Offshore Petroleum Regulator
for Environment & Decommissioning

Serica Energy (UK) Limited
Columbus Field Development

Environmental Statement Summary

To: **Jonathan Ward**

From: **Angela Flowers**
Date: **28/09/2018**

ES Title:	Columbus Field Development
Developer:	Serica Energy (UK) Limited
Consultants:	Orbis Energy Limited
OGA Field Group:	Central North Sea
ES Report No:	D/4221/2018
ES Submission Date:	15th June 2018
Block No:	23/16f and 23/21a
Development Type:	Field Development

Project Description

Serica Energy (UK) Limited (Serica) propose to develop the Columbus gas and condensate field. The field is located in Blocks 23/16f and 23/21a in the central North Sea, approximately 230 kilometres (km) from the UK coastline and 8 km from the UK / Norway median line.

Serica plan to target the reservoir via a single well, drilled using either a heavy-duty jack-up mobile drilling unit (MoDU) or an anchored semi-submersible MoDU. The well will be tied-in to the proposed Arran to Shearwater pipeline system via a 36 metre (m) spoolpiece. To accommodate the tie-in, the originally proposed Arran to Shearwater pipeline will be deviated, adding 800 m to the total pipeline length. The deviated section and tie-in will be mechanically trenched and buried, and approximately 6,600 tonnes of rock and 120 concrete mattresses are proposed for pipeline protection.

Production from the Columbus field will be co-mingled with production from the Arran field and processed on the Shearwater installation operated by Shell UK Limited. Associated chemical use and produced water discharge will be mediated via the Shearwater installation. Produced gas will be exported via the Shell Esso Gas and Associated Liquids (SEGAL) pipeline system, and condensate will be exported via the Graben Area Export Line (GAEL) pipeline system which links to the Forties Pipeline System.

Drilling is proposed between Q4 2020 and Q2 2021 with infrastructure installation, tie-in, commissioning and first production in Q2 2021. Peak condensate production is estimated to be 1,248 tonnes/day in 2022 and peak gas production is estimated to be 920,686 m^3/day in 2024.

Key Environmental Impacts

The Environmental Statement (ES) identified and discussed the following operations as

having the potential to cause an environmental impact:

- Drilling operations - MoDU footprint; marine discharges; atmospheric emissions, including combustion and well-clean emissions; and drilling and vessel noise.
- Infrastructure installation - infrastructure footprint including rock deposits; noise including piling for the tie-in structure; and vessel combustion emissions.
- Production operations - marine discharges and atmospheric emissions at the Shearwater platform.
- Cumulative and transboundary impacts.
- Accidental events.

Key Environmental Sensitivities

The ES identified the following key environmental sensitivities:

- Fish: The development is within spawning areas for cod, lemon sole, Norway pout, plaice, mackerel and sandeels; and nursery areas for blue whiting, cod, European hake, haddock, ling, Norway pout, plaice, whiting, anglerfish (monkfish), herring, horse mackerel, mackerel, sandeels, spotted ray and spurdog. However, the spawning and nursery grounds are extensive and the proposals are unlikely to have any significant impact.
- Seabirds: The most frequently recorded species in the development area are fulmar and kittiwake, and the area is also within the foraging range of Manx shearwater and gannets during the breeding seasons. However, seabird vulnerability to surface oil pollution in the area is generally low, and it is considered that there are sufficient mitigation measures in place to prevent accidental spills that could have a significant impact on seabirds. Appropriate Oil Pollution Emergency Plans will be required for the drilling, infrastructure installation and production operations.
- Protected habitats / species: Seapens and ocean quahog are both recorded in the development area, and the ocean quahog is a qualifying species for the East of Gannet and Montrose Fields Nature Conservation Marine Protected Area which is located 33 km to the west of the proposed development. Direct impacts resulting from the drilling operations and discharges, and from the installation of seabed infrastructure including the pipelines and umbilicals, will be localised and are not considered to be significant.
- Marine mammals: The most frequently recorded species are harbour porpoise, white-beaked dolphin and white-sided dolphin, with less frequent sightings of bottlenose dolphin, Risso's dolphin and both killer and minke whales. Grey and harbour seals may also be observed in the area but are more frequently sighted closer to shore and unlikely to be present regularly or in significant numbers. Noise impacts will be of limited duration and/or extent and considered to be minor, and no significant adverse effects on marine mammals are anticipated.
- Other users of the sea: Fishing effort and value in the ICES rectangles covering the development area (43F2) are reported as low in winter, high in June and July and intermediate in intervening months. Shipping density is low. Safety zones and appropriate navigational controls will be in place, and it is not anticipated that there will be any significant impact on other users of the sea.
- Cumulative/Transboundary impacts: No significant in-combination, cumulative or transboundary effects are anticipated.

Key Mitigation Measures (including environmental or monitoring conditions)

- A geotechnical survey will be undertaken to finalise the pipelay location, to avoid trenching where there are obstructions and minimise deposit requirements. If a barge

is used to lay the pipeline and umbilical, the survey will be required to assess the impact of the wider anchor deployment corridor.

- The Joint Nature Conservation Committee (JNCC) protocol for minimising the risk of injury to marine mammals from piling (August 2010) will be implemented to minimise potential adverse effects on marine mammals.
- Fishing-friendly subsea infrastructure will be installed with a 500 m exclusion zone around the well, and appropriate navigational risk assessments will be undertaken for all drilling and installation operations.
- Not directly related to the Columbus development, Shell has committed to increase the produced water handling capacity at Shearwater by installing an additional hydrocyclone and degasser.

Consultation

JNCC, Marine Scotland (MS), the Maritime and Coastguard Agency (MCA), the Northern Lighthouse Board (NLB) and the Ministry of Defence (MoD) were consulted on the proposals. The Health and Safety Executive (HSE) and the Norwegian Environment Agency (NEA) were also notified of the proposals, and the ES was subject to public notice.

- JNCC confirmed there were no objections provided consent was subject to adoption of the piling guidance referenced above.
- MS confirmed there were no objections.
- MCA confirmed there were no objections subject to the imposition of appropriate navigational conditions.
- NLB confirmed there were no objections, subject to the imposition of the standard navigational consent conditions.
- MOD confirmed there were no objections.
- NEA confirmed there were no objections.

The HSE did not make any representation, and there was no response to the public notice.

Further Information

Additional information was requested from Serica to address issues raised by consultees and during the internal BEIS OPRED review. The requested information included:

- A summary of the results of the 2018 environmental survey to confirm agreement with the information presented in the ES, in particular with regard to information relating to habitats and species of conservation importance.
- Survey proposals to better inform pipeline route, mechanical trenching and protective deposit requirements.
- Clarifications relating to produced water handling capacity and chemical use and discharge requirements for processing the Columbus fluids at Shearwater.
- Clarification of the impact on atmospheric emissions at Shearwater.

Additional information was provided by Serica on 24th August and 27th September 2018 which adequately address the issues raised.

Determination

Following the review of the ES, the responses received from consultees and the additional information provided by Serica, BEIS OPRED is satisfied that the proposed development will not have a significant adverse impact on the receiving environment or the living resources it supports, or on any protected habitats or species or other users of the sea.

Recommendation

BEIS OPRED is content that there are no objections to the proposals and agrees to the OGA issuing the necessary consent to Serica to allow the development to proceed. Conditions relevant to the agreement will be included in environmental permits etc. required for specific elements of the proposals.

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Jonathan Ward
Director, Environmental Operations
BEIS OPRED

2/10/18
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Date