



Shell U.K. Limited

Fram 2 Field Development
Environmental Statement Summary

To: Wendy Kennedy

From: Ben Bryant

Date: 20 June 2018

ES Title:	Fram 2 Field Development
Developer:	Shell U.K. Limited
Consultants:	Genesis Oil and Gas Consultants Limited
OGA Field Group:	Central North Sea
ES Report No:	D/4198/2017
ES Submission Date:	13 October 2017
Block No:	29/3a, 29/4c, 29/8a and 29/9c
Development Type:	Field Development

Project Description

Shell U.K. Limited (Shell) proposes to develop the Fram gas and condensate field. The field is located in Blocks 29/3, 29/4, 29/8 and 29/9 in the central North Sea, approximately 221 kilometres (km) east of Aberdeen and 50 km from the UK / Norway median line. The water depth in the area ranges from 94 to 100 metres (m).

Shell plan to target the reservoir by drilling from the top-hole sections of an existing well and drilling a second new well. The wells will be drilled using a semi-submersible drilling rig. The upper sections will be drilled riserless with seawater and viscous sweeps, and the lower sections will be drilled using low toxicity oil based mud (LTOBM). Cuttings contaminated with water based mud will be discharged to sea, and cuttings contaminated with LTOBM will be skipped and shipped to shore for treatment and disposal. No extended well test is planned, but there will be limited flaring for approximately 66 hours during the clean-up of each well.

Production will be routed *via* a new 15 km pipeline connecting the Fram facilities to the existing Starling field manifold, where it will be comingled with production from Starling and transported *via* existing pipework to the Shearwater facility. The new pipeline and umbilical will be surface laid, and retrospectively trenched using either a jetting tool or a mechanical plough. Up to 9,800 tonnes of rock dumping may be required to mitigate against buckling, and mattresses and grout bags will also be required to protect the pipeline and umbilical.

Drilling is scheduled during Q4 2019 and 2020; installation of the subsea pipelines and topside modifications on Shearwater are scheduled during Q2 and Q3 of 2019; and subsea tie-in, commissioning and first production are scheduled for Q2 2020. Peak daily production is anticipated to be approximately 280 tonnes per day of condensate and 917,000 cubic metres per day of gas.

All activities will be covered in relevant Oil Pollution Emergency Plans (OPEPs) that will need to be approved prior to commencement of operations.

Key Environmental Impacts

The Environmental Statement (ES) identified and discussed the following key changes as having the potential to cause an environmental impact:

- Drilling - drill rig location and anchors, rig and vessel noise, drilling discharges; combustion emissions, well clean-up emissions and accidental spills.
- Subsea infrastructure - installation and installation noise, rock dumping, combustion emissions and accidental spills.
- Production - marine discharges, atmospheric emissions and accidental spills.
- Wider concerns - in combination, cumulative and transboundary effects and accidental events,

Key Environmental Sensitivities

The ES identified the following environmental sensitivities:

- Fish: The area is a recognised spawning area for cod, lemon sole, Norway pout, mackerel and sandeels, and a nursery area for cod, blue whiting, European hake, haddock, ling, Norway pout, plaice, whiting, herring, mackerel, sandeels, anglerfish and spurdog. However, the spawning and nursery areas are extensive, and the proposals are unlikely to have any significant impact on these species.
- Seabirds: Seabird sensitivity in the Fram area is low for most of the year but medium in May and June. Sufficient mitigation measures are considered to be in place to prevent accidental spills that could have a significant impact on seabirds.
- Protected habitats: Pipeline route surveys identified evidence of potential methane derived authigenic carbonate (MDAC) structures derived from leaking gases (pockmarks), and the pipeline route was optimised to prevent adverse effects on such structures. The closest identified conservation areas are the East of Gannet and Montrose Fields Nature Conservation Marine Protected Area (NCMPA) located 6 km north of the Fram field, and the Fulmar Marine Conservation Zone (MCZ) located 32 km southeast of the field. None of the designated features or conservation objectives of the sites are expected to be adversely impacted by the development.
- Protected species: Harbour porpoise, Atlantic white-sided dolphin, common dolphin white-beaked dolphin, minke whale and pilot whale have been recorded in this general area. Grey and Common Seals inhabit the coastal waters around the North Sea and have occasionally been observed to travel long distances when foraging, but both species are unlikely to be present in large numbers at the Fram location. Any localised disturbance of marine mammals is expected to be limited to the drilling period and during installation of subsea infrastructure, and unlikely to be significant.
- Other users of the sea: The proposed development is situated within ICES rectangle 42F1, and relative fishing effort in the area is low. Shipping density in the vicinity of the proposed development is low to moderate. 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.

- In-combination, cumulative and transboundary effects: No significant in-combination, cumulative or transboundary effects are anticipated as a result of the proposed activities or the increases in marine discharges and atmospheric emissions from the Shearwater facility.

Key Mitigation Measures (including environmental or monitoring conditions)

- Proposed cementing requirements and monitoring during cementing operations during well operations will aim to ensure that the minimum amount of cement is discharged at the seabed;
- Pipeline and umbilical installation routes will be optimised to avoid potential MDAC locations and any identified wrecks, and installation operations will be designed to minimise the requirement for the deposit of protection / support materials;
- Produced water monitoring will be undertaken to validate the forecasts made in the ES for the selected corrosion inhibitor CRW85440, and development studies will be undertaken to seek an alternative to the corrosion inhibitor to further reduce the potential environmental impact.

Consultation

The Joint Nature Conservation Committee (JNCC), Marine Scotland (MS), the Maritime and Coastguard Agency (MCA) and the Ministry of Defence (MoD) were consulted on the project. The proposals were also subject to public notice.

JNCC: JNCC confirmed that they had no objections.

MS: After consideration of further information provided by Shell, MS confirmed that they had no objections.

MCA: MCA confirmed that they had no objections.

MoD: MoD confirmed that they had no objections.

There were no representations in response to the public notice.

Further Information

Further information was requested from Shell to address issues raised by consultees and during the internal BEIS OPRED review, including clarifications relating to cementing discharges during the drilling operations, the chemical assessment for the proposed new corrosion inhibitor and the field production profile. Additional information was provided by Shell on 15 May 2018 and 7 June 2018 which adequately addressed the issues raised.

Determination

Following review of the ES, the responses received from consultees and the additional information provided by Shell, BEIS OPRED is satisfied that this project 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. BEIS OPRED is therefore content that there are no sustainable objections, and agrees to the OGA issuing the

necessary consent for the proposals.

Wendy Kennedy

20/06/2018

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Wendy Kennedy
Chief Executive, BEIS OPRED

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Date