Centrica Resources Ltd.
York Field Development
Environmental Statement Summary

To: Sarah Pritchard

From: Sarah Dacre
Date: 1st February 2011

ES Title:	York Field Development
Operator:	Centrica Resources Ltd
Consultants:	RPS Energy HSE & Risk Management
Field Group (DECC):	London
ES Report No:	D/4094/2010
ES Date:	October 2010
Block Nos:	47/2a, 47/3a, 47/3d and 47/3e
Development Type:	Production via NUI and export pipeline

Project Description

The proposed York Field Development comprises the following:

- The installation of a Normally Unmanned Installation (NUI) located in Block 47/3.
- The drilling of two production wells.
- The installation of a 34km 16" pipeline, piggybacked by a 3" methanol line which will export fluids to the onshore Easington terminal, operated by Centrica Storage Limited.

The proposed development is located in Blocks 47/2a, 47/3a, 47/3d and 47/3e and first gas is anticipated for August 2012.

Key Environmental Sensitivities

The EIA identified the following environmental sensitivities:

- High shipping activity;
- Moderate to ? fishing activity predominantly potting for crabs, lobster and whelks;
- Fish spawning area for sandeel (November to February), herring (August to October); lemon sole (April to September) and sprat (May to August). In relation to herring and cod spawning, there are a number of restrictions which apply to drilling and seismic activities between August and October and January and April, respectively.
- Seabird vulnerability is very high or high throughout most of the year (June to February);
- Low numbers of cetaceans have been recorded;
- Annex I Habitats: Site surveys identified a number of potential stony reef features along the proposed pipeline route;
- Annex I Species: there are no Annex I species in the vicinity of the proposed well.
- Annex II Species: harbour porpoise occurs in low numbers, mainly in the summer months;
- Protected sites*: The nearest protected sites are the Humber Flats, Marshes and Coast SPA* which is located 3km from landfall. The proposed development is not in the vicinity of any offshore or marine protected sites.

Key Potential Environmental Impacts

The following potential impacts and mitigation were addressed in the EIA:

- **Obstacles to other marine activities during operations** – during the construction, installation, drilling and production the main obstacles will be the drilling rig, pipelay vessel, DSV and associated standby vessels and the NUI, supply vessels and periodic shuttle tanker. Shipping traffic density is high, where 43 traffic routes were identified within a 10nm radius of the proposed development. Two routes were examined more closely for collision risk frequency as they passed 0.3 and 1.4 nm from the proposed York installation. Results showed a collision risk frequency of $1.62E^{-04}$ per annum, which equates to a return period of approximately 6,170 years. Based on the results a collision risk management plan will be in place to minimise the risk of vessel collision. Measures include advance notification to regular runners of the area informing them of up-coming operations. In addition, safety zones will also be designated and the operations will be promulgated in advance through the Notices to Mariners, Navtex and VHF broadcast in line with the recommendations of the navigational authorities. All subsea structures will be 'fishing friendly' and protective mattresses will be used to minimise the impact of dropped objects and fishing equipment.

- **Seabed disturbance** – As a result of the pipe lay activities, installation of subsea infrastructure, drilling activities and the presence of the NUI there will be disturbance to the seabed through:

  i. *Pipe lay activities* – it is proposed to lay a 34km, 16" pipeline, which has the potential to disturb approximately 0.569km^2, where approximately 483,750m3 of material will be removed and stored alongside the trench to be used for mechanical backfilling on completion of the pipeline installation. The use of rock dumping and mattressing are only considered as a contingency if backfilling proves to be insufficient.. Centrica believe it is unlikely deposits will be required, however, if they were they would include 50 mattresses and approximately 25000 tonnes of rock dumping.

     Although there will be a direct impact on the seabed, the working width of the pipeline corridor will be minimised and the residual impacts on sediments and water quality are considered to be negligible due to their temporary nature. In addition, impacts on local sediment transport is also considered to be negligible.

     The installation of the pipelines will also have an impact on the benthic communities in the area. Although faunal communities will be severely impacted by trenching operations, there are a number of dominant taxa which are tolerant to smothering and physical disturbance and given the fact the species present are representative of that area of the North Sea, any impacts are considered to be low overall.

  ii. *Installation and presence of the NUI* – the impacts on the seabed by the NUI are not considered to be significant. Although the impacts are long-term (25 years) the overall estimated area of seabed impact is 80m^2 where benthic communities are representative of that area of the North Sea. It is not anticipated that scour protection will be required, but Centrica will monitor for scour around the NUI.

  iii. *Physical presence of the rig* - The placement of the spud cans of the jack-up rig on the seabed will disturb localised areas of seabed. Each spud-can impact area will be approximately 308m^2, therefore the total impact area of the 3 spud cans is estimated to be 924m^2. In the event that rig stabilisation material is required, approximately 5000 tonnes may be used, increasing the impact area to 1038m^2. Once the rig has moved off location re-colonisation of any impacted area will occur and due to the nature of the currents and sediments in the area it is expected that the deposited

rock would become covered by sediment resulting in the surface of the seabed returning to its previous state.

iv. *Mud and cuttings discharge* – a base case of two platform wells are proposed. The East York well was drilled, completed and suspended in September 2010 and impacts from this well were assessed under a previous ES and subsequent PON15B application. Upper completion and tie-in is scheduled for June/July 2012. Drilling operations for the south York well are scheduled for between February and May 2012.

A total of 1,750 tonnes of cuttings will be generated from the South York well and will be discharged to sea. Cuttings modelling shows that 53% of cuttings will be deposited within a 90m radius of the well location, 92% within 200m and 99% within 630m. The remaining 1% of finer particles could travel up to 2km from the well, but are likely to be widespread and undetectable. The maximum predicted depth of cuttings is 2.7cm.

Any impacts from the discharge of cuttings will be local and transitory as the majority of cuttings will settle or disperse quickly. Within the vicinity of the well, smothering will occur but given the high tidal current area, it is likely that the cuttings will either mix with the natural sediments and/or eventually disperse.

- **Underwater Noise** – the proposed development will generate noise from the following activities:
  - Drilling operations -
  - Installation of the NUI (piling)
  - Installation of pipelines
  - Vessel activity

The noise disturbance expected as a result of the York operations are all low frequency, where the main sound will be generated from the drilling and piling operations (163 and 240 dB re:1µPa respectively). The proposed operations are unlikely to exceed the sound pressure level injury thresholds. However, it is likely that the noise levels will exceed the behavioural thresholds, but not exceed the threshold over a distance of 1km from the sound sources. During the drilling period harbour porpoise are likely to be found in the area in low to medium concentrations, but given this density of harbour porpoise it has been estimated that 0.0176 animals are likely to detect the noise. With respect to piling, the estimation is 1.76 animals. However, Centrica are committed to undertaking operations in line with JNCC guidelines for minimising the risk of disturbance and injury to marine mammals and due to the short duration of activity, the residual impacts on marine mammals from noise is considered to be low. It can therefore be concluded that the proposed activities are unlikely to cause an offence to a European Protected Species.

- **Atmospheric emissions** – the main sources of atmospheric emissions will occur during the drilling operations, pipeline and NUI installation and from operations and maintenance of the NUI.

As a result of drilling operations, expected CO_2 emissions will temporarily increase in the vicinity of the operations, however in comparison to UK emissions (based on 72 days of UK emissions from the energy sector) over the proposed drilling period emissions equate to 0.01%. NUI and pipeline installation activities have been predicted to emit 1434.24 tonnes of CO2, which is the equivalent of 0.01% of UK emissions (based on 72 days of UK emissions from the energy sector). Drilling, construction and installation operations will be controlled through careful planning to minimise the timing of the operations.

Emissions from NUI operations and maintenance is also considered to be negligible compared to UK emissions. In addition, the effects of all source emissions will be minimal due to rapid dispersion.

- **Marine discharges** – the only foreseeable discharges associated with the proposed development will be through the drilling operations, pipeline commissioning and the use of rigs and vessels during construction. Although chemicals will be injected at the NUI, no discharge of chemicals will occur offshore. The drilling operation will only use Water Based Muds. All chemicals are CEFAS registered and are not considered to be significantly harmful to the environment. Further risk assessment will be undertaken in subsequent chemical permit applications for the drilling and pipeline operations and the NUI.

- **Accidental events** – The York field development targets a gas reservoir, with associated condensate. The worse-case scenario would be a blow-out, which would result in a maximum flow rate of 2000 bbls/day. Modelling estimates that over a 28-day period, there would be a 7% probability that the condensate spill would beach.

  The total diesel inventory for the rig is 334 tonnes. Modelling results have shown that the diesel will disperse within 7 hours, approximately 13km from the English coastline. There is a 0% probability that diesel would reach the coastline.

  A number of control measures will be in place to minimise the risk of accidental events such as an Oil Pollution Emergency Plan (OPEP) and an Emergency Procedures Plan (EPP).

- **Cumulative and Transboundary Impacts** – The area of the proposed development is subject to a range of oil and gas operations, shipping and commercial fishing, however it is unlikely to have a significant effect in combination with other projects. The nearest transboundary line is the UK/Netherlands, approximately 162km from the York NUI and therefore it can be concluded there are no transboundary issues.

- **Annex 1 Habitats** – there were a number of stony reef habitats identified. A detailed assessment was undertaken and as a result the pipeline route was revised in order to minimise the impacts of the pipeline on the stony reef habitats. The re-routing resulted in a 98.7% decrease in the habitat being affected and the overall impact is considered to be low. No other Annex 1 habitats were identified in the development area.

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

Consultee(s):

The statutory consultees for this project were JNCC, Natural England and CEFAS. In addition, the Marine Management Organisation (MMO) were also part of the consultation as the ES covered both DECC and MMO regulatory zones. The following comments were made:

JNCC and NE: JNCC requested further clarification on the re-routing of the pipeline to avoid Annex I habitat to satisfy themselves that the most optimal route was considered in terms of minimising impact and that Centrica had fully considered the potential impacts on the stony reef habitats that had been identified. Clarification was subsequently fully represented in the further information provided by Venture to JNCC's satisfaction and recommendation for consent was issued.

CEFAS: There are a number of fisheries restrictions within the vicinity of the proposed development. Restrictions regarding drilling and seismic activities between August and October to protect herring spawning have been disregarded as site specific evidence has concluded there is a low potential for herring spawning. Restrictions still remain for seismic activities regarding cod spawning, however Centrica have confirmed there are no plans to conduct seismic activities. Recommendation for consent was issued.

MMO: Clarification was sought regarding a ICES rectangle discrepancy, which may have affected the fisheries discussion. MMO confirmed they were content.

Further Information: In addition to the consultee comments a number of issues were highlighted by DECC and further information was requested.

Centrica Resources Ltd provided the additional information requested and where appropriate acknowledged comments and committed to incorporating them in future submissions. All issues were considered satisfactorily amended and clarified.

Conclusion(s):

Following consultation and the provision of the additional information on the 31st December, DECC and its consultees 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.

Sarah Pritchard

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Sarah Pritchard **Date**