carrying out environmental screening and any environmental

\[\text{Drilling activities do not form part of the survey operations proposed in the Europa application.}\]
assessments determined as being required following screening, in accordance with the requirements set out in Directive 2011/92/EU, as amended by Directive 2014/52/EU (EIA Directive) and Directive 92/43/EEC, as amended, (Habitats Directive) in respect of applications made to the Minister for permission to undertake “activities” under an exploration licence or petroleum prospecting licence.

EIA – In Ireland, the European Union (Environmental Impact Assessment) (Petroleum Exploration) Regulations 2013 (S.I. 134 of 2013), as amended by the European Union (Environmental Impact Assessment) (Petroleum Exploration) (Amendment) Regulations 2019 (S.I. 124 of 2019) give effect to the EIA Directive in the context of applications to the Minister for permission to conduct “activities” under an exploration licence or a petroleum prospecting licence, and provide (at Regulation 3(1B)) that the EAU shall carry out an EIA Screening Assessment and make a Determination as to whether the activities the subject of an application would, or would not, be likely to have significant effects on the environment by virtue, inter alia, of their nature size and location. Where it has been determined, following screening, that the activities the subject of an application are likely to have significant effects on the environment, an environmental impact assessment will be required.

Habitats – The European Communities (Birds and Natural Habitats) Regulations 2011 – 15, (S.I. 477 of 2011, as amended) (Birds and Natural Habitats Regulations) give effect to the Habitats Directive as a matter of Irish law and require, inter alia, that a public authority carry out screening for Appropriate Assessment of a plan or project for which an application for consent is received. Where a public authority determines that an Appropriate Assessment is required, the Birds and Natural Habitats Regulations require that the assessment carried out by a public authority include a determination pursuant to Article 6(3) of the Habitats Directive as to whether or not the plan or project would adversely affect the integrity of a European site. The EAU is responsible for carrying out Stage 1 AA Screening Assessments and any required Stage 2 Appropriate Assessment in accordance with the Birds and Natural Habitats Regulations, in respect of applications to the Minister for permission to undertake “activities” under an exploration licence or petroleum prospecting licence.

On receipt of an application, the Petroleum Affairs Division in DCCAE (PAD) places the application on the DCCAE website for consultation and refers the application, and any associated responses to the consultation, to the EAU for the purposes of carrying out its assessments.

On the completion of all environmental assessments by the EAU and after incorporating any suggested conditions which may be recommended by the EAU, the application will then be evaluated by the Petroleum Affairs Division in the Department who will make a recommendation to the Minister of State regarding whether consent should be given for the ‘activities’ applied for.

Independent Expert Advisors

DCCAE has further engaged Ramboll UK Limited (Ramboll) to provide advice to the EAU with regard to the carrying out of statutory environmental assessments of applications for permission to carry out “activities” under an exploration or petroleum prospecting licence.

Ramboll conducted an independent assessment of the information provided by the Applicant by reference to the relevant selection criteria set out in Annex III of the EIA Directive and their Report entitled “Statutory Environmental Assessment EIA Screening Determination for Europa Edgeworth” (Ramboll Report) is shown at Appendix 1.
Legislative Background

The EIA Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU) requires that projects that are likely to have significant effects on the environment by virtue, *inter alia*, of their nature, size or location are made subject to an environmental impact assessment.

Under Article 4 of the EIA Directive, projects listed under Annex I are automatically subject to an environmental impact assessment and for projects listed in Annex II, Member States shall determine whether the project is to be subject to EIA and can make the determination through either one or both of: (a) case by case examination or (b) thresholds set by the Member State.

Article 4(4) of the EIA Directive requires in respect of projects listed in Annex II that the developer provide information on the characteristics of the project and its likely significant effects on the environment. The list of information to be provided is set out at Annex IIA. The developer may also provide a description of any features of the project and/or measures designed to avoid or prevent what might otherwise have been significant adverse effects on the environment.

The EIA Directive requires that when carrying out an EIA Screening Assessment, the relevant selection criteria as set out in Annex III shall be taken into account.

Article 4(6) of the EIA Directive requires that an EIA Screening Decision must be made as soon as possible and within a period not exceeding 90 days from the date on which the developer has submitted all the information required.

In Ireland, 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. 124 of 2019), (*EIA Petroleum Exploration Regulations*) give effect to the EIA Directive in the context of applications to the Minister for permission to conduct “activities” under an exploration licence or a petroleum prospecting licence.

“Activities” are defined in Regulation 2 of the EIA Petroleum Exploration Regulations as meaning:

(a) searching for petroleum (within the meaning of section 8(7) of the Petroleum Act 1960) under an exploration licence, or
(b) doing anything referred to in section 9(5) of the Petroleum Act 1960 under a petroleum prospecting licence,

and includes deep drillings.

Section 8(7) of the 1960 Act provides that “searching for petroleum” means:

‘...the doing by the licensee under an exploration licence of all such things as are in his opinion necessary or desirable for the purpose of ascertaining the character, extent or value of the petroleum in the area to which the licence extends and, in particular and without prejudice to the generality of the foregoing power, includes exploring for petroleum by using geological, geophysical, geochemical and topographic examination, making borings, sinking pits, removing water from old workings and taking and removing reasonable quantities of petroleum and other minerals for analysis, test, trial or experiment.’

Section 9(5) of the 1960 Act provides as follows:
‘Every petroleum prospecting licence shall be expressed and operate to authorise the
licensee, during the currency of such period as is specified in the licence, to enter on the land
specified in the licence and there do all such things as the licensee considers necessary or
desirable for the purpose of ascertaining the character, extent or value of the petroleum
under such land and, in particular and without prejudice to the generality of the foregoing
power, for the purpose aforesaid, to make geological, geophysical, geochemical and
topographic examinations and to make borings, sink pits, remove water from old workings
and take and remove reasonable quantities of petroleum and other minerals for the purpose
of analysis, test, trial or experiment.’

Applications for geophysical examinations (including site surveys) by holders of exploration or
petroleum prospecting licences come within the above definitions and are therefore subject to the
requirements of the EIA Petroleum Exploration Regulations in relation to EIA Screening.

Regulation 3(1B) of the EIA Petroleum Exploration Regulations provides, in this regard, that where
the holder of an exploration licence or petroleum prospecting licence makes an application to the
Minister under Regulation 3(1) for permission to undertake activities under the licence, the
Environment Advisory Unit of the Department (EAU): “shall make a determination, having taken
account of the matters specified in paragraph (2A), as to whether the activities the subject of the
application would, or would not, be likely to have significant effects on the environment by virtue,
inter alia, of their nature, size and location”.

Regulation 3(2A) refers to: (a) the criteria specified in Annex III of the EIA Directive and (b) where
relevant, the results of preliminary verifications or assessments of the effects on the environment
carried out pursuant to European Union legislation (other than the EIA Directive).

Regulation 3(2B) provides that where a determination is made that the proposed activities would be
likely to have significant effects on the environment, the EAU shall specify, with reference to the
relevant criteria listed in Annex III, the main reasons for the determination.

Regulation 3(2C) provides that where a determination is made that the proposed activities would
not be likely to have significant effects on the environment, the EAU shall specify:-

(a) with reference to the relevant criteria listed in Annex III, the main reasons for that
determination,
(b) any features (proposed by the applicant) of the proposed activities which would avoid or
prevent what would otherwise be significant adverse effects on the environment, and
(c) any measures proposed by the applicant to avoid or prevent what would otherwise be
significant adverse effects on the environment.

Regulation 3(2) provides that, where the EAU makes a determination that the activities would be
likely to have significant effects on the environment: “the Unit shall require the applicant to submit
an environmental impact statement in respect of the activities the subject of the application.”

Notified Bodies

Notification of the Edgeworth Survey application was issued to the following organisations:

• Development Applications Unit of the Department of Culture, Heritage and the Gaeltacht;
• Irish Maritime Administration, Department of Transport, Tourism and Sport;
Three observations were received of which two responded with substantive comments as shown in Section 2.3.1 of the Ramboll Report, referenced above and included at Appendix 1.

Public Consultation and Process

The following documents were submitted with the Europa Edgeworth Survey application:

(i) Europa Edgeworth Site Survey – Cover letter;
(ii) Europa Edgeworth Prospect Site Survey – Screening for Environmental Impact Assessment and Environmental Risk Assessment Report, prepared by RPS on behalf of Europa;
(iii) Europa Edgeworth Prospect Site Survey – Screening for Appropriate Assessment and Natura Impact Statement Report, prepared by RPS on behalf of Europa;
(iv) Europa Edgeworth Prospect Site Survey – Survey Technical Specifications Report, prepared by RPS on behalf of Europa;
(v) Europa Edgeworth Prospect Site Survey - Pre-Survey Fishery Assessment, prepared by RPS on behalf of Europa.

On 6th June 2019, the Europa ‘Edgeworth Survey’ application documents were posted on the DCCAE website and the public invited to make submissions thereon during a 30 day consultation period ending on the 8th July 2019. The following responses were received and the points raised have been considered as part of the EIA screening assessment process.

- Submission received from IWDG, dated 12th June 2019;
- Submission received from private individual, dated 14th June 2019;
- Submission received from Gas Networks Ireland (GNI) dated 8th July 2019;
- Submission received from Not Here Not Anywhere, Futureproof Clare, Love Leitrim, Friends of the Earth Ireland and Safety before LNG, dated 8th July 2019; and
- Submission from Gluaischt, received by email dated 8th July 2019.

Having reviewed the Europa ‘Edgeworth’ application and accompanying documents and the responses received to the public consultation, Ramboll recommended that further information be obtained from Europa in relation to their application on the basis that insufficient information had been provided with the application to enable an EIA Screening Assessment and Determination be made in respect of the proposed geophysical and environmental baseline site survey, having regard to Article 4(4) / Annex IIA of the EIA Directive. Adopting that recommendation, additional information was sought from the applicant on 30th August 2019. The Department website was updated to reflect the position and the bodies who submitted observations following the initial consultation were notified of the decision to request further information.
The Applicant submitted the following additional information on 03 October 2019:

- Europa Oil & Gas (Edgeworth) – Response to Request for Further Information, prepared by RPS on behalf of Europa.

Following a preliminary review by Ramboll as to the adequacy of the information provided, the supplemental information received from the applicant was posted on the Department website on 15 October 2019, with submissions invited to be made thereon until 30 October 2019. The following two responses were received and the points raised have been considered as part of the EIA screening assessment process:

- Submission received from private individual, dated 29 October 2019;

- Submission received from Not Here Not Anywhere, Futureproof Clare, Love Leitrim, Friends of the Earth Ireland, dated 30 October 2019.

The consultation responses received (including the project specific observations) are shown in Paragraphs 2.3.2 – 2.3.4 of the Ramboll Report (at Appendix 1), as part of the external review of the applicant’s Screening for Environmental Impact Assessment and Environmental Risk Assessment Report and Response to Request for Further Information (prepared by RPS on behalf of Europa).

**EIA Screening Assessment and Determination**

Further to Regulation 3(1A) of the EIA Petroleum Exploration Regulations, the EIA Screening Assessment of the Europa Edgeworth Survey application must be carried out based on information provided by the applicant on the characteristics of the proposed activity and its likely effect on the environment, as specified in Annex IIA of the EIA Directive, and any description provided by the applicant of the features of the proposed activities and the measures envisaged to avoid or prevent what might otherwise have been significant adverse effects on the environment.

In carrying out the EIA Screening assessment of the proposed Edgeworth Survey, I have carefully considered the following documents:-

- Documents provided by the Applicant –
  
  (i) Europa Edgeworth Site Survey – Cover letter;
  
  (ii) Europa Edgeworth Prospect Site Survey – Screening for Environmental Impact Assessment and Environmental Risk Assessment Report, prepared by RPS on behalf of Europa;
  
  (iii) Europa Edgeworth Prospect Site Survey – Survey Technical Specifications Report, prepared by RPS on behalf of Europa;
  
  (iv) Europa Edgeworth Prospect Site Survey - Pre-Survey Fishery Assessment, prepared by RPS on behalf of Europa;
  
  (v) Europa Edgeworth – Response to Request for Further Information, prepared by RPS on behalf of Europa;

- Ramboll Report entitled “Statutory Environmental Assessment EIA Screening Determination for Europa Edgeworth” (at Appendix 1 to this Determination) prepared following Ramboll external review of the EIA Screening and ERA Report and Response to Requests for Further Information Report , prepared by RPS on behalf of Europa;
• Submissions received during the public consultation processes; and

• Observations received from Notified Bodies.

In accordance with Regulation 3(1B) and (2A) of the EIA Petroleum Exploration Regulations, in carrying out an EIA Screening Assessment of the application to determine whether the activities the subject of the application would or would not be likely to have significant effects on the environment, it is necessary to have regard to, inter alia, the relevant selection criteria as outlined in Annex III of the EIA Directive. The EIA screening assessment of the proposed Edgeworth Site Survey carried out by Ramboll considered the different project elements by reference to the Annex III criteria. In this context the following elements were considered:

• Characteristics of the Project, with particular regard to: size and design of the development, cumulation with other existing or approved developments, use of natural resources (particularly land, soil, water and biodiversity), production of waste, pollution and nuisances, risk of major accidents and/or disasters relevant to the project including climate change, risks to human health.

• Location of the project, with particular regard to: existing and approved land use, relative abundance, availability and regenerative capacity of natural resources in the area, absorption capacity of wetlands, riparian areas and river mouths, absorption capacity of the natural environment (paying particular attention to coastal zones and marine areas, nature reserves and parks, areas classified or protected under national legislation, areas where there has been a failure to meet environmental quality standards or in which it is considered there is such a failure, landscapes and sites of historical, cultural or archaeological significance).

• Types and characteristics of the potential impact (as set out in Annex III of the EIA Directive) with regard to the impact on the factors specified in Article 3(1) of the EIA Directive, taking into account: the magnitude and spatial extent of the impact, the nature of the impact, the transboundary nature of the impact, the intensity and complexity of the impact, the probability of the impact, the expected onset, duration, frequency and reversibility of the impact, the cumulation of the impact with the impact of other existing and/or approved projects and the possibility of effectively reducing the impact.

Based on careful consideration of the documentation highlighted above by reference to the Annex III criteria, I agree with and adopt the conclusions reached in the Ramboll Statutory Environmental Assessment EIA Screening Determination for Europa Edgeworth Report (at Appendix 1) regarding the adequacy of the information provided by the Applicant and accordingly am satisfied that the Applicant has provided sufficient information to enable an EIA Screening Assessment of the proposed Europa Edgeworth Site Survey.

I further agree with and adopt the Ramboll responses to the observations received from the Maritime Safety Policy Division, Department of Transport, Tourism and Sport, Department of Defence and Commissioners of Irish Lights (as notified bodies), set out in section 2.3.1 of the Ramboll Report and the responses to the project specific observations received during the public consultation process, as set out in section 2.3.4 of the Ramboll Report (at Appendix 1).
As regards the additional observations received during the public consultation process, comprising general economic comments, general comments on health, safety and environment issues (including climate change), general comments on legal entities and contractor, which are set out in section 2.3.3 of the Ramboll Report, these are outside the scope of the EIA Screening Assessment process.

As regards the further additional observations received during the public consultation process regarding the current regulatory process and structures in DCCAE (as set out in section 2.3.3 of the Ramboll Report), these are addressed in the “Assessment Process” section of this Determination, which describes the structural changes that have occurred in the Department’s management of the environmental assessment and decision making processes.

I note the applicant’s own conclusion (set out in the RPS Reports submitted on behalf of Europa) that the proposed Europa Edgeworth Site Survey will not have significant effects on the environment and, therefore, that an Environmental Impact Assessment (EIA) is not required.

I further agree with and adopt the EIA Screening Assessment carried out by Ramboll in respect of the Europa Edgeworth Survey by reference to the Annex III criteria and the conclusions reached in the Ramboll Statutory Environmental Assessment EIA Screening Determination for Europa Edgeworth Report (at Appendix 1 to this Determination). The Ramboll Report concludes that, because of the nature and extent of the proposed activities, there are not likely to be significant effects on the environment from this project alone or in combination with other projects, subject to the implementation of the mitigation commitments detailed at section 5 of the Ramboll Report.

Accordingly, I am satisfied and have decided for the purposes of Regulation 3(1B) of the EIA Petroleum Exploration Regulations that the proposed Europa Edgeworth geophysical and environmental baseline site survey over licencing blocks 54/7 and 54/8, along the eastern flanks of the Porcupine Basin to take place in 2019 or 2020 is not likely to have a significant effect on the environment and, consequently, an Environmental Impact Assessment is not required in respect of the activities the subject of the Europa application, subject to the implementation of the mitigation measures referred to in Section 5 of the Ramboll Report, which I adopt and set out Table 1 of this Determination (below). This decision is contingent on the inclusion of these mitigation measures in any permission that may be granted in respect of this application.

Further, the vessel proposed to be used for the proposed survey is the MV Fugro Venturer. Adopting the recommendation in the Ramboll Report, any consent granted in respect of this application must further require that the applicant obtain prior approval from DCCAE should an alternative survey vessel be proposed, in which case confirmation will be required that the survey equipment and methodology on any replacement vessel are equivalent to that described in the RPS EIA Screening Reports submitted by Europa; namely:

- Screening for Environmental Impact Assessment and Environmental Risk Assessment Report;
- Response to Request for Further Information Report,

and that the nature and extent of the proposed activities described in these Reports has not materially changed. Accordingly, this decision is further contingent on this requirement also being included as a condition of any permission that may be granted in respect of this application.

The Applicant can be informed of this EIA Screening Determination and, in accordance with Regulation 3(2E) of the EIA Petroleum Exploration Regulations, the public will also be informed of
this EIA Screening Determination, with the Determination being published on the Department’s website and notice thereof being published in a national newspaper.

Jean Clarke

Environment Advisory Unit, 12th December, 2019
Department of Communications, Climate Action and Environment
Table 1: Mitigation measures required to be specified in any Consent that may be granted

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Mitigation Measure Proposed</th>
<th>Industry Standard</th>
<th>Project Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Presence</td>
<td>Mitigation measures relevant to potential impacts of the vessel and equipment physical presence are proposed in relation to potential interactions with other sea users, see below.</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
| Interactions with Other Sea Users | Implementation of communications strategy described in Section 3.3 of the Fishery Assessment before the survey commences, with emphasis on notifying EU fishers:  
  - Notification of the survey activity to be given in detail in a ‘Marine Notice’ which will be published on the DTTAS website. This Marine Notice is also sent to all Irish Harbour authorities.  
  - A Radio Navigation Warning to be broadcast numerous times daily by the Irish Coastguard for the duration of the survey activities.  
  - Notification of the site survey to be given in detail in a Notice to Fishermen which will be published by way of advertisements to be placed in relevant fishing journals and online portals (e.g. The Marine Times, The Irish Skipper, Kingfisher Fortnightly Bulletin).  
  - In the case of other EU nationalities, a multi-lingual notification campaign comprising a translated survey factsheet should be distributed to fishing organisations and vessel owners in France, Spain, The Netherlands, Belgium and Norway. The factsheet should detail planned survey operations. This notice to be distributed to these organisations in sufficient time and in advance of the planned survey. Factsheets should also include a point of contact ashore.  
  - It is recommended that an experienced FLO be appointed to set up daily communications radio briefs to keep fishing vessels operating in the area informed of the planned survey activities.  
  - Survey vessel to issue regular Securitae messages over VHF radio on agreed working channel in addition to an early warning radar and communication system to identify and communicate with approaching vessels. VHF radio will be used to warn approaching vessels of the survey.  
  - Implementation of a safety zone around the survey vessel during operations.  
  - The survey will meet national and international regulations for vessel navigation and the regulations defined by the IMO and convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs) for avoiding collisions at sea. |                   | ✓                |
<table>
<thead>
<tr>
<th>Discipline</th>
<th>Mitigation Measure Proposed</th>
<th>Industry Standard</th>
<th>Project Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underwater Noise</td>
<td>The applicant will consider the use of a Fishing Liaison Officer (FLO) on board the survey vessel which will operate on site for the duration of the project. The applicant will also consider the involvement of a designated Spanish and French speaking person ashore, with a working knowledge of both the fishing industries to assist engaging with fisheries in collaboration with the FLO.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Broadcast of regular Sécurité messages by the survey vessel.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Sharing of coordinates with the fishing industry to be always shown in WGS84 lat-long format to avoid confusion.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Details of the vessel (vessel name and call sign etc.) and survey equipment will be communicated through a Marine Notice published on the Department for Transport, Tourism and Sport (DTTS) website. During survey operations Radio Navigation Warnings will be broadcast daily.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Adherence to the most recent guidance produced by the NPWS.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>A qualified and experienced marine mammal observer (MMO) shall be appointed to monitor for marine mammals and log all relevant events using standardised data forms. Full reporting on MMO operations and mitigation undertaken will be provided to the Regulatory Authority.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Seismic surveying shall not commence if marine mammals are detected within a 1,000 m radial distance of the sound source, while in the case of MBES, SBES, SSS, SBP and USBL, operations will not commence if marine mammals are detected within 500 m of the sound source.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Sound-producing activities shall only commence in daylight hours where effective visual monitoring by the MMOs is achieved. Where effective visual monitoring, as determined by the MMO, is not possible the sound-producing activities shall be postponed until effective visual monitoring is possible</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Pre-start monitoring will only be undertaken when visual conditions are conducive to effective monitoring and outside of the hours of darkness. Sound producing activity will only commence where the required pre-start monitoring periods have elapsed with no marine mammals detected within the monitored zones by the MMO.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Discipline</td>
<td>Mitigation Measure Proposed</td>
<td>Industry Standard</td>
<td>Project Specific</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------</td>
<td>-------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td></td>
<td>In waters over 200 m deep, the MMO shall conduct pre-start-up constant effort monitoring at least 60 minutes before the sound-producing activity is due to commence. Sound-producing activity shall not commence until at least 60 minutes have elapsed with no marine mammals detected within the Monitored Zone by the MMO.</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
|            | In commencing a seismic survey operation, the following Ramp-up Procedure will be used, including during any testing of seismic sound sources, where the output peak sound pressure level from any source exceeds 170 dB re: 1μPa @1m:  
  • Seismic energy output shall commence from a lower energy start-up (i.e., starting with a single seismic device/airgun which is the smallest in the array and gradually adding others) and thereafter be allowed to gradually build up to the necessary maximum output over a period of 40 minutes.  
  • This controlled build-up of seismic energy output shall occur in consistent stages to provide a steady and gradual increase over the ramp-up period. | | ✓ |
|            | In all cases the delay between the end of ramp-up (i.e., the necessary full seismic output) and the start of a survey line or station will be minimised to prevent unnecessary high-level sound introduction into the environment. | | ✓ |
|            | Once the Ramp-Up Procedure commences, there is no requirement to halt or discontinue the procedure at night-time, nor if weather or visibility condition deteriorates. | | ✓ |
|            | Where the duration of a survey line or station change will be greater than 40 minutes the activity shall, on completion of the line/station being surveyed, either:  
  • shut down and undertake full Pre-Start Monitoring, followed by a Ramp-Up Procedure for recommencement, or  
  • undergo a major reduction in seismic energy output to a lower energy state where the output peak sound pressure level from any operating source is 165-170 dB re: 1μPa @1m, and then undertake a full Ramp-Up Procedure for recommencement. | | ✓ |
<p>|            | Where the duration of a survey line or station change will be less than 40 minutes the activity will continue as normal (i.e., under full seismic output). | | ✓ |
|            | If there is a break in sound output for a period of 5-10 minutes (e.g., due to equipment failure, shut-down, survey line or station change), MMO monitoring will be undertaken to check that no marine mammals are observed within the Monitored Zone (i.e. within the 1,000 m radius) prior to | | ✓ |</p>
<table>
<thead>
<tr>
<th>Discipline</th>
<th>Mitigation Measure Proposed</th>
<th>Industry Standard</th>
<th>Project Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>recommencement of the sound source at full power.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Where a marine mammal is observed within the Monitored Zone during such a break of 5-10 minutes, then all Pre-Start Monitoring and a subsequent Ramp-up Procedure (where appropriate following Pre-Start Monitoring) shall recommence as in a normal start-up operation.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>In any case, if there is a break in sound output for a period greater than 10 minutes (e.g., due to equipment failure, shut-down, survey line or station change) then all Pre-Start Monitoring and a subsequent Ramp-up Procedure (where appropriate following Pre-Start Monitoring) will be undertaken.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>In line with current recommendations from PAD and NPWS, the applicant will maintain a 100 km separation distance between the survey vessel and other concurrent acoustic surveys that may be operating in the area.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>In addition to the above measures, MMOs will use of passive acoustic monitoring (PAM) to optimise marine mammal detection around the survey.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Sound producing equipment on the AUV will be switched on at surface following pre-start monitoring and ramp up procedures. Monitoring at depth will be undertaken using PAM.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Treated grey and black water will be discharged in line with MARPOL 73/78 Annex IV</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Food waste will be macerated in line with MARPOL 73/78 requirements, and no discharges will be made within 12 nm of the coastline.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Discharge of bilge water from the survey vessel will comply with standards set out in the 1973/78 MARPOL Convention with no discharge occurring within the 12 nm limit.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Ballast water discharges may be required during operations and will be managed through a Ballast Management Plan</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Solid waste stored onboard and handled to comply with the Waste Management Hierarchy, MARPOL and the Sea Pollution (Prevention of Pollution by Garbage from Ships). Garbage Management Plan will be developed. Contractors must use authorised waste contractors.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discipline</td>
<td>Mitigation Measure Proposed</td>
<td>Industry Standard</td>
<td>Project Specific</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Archaeology</td>
<td>Survey vessel will have a SOPEP in place in accordance with Annex I of MARPOL.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spill kits on board the vessel deck to clean-up spills of utilities hydrocarbons or chemicals before they can enter the sea.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refuelling of the survey vessel to be undertaken in port, thus reducing potential for collision or spillage at sea</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Implementation of a Waste Management Plan describe all operational procedures related to the treatment, disposal and management of generated wastes.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Using geophysical data to ensure that no marine archaeological sites are disturbed</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Investigation of environmental sampling sites using video/photos to confirm that no archaeological sites are disturbed.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>The services of a suitably qualified and suitably experienced marine archaeologist, to include experience in the interpretation of marine geophysical data, shall be engaged in advance of any such survey to undertake the Underwater Archaeology Impact Assessment so as to inform on the cultural potential of the area and advise on the known or potential location of any shipwrecks of other underwater cultural heritage sites within the specified survey area. This is particularly relevant where environmental surveying is proposed to be carried out.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>The UAIA should comprise a desktop study and archaeo-geophysical interpretation of all geophysical survey results as well as assessment of the results of all sampling.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>The UAIA shall be licensed by DAHG and a detailed method statement shall accompany the licence application by the archaeologist.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>The archaeologist should ideally be on board the survey vessel to view the geophysical data in real time and identify known and potential underwater cultural heritage as it is encountered. If it 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.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>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</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Discipline</td>
<td>Mitigation Measure Proposed</td>
<td>Industry Standard</td>
<td>Project Specific</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Atmospheric Emissions</td>
<td>Compliance with the Merchant Shipping (Prevention of Air Pollution from Ship) Regulations 2010-2017 and the MAPROL Convention 73/78 Appendix VI on atmospheric emissions.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operations will be planned to minimise duration, and vessel movements, and ensure efficient operations.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>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.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Final details of the timing and duration of the survey, including proposed survey vessel, will be communicated to PAD of DCCAE in advance of operations commencing.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Final survey lines and transects will be confirmed to PAD DCCAE prior to survey.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The location of environmental seabed sampling stations, including reference stations, have yet to be identified. Once locations have been confirmed details will be provided to PAD DCCAE.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prior to undertaking seabed sampling operations, a visual inspection will be undertaken using AUV mounted cameras and/or drop-down video.</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>