



Environmental Statement (ES) Summary and Sign-Off

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| Title: | Culzean Field Development |
| Operator: | Maersk Oil North Sea UK Limited (Maersk) |
| Report No: | D/4163/2013 |
| Submission Date: | July 2014 |
| Quad / Block: | 22/25a, 22/25e & 22/25f |
| Development Type: | Field Development |
| Reviewer: | Fiona Brett |
| Date: | March 2015 |

PROJECT DESCRIPTION

Maersk is planning to develop the Culzean Field by installing three bridge linked platforms in Block 22/25a. The field development will consist of installation of a Wellhead platform (WHP), a Central Processing Facilities (CPF) platform and a Utilities and Living Quarters (ULQ) platform. Development proposals include drilling up to six production, one produced water re-injection and three replacement wells. Produced gas will be exported via a new 48 kilometre (km) 20"/22" pipeline which will be tied into the existing Central Area Transmission System (CATS), and condensate via a 3.6 km 8"/14" pipeline to a Floating Storage Offloading vessel for onward tankerage.

Situated within Blocks 22/25a, 22/25e & 22/25f in the central North Sea, the Culzean Field lies approximately 225 kilometres (km) from the Scottish coastline and 25 km from the UK / Norwegian median line; in a water depth of approximately 90 metres (m). The Culzean discovery is located in the East Central Graben within the uHPHT domain and the estimated total recoverable volume of gas and condensate is anticipated to be 272 million barrels of oil equivalent.

The wells will be drilled using a heavy duty jack-up drilling rig, with the top hole sections being drilled riserless with water based mud (WBM). The lower sections will be drilled with low toxicity oil based mud (LTOBM). Each well will generate approximately 841 tonnes of water based mud and cuttings which will be discharged to sea, and 1,365 tonnes of LTOBM cuttings which will be returned to the rig for rotomill treatment prior to discharge. In the event that rotomill is unavailable, the LTOBM will be skipped and shipped ashore for treatment and disposal. No extended well test will be carried out, but there will be limited flaring during well clean-up.

Pipelay operations to install the pipelines will be undertaken using an S-lay vessel with the gas export pipeline surface laid and the condensate pipeline trenched and buried. An estimated 265 concrete mattresses and 220,000 tonnes of rock will be required to mitigate against upheaval buckling and to protect subsea infrastructure.

The Development of the Culzean field will span over 11-12 years with development drilling commencing Q3 2016, sub-sea infrastructure installation scheduled for Q1 2017, jacket and topside installation scheduled from Q2 2015 and first Oil anticipated in Q3-Q4 2019. All activities will be subject of an Oil Pollution Emergency Plan (OPEP) that will need to be approved prior to commencement of operations.

KEY ENVIRONMENTAL IMPACTS

The ES identified and discussed the following key activities as having the potential to cause an environmental impact:

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| <i>Drilling:</i> | Combustion emissions, well clean-up emissions, drill rig spud can and anchors, rig and vessel noise, accidental hydrocarbon spills. |
| <i>Sub-sea installation:</i> | Combustion emissions, subsea infrastructure, protection materials, subsea infrastructure installation noise, hydrotest discharges, accidental spills. |
| <i>Production:</i> | Atmospheric emissions, accidental hydrocarbon spills. |
| <i>Wider concerns:</i> | Accidental events, transboundary issues, cumulative effects |

(C) KEY ENVIRONMENTAL SENSITIVITIES

The Environmental Impact Assessment (EIA) identified the following environmental sensitivities:

- **Fish:** The development area is a potential spawning area for lemon sole, mackerel and Norway pout. The location is also within a potential nursery area for Norway Pout, haddock, cod, spurdog, herring, whiting, blue whiting, ling and plaice. The spawning and nursery areas are extensive and the area of impact would be localised and temporary. The development proposals are unlikely to have an impact on these species.
- **Seabirds:** Seabird vulnerability is at its highest in January, September and November and low to moderate throughout the remainder of the year. It has been assessed that there are sufficient mitigation measures in place to prevent accidental spills that could have a significant impact on seabirds and this will also be covered by the OPEP.
- **Protected habitats:** The original gas export pipeline route survey identified evidence of active methane derived authigenic carbonate (MDAC) structures, formed by leaking gases (pockmarks), resulting in further detail survey by Maersk and subsequent re-routing of the gas export pipeline. The closest MDAC habitat is now approximately 65 m from the pipeline. The gas export pipeline is routed across the East of Gannet and Montrose Fields marine protected area (pMPA) which is identified for ocean quahog and offshore deep-sea muds. The nearest Special Area of Conservation (SAC) is the Scanner and Braemar Pockmarks SCIs which are located 135 km and 205 km to the North of the proposed development. The development proposals are not expected to have any significant impact on the protected habitat.
- **Protected species:** The most common occurring species present in the CNS area are Harbour porpoise, minke whales and white-beaked dolphins, which have all been recorded in low numbers. Grey and Common Seals inhabit the coastal waters around the North Sea and have occasionally been observed to travel long distances when foraging, both species are unlikely to be present in large numbers at the proposed development location. Any disturbance of marine mammals is expected to be limited to the drilling period and during infrastructure installation, and the localised disturbance is considered unlikely to have any significant impact.
- **Other users of the sea:** The proposed development is situated within ICES rectangle 43F1 and relative fishing effort in the area is moderate too low for most of the year with an average fishing effort of 76 days per annum. Shipping density in the vicinity of the proposed development is low. Appropriate navigational controls will be put in place, and it is not anticipated that there will be any significant impact on other users of the sea.

(D) CONSULTATION

Comments were received from the Joint Nature Conservation Committee (JNCC), Marine Scotland (MS), Maritime and Coastguard Agency (MCA), Ministry of Defence (MoD) and Northern Lighthouse Board (NLB). The ES was also subject to public notice.

JNCC: JNCC requested further clarification on information presented in the ES including information on recent MDAC survey (2014) undertaken by Maersk. Following the provision of additional information, JNCC had no further comments.

MS: MS requested further clarifications on decommissioning aspects. Following the provision of additional information, MS had no further comments.

MCA: MCA confirmed that they have no objections.

MoD: MoD confirmed that they have no objections.

NLB: NLB advised that the permanent infrastructure on the seabed must be communicated to UK Hydrographic Office to ensure updating of all relevant admiralty charts.

Public Notice: No comments were received in response to the public notice.

(E) FURTHER INFORMATION

Further information was requested from Maersk which addressed the issues raised by JNCC, Marine Scotland and the internal DECC review. The information requested included clarification on most recent survey data, MPA and decommissioning aspects. The additional information received from Maersk on 03 February 2015 adequately addressed the issues raised.

CONCLUSION

Following review of the ES, the comments received from consultees and the additional information provided by Maersk, DECC OGED is satisfied that the project will not have a significant adverse impact on the receiving environment or on the living resources it supports, or on any protected sites or species or other users of the sea.

(G) RECOMMENDATION

On the basis of the information presented within the ES and advice received from consultees, DECC OGED is content that there are no environmental or navigational objections to approval of the proposals, and has advised DECC LED that there are no objections to the grant of the relevant consents.

Approved

Sarah Pritchard

.....Date 24 March 2015

Sarah Pritchard
Head of Offshore Oil & Gas Environment, DECC OGED