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## WEB COMMENTS: Don Southwest and West Don Development Projects

<b>ES Title:</b>	Don Southwest and West Don Development Projects
<b>Operator:</b>	Petrofac Energy Development Limited
<b>Consultants:</b>	Metoc plc
<b>Field Group (BERR):</b>	Aberdeen
<b>ES Report No:</b>	W/3963/2008
<b>ES Date:</b>	February 2008
<b>Block No's:</b>	211/18a, 211/13
<b>Development Type:</b>	Two subsea developments tied back to a floating production facility (FPF), with an export line from the (FPF) to the Thistle platform.

### Synopsis:

#### Project Description

The proposed Don Southwest and West Don development is located in Block 211/18a and 211/13, 150km northeast of the Shetland Islands and 14.6km northeast of the Thistle platform.

The project comprises of:

- The drilling of four development wells (two gas lift oil producers and two water injectors) at the Don SW location;
- The drilling of three development wells (two gas lift oil producers and one water injector) at the W Don location;
- Installation of a new riser base structure connected to the Northern Producer (FPF) via seven flexible risers and a dynamic umbilical riser;
- Installation of an 8" production pipeline, piggy-backed 3" gas-lift pipeline and 8" water-injection pipeline, control umbilical from the riser base structure to each of Don SW and W Don;
- Installation of a single anchor loading (SAL) system

connected to the riser base structure via an 8” oil export line;

- Installation of an 8” oil export pipeline and piggy-backed 3” gas export line between the riser base structure and the Thistle platform;
- Minor modifications to the Northern Producer and Thistle platform to receive and export the produced hydrocarbons, such as new pipework and metering systems;
- Don SW and W Don production is expected to peak at 50,000 bbls/d. Prior to the availability of the export route to Thistle, surplus gas will be flared after fuel use at the FPF and Thistle.

### **Key Project Activities**

The EIA identified the following activities as having the potential to cause an environmental impact:

- Drilling of the wells, including discharge cuttings
- Installation of subsea infrastructure, including anchoring, trenching and back fill, contingency rock dumping
- Noise and emissions from drilling, pipelay and installation activities
- Pipeline hydrotest discharge
- Presence of subsea infrastructure
- Increased production at Thistle
- Flaring surplus gas
- Accidental spills

### **Key Environmental Sensitivities**

The EIA identified the following environmental sensitivities:

- Low shipping activity (average of 0-1 vessel per day);
- Moderate to high fishing activity;
- Fish spawning area for haddock, saithe (peak January and February), Norway pout and cod (peak February to March);
- Nursery area for haddock, Norway pout, mackerel and blue whiting;
- Seabird vulnerability is high in July;
- High to low densities of cetaceans have been recorded in the development area;
- Annex I Habitats: the development is located within the Iceberg Ploughmarks (Hebrides Slope to West Shetland Slope including Wyville-Thomson Ridge) Potential Annex I Habitat (PAIH);
- Annex II Species: Harbour porpoise has been sighted in low to high numbers within the development area.

### **Key Potential Environmental Impacts**

The following potential impacts and mitigation were

addressed in the EIA:

- Low shipping activity (average of 0-1 vessel per day);
  - Combined the drilling of seven wells will generate cuttings piles that cover an estimated area of 2728m<sup>2</sup>. However, local bottom currents will disperse the cuttings, in addition to them being incorporated into the sediment through bioturbation.
  - Anchoring associated with the drilling rig and Northern Producer will use established anchor patterns. A total of 16 anchors will be used. The area impacted by anchor mounds is estimated to be 641m<sup>2</sup>. In addition, there will also be scar marks from the anchor chains. There will be localized disturbance of benthic fauna and flora, but recovery rate will be within 5 years and therefore any impact is not deemed to be significant. In addition, rig movement will be kept to a minimum.
  - Installation of the subsea infrastructure will combine to give an overall area of impact of 499m<sup>2</sup>. Due to the benthic fauna and flora species in the vicinity being typical of the Northern North Sea area and the recovery rates (within 5 years), impacts from the installation of subsea infrastructure will not be significant.
  - In total, six pipeline trenches will be dug – two mechanically backfilled and four to be left to naturally backfill. A total of 0.40km<sup>2</sup> of seabed will be impacted. In addition, 372 mattresses and 121,000 tonnes of rock dumping will be required covering an area of approximately 1284km<sup>2</sup>. Any losses of the existing benthic environment will be local to the development and will unlikely affect the integrity of the benthic community in the area of the development. Recolonisation is expected to occur quickly.
- Obstacles to other marine activities – The presence of subsea infrastructure can have implications for fishing vessels. However the infrastructure is designed to be fishing friendly and marked on admiralty charts.
- Noise – drilling, the pipelay and associated vessels will produce noise during operations, however this will not have a significant impact.
- Atmospheric emissions – these will be produced during the installation of the subsea infrastructure from the installation vessels and as a consequence of increased production. For the initial six month period the excess produced gas will be flared at the Northern Producer. In addition, Don gas will be utilised as fuel on the Northern Producer, as fuel on the Thistle platform, and negotiations will be carried out to export any further

excess Don gas onwards into the Northern Leg Gas Pipeline. Once the wells and process train are stabilized, the long term average flare will be within the minimum flare requirement for safe platform operation. The environmental impact of flaring operations is not deemed to be significant.

- Marine discharges – the only foreseeable discharges are associated with drilling, the proposed hydrotest of the pipeline and through produced water (PW). All chemicals used for drilling and pipeline testing are CEFAS registered and are not considered to be significantly harmful to the environment. For the life of the development PW will be a maximum of 41,692bpd and will comply with current regulations and oil in water will not exceed 30ppm. It is unlikely any cumulative impacts will be associated with PW discharge, especially with the high dispersion regime of the area.
- Accidental events – The highest risk of a hydrocarbon spill is during bunkering operations, therefore all bunkering operations will only take place in suitable weather conditions, in daylight hours, with a continuous watch present. Petrofac also have an approved OSCP in place.
- Cumulative Impacts – The cumulative impacts from the proposed development are negligible due to the extent of existing infrastructure in the area.
- **Biodiversity and Protected Habitats** – The location of the project is within an area known for its iceberg ploughmarks, a PAIH. Surveys show extensive scarring by relict iceberg ploughmarks, but there is no evidence of Annex I habitats within the vicinity of the development. If there is any evidence in subsequent surveys to suggest that this habitat is present, Petrofac will notify BERR immediately.
- **Protected Species** – The Harbour porpoise listed in Annex II to the EU Habitats Directive occur in the area of the proposed project. Operations associated with the proposed development are not considered to have an impact on any Harbour porpoise present.

**Consultee(s):**

The statutory consultees for this project were JNCC and FRS. The following comments were made:

**JNCC:** Initial comments were unable to advise whether the development would have a significant impact on the marine environment and asked for further information regarding the proposed export route e.g. proposed installation time to minimise flaring requirement and the survey area.

It was clear from the ES that areas of the anchor patterns and the export pipeline had not undergone survey work and it was deemed that on this basis it could not be determined whether any potential Annex I habitats were in the vicinity of the proposed development. Previous export pipeline route options had been surveyed and after consultation with Petrofac, one of these was chosen and the impacts were fully assessed.

**FRS:** There are no fisheries related restrictions covering this Block during the proposed works period and overall it was concluded that with the implementation of the proposed mitigation and risk reduction measures, the proposed development would not have a significant impact on the marine environment. Recommendation for consent was issued.

**Public Consultation:** No comments were received as a result of the public consultation.

**Conclusion(s):** Following consultation and the provision of the additional information, we are satisfied that this project is not likely to have a significant impact on the receiving environment, including any sites or species protected under the Habitats Regulations.

**Recommendation(s):**

On the basis of the information presented within the ES and advice from consultees it is recommended that the ES should be approved.

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