PL 053C – License status report

Status: **Final**

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PL 053C License status report		
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Author(s)/Source(s): Eva Helle Simmenes, Atle Nygård	
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Summary

Reference is made to the notification on PL 053C license drop decision to NPD dated 9th of February 2021.

This report outlines the key license history, the database, prospects and the technical evaluation of the production license 053C (PL 053C) and fulfils the requirement by the NPD for a license status report within 3 months of relinquishment.

Contents

1 Licence history

License: PL 053C

Awarded: 10.02.2017

License period: Expires 10.02.2023
Initial period: 6 years

License group:

Equinor Energy AS	49.3% (Operator)
Petoro	33.6%
Total	14.7%
ConocoPhillips	2.4%

License area: 123.726 km^2

Work programme:

Work obligation	Decision	Task status	Expiry date	Wellbore if drilled
Study of geology and geophysics		Approved		
	Decision to drill	Will be drilled	10.02.2019	
Drill exploration well		Approved		30/6-31 S
	(BoK) Decision to concretize	In process	10.02.2021	
Conceptual studies		In process		
	(BoV) Decision to continue	In process	10.02.2022	
(PDO) Prepare plan for development		In process		
	(PDO) Decision to submit plan for development	In process	10.02.2023	
	(PDO) Submit plan for development	In process	10.02.2023	
	Decision to enter extension period	In process	10.02.2023	

Meetings held:

15.05.2018 EC/MC startup meeting

The PL 053C has been administrated by the OAU (Oseberg Area Unit). Consequently, it has followed the OAU meeting schedule which include four MC and two EC meeting every year. In addition, technical and commercial meetings, in relation to well decision and planning, have been held when required.

Work performed:

2017: License award.
05/2018: EC/MC startup meeting.
2018/2019: Geological/geophysical evaluation of prospectivity.
2019: Drill or drop decision.
2020: Drilled exploration well 30/6-31 S Helleneset.
2021: License decision to surrender license.

Reason for surrender:

The exploration well 30/6-31 S drilled the prospect Helleneset (Figure 1,2 and 3) and was proven dry. (Note that for geological reasons the well was drilled in the neighboring PL 053, not

in the PL 053C.) The remaining potential in PL 053C has been evaluated on good quality CGG18M01 PSTM and it is challenging to de-risk any prospects further. Evaluation of prospectivity in the Middle and Upper Jurassic indicates that similar opportunities in the area have low potential and low probability of success (Figure 4 and Table 1,2).

2 Database overview

2.1 Seismic data

Common seismic database is the Seismic survey 3D CGG18M01 PSTM covering in total 1606.198Km^2 and covering the total area of the licence. (Figure 1). The survey (together with the earlier version CGG17M01 PSTM) formed the basis of the seismic interpretation in the licence. The survey is commercially available.

2.2 Well data

Table 1. Key wells in common database are, see figure 1: 30/6-4, 30/6-6, 30/6-8, 30/6-10, 30/6-13

Wellbore	NPDID
30/6-4	383
30/6-6	39
30/6-8	77
30/6-10	92
30/6-13	7

3 Results of geological and geophysical studies

The application securing the PL053C in 2017 focused on the Middle Jurassic, located next to the Oseberg Main Field. The main prospect of the application was the Middle Jurassic Helleneset Callovian prospect.

The main risk of the Middle Jurassic play in the area was reservoir presence, based on the wells 30/6-6 (cemented sands in the reservoir equivalent interval) and 30/6-8 (shale in the reservoir equivalent interval). However, syn-rift environments showed large lateral variations, and relevant field analogues demonstrate that the concept could work.

The Helleneset prospect was worked up by studying all the available seismic and well data. The results of the studies improved the understanding of the opportunities and provided support for volumetric input parameters and risk assessment.

The studies/work completed for PL 053C were the following:

- Mapping with focus on the Middle and Upper Jurassic prospectivity on CGG18M01 PSTM
- Well-ties of key wells

- Middle and Upper Jurassic reservoir quality and prediction (petrology and sedimentology)
- PVT studies
- Seismic data analysis for enhanced understanding of depositional model
- Petrophysical analysis
- Prospect evaluation
- Prospect volume calculations and risk estimation
- Prospect technical economic evaluation

4 Prospect update

The initial reservoir model for the Helleneset prospect was Middle Jurassic sandstones of Callovian age on the dip-slope of the Oseberg block. The targeted sandstones were the predicted downslope deposits resulting from late Jurassic rotation and erosion of the Oseberg block, where up to 40m of Tarbert Formation sandstones were missing from the crest of the Oseberg block.

The main risk of the Helleneset prospect was reservoir presence, and the uncertainty was linked to the depositional model for the reservoir sands. The well failed on the main risk – reservoir presence. The well did encounter Callovian sand stringers, but these were thin and cemented.

The remaining resource potential has been dramatically reduced due to the poor well result. Prospects sharing similar reservoir level has been taken out. The only remaining prospect in the license, the Tertnes prospect, has been subjected to an expected reduction in volume and increased risk (Figure 4, Table 1,2).

5 Technical evaluation

A business case based on a subsea tie-in to the Oseberg Field Center with support for water injection for a discovery in Helleneset, was performed in 2018.

6 Conclusion

The work programme for PL 053C has been fulfilled. The prospect Helleneset has been evaluated within the specified time frame and geological and geophysical studies have been completed. After a full evaluation the licence recommends dropping the licence due to the negative well result and poor remaining potential. The PL 053C Management Committee has therefore decided to allow the licence to be surrendered.

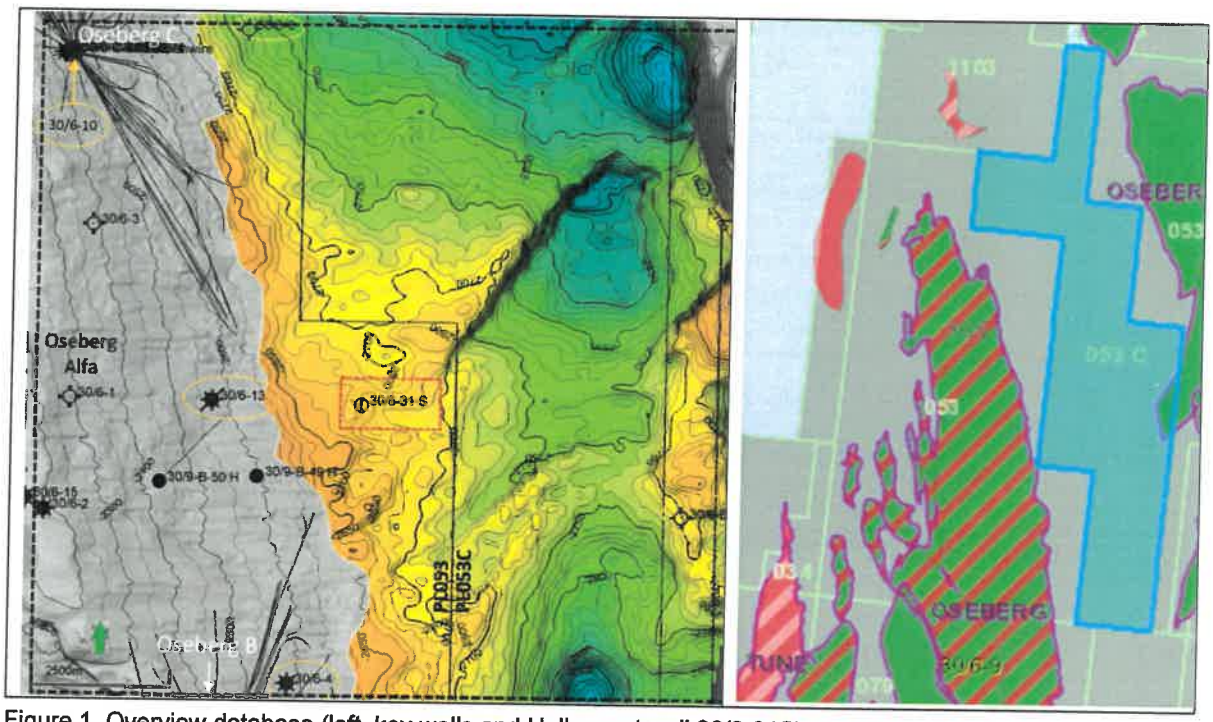

Figure 1. Overview database (left, key wells and Helleneset well 30/6-31S), and license outline (right).

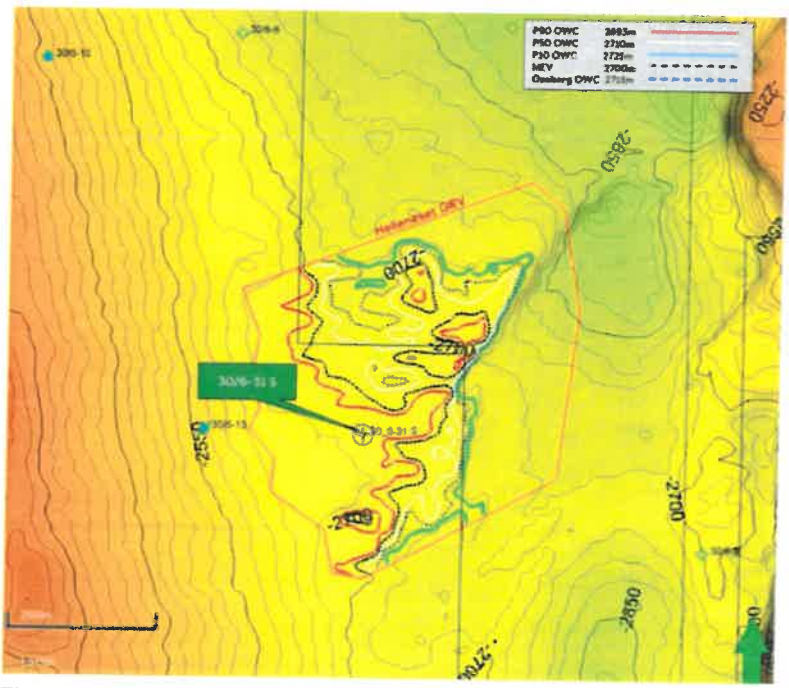

Figure 2. Top Callovian depth map showing Helleneset prospect across the border between PL 053 (left og black line) and 53C (right of black line) and the exploration well 30/6-31S drilled in PL 053 (and not PL 053C).

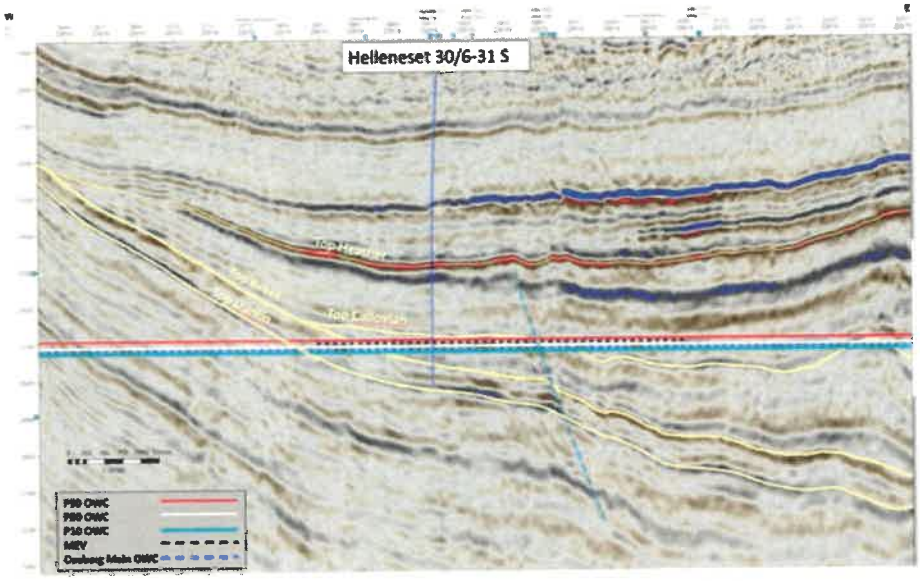

Figure 3 CGG18M01 X-line through Helleneset with key seismic horizons.

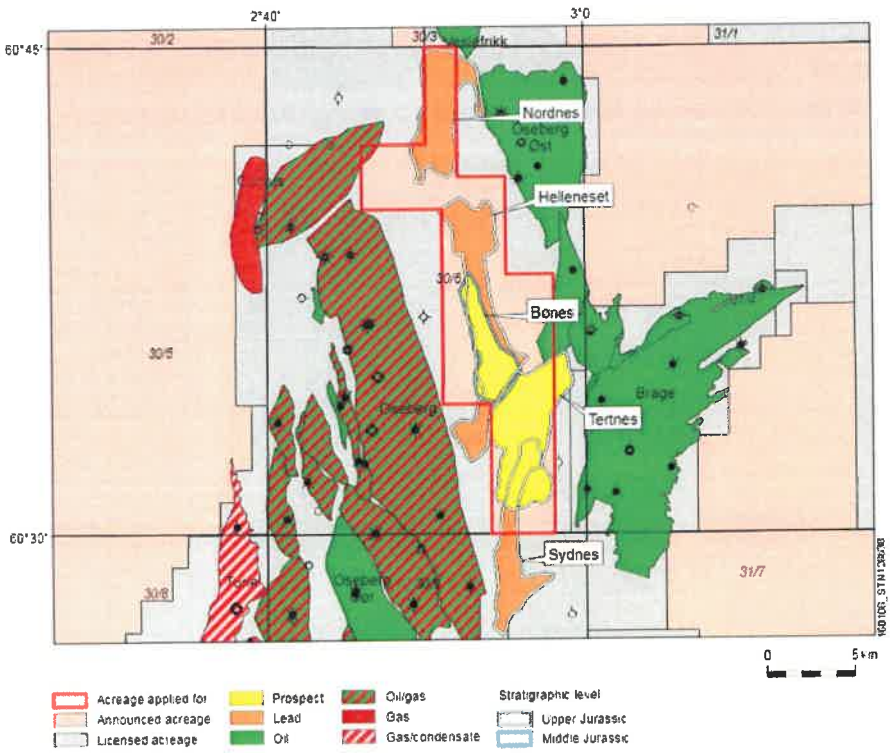

Figure 4. Overview map. From APA application summary.

Table 1. Resource potential from APA application.

Discovery/ Prospect/ Lead name [1]	D/ P/ L [2]	Case (Oil/ Gas/ Oil&Gas) [3]	Unrisked recoverable resources [4]						Probability of discovery [5] (0.00 - 1.00)	Resources in acreage applied for [%] [6] (0.0 - 100.0)	Reservoir		Nearest relevant infrastructure [8]	
			Oil [10^6Sm^3] (>0.00)			Gas [10^9Sm^3] (>0.00)					Litho-/ Chrono-stratigraphic level [7]	Reservoir depth (m MSL) (>0)	Name	Km (>0)
			Low (P90)	Base (Mean)	High (P10)	Low (P90)	Base (Mean)	High (P10)						
30/6 Tertnes	P	Oil	5 69	14.76	25.48	0 65	1 79	3 20	0.23	92.0	Heather Fm / Late Jurassic	2560	Oseberg FC	7
30/6 Bønes	P	Oil	0 64	4.42	9.07	0 10	0 54	1 16	0 10	100.0	Brent Gp / Middle Jurassic	2780	Oseberg C	7
30/6 Bønes	P	Gas	0 34	1.70	3.51	0 72	3 61	7 46	0 10	100.0	Brent Gp / Middle Jurassic	2780	Oseberg C	7
30/6 Nordnes	L	Gas	1 32	3 50	6 03	2 82	7 42	12 75	0.22	81 0	Heather Fm / Late Jurassic	2620	Oseberg C	11
30/6 Helleneset	L	Gas	1 29	3 81	7 74	2 74	8 08	16 45	0 18	83 0	Heather Fm / Late Jurassic	2650	Oseberg C	7
30/6 Sydnes	L	Oil	2 99	7 66	13 78	0 33	0 96	1 73	0 09	39 0	Heather Fm / Late Jurassic	2690	Oseberg FC	5
30/6 Sydnes	L	Gas	1 13	2 91	5 01	2 42	6 17	10 71	0 09	39 0	Heather Fm / Late Jurassic	2690	Oseberg FC	5

Table 2. Revised prospect table scheme for remaining prospectivity inside license (One prospect: Tertnes).