Relinquishment Report for Exploration License P.1749

Part Block 49/24c

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1 License Information

Block 49/24c (Figure 1) is located immediately West of the Sean gas fields, currently in production, operated by Oranje-Nassau Energie UK Ltd (“ONE”). The outline of the block is highlighted in yellow.

<table>
<thead>
<tr>
<th>License Number</th>
<th>P.1749</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round/Award Date</td>
<td>26th Round, 10th of May 2011</td>
</tr>
<tr>
<td>License Type</td>
<td>Traditional</td>
</tr>
<tr>
<td>Block</td>
<td>49/24c</td>
</tr>
<tr>
<td>Equity Holding</td>
<td>100% Oranje-Nassau Energie UK Ltd</td>
</tr>
<tr>
<td>Work Programme</td>
<td>(a) drill one well to 3000m or to the Rotliegendes, whichever is the shallower, or: (b) elect to allow the licence to automatically cease, in accordance with the conditions of the license.</td>
</tr>
</tbody>
</table>

Table 1: P.1749 License information

ONE confirms that OGA is free to publish this document, and that any relevant third party ownership rights have been cleared for publication purposes.

2 License Synopsis

License P.1749 (Block 49/24c, Figure 1) was awarded on the 10th of May 2011, through the 26th round, with a start date the 10th January 2011. The license was applied for to evaluate an extension of the Sean field main structure, possibly holding an independent gas-accumulation in a three-way fault-dip closure, known as and from here on referred to as the Sean NW prospect.

Recently, upon transeral of ownership from Shell to ONE, the prospectivity of the block was re-evaluated and the only identified prospect was assessed to be un-economic (see chapter 5). Consequently, ONE decided to release the license.

The initial term (4 years) of the license was extended with one year, new end date 10th of January 2016, as per correspondence from DECC on the 18th of November 2014 in view of the transition of operatorship from Shell to ONE. ONE has indicated (email, 26th August 2015) that potential volumes in licence P.1749 are too small to warrant an exploration well and therefore has decided to relinquish the license.
3 Work Programme Summary

Upon transferal of ownership from Shell, ONE has undertaken a complete subsurface re-evaluation of the Sean field, to obtain an improved understanding of the distribution of GIIP, reservoir connectivity and potential infill opportunities. As part of this project, the Sean NW prospect, as well as the prospectivity of block 49/24c in general were re-evaluated. The main conclusions are that, although the Sean NW prospect is probably gas bearing in good quality Rotliegendes sandstone, the volumes in place are too low to warrant a well and other opportunities have not been identified.

The re-evaluation project comprised a full re-interpretation of the seismic PSDM (Shell, 2009) volume over the Sean field and surrounding area, a layer-cake depth conversion, 3D static modelling and a new review of the existing petrophysical evaluations by Shell. Specifically the layer-cake depth conversion changed views on the structure of the Sean field and surrounding areas, compared to work done by Shell, which relied entirely on seismic mapping directly on the PSDM depth volume. The smaller residual error on the well-tops of the numerous production wells in the Sean field, gives confidence in the validity of the depth prediction by the layer-cake model and preference over the seismic volume in depth.

The structure of the NW prospect, as predicted by the layer-cake model, contains a much smaller independent closure compared to the structure as interpreted on the depth seismic (see Figure 2), the latter being less reliable in ONE’s view. At the very least, ONE considers it to be likely that the Sean NW prospect is much smaller than suggested by depth seismic interpretation, thereby decreasing the possibility of finding sufficient volumes in place.

The prospect is probably positioned in a gas migration shadow and therefore carries additional significant exploration risk. In addition, any possible discovery in the low relief structure (chapter Error! Reference source not found.) is prone to suffer from early water breakthrough when taken into production, this will further decrease the overall possibility of success to an unacceptably low figure.
4 Database

4.1 Seismic and well data

A base map with an overview of the available seismic and well data is given in Figure 3.

4.1.1 Seismic

Two recent and good quality 3D seismic datasets were acquired by Shell, one in 2001 and one in 2009. These were obtained by ONE through the transferral of ownership of the Sean gas fields. Both acquisitions were processed with Kirchhoff pre-stacked depth migration algorithm, the 2009 acquisition was also processed with a reverse time migration algorithm.

ONE used these seismic volumes to map and depth convert a number of relevant seismic horizons. These maps were investigated and compared to the maps previously generated by Shell, to assess the prospectivity of block 49/24c. This resulted in the identification of a single structure at Rotliegend level, with a potential for bearing hydrocarbons. The evaluation of this prospect is described in chapter Error! Reference source not found..

4.1.2 Well data

No wells have been drilled in block 49/24c but numerous wells in the neighbouring blocks, also covering the Sean gas fields, clearly demonstrate a high reservoir quality Rotliegendes sandstone (see field type log in Figure 4), the presence of which can be inferred in block 49/24c on seismic in the structure described in chapter Error! Reference source not found.. Well data in the vicinity of the Sean fields does not indicate deteriorating reservoir quality towards the location of the Sean NW prospect.
5 Resource and Risk Summary

5.1 Prospect Sean NW

5.1.1 Trap
Sean NW is a three-way fault-dip closure in a north-western extension of the South Sean field structure. Although a strongly dipping structure in dip direction (see Figure 5) on time seismic, in strike direction the relief in the structure is minimal (Figure 6) and a shallow saddle exists between the Sean NW prospect area and the crest of the Sean field, resulting in a shallow spill-point (Figure 7).

5.1.2 Risk
Sean NW consists of a small but valid structure after layer-cake depth conversion, most likely containing similar reservoir properties to the Sean field. The geological chance of success is low (30%) due to the fact that the prospect is likely located in a gas migration shadow.

As can be seen in Figure 8, gas migration into the Sean field occurred along a narrow ridge from the North, filling the Sean main field down to a spill point controlled by a saddle towards the Sean East field. As the GWC in the Sean main field is shallower than the spill point to Sean NW, the prospect can only have been filled by the existence of an independent connection to the northern migration route. Probability of this occurring is regarded to be low.

Another element contributing to the overall risk of the prospect is the fact that a combination of the low-relief structure with a shallow spill-point bares a significant risk of early water breakthrough, when taken into production.

5.1.3 Gas Volumes in Place
The gas volume in place (GIIP) presented below is a deterministic number. No attempt was undertaken to calculate a probabilistic range of volumes. GIIP uncertainty is mainly driven by the uncertainty in the estimation of seismic velocities, used in the layer-cake depth conversion, which has a low residual error of +/- 15 m on the numerous wells in the area. Doubling of the volumes in place will not increase the value of the prospect to the extent that an exploration well can be justified.

<table>
<thead>
<tr>
<th>Prospect Lead Discovery Name</th>
<th>P L D</th>
<th>Stratigraphic Level</th>
<th>Unrisked Volumes in Place (Gas, BCF), Deterministic case (FWL at 2734)</th>
<th>Geological chance of success (%)</th>
<th>Risked Volume (MMboe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sean NW</td>
<td>P</td>
<td>Slochteren Fm.</td>
<td>2.2</td>
<td>30</td>
<td>0.66</td>
</tr>
</tbody>
</table>

Table 2: Resource and risk summary table
6 Conclusions

The Sean NW prospect is an unattractive prospect. Volumes in place are estimated to be very low and the geological chance of success is low due to the position of the closure being in a likely migration shadow. Also, the value of the prospect is reduced by a significant risk of early water breakthrough, when taken into production.

Other prospective resources in the area of license P.1749 could not be identified. Therefore, ONE decided to relinquish the license.

7 Clearance

Oranje-Nassau Energie UK Ltd confirms, within this report (see License Information) that OGA is free to publish the Report and that all 3rd party ownership rights (on any contained data and/or interpretations) have been considered and appropriately cleared for publication purposes.
8 Maps and Figures

Figure 1: Structural depth contour map of top Rotliegend, highlighting block 49/24c, adjacent to the Sean field
Figure 2: Layer-cake depth conversion structure (left) and depth seismic structure (right) compared
Figure 3: Seismic and well data base used to evaluate Sean NW
Figure 4: Well 49-25a-08 type log of the Sean field
Figure 5: Seismic section S1 (TWT) showing crossline 2256 over the crest (orange polygon) of the Sean NW prospect in a southern location.
Figure 6: Seismic section S2 (TWT) along a polyline over the crest of the Sean NW prospect
Figure 7: Structural depth (layer-cake velocity model) contour map of Sean NW prospect with closing contour at 2734 m TV in orange
Figure 8: Migration and charge into the Sean field area, Sean NW area indicated by orange polygon