Roinn Cumarsáide, Gníomhaithe
ar son na hAeráide & Comhshaoil
Department of Communications,
Climate Action & Environment

27 May 2019

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UK

Permission to undertake drilling activities on proposed well 52/4-A
Iolar Prospect, FEL 3/18

Dear Ms. Ball,

I am directed by the Minister of State at the Department of Communications, Climate Action and Environment to refer to an application by CNOOC Petroleum Europe Limited (CNOOC), previously Nexen Petroleum U.K Limited, for permission to undertake drilling activities on proposed well 52/4-A, Iolar Prospect pursuant to Frontier Exploration Licence 3/18, which application includes the following documents:

- Application letter seeking consent for exploratory drilling;
- Application for consent to place a temporary well head and associated infrastructure on the seabed, pursuant to Section 5 of the Continental Shelf Act, 1968, as amended.
- Environmental Risk Assessment (EIA Screening) Report;
- Appropriate Assessment Screening Report (AA);
- Pre-drill Fisheries Report;
- Underwater Archaeological Assessment;
- Application for a Permit to Use and Discharge Added Chemicals ("PUDAC");
- Generic Well Proposal including evidence of required notification of relevant Government Departments, Agencies and Authorities in accordance with Section 3.1.3 of the Rules and Procedures Manual for Offshore Petroleum Exploration and Appraisal Operations.

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Having considered the application pursuant to:

- The Petroleum and Other Minerals Development Act, 1960, as amended;
- Section 5 of the Continental Shelf Act, 1968, as amended;
- Frontier Exploration Licence 3/18;
- The Licensing Terms for Offshore Oil and Gas Exploration, Development and Production 2007;
- Rules and Procedures Manual for Offshore Petroleum Exploration and Appraisal Operations;
- 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);
- 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.

And having regard to:

- The information, advice and recommendations as set out in the submission to the Minister of State by officials of the Department of Communications, Climate Action and Environment dated the 24th May 2018.
- The EIA Screening Determination, made by the Environment Advisory Unit ("EAU") of the Department, which has concluded that the application to drill an exploration well on the Iolar Prospect can be completed without significant effects on the environment, subject to attachment of specified conditions.

- The AA Determination of 17 May 2019, made by the EAU, which has concluded that the application to drill an exploration well on the Iolar Prospect 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.

- The policy objectives in respect of offshore oil and gas exploration, as stated in the Government's White Paper *"Irelands Transition to a Low Carbon Economy Future 2015-2030"*.

- The technical assessment of the application undertaken by Petroleum Affairs Division Technical Section, who indicated that the technical elements of the well proposal are acceptable and that the details and design provided by CNOOC meets the Department's requirements, subject to conditions.

- The Financial Responsibility Assessment documentation submitted by CNOOC, together with the assessment conducted by a consortium of independent consultants comprising Astrid (Petroleum Safety Consultant), NRG (Well Management Consultants) and INDECS (Insurance Consultants), pursuant to Section 9A (2) c of the Petroleum and Other Minerals Act 1960,

- The granting of a safety permit (SP15) by the Commission for Regulation of Utilities and adoption of an oil spill contingency plan by Irish Coast Guard.

- The observations made by relevant State Bodies.

- Consultations with the Minister for Transport, Tourism and Sport pursuant to Section 5 of the Continental Shelf Act 1968, in respect of the safety of navigation, in relation to the drilling of an exploration well on the Iolar Prospect, Block 52/4-A.

Having regard to the foregoing and having first satisfied himself it is appropriate to grant the application for the following reasons:

1. As set out in detail in the EIA Screening Determination of 12 April 2019, the drilling of an exploration well on the Iolar Prospect can be completed without significant effects on the environment, subject to attachment of specified conditions;

2. As set out in detail in the AA Determination of 17 May 2019, the application to drill an exploration well on the Iolar Prospect, 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;

3. The technical elements of the proposals are acceptable and meet the Department's requirements. It is considered that information delivered from such activity will underpin greater geological understanding of the basin subsurface in a frontier unexplored part of the Irish offshore. A well would also provide information on prospect seal lithology, effectiveness and trap potential and the findings could help de-risk the Irish Atlantic Margin Middle Jurassic play. The data provided from the proposed Iolar Prospect well would act as a key control point in assessing the prospectivity in an underexplored basin and would enable assessment of the potential fairways and petroleum systems within the Porcupine Basin;

4. The applicant has provided sufficient evidence that suitable insurance cover is in place and that the applicant's overall Financial Responsibility estimate is reasonable to meet the costs of carrying out the offshore petroleum activities in question, to meet the costs of effective emergency response and subsequent remediation in the event of a major accident, and to have appropriate insurance, indemnity or other financial assurance instruments to cover liabilities potentially deriving from the applicant's offshore activities;

5. Having consulted with the Minister for Transport, Tourism and Sport regarding the safety of navigation pursuant to Section 5 of the Continental Shelf Act 1968, it was confirmed that there is no impact on safety of navigation, should a temporary well head be located at the proposed location of drilling operations and provided certain information is supplied to the Marine Safety Office;

6. 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 Minister of State at the Department of Communications, Climate Action and Environment has decided to consent to:

(i) To grant permission to CNOOC to undertake drilling activities on proposed well 52/4-A, Iolar Prospect pursuant to Frontier Exploration Licence 3/18;

(ii) To consent to the placement of a temporary well head and associated infrastructure on the seabed, pursuant to Section 5(2) of the Continental Shelf Act 1968, as amended.

The consent is subject to the conditions set out below, and is to take effect from the date of this letter.

Please note that the validity of this decision may be questioned by judicial review under Order 84 of the Rules of the Superior Courts (S.I. No.15 of 1986), as amended. Any application for leave to apply for judicial review must be made promptly and in any event within three months from the date of this decision. Practical information on the review mechanism can be obtained from the Citizens Information Board, Ground Floor, George's Quay House, 43 Townsend Street, Dublin 2, or online at www.citizensinformation.ie or www.courts.ie.

Conditions:

1. The Minister of State grants permission to undertake drilling operations at the approximate surface location Latitude 50° 53' 31.16" North; Longitude 13° 21' 24.38" West (ED50 datum) in accordance with the 52/4-A Final Well Proposal (Rev 2.0) (Doc. No. IE-EXP-52/04-IOLAR-DR-00002-WE-01) dated 15 March 2019, and the clarifications provided by CNOOC in relation to the 52/4-A well proposal. This well location is at Inline [redacted] and Crossline [redacted] on the MC1402- 3D seismic volume, acquired in 2014 (PAD Survey ID 2014/02).

2. Permission is granted subject to the well being drilled to a depth sufficient to penetrate and fully evaluate the interpreted Upper and Middle Jurassic formations of the 'Iolar' prospect at the well location. In the dry hole case the Total Depth [redacted] and is anticipated to be at 5,810m TVDSS. In the success case the Total Depth will be in the order of [redacted] below the [redacted] Seismic Event and will be sufficient to penetrate the entire interpreted [redacted] succession to allow for a full geological and formation evaluation. The success case Total Depth is anticipated to be at 6,174m TVDSS. In the event that [redacted] or older stratigraphy is encountered a shallower Total Depth may apply, following approval from the Department.

3. Once the Total Depth (TD) has been reached confirmation shall be required from the Department that the TD criteria have been met.

4. During wireline logging operations CNOOC shall provide the proposed sidewall core and [redacted] programmes to the Department for its review and approval.

5. All operations shall be conducted in compliance with the provisions of the Rules and Procedures Manual for Offshore Petroleum Exploration Operations ("RPM").

6. Attention is drawn to the Reporting Procedures of the RPM. To ensure complete confidentiality, the daily drilling, daily geological reports and daily logs should be sent to the Department by posting to a designated secure website or by emailing (addresses advised separately). CNOOC is required to make the daily drilling and geological reports and daily logs available at the start of business each day if possible, but in any event not later than noon. Any significant event that occurs between the daily drilling and geological reports should be notified to the Department by telephone or email as soon as possible. Copies of wireline log data shall be made available by secure website or email to the Department immediately after the completion of logging runs. The Department's lead contact point for the operations is [redacted]

7. These conditions shall also apply to any re-spud of well 52/4-A.

8. Daily reporting shall commence from the time the drilling unit enters Irish waters and shall continue until the drilling unit leaves Irish waters, after the completion of the drilling operations.

9. The use and discharge of chemicals associated with the well operations shall be in accordance with the conditions of a Permit to Use and Discharge Added Chemicals (PUDAC).

10. Operations shall be conducted in compliance with the provisions of the Department of Justice and Equality *Guidance Document on relevant Explosives Legislation for Offshore Exploration Installations*.

11. 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 Determination.

12. Compliance with the conditions outlined in the attached Table 2: Mitigation and Management measures committed to by the Applicant, following the EAU's AA Determination.

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

Discipline	Mitigation Measure Proposed	Industry Standard	Project Specific
Physical Presence	A pre-spud ROV survey of the well site will be undertaken to increase the likelihood that areas of high sensitivity species and habitats will be avoided at the well site.		✓
Interactions with Other Sea Users	CNOOC will consult with relevant authorities and organisations as defined in the Rules and Procedures Manual, particularly the Sea Fisheries Protection Authority and the Sea Fisheries Policy Division, Department of Agriculture, Food and the Marine to minimise interference impacts resulting from the project.	✓	
	A Notice to Mariners will be distributed by the Department of Transport, Tourism and Sport and a version of this will be run in selected local marine related publications.	✓	
	A vessel will operate on site for the duration of the project	✓	
	The drill ship and supply vessel will display SOLAS compliant lights and shapes and noise signals to alert other seafarers in the area	✓	
	A 500 m safety zone will be maintained around the drill ship whilst on location		✓
	Nexen will consider the use of a Fishing Liaison Officer (FLO) on board the standby guard vessel which will operate on site for the duration of the project.		✓
	The drill ship will have Safe Work Procedures to prevent dropped objects which will include (but not limited to): • Good housekeeping practices with all wastes correctly stored; • Storage of hazardous chemicals as per material safety data sheet (MSDS); • Lift planning for over-the-side lifting (including appropriate crane rigging and load ratings, crane operator and rigger training and competency requirements) all lifting equipment will be tested and certified; • A ship to ship transfer permit will be in place; • All deck items will be securely stowed; • Transfer of objects will use specialist equipment and consider environmental conditions;	✓	

Discipline	Mitigation Measure Proposed	Industry Standard	Project Specific
	• Ongoing personnel awareness and training and dropped object prevention programs (e.g. lanyards on hardhats, hand tools); • Safe working procedures to prevent dropped objects; • Procedures will be in place to ensure that the location of any lost material is recorded and that significant objects are recovered – including ROV and boat recovery where practicable; • Waste Management Plan.		
Underwater Noise	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.		✓
	Sound-producing activities shall only commence in daylight hours where effective visual monitoring, as performed and determined by the MMO, has been achieved. Where effective visual monitoring, as determined by the MMO, is not possible, the sound-producing activities shall be postponed until effective visual monitoring is possible.		✓
	As the water depth is >200 m pre-start-up monitoring shall be conducted at least 60 minutes before the activity is due to commence. Sound-producing activity shall not commence until at least 60 minutes have elapsed with no marine mammals detected within 1,000 m Monitored Zone by the MMO.		✓
	Pre-start monitoring shall subsequently be following by a Ramp-up Procedure (where possible) which should include continued monitoring by the MMO. Airguns utilised in VSP generally fire for approximately two minutes then stop for 5-10 minutes before repeating the pattern. To ensure that marine mammals are given the opportunity to move away from the airguns as they commence firing, energy would be slowly increased to the maximum level over a period of 40 minutes, in a process called "soft-start".		✓
	If there is a break in sound output for a period of 5-10 minutes (e.g. due to equipment failure, shut-down), MMO monitoring must be undertaken to check that no marine mammals are observed within the Monitored Zone prior to recommencement of the sound source at full power.		✓
	If there is a break in sound output for greater than 10 minutes (e.g. due to equipment failure, shut-down or station change) then all Pre-start Monitoring and a subsequent Ramp-up Procedure (where appropriate following the Pre-start Monitoring) will be undertaken.		✓

Discipline	Mitigation Measure Proposed	Industry Standard	Project Specific
Atmospheric Emissions	Practical steps to limit the release of atmospheric emissions during the project will include advanced planning to enable efficient operations and fuel utilisation and well maintained and operated power generation equipment.	✓	
	The contractors will comply with the MARPOL Convention 73/78 Appendix VI on atmospheric emissions; no emissions of ozone depleting substances, content of sulphur in fuel oil will not exceed 35% m/m and no incineration of garbage containing more than traces of heavy metals.	✓	
	A vessels and the drill ship will comply with the Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2010-2017	✓	
	Nexen will verify that drill ship contractor procedures align with the relevant Nexen Engineering requirements which cover all aspects of primary and secondary well control for floating drilling operations.		✓
Discharges to the Sea	All Oil Based Muds will be skipped and shipped onshore for recovery and /or disposal in accordance with Waste Management legislation, and not discharged overboard.		✓
	Cementing procedures will be in place to minimise the quantities of cement prepared and used, consistent with safe practices, and to minimise the amount of unused cement discharged.		✓
	Chemicals will be selected in line with CNOOC's chemical selection policy, reducing where possible the use of chemicals carrying substitution notifications and other product warnings.		✓
	The management of drilling fluids, drill cuttings, cementing fluids and subsea control fluids will be consistent with all appropriate CNOOC Engineering Standards, Operating Standards and Procedures.		✓
	Environmental risk assessment as part of PUDAC approval process, and identification of measures to reduce risk, will be carried out to obtain approval for chemical use prior to drilling operations commencing as per the PAD Rules and Procedures Manual.	✓	
Archaeology	A pre-spud ROV survey will be conducted at the well site to identify any marine artefacts that could potentially be disturbed, or any other obstructions.		✓
	If potential marine artefacts are observed, a qualified marine archaeologist will be consulted prior to spud, and spudding will not commence until the marine		✓

Discipline	Mitigation Measure Proposed	Industry Standard	Project Specific
	archaeologist has confirmed that the spud location is free of marine artefacts.		
	If any item of potential archaeological interest is identified, that item will be avoided and the well location be moved to an alternative location, which will also be subject to a pre-spud ROV survey and the same precautions identified above. A short report will be prepared by the marine archaeologist detailing the observations made and the actions taken.		✓
	If a discovery of a ship wreck or object of historical interest is made during the above process, CNOOC will immediately report the discovery and its location to the relevant Government Departments and Agencies identified by PAD (2014).		✓
	Under these circumstances CNOOC would also facilitate the statutory authorities in any investigations that they may need to carry out in accordance with the terms of the National Monuments Acts		✓
General	All mitigation and management measures identified during the Environmental Risk Assessment Process will be incorporated into a commitments register. These commitments will be incorporated into the Environmental Management Plan (EMP) for the project.		

Table 2: Mitigation and Management Measures Committed to by the Applicant.

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

	If there is a break in sound output for a period of 5-10 minutes (e.g. due to equipment failure, shut-down), MMO monitoring must be undertaken to check that no marine mammals are observed within the Monitored Zone prior to recommencement of the sound source at full power.	The airguns proposed generally fire for approximately two minutes then stop for 5-10 minutes before repeating this pattern. It is recommended that the break between firing is reduced as much as possible and that monitoring is undertaken by the MMO throughout the break during the use of the airgun and shall not recommence within the hours of darkness when visual monitoring is ineffective.
	If there is a break in sound output for a period greater than 10 minutes (e.g., due to equipment failure, shut-down or station change) then all pre-start-monitoring and a subsequent Ramp-Up Procedure (where appropriate following pre-start-monitoring) will be undertaken.	If a break of greater than 10 minutes occurs in the hours of darkness, then sound-producing activities will not commence until hours of daylight and when effective visual monitoring is possible.
Unplanned accidental releases	Crew of the drill ship will undergo environmental awareness and safety training. Incident response training will form part of the induction for any crew joining the drill ship or Project vessels. The drill ship has an approved safety case and will be class certified by a recognised certifying authority	None
	A full risk assessment will be performed as part of well planning	None
	CNOOC Engineering Standards will be implemented	None
	The well will be designed to CNOOC Well Control Standards ECN-DR-STD-00067	None

	While drilling a two-barrier well control policy will be implemented at all times. The primary well control will be the mud hydrostatic and secondary well control will be the blow-out preventers or BOPs, which will be maintained throughout the drilling of the well. A full risk assessment was performed during well design	None
	While drilling, the primary well control barrier in the main conduit will be the hydrostatic pressure imparted by correctly weighted drilling fluid and secondary well control measures will include the BOP and cut-off valves on all machinery, pipelines and hoses	None
	Outside the main conduit, previous casings in the next annulus also have barriers, i.e. seal assemblies in casing hangers, and cement isolation between reservoir and surface – there may be one or more cement seals set in each annulus	None
	Well design, materials and drilling procedures will combine to ensure that the surface environment can be isolated from the wellbore by at least two independent barriers during all stages of well construction and abandonment	None
	The BOP rated design pressure will comfortably exceed the anticipated reservior pressure and the BOP will undergo maintenance and inspection prior to use	None
	Barriers will be tested prior to use, during installation and post-installation	None

	In the event of a blowout during drilling activities, when the primary Blowout Prevention Equipment has failed, a capping device will be deployed. The full description of the containment and recovery process is described in the Iolar Oil Spill Contingency Plan (OSCP), ECI-HS-PRP-00014. The OSCP was approved by the Irish Coast Guard on 12 February 2019 and was prepared in accordance with the Sea Pollution (Amendment) Act 1999. Details of the OSCP are provided in Section 4.3.4.2 of the applicant's NIS. This capping and containment system is a one of two-source control strategy, the other being a relief well drilling	None
	Shallow hazards (from shallow gas or over-pressured shallow formation water) have been assessed by seismic survey prior to drilling, and the results have been incorporated into the well design	None
	The plug and abandonment plan will be reviewed and approved by CNOOC, in accordance with Oil and Gas UK Well Decommissioning Guidelines	None

Yours sincerely,

Bill Morrissey

Bill Morrissey
Principal Officer
Petroleum Affairs Division

Cc Mr. Rory Dunphy, Petroleum Europe Limited