Spirit Energy Resources Limited
Pegasus West Development

Environmental Statement Summary

ES Title: Pegasus West Development
Developer: Spirit Energy Resources Limited
Consultants: Genesis Oil and Gas Consultants Limited
OGA Field Group: Southern North Sea
ES Report No: D/4227/2018
ES Submission Date: 19th November 2018
Block No: 43/13b, 43/14, 43/15, 44/11 and 44/12
Development Type: Gas and Condensate Development

Project Description

Spirit Energy Resources Ltd. (Spirit Energy) propose to develop the Pegasus West field in Block 43/13b in the southern North Sea, located approximately 107 kilometres (km) from the nearest UK coastline and approximately 95 km from the UK / Netherlands median line and in a water depth of approximately 28 metres (m).

Spirit Energy propose to develop the field by completing the Pegasus West appraisal well (Well 44/13b-7) as a production well, and tying the well back to the Cygnus A PU platform via a 10" production pipeline and a 180 mm electro-hydraulic-chemical umbilical, both approximately 57 km in length. The pipeline and umbilical will traverse Blocks 43/14, 43/15 and 44/11 and tie-in to the Cygnus platform in Block 44/12, approximately 155 km from the nearest UK coastline and approximately 35 km from the UK / Netherlands median line. The production xmas tree installed on the well will be fitted with a wellhead protection structure. The pipeline and umbilical will be trenched and backfilled, with pipeline crossings, surface sections and transition points protected with rock placement, mattresses and grout bags. A subsea isolation valve will be installed at the Cygnus platform.

Modifications will be required to the Cygnus topside facilities, to accommodate the Pegasus West production. Production is scheduled to commence in 2021 at the earliest, with anticipated peak production of approximately 1,740,000 m³/d of gas and 55.6 t/d of condensate in the following year. Field life is expected to extend until at least 2032, with total recoverable reserves of approximately 14.5 MMBOE. As production will exceed the Environmental Impact Assessment Directive thresholds, an Environmental Statement (ES) was required under the Offshore Petroleum Production and Pipe-lines (Assessment of Environmental Effects) Regulations 1999 (as amended).

Key Environmental Impacts

The ES identified and discussed the following as having the potential to result in an
environmental impact:

- Physical presence of subsea infrastructure and rock dump;
- Seabed disturbance;
- Energy use and atmospheric emissions;
- Discharges to the sea;
- Underwater noise;
- Interaction with other sea users; and
- Accidental events.

Key Environmental Sensitivities

The ES identified the following environmental sensitivities:

- Fish: The development is located within spawning grounds for cod, plaice, sole, whiting, herring, mackerel, sandeels and sprat; and within nursery areas for blue whiting, hake, ling, whiting, anglerfish, spurdog and tope. However, the spawning grounds for pelagic spawning species and all of the nursery areas are extensive and the proposals are unlikely to have any impact on the relevant species. Seabed disturbance could impact herring and sandeel spawning grounds, but offshore activities are, as far as possible, scheduled to avoid the herring spawning period of August to October and the sandeel spawning period of November to February. Nevertheless, the proposed timing of operations could amend the sediment and make it unsuitable for spawning or bury deposited eggs, and underwater noise could also result in avoidance that could impact the spawning behaviour of both species. However, effects are unlikely to be significant.

- Seabirds: Seabird numbers are highest from October to April, but SOSI data indicates that the most sensitive periods are June to September and December. It is considered that there are sufficient mitigation measures in place to prevent accidental spills that could have a significant impact on seabirds, and Spirit Energy will be required to have approved Oil Pollution Emergency Plans (OPEPs) in place before undertaking the offshore operations.

- Protected habitats: The proposed development is located within both the Dogger Bank SAC and the Southern North Sea Harbour Porpoise SCI. However, the likely impact of seabed disturbance on the benthic species in both sites is considered to be minor because of the size of the sites, and recovery would also be expected to be comparatively rapid. The overall impact is therefore likely to be negligible because of the extent and nature of the habitats and associated species. There are no SPAs or MCZs in the vicinity of the development that are likely to be impacted by the proposals.

- Protected species: Grey seals have been recorded in the development area but the distribution of harbour seals is generally restricted to more coastal areas and they are unlikely to be found this far offshore. Harbour porpoise, white beaked dolphins and minke whales are regularly recorded in the area, and the numbers of harbour porpoise are particularly high during the summer months. Noise disturbance of marine mammals is possible, but there are no significant noise sources and the species found in the area are likely to be habituated to vessel noise. Significant impacts are therefore unlikely. The potential extent of any noise impact is also likely to be very small compared with the area of the Southern North Sea Harbour Porpoise SCI. If any of the proposed offshore oil and gas activities overlap with the Creyke Beck A windfarm piling, it is likely that the impact of vessel operations relating to the
oil and gas operations will be almost entirely within the area of impact of the windfarm piling and the oil and gas operations would not significantly add to the impact or the impacted area.

- East Offshore Marine Plan: Proposals have been assessed against the plan objectives and oil and gas policies, and there are no barriers to the proposed development.

- Other users of the sea: The development is located within ICES rectangles 38F1 and 38F2. Relative fishing effort in both areas is considered low, although slightly greater in rectangle 38F2. Shipping density is low in Blocks 43/13 and 43/14, increasing to moderate in Blocks 43/15 and 44/11, and increasing again to high in Block 44/12 at the Cygnus end of the pipeline. Appropriate navigational controls will ensure that there is no significant impact on other users of the sea.

- In-combination, cumulative and transboundary impacts: No significant in-combination, cumulative or transboundary effects are anticipated as a result of the development. However, the potential for in-combination and cumulative impacts will have to be re-assessed at the time of submission of applications for specific activities.

**Key Mitigation Measures (including environmental or monitoring conditions)**

All activities will be undertaken in line with commitments detailed in the ES and best industry practice, and commitments relating to the key environmental impacts are collated in the Non-technical Summary that is included in the ES.

**Consultation**

The Joint Nature Conservation Committee (JNCC), the Marine Management Organisation (MMO), the Centre for Environment, Fisheries and Aquaculture Science (Cefas), the Maritime and Coastguard Agency (MCA), Trinity House (TH) and the Ministry of Defence (MOD) were consulted on the proposals. The Health and Safety Executive (HSE) was also notified of the proposals and the ES was subject to public notice.

**JNCC:** JNCC had no objections but confirmed the requirement for Habitats Regulations Assessments (HRAs) and the need to minimise seabed disturbance and rock dumping.

**Cefas:** Cefas had no objections but pointed out that there was very limited information provided in relation to specific uses and discharges of chemicals, and they would therefore expect full details to be included in relevant chemical permit applications.

**MCA:** MCA had no objections but provided detailed comments on navigational requirements to be incorporated into future consents relating to the rig, the xmas tree and associated wellhead protection structure and the pipeline operations.

**TH:** TH had no objections but confirmed the requirement for standard rig marking and a wellhead depth survey.

**MOD:** MOD did not raise any objections.

No comments were received from the MMO or HSE, or in response to the public notice.

**Further Information**
Further information was requested from Spirit Energy to address issues that were raised by consultees and during the internal OPRED review. The information requested related to survey requirements, the well safety zone, pipeline and umbilical discharges and the acquisition of Third Energy Offshore Limited by Hague and London Oil. Additional information provided by Spirit Energy on 30th April addressed all the issues.

**Determination**

Following review of the ES, the responses received from consultees, the additional information provided by Spirit Energy and the supplementary information included in the Likely Significant Effects (LSE) assessment undertaken by OPRED to satisfy the request for a HRA, OPRED is satisfied that the 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.

**Recommendation**

Based on the information presented within the ES, the advice received from consultees and the additional information provided by Spirit Energy and in the LSE assessment, BEIS OPRED is content that there are no objections, and agrees to the OGA issuing the necessary consent for the proposed development. This agreement is not subject to the inclusion of any specific environmental conditions.

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<td>Wendy Kennedy</td>
<td>Date</td>
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<td>Chief Executive, BEIS OPRED</td>
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