



PL 796/PL796B - Licence status report

Summary

The PL796 and PL796B licences are located east and south the Mikkel Field (Figure 1). The PL796 licence was applied for during the APA2014 application round and was awarded in 2015. Statoil Petroleum AS (current Equinor Energy AS) was granted operatorship of the licence together with licence partners Point Resources (current Vår Energy AS), Edison Norge AS and Atlantic Petroleum (current M Vest Energy). In 2018 M Vest Energy decided to leave the licence and their share was transferred to Equinor Energy AS.

The prospectivity within the licence covers plays elements of the middle and upper Jurassic play on the Halten Terrace and lower to middle Jurassic play on the Trøndelag Platform. In 2018 a drill decision was taken on the Lanterna prospect which at that time was shared with the PL835 licence. Following a drop of the PL835 licence in 2018, the PL796 licence applied for an extension (PL796B) to include the entire resource base from the Lanterna prospect within the licence. In 2018, shallow seismic was acquired over the Lanterna prospect to evaluate shallow gas in the area and well planning was initiated. The Lanterna well (NO 6407/3-2 S) was drilled in August 2019. The well was classified as dry without shows.

An updated evaluation of the PL796/PL796B licence was carried out. Based on this evaluation, the PL796/PL796B partnership did not see any attractive drilling candidates in PL796/PL796B and unanimously decided to drop the licences.

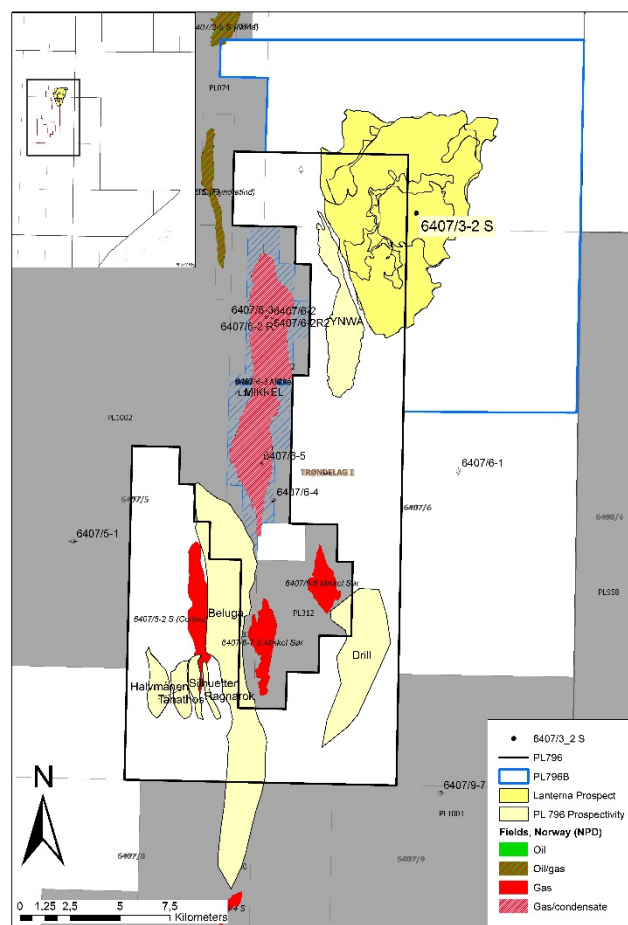


Figure 1 PL796/PL796B licence map with main prospectivity.

Table of Contents

1	Licence history	4
2	Database overview	5
2.1	Seismic data	6
2.2	Well data	6
3	Results of geological and geophysical studies	6
3.1	Upper Jurassic prospectivity.....	7
3.2	Lower - middle Jurassic prospectivity Halten Terrace.....	8
3.3	Lower – middle Jurassic prospectivity Trøndelag Platform.....	9
4	Prospect update report	10
5	Technical evaluation	12
5.1	Lanterna.....	12
5.2	Tanathos/Silhuetten/Chamonix.....	12
6	Conclusion	13

1 Licence history

<u>Licence:</u>	PL796 PL796B	
<u>Awarded:</u>	06.02.2015 (APA2014) 01.03.2019 (APA2018)	
<u>Licence period:</u>	Expires 06.02.2022: Initial period: 8 years Expires 06.02.2022	
<u>Licence group:</u>	Equinor Energy AS 60% (Operator) Edison Norge AS 20% Vår Energy AS 20%	
<u>Licence area:</u>	253 km ² 206 km ²	
<u>Work programme:</u>	Technical G&G work Purchase 3D seismic Lanterna prospect and economical evaluations Initial Drill or Drop by 06.02.2017 Extended Drill or Drop by 06.02.2018 Initial BoK or Drop by 06.02.2019 Extended BoK or Drop by 06.08.2020	- Fulfilled - Fulfilled - Fulfilled - Applied for one year extension - Decision made to drill - Applied for one year extension - Decision made to drop the licence
<u>Meetings held:</u>	11/05/2015 EC/MC meeting 23/11/2015 EC/MC meeting 06/04/2016 EC work meeting 15/04/2016 EC follow up work meeting 10/10/2016 EC work meeting 10/11/2016 EC/MC meeting 22/08/2017 EC work meeting 31/08/2017 EC work meeting follow up 23/11/2017 EC/MC meeting 08/05/2018 EC/MC Meeting 22/10/2018 EC workmeeting – Lanterna Techec 28/11/2018 EC/MC Meeting 31/01/2019 EC Lanterna well planning status 22/03/2019 EC/MC work meeting 30/04/2019 EC CANCELLED! PL796 EC work meeting - follow up 25/09/2019 EC work meeting 30/10/2019 EC/MC meeting	

Work performed:

2015	Licence start-up, acquisition/purchase new 3D seismic Initiation of AVO study for the licence
2016	Prospect evaluation
2017	Alignment strategy with PL835 – Lanterna prospect
2018 - 2019	Well planning and execution

Reason for surrender:

Prospectivity in the licences can be divided into 3 plays: i) the Lower-Middle Jurassic play on the Trøndelag Platform, ii) the lower to middle Jurassic play in the western part of the Bremstein Fault Complex and iii) the upper Jurassic play in the grabens and half grabens in the Bremstein Fault Complex.

Following the dry Lanterna well, no commercially attractive and time critical drilling candidates have been identified within the licences. With respect to testing new opportunities within the upper Jurassic play, it is the operator's viewpoint that there are more favourable locations to test these.

2 Database overview

The PL796 licence common database was proposed in EC/MC meeting #1 (11.05.2015). A revised version was approved in September 2015. Later revisions were made in 2016 and 2017 including additional seismic data and well data respectively. The licence database is presented visually on the map (Figure 2). This database also applies to the PL796B licence.

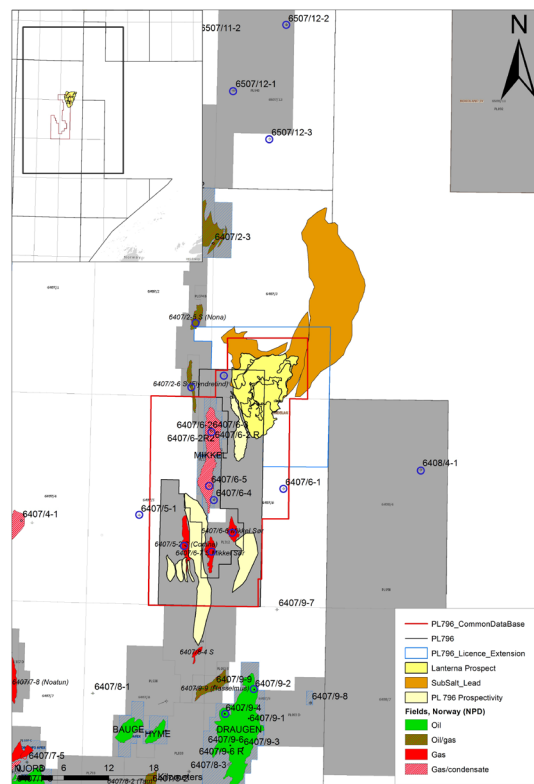


Figure 2 Overview of the common database in PL796/796B

2.1 Seismic data

The seismic data that were utilized in the PL796 technical evaluations are shown in Table 1. The seismic data includes 565 km², Full stack and angle stacks data and covers the main prospectivity within the licence.

Survey name	NPDID	Survey year	Seismic type	Seismic operator	Market available
PGS14002*	7993	2014	3D	PGS	Yes
PGS14005*	8054	2014	3D	PGS	Yes

Table 1 Seismic data included in the PL796/796B common database

2.2 Well data

The well database utilized in the PL796 technical evaluations is shown Table 2.

Well	Year	Operator	Status	Age TD
NO 6407/2-5 S	2009	StatoilHydro Petroleum AS	O/G	E. JURASSIC
NO 6407/2-6 S	2010	Statoil Petroleum AS	O/G	E. JURASSIC
NO 6407/3-1 S	2011	Statoil Petroleum AS	D	E. JURASSIC
NO 6407/5-1	1988	Mobil Exploration Norway INC	S	M. JURASSIC
NO 6407/5-2 S	2011	OMV (Norge) AS	G	E. JURASSIC
NO 6407/6-1	1984	Den norske stats oljeselskap a.s	D	L. TRIASSIC
NO 6407/6-3	1987	Den norske stats oljeselskap a.s	G/C	L. TRIASSIC
NO 6407/6-4	1990	Mobil Exploration Norway INC	OS	E. JURASSIC
NO 6407/6-5	1999	Den norske stats oljeselskap a.s	G	E. JURASSIC
NO 6407/6-6	2008	StatoilHydro ASA	G	E. JURASSIC
NO 6407/6-7 S	2009	StatoilHydro ASA	G	E. JURASSIC
NO 6407/9-2	1985	A/S Norske Shell	O	E. JURASSIC
NO 6407/9-4	1985	A/S Norske Shell	O	M. JURASSIC
NO 6408/4-1	1988	Conoco Norway Inc.	D	L. TRIASSIC
NO 6507/12-1	1980	Saga Petroleum ASA	D	TRIASSIC
NO 6507/12-2	1981	Saga Petroleum ASA	S	M. TRIASSIC
NO 6507/12-3	1985	Saga Petroleum ASA	D	E. JURASSIC

Table 2 Wells included in the PL796/796B common database

3 Results of geological and geophysical studies

The main studies in PL796 related to AVO evaluation of prospectivity on the newly acquired PGS14002 data. The different angle stacks used include: Near 4-12, Near-Mid 12-20, Mid 20-28, Mid-Far 28-36, Far 36-44, Ultra-Far 44-52. A bandpass filter of 4-8-35-60Hz was used. Fluid (EEI20), lithology (EEIminus50) and intercept cubes were generated and responses were cross-checked with existing discoveries/wells (6407/6-7 S Gamma, 6407/5-2 S Chamonix/Cortina).

3.1 Upper Jurassic prospectivity

Three prospects are identified within the upper Jurassic play. The largest prospect, YNWA (Figure 3), was the main prospect when applying for the PL796 licence during APA2014. The focus of the subsequent work program was to acquire new seismic data and derisk the YNWA prospect based on AVO analysis. Two additional upper Jurassic prospects were identified by partners and evaluated during the maturation phase. These are the Drill prospect (Figure 4), located in a half graben east of the 6407/6-7 S discovery (Gamma), and the Beluga prospect (Figure 5), located downflank from the 6407/5-2 S (Chamonix/Cortina) discovery. Considering the work on these prospects the Chamonix discovery was evaluated as well.

The main conclusion following the prospect evaluation was that the upper Jurassic prospects (with Pg below 0.16) had too high risk to put forward as obvious drill candidates within PL796. YNWA and Drill are identified with largest volume potential after Lanterna. In order to reach this volume a sand package of at least 20 m would be required. The presence of such a thick hydrocarbon filled sand was however not confirmed on the AVO analyses.

Even though the highest individual prospect risk is trap seal, the overall risk or uncertainty within the upper Jurassic graben structures of the Bremstein fault complex is presence of reservoir to make the prospects economic viable.

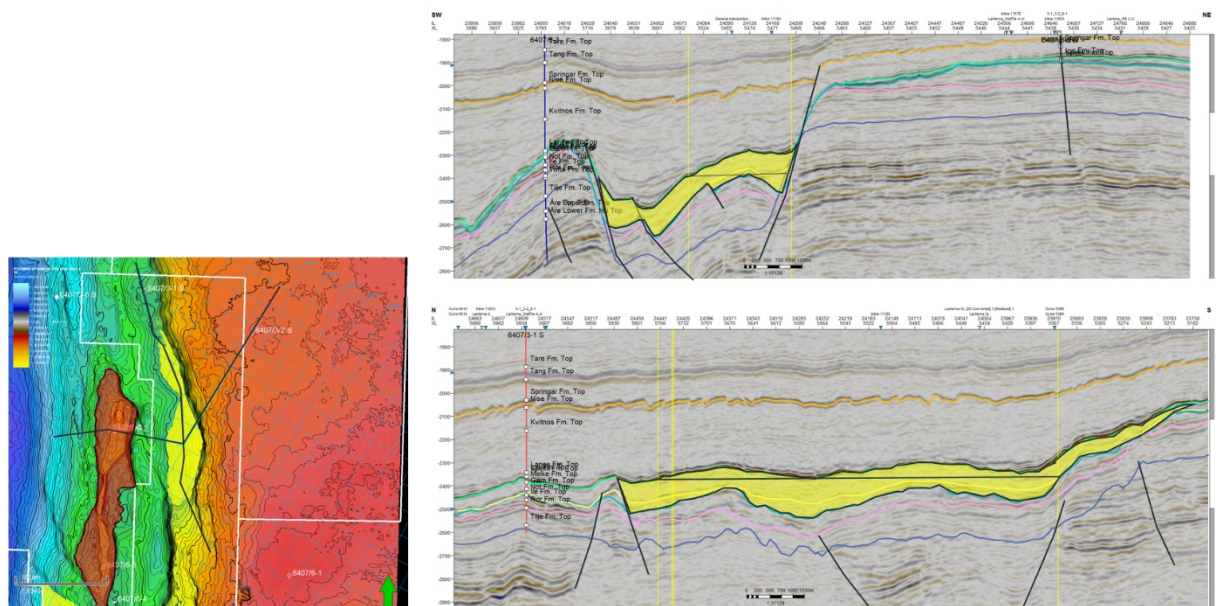


Figure 3 Structural map and seismic sections across and along the YNWA prospect

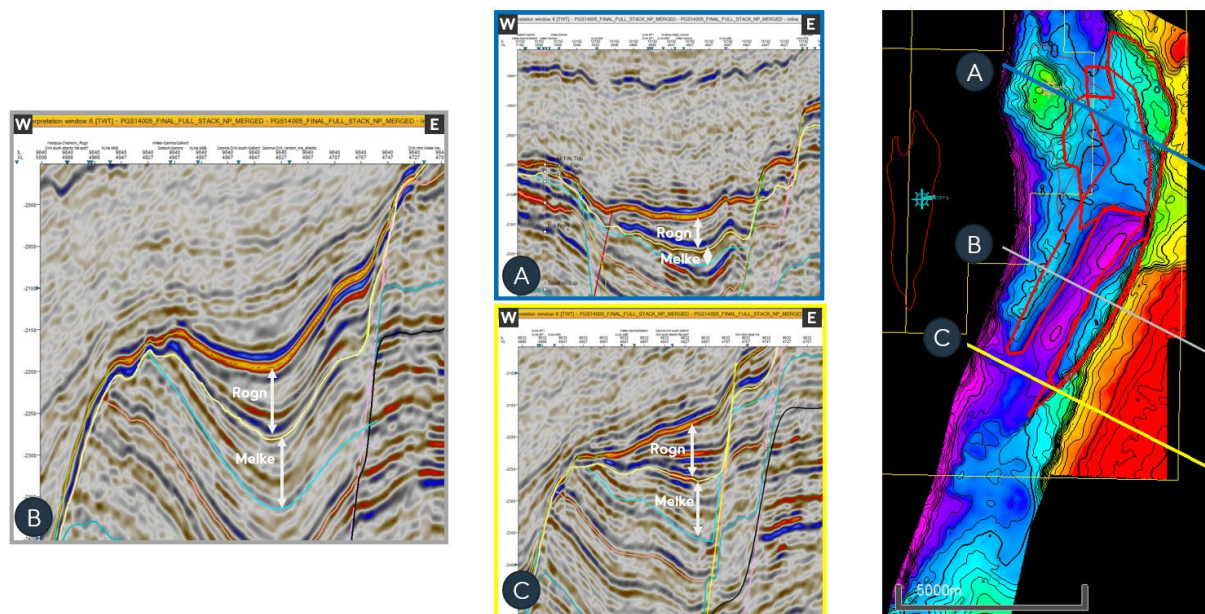


Figure 4 Structural map and seismic sections across the Drill prospect

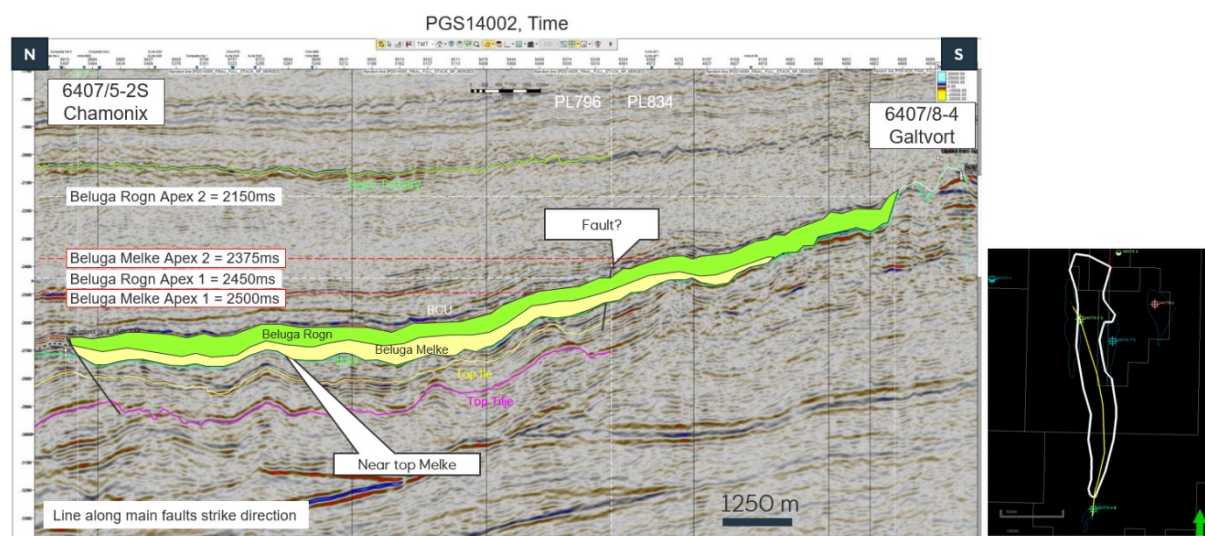


Figure 5 Seismic section along the Beluga prospect

3.2 Lower - middle Jurassic prospectivity Halten Terrace

Additional prospectivity in the southwestern corner of the licence was brought in by one of the partners and comprised a series of small rotated fault blocks, originally referred to as the Baugen cluster (leads). The prospective interval in this area range from the middle Jurassic Ile Formation to the lower Jurassic Åre Formation. The Garn Formation is believed not to be present. After internal QC, the fault blocks were treated at individual prospects, with Halvmånen, Tanathos, Silhuetten and Ragnarok as main prospects (Figure 6) in addition to several smaller leads (Flygende Hollender, Ragnarok Updip). The prospects are located suitable for migration and fault seal along the main bounding faults of the structures is the main risk. The Ile Formation in the Tanathos

prospect has a clear flatspot and a positive fluid indicator. Despite the relatively high Pg (0,5 – 0,6) for each of the individual prospects, the volume potential is relatively low.

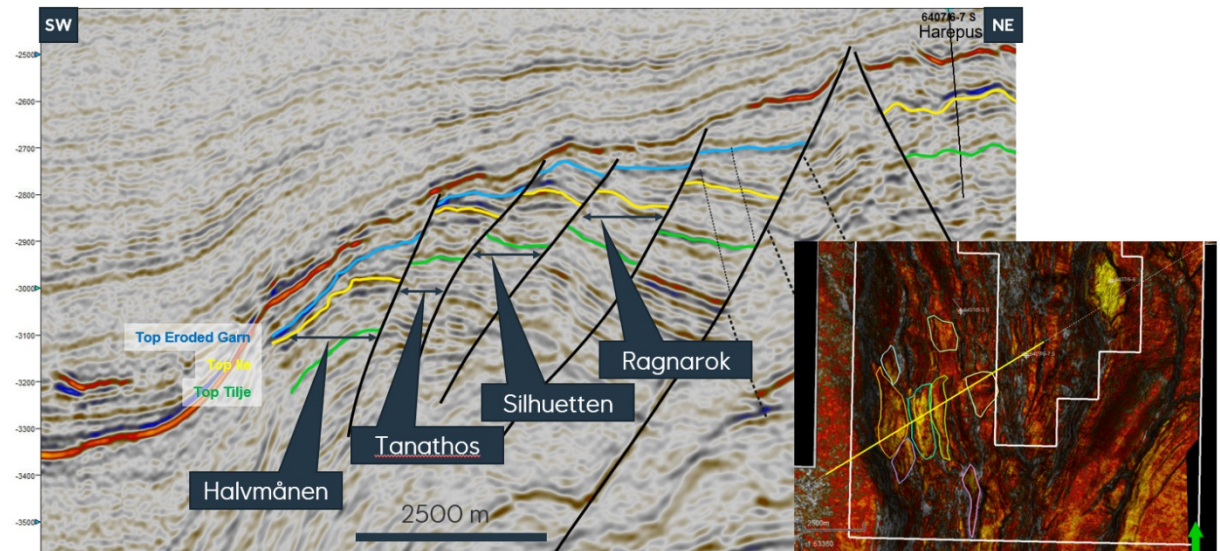


Figure 6 Amplitude map and seismic section across Halvmånen, Tanathos, Silhuetten and Ragnarok prospects

3.3 Lower – middle Jurassic prospectivity Trøndelag Platform

The Lanterna well (6407/3-2 S) targeted the prospect with the highest volume and Pg within the PL 796 and PL796B licences. The well was spudded within the PL796B licence since the APEX of the prospect was in this licence. The Lanterna prospect (Figure 7) also stood out with best economic potential. The main objective was to test migration on the Trøndelag platform within the lower to middle Jurassic strata of the Garn, Ile, Tilje and upper Åre Formation. Due to uncertain volumes and economy, the lower Åre Formation as well as the Triassic grey beds, were not included in the business case for this well. As a result, they were defined as secondary targets that were to be drilled in case of hydrocarbon indications in the shallower strata. The Lanterna area was considered as one of the multiple entry points on the Trøndelag Platform. The spill route out of the structure would during deposition of the Naust package have directed towards prospectivity located further onto the Trøndelag Platform. A discovery in Lanterna would obviously have had significant derisking potential.

In addition, a discovery in Lanterna would immediately derisk migration into prospects located between Mikkel / Nona and the Bremstein main fault. A number of smaller leads and prospects such as the YNWA prospect, are mapped out in that area.

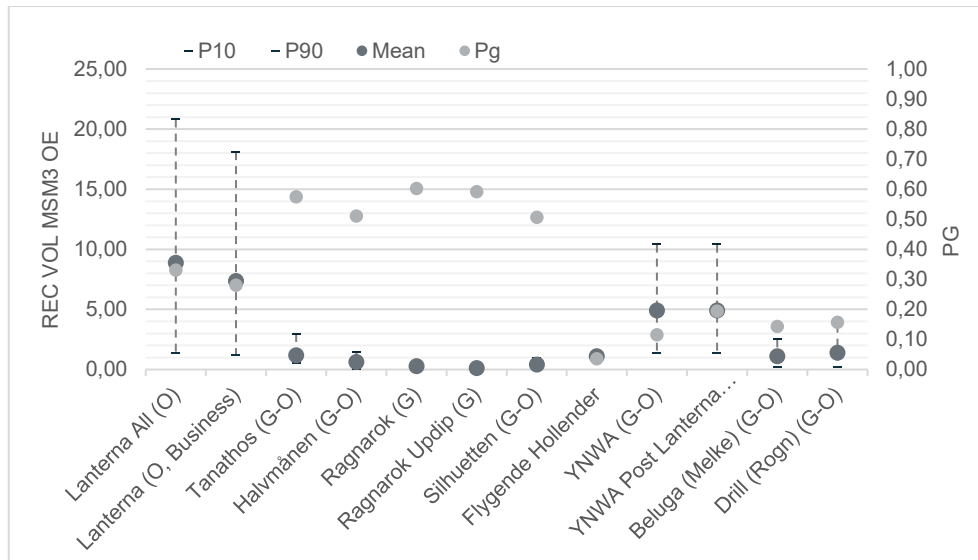


Figure 9 Licence prospectivity after Lanterna: Volume spread and Pg

5 Technical evaluation

5.1 Lanterna

The Lanterna prospect was evaluated as part of drill decision made in 2017. The Lanterna prospect is located in the Halten area in the Norwegian Sea about 45 km north of the Draugen platform and 62 km north east of the Njord platform. The water depth in the area is about 250 m. Only oil cases have been considered in the volumetric calculations.

The field development solution considered for Lanterna is a subsea tie-back to Draugen which is the nearest platform. The tie-back distance is within the range what is technically feasible on the Norwegian shelf. Tyrihans has a tie-back distance of 43 km, and is the longest distance on the Norwegian shelf for transporting an unprocessed 3-phase wellstream. The wellstream is processed on the platform. Oil is loaded and transported via shuttle tankers. The associated gas is assumed transported via the Åsgard Transport pipeline to Kårstø. The prospect consists of several segments and the number of templates and wells are dependent on the number of hydrocarbon bearing segments. In a low case with only one segment filled with oil, only one four-slot template is required. In a high case with discoveries in all segments, four 4-slot templates are required with producers and injectors (Figure 10).

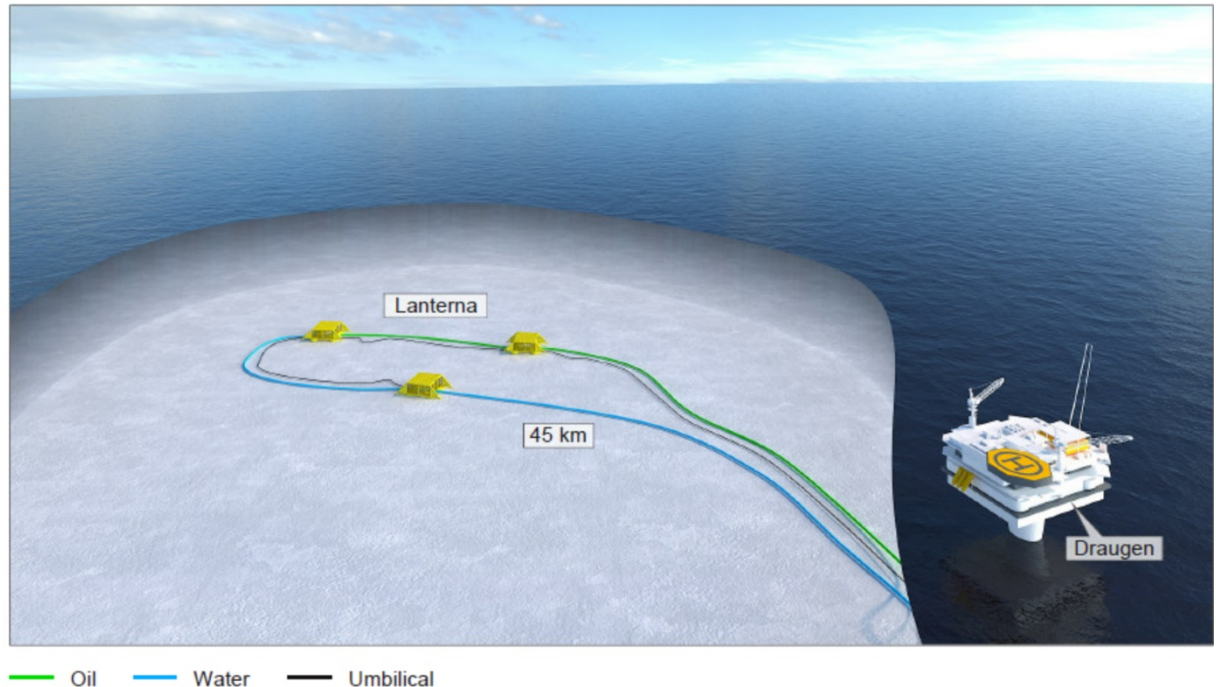


Figure 10 Lanterna field development solution

5.2 Tanathos/Silhuetten/Chamonix

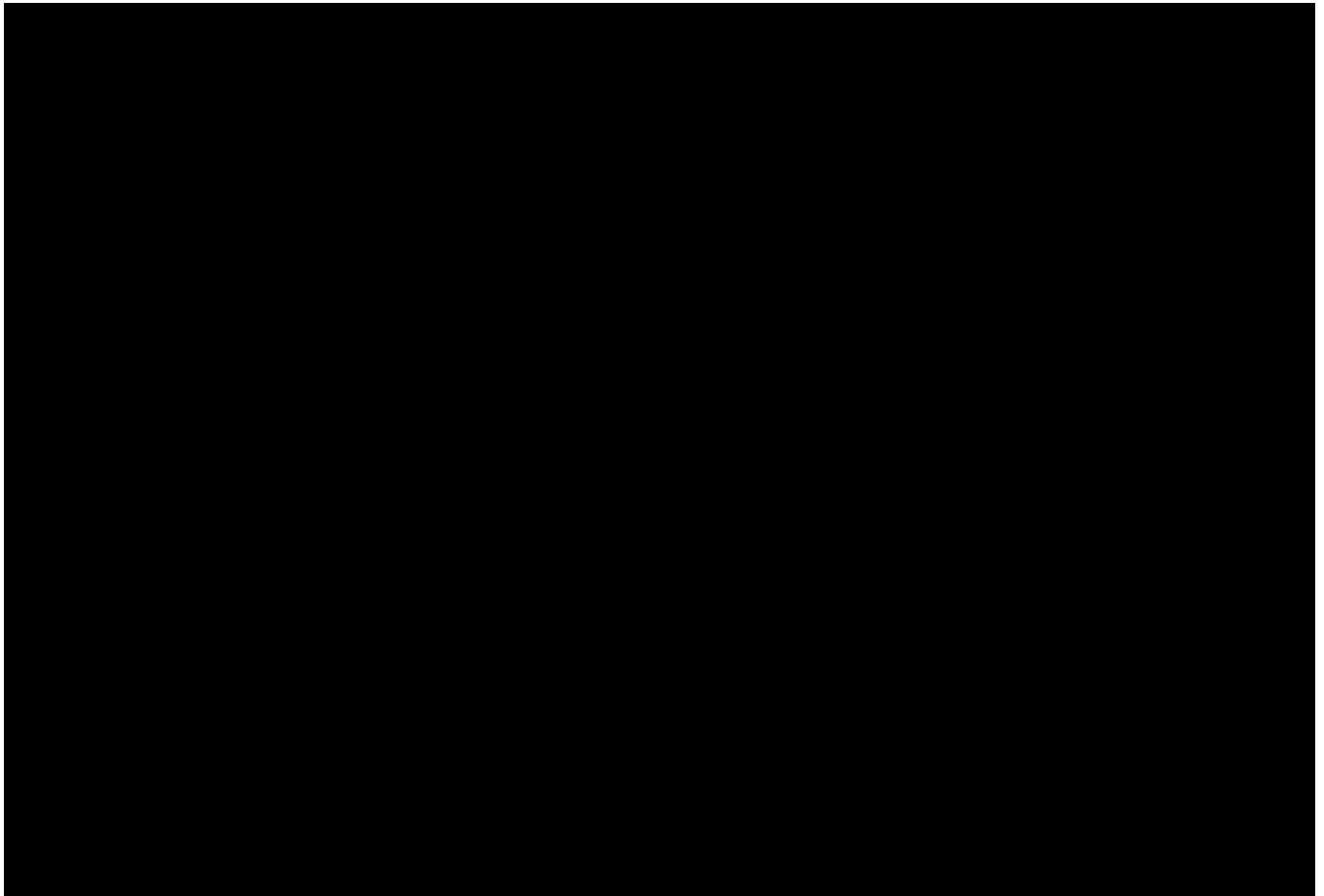


Figure 11 Tentative tie back to Mikkel South template, 6 km away from Thanatos and Halvmånen

6 Conclusion

The well 6407/3-2 S was drilled on the Lanterna prospect. This was a high-risk prospect with a large upside volume potential. The prospect covered both the PL796 and PL796B licences. The main risk was considered migration with an additional trap geometry risk on the shallower segments (Garn and Ile fms) due the flat relief of the structure. The remaining prospectivity is located in the PL796 licence and comprises upper Jurassic (YNWA, Drill and Beluga) and middle Jurassic (Halvmånen, Tanathos, Silhuetten, Ragnarok & Flygende Hollender) prospects. At current stage these pose either to high risk or have too small volumes to be drilled.