



**Total Exploration & Production UK Ltd (TEPUK)  
Edradour Area Development  
Environmental Statement (ES) Summary**

<b>Title:</b>	Edradour Area Development Environmental Statement
<b>Operator:</b>	Total Exploration & Production UK Ltd (TEPUK)
<b>Consultants:</b>	Xodus Group
<b>Report No:</b>	D/4149/2012
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<b>Quad/Block:</b>	206/4
<b>Project Type:</b>	Development
<b>Reviewer:</b>	Julie Cook
<b>Date:</b>	31 May 2013

**Project Description**

TEPUK propose to develop the Edradour Field located in Block 206/4, approximately 56 kilometres (km) northwest of the Shetland Islands and 96 km east of the UK / Faroe median line. The field is located in a water depth of approximately 295 metres (m).

TEPUK are planning to develop the Edradour Field by completion of the existing Edradour exploration well (206/4-2) as a production well. The well will be connected to a new subsea 4-well manifold unit that will be tied-back to the existing Laggan / Tormore pipeline facilities via a new 17 km 16" production flowline and associated monoethylene glycol (MEG) and service pipelines. Control of the Edradour facilities will be via a new 35 km control / chemical umbilical linking the Laggan manifold to the Edradour manifold. The Edradour Area gas-condensate will be exported via the Laggan / Tormore production flowlines to the Shetland Gas Plant (SGP) currently being developed for the Laggan / Tormore project. Processed gas from the SGP will then be re-exported to the St Fergus gas terminal in northeast Scotland via the new Shetland Island Region Gas Export (SIRGE) pipeline.

As part of the wider Edradour Area Development, a further three wells may be drilled immediately adjacent to the existing 206/4-2 well, to targeting separate prospects. If the wells are drilled and successful, they will be completed with Xmas trees and connected to the Edradour 4-well manifold to produce via the facilities described above.

First gas-condensate from Edradour is anticipated in Q4 2016. Based on the projected recovery rate, it is estimated that gas production will peak at 5,146 thousand standard cubic metres per day (kSm<sup>3</sup>/day) in 2018 before steadily declining to 780 kSm<sup>3</sup>/day in 2027.

**Key Environmental Sensitivities**

The Environmental Statement (ES) identified the following environmental sensitivities:



**Fish Stocks:** Norway pout spawn in the area of the proposed development, and it is also a nursery area for blue whiting, cod, ling, hake, Norway pout, mackerel, sandeels, common skate, spurdog and anglerfish.

**Seabirds:** Seabirds vulnerability in the vicinity of the Edradour Area Development ranges from low to high, depending upon the time of year, with no periods of very high vulnerability. Vulnerability is highest in February, March, May and July, and for the remainder of the year it is either moderate or low.

**Annex I Habitats:** Areas of cobble and boulder materials were observed along the pipeline and umbilical route, but further investigation concluded that these areas would not merit designation as an Annex I stony reef habitat. The Edradour Area Development lies within the general area of search for the potential Faroe-Shetland Sponge Belt Marine Protected Area (MPA), but further investigation confirmed that the sponge communities lacked the characteristics of the northeast Atlantic deep sponge communities that are considered to be of conservation interest. The Edradour pipeline route also falls within the distribution of the cold-water coral *Lophelia pertusa*, but there was no evidence consistent of aggregations of corals in the area.

**Annex II Species:** Harbour porpoise and bottlenose dolphin have previously been recorded in the vicinity of the proposed Edradour Area Development. High numbers of harbour porpoise are recorded during March to August and October and November, with low numbers recorded in December to February. Bottlenose dolphins are commonly sighted in coastal areas south of the Shetland and are therefore unlikely to occur in significant numbers. A number of other marine mammal species may also occur in the area, e.g. humpback whales, sperm whales, killer whales, long-finned pilot whales, minke whales, and white-sided and white-beaked dolphins, with peak numbers usually recorded between June and September. As the area is approximately 56 km from the UK coastline, grey and common seals are unlikely to occur in significant numbers.

**Protected Sites:** There are no designated offshore conservation sites in the vicinity of the development. The closest offshore site is the Wyville Thomson Ridge (cSAC), located approximately 232 km to the southwest. The nearest coastal protected areas are located on the Shetland coastline approximately 56 km southeast of the Edradour Area Development.

**Other Users of the Sea:** The level of fishing activity and shipping traffic in the development area is low.

### **Key Potential Environmental Impacts**

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

**Physical interference:** Appropriate mitigation measures will be put in place to ensure that other users of the sea are aware of the proposed activities, e.g. 500 m exclusion zone around the MoDU and completed well, the use of standby vessels, and the dissemination of



information via the Kingfisher Bulletin and Notices to Mariners. All subsea structures will be designed to be overtrawlable, and the pipelines buried or protected along their entirety. Due to the relatively low level of fishing and shipping activity in the area, the impact of the proposed development is considered to be insignificant.

**Seabed disturbance:** The drilling of up to three additional wells and the installation of the subsea infrastructure, including the potential deposit of up to 936,500 tonnes of rock for pipeline stability, will have a direct impact on the benthic community. However, the species composition and habitat is typical of the area, and only a very small proportion of the local habitat will be impacted by the proposed operations. The benthic community and habitat are also expected to recover from the disturbance relating to the installation operations within a relatively short period of time.

**Noise:** A number of noise sources will be associated with the proposed operations, including noise relating to the drilling and infrastructure installation operations. Piling operations will be limited to the installation of the pipeline end manifold (PLEM) and 4-well manifold. Modelling indicates that the sound pressure levels during piling are below those capable of causing Permanent Threshold Shift (PTS) in cetaceans or pinnipeds. Trained Marine Mammal Observer will be present during the piling operations, and the risk to marine mammals is considered to be low.

**Marine discharges:** It is anticipated that all wells will be drilled using Water Based Mud (WBM) which will be discharged to sea. Chemicals used and discharge during the course of the drilling and production operations will be risk assessed in the relevant chemical permit applications. Produced water from the development will be treated at the SGP. The marine environment in the development area is considered to be sufficiently dynamic to facilitate rapid dispersion of the proposed discharges, and potential environmental impacts are considered to be insignificant.

**Atmospheric emissions:** The main source of atmospheric emissions will be fuel use during the drilling and infrastructure installation operations. Considering the highly dispersive nature of the environment, potential 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 TEPUK will develop an Oil Pollution Emergency Plan (OPEP) for the proposed drilling and production activities. Modelling of worst-case blow-out and diesel spillage scenarios has been undertaken.

**Cumulative Impacts:** The proposed development is within an area West of Shetland that has a long history of oil and gas activity. The proposed development will consist of subsea facilities that have a comparatively small footprint, and there is a relatively low level of shipping and commercial fishing activity. It is therefore not anticipated that there will be any significant in-combination navigational or environmental effects.

**Transboundary Impacts:** The proposed drilling and production activities are not anticipated



to result in any significant transboundary effects, with atmospheric emissions and discharges to sea expected to disperse within a short distance of the development. In the event of a spill entering the waters of an adjacent State, it may be necessary to implement international contingency arrangements e.g. the NORBRIT Agreement (the Norway-UK Joint Contingency Plan).

### **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 proposals. The ES was also subject to Public Notice.

**JNCC:** JNCC requested additional information in relation to the potential impact of the rock deposits for infrastructure protection, and the noise assessment. Following the provision of additional information, it was concluded that the rock dumping would have a negligible impact on the potential Faroe-Shetland Sponge Belt MPA, and that the noise assessment was acceptable.

**MS:** MS confirmed they were content for the Department to accept the ES.

**MCA:** MCA confirmed that there were no objections.

**MoD:** MoD confirmed that there were no objections.

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

### **Further Information**

Further information was requested to address issues raised by the consultees and identified during the DECC OGED review of the ES. The response received from TEPUK on 09 April 2013 adequately addressed the issues raised.

### **Conclusion**

Following its review of the ES, the comments received from consultees and the additional information provided by TEPUK, DECC OGED is content that the Edradour Area Field Development is unlikely to have a significant adverse effect on the marine environment in general, or on any protected sites or species or other users of the sea.

### **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**

.....Date 31 May 2013

**Wendy Kennedy**

Director, DECC OGED