

Environmental Statement (ES) Summary and Sign-Off

Title:	Leman Tie-Back Development ES
Operator:	Perenco UK Limited (Perenco)
Report No:	D/4146/2012
Submission Date:	June 2012
Block No:	49/27 and 53/02
Development Type:	Field Development
Reviewer:	Julie Cook
Date:	06 September 2012

A) Project Description:

The Leman Tie-back development will consist of the installation of a new 9.2 km 8" pipeline piggy-backed with a 4½" MEG umbilical pipeline between well 53/02a-14A drilled in Block 53/02 and the existing Leman 27A platform located in Block 49/27. Following pipeline installation and production start up Perenco also plan to drill two further production wells and install an additional 2.5 km 6" interconnector pipeline to connect the wells to the Leman Tie-back pipeline, all located in block 53/02. Works on the additional wells and interconnector pipeline are not scheduled to take place until 2014.

The proposed development is located in Blocks 49/27 and 53/02 in the Southern North Sea, approximately 50 km east of the UK coast and 55 km west of the UK / Netherlands median line. Water depths range from 32 metres at well 53/02a-14A to 47 metres at the Leman 27A platform.

Pipeline installation is planned for Q3 2012, with first gas anticipated in Q2/3 2013. Production is expected to increase to approximately 66 billion cubic feet of gas per year by 2029 with the two additional wells potentially providing an additional 42 bscf to the production of the Leman Tie-back development.

Pipelay will be undertaken using a dynamically positioned vessel, using a water-jet trencher. The pipeline trench will be between 1.0 and 1.5 metres deep and allowed to backfill naturally. It is estimated that 50 concrete mattresses will be required for protection of the pipeline crossings and tie-in points of the Leman Tie-back pipeline and a further 25 for the interconnector pipeline.

It is anticipated that drilling will be completed using a jack-up drilling. The top-hole sections of the well will be drilled using sea water with cuttings discharged directly to the seabed. Subsequent sections will be drilled using Low Toxicity Oil Based Mud (LTOBM) with all cuttings recovered for onshore treatment and disposal.

All of the proposed facilities and activities will be the subject of an approved Oil Pollution Emergency Plan (OPEP).

B) Key Environmental Sensitivities

The EIA identified the following environmental sensitivities:

- Fishery stocks: Blocks 49/27 and 53/02 are spawning grounds for mackerel, sandeel, lemon sole, whiting sole, cod, sprat and plaice and nursery areas for mackerel, lemon sole, sandeel, herring, *Nephrops*, plaice, sole, thronback ray, tope shark and whiting.
- Seabirds: Seabird vulnerability in both blocks is high in December.
- Annex I Habitats: The proposed Leman Tie-back Development main pipeline is located within the boundary for the North Norfolk Sandbanks and Saturn Reef cSAC. Annex I Sabellaria spinulosa reef formations have been confirmed at several locations along the main pipeline route and interconnector route.
- Annex II Species: Harbour porpoise and white-beaked dolphin have been recorded in low to moderate numbers in the Leman Tie-back Development area and neighbouring blocks and quadrants, mainly in the summer months. Low numbers of grey and common seals may also be present within the area.
- Other users of the sea: Total fishing effort in the Leman area is comparatively low. Shipping intensity is moderate to high.

C) Key Environmental Impacts:

The EIA identified the following potential impacts and related mitigation measures:

Physical interference: The placement of the spud cans of the jack-up drilling rig and the proposed drilling operations could interfere with other users of the sea. However, appropriate mitigation measures will be put in place, including 500m safety zones around the drilling rig and wellheads, and the issue of Kingfisher Bulletins and Notices to Mariners. The area has low shipping and fishing activity and any impact on other users of the sea is therefore expected to be negligible.

Seabed disturbance: A number of the proposed activities will impact the seabed, the most significant being the installation of the proposed pipeline, the placement of concrete mattresses and rock deposits required for rig stabilisation. Where possible Perenco have re-routed both the main pipeline and interconnector pipeline to minimise the disturbance to the Annex I Sabellaria spinulosa reef habitat. The revised pipeline routes do not now impact any areas of Sabellaria spinulosa with reef building morphology and impact to Sabellaria spinulosa with low potential for reefs has also been significantly reduced. The estimated worst-case total area of impact within the North Norfolk Bank cSAC and Saturn Reef cSAC is 0.03 km², which equates to <0.001% of the area of the cSAC. It is therefore concluded that the proposed project will not have an adverse effect on the structure, function and integrity of the North Norfolk Bank cSAC and Saturn Reef cSAC.

Noise: Noise will be generated during various activities, including drilling operations, pipeline installation operations and vessel movements. Noise levels are not expected to significantly exceed normal background levels in the area. The noise is therefore unlikely to result in injury or significant disturbance of European Protected Species.

Atmospheric emissions: The main source of atmospheric emissions will be fuel use during the drilling, well clean-up, production, pipeline installation and support operations. Considering the highly dispersive nature of the environment, potential impacts are considered to be insignificant.

Marine discharges: The proposed wells will be drilled using a combination of Water Based

Mud (WBM) and Low Toxicity Oil Based Mud (LTOBM), with WBM cuttings discharged to sea and LTOBM cuttings shipped ashore for disposal. All the chemicals used in the course of the drilling and production operations will be selected on the basis of technical compatibility and environmental performance. The marine environment in the development area is sufficiently dynamic to facilitate rapid dispersion and dilution of the proposed discharges, and potential environmental impacts are considered to be insignificant

Accidental events: A number of control measures will be in place to minimise the risk of accidental events, and the proposed operations will be covered by an Oil Pollution Emergency Plan. Modelling of worst-case blow-out and diesel spills has been undertaken, and related impact assessments included in the environmental impact assessment

Cumulative Impacts: The proposed development is in an area where there are a range of oil and gas operations, in addition to shipping and commercial fishing operations. However, it is not anticipated that there will be any significant in-combination effects.

Transboundary Impacts: The UK / Netherlands median line is approximately 55 km east from the development area. No transboundary impacts are likely as a result of proposed operations.

D) Consultation:

Comments were received from The Joint Nature Conservation Committee (JNCC) and The Centre for Environment, Fisheries and Aquaculture Science (CEFAS Environment & Chemical), the Maritime and Coastguard Agency (MCA), the Ministry of Defence (MoD) and Trinity House Lighthouse Board (THLB). The ES was also subject to public notice.

JNCC: JNCC advised that the installation of the main pipeline and interconnector pipeline would pose a likely significant effect on the North Norfolk Sandbanks and Saturn Reef cSAC and further advised that DECC should undertake an Appropriate Assessment to demonstrate the significance of the potential loss of the Annex I habitat *Sabellaria spinulosa* within the cSAC. DECC considers that the ES contains sufficient information to demonstrate that pipeline system will be installed in an area where it is unlikely to affect the integrity of the adjacent linear sandbanks and that the area of the cSAC impacted by the development will have an insignificant impact on the integrity of the sandbanks or associated fauna. DECC also considers that the re-routing of the pipeline system will ensure that there is no direct impact on the *Sabellaria spinulosa* identified within the cSAC and the indirect effects will be extremely limited. DECC are content that the ES has satisfactorily demonstrated that the pipeline installation operations will not pose a Likely Significant Effect on the North Norfolk Sandbanks and Saturn Reef cSAC and that an Habitats Regulations Assessment is not necessary

CEFAS (Environment): CEFAS Environment confirmed that there are no English fisheries-related restrictions on drilling or seismic activities and recommended that the ES should be accepted.

CEFAS (Chemical): CEFAS Chemical confirmed they had no concerns in relation to the planned use of chemicals during the drilling or production operations, but would make a more detailed assessment of the proposals when Perenco submitted the relevant applications for chemical permits

MCA: MCA confirmed that they have no objections.

MoD: MoD confirmed that they have no objections.

NLB: NLB confirmed that they have no objections.

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

E) Further Information:

Further information was requested from Perenco to address issues raised during the internal DECC review, which included clarification of the production profiles presented in the ES. Additional information was provided by Perenco on 4 August 2012, which adequately addressed the issues raised.

F) Conclusion:

Following consultation and the provision of further information, DECC OED 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 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 OED 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 : Wendy Kennedy - Head of Offshore Oil and Gas Environment and Decommissioning

Wendy J Kennedy

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Date: ...10 September 2012.....