15 Fields and projects under development

Fram West

Block and production licence	Block 35/11 - production licence 090. Awarded 1984.	
Progress	Government approval: March 2001 Planned production start-up: October 2003	
Operator	Norsk Hydro Produksjon a.s	
Licensees	Norsk Hydro Produksjon a.s	25%
	Mobil Development Norway AS	25%
	Statoil ASA	20%
	Gaz de France Norge AS	15%
	Idemitsu Petroleum Norge AS	15%
Resources	Oil: 16.1 mill scm Gas: 3.6 bn scm NGL: 0.1 mill tonnes	
Investment	Total investment is likely to be NOK 4.3 bn (2002 value)	

Fram West lies in the northern North Sea, about 22 km north of Troll C. This development embraces a reservoir in the Fram/Gjøa area and involves two subsea templates tied back to Troll C, where the wellstream will be processed and oil sent to Mongstad through Troll Oil Pipeline II. Associated gas will initially be injected back into the reservoir, and later exported via Troll A to Kollsnes. In the production phase, Fram West operations will be integrated with Troll C, which is also operated by Norsk Hydro.

Grane

Blocks and production licences	Block 25/11 - production licence 001. Awarded 1965. Block 25/11 - production licence 169 B1. Awarded 2000. Block 25/11 - production licence 169 B2. Awarded 2000.	
Progress	Government approval: June 2000 Planned production start-up: 4th quarter 2003	
Operator	Norsk Hydro Produksjon a.s	
Licensees	Norsk Hydro Produksjon a.s	38.0%
	Petoro AS[1]	30.0%
	Esso Expl & Prod Norway AS	25.6%
	Norske Conoco A/S	6.4%
Recoverable reserves	Oil: 120 mill scm	
Investment	Total investment is likely to be NOK 14.4 bn (2002 value)	

[1] Petoro AS serves as the licensee for the SDFI.

Proven in 1991, Grane lies in 127 metres of water east of Balder in the North Sea. Plans call for production to start in the autumn of 2003 and reach a plateau oil output of just over 200 000 b/d in 2005-2009.

Oil in the field is heavy and complicated to recover. Development is based on an integrated production, drilling and quarters platform, with oil due to be transported by the Grane Oil Pipeline to the Sture terminal for storage, metering and export.

Natural gas will be used as the drive mechanism for oil production. Since the field contains very little associated gas, injection volumes must be acquired elsewhere and a pipeline will accordingly be laid from Grane to Heimdal.

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Kristin (Halten Bank West)

Blocks and production licences	Block 6506/11 - production licence 134B. Awarded 2000. Block 6406/2 - production licence 199. Awarded 1993. Blocks 6406/1 and 6406/5 - production licence 257. Awarded 2000.	
Progress	Government approval: December 2001 Planned production start-up: October 2005	
Operator	Statoil ASA	
Licensees	Statoil ASA	46.6 %
	Petoro AS[1]	18.9 %
	Norsk Hydro Produksjon a.s	12.0 %
	Mobil Development Norway A/S	10.5 %
	Norsk Agip A/S	9.0 %
	Total FinaElf Exploration Norge AS	3.0 %
Resources (Kristin)	Gas: 34.9 bn scm NGL: 8.5 mill tonnes Condensate: 34.6 mill scm	
Investment (Kristin)	Total investment is likely to be NOK 16.3 bn (2002 value)	

[1] Petoro AS serves as the licensee for the SDFI.

Halten Bank West embraces the production licences which contain Kristin and the Lavrans, Erlend, Morvin and Ragnfrid discoveries. Found in 1997, Kristin lies about 20 km south-west of Åsgard's Smørbukk deposit. The plan for development and operation was approved in December 2001.

Development of this field is based on a subsea production facility tied back to a semi-submersible production platform. Plans call for the rich gas to be piped through the Åsgard Transport trunkline to Kårstø for separation of the NGLs, while condensate will be piped to Åsgard C for storage and export by shuttle tanker.

Kvitebjørn

Block and production licence	Block 34/11 - production licence 193. Awarded 1993.	
Progress	Government approval: June 2000 Planned production start-up: October 2004	
Operator	Statoil ASA	
Licensees	Statoil ASA	50%
	Petoro AS[1]	30%
	Norsk Hydro Produksjon a.s	15%
	TotalFinaElf Exploration Norge AS	5%
Recoverable reserves	Gas: 54.2 bn scm NGL: 0.5 mill tonnes Condensate: 20.6 mill scm	
Investment	Total investment in field and pipelines is likely to be NOK 9.1 bn (2002 value)	

[1] Petoro AS serves as the licensee for the SDFI.

Kvitebjørn was proven in 1994 and lies south-east of Gullfaks. It is being developed with a fixed production platform carrying drilling package, processing facilities and quarters module. The topside is being fabricated at ABB in Haugesund, the quarters module by Leirvik Sveis, the drilling package by Heerema Tønsberg and the jacket by Aker Verdal. The platform is due to be assembled offshore in the spring of 2003.

All production wells will be drilled from the platform. Four of 11 gas producers are due to be ready to begin production in October 2004. The facilities are dimensioned for a daily output of 20.7 mill scm of rich gas and 10 000 scm of condensate. Rich gas will be piped through a new line to Kollsnes for further processing and export. Stabilised condensate will be transported to the crude oil terminal at Mongstad in the new Kvitebjørn Oil Pipeline and a tie-in to Troll Oil Pipeline II.

Mikkel

Blocks and production licences	Block 6407/6 - production licence 092. Awarded 1984. Block 6407/5 - production licence 121. Awarded 1986.	
Progress	Government approval: September 2001 Planned production start-up: October 2003	
Operator	Statoil ASA	
Licensees	Statoil ASA Mobil Development Norway A/S Norsk Hydro Produksjon a.s	56.52% 33.48% 10.00%
Resources	Gas: 19.8 bn scm NGL: 4.2 mill tonnes Condensate: 5.5 mill scm	
Investment	Total investment is likely to be NOK 2.5 bn (2002 value)	

Proven in 1987, Mikkel lies in 220 metres of water on Halten Bank East, about 40 km south of Åsgard's Midgard deposit and 40 km north of Draugen. The plan for development and operation was approved in September 2001.

The field is being developed with two subsea templates housing a total of four production wells tied back via Midgard to Åsgard B. Condensate will be separated on the platform, with the rich gas being piped through Åsgard Transport to Kårstø for separation of the NGLs. After being stabilised, condensate will be stored and shipped away together with Åsgard's own production.

Sigyn

Block and production licence	Block 16/7 - production licence 072. Awarded 1981.	
Progress	Government approval: August 2001 Planned production start-up: 1st quarter 2003	
Operator	Esso Expl & Prod Norway AS	
Licensees	Statoil ASA Esso Expl & Prod Norway AS Norsk Hydro Produksjon a.s	50% 40% 10%
Resources	Gas: 5.3 bn scm NGL: 1.5 mill tonnes Condensate: 3 mill scm	
Investment	Total investment is likely to be NOK 3.1 bn (2002 value)	

Sigyn was proven in 1982 and lies 70 metres of water in the Sleipner area. It will be developed as a phased subsea solution tied back to Sleipner A. After processing on that platform, Sigyn gas will be exported via the Sleipner lean gas system. Its condensate is due to travel in the existing pipeline from Sleipner to Kårstø.

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Snøhvit (incl Albatross and Askeladd)

Blocks and production licences	Blocks 7120/5 and 7121/5 - production licence 110. Awarded 1985. Block 7120/6 - production licence 097. Awarded 1984. Block 7120/7 - production licence 077. Awarded 1982. Block 7120/8 - production licence 064. Awarded 1981. Block 7120/9 - production licence 078. Awarded 1982. Block 7121/4 - production licence 099. Awarded 1984. Block 7121/7 - production licence 100. Awarded 1984.	
Progress	Government approval: 7 March 2002. Planned production start-up: 2006	
Operator	Statoil ASA	
Licensees	Petoro AS[1]	30.00%
	Statoil ASA	22.29%
	TotalFinaElf Exploration Norge AS	18.40%
	Gaz de France Norge AS	12.00%
	Norsk Hydro Produksjon a.s	10.00%
	Amerada Hess Norge AS	3.26%
	RWE-DEA Norge AS	2.81%
	Svenska Petroleum Exploration AS	1.24%
Recoverable reserves	Gas: 163.5 bn scm NGL: 5.1 mill tonnes Condensate: 18.1 mill scm	
Investment	Total investment is likely to be NOK 40 bn (2001 value)	

[1] Petoro AS serves as the licensee for the SDFI.

Discovered in 1984, Snøhvit lies about 140 km north-west of Hammerfest and comprises the Askeladd and Albatross finds as well as the main discovery.

The operator's planned development solution is based on subsea installations tied back to Melkøya outside Hammerfest by a pipeline for gas and condensate. The gas will be processed on land and transported to market in liquefied natural gas (LNG) carriers. Gas production is due to start in 2006.

Plans for development and operation as well as installation and operation of Snøhvit were submitted to the authorities in September 2001, and approved by the Storting on 7 March 2002.

Tune

Blocks and production licences	Block 30/5 - production licence 034. Awarded 1969. Block 30/6 - production licence 053. Awarded 1979. Block 30/8 - production licence 190. Awarded 1993.	
Progress	Government approval: December 1999 Planned production start-up: 1 October 2002	
Operator	Norsk Hydro Produksjon a.s	
Licensees	Petoro AS[1] Norsk Hydro Produksjon a.s TotalFinaElf Exploration Norge AS	40% 40% 20%
Recoverable reserves	Oil: 6.1 mill scm Gas: 22.9 bn scm NGL: 0.1 mill tonnes	
Investment	Total investment is likely to be NOK 4 bn (2002 value)	

[1] Petoro AS serves as the licensee for the SDFI.

Tune is a gas and condensate field proven in 1995, about 10 km west of the Oseberg field centre. The bulk of its reserves lie in production licence 190, but part of them extends into production licences 034 and 053. Licence interests in 034 and 190 are the same, and the Tune licensees have purchased production rights for the reserves extending into 053.

Phase I of the development covers four production wells drilled from a subsea installation centrally placed on the field and tied back to Oseberg D through two 12-inch flowlines and an umbilical. A Tune receiving module has been built on Oseberg D.

Tune condensate will be stabilised at the Oseberg field centre and piped to Sture through the Oseberg Transport System. Gas from the field is due to be injected in Oseberg, but the Tune licensees will receive sales gas in exchange from the Oseberg Unit at the inlet to the Oseberg Gas Transport system.

Vale

Block and production licence	Block 25/4 - production licence 036. Awarded 1971.	
Progress	Government approval: March 2001 Planned production start-up: spring 2002	
Operator	Norsk Hydro Produksjon a.s	
Licensees (rounded off to two decimal places)	Marathon Petroleum Norge A/S Norsk Hydro Produksjon a.s TotalFinaElf Exploration Norge AS AS Ugland Rederi	46.90% 28.53% 24.24% 0.32%
Resources	Oil: 3 mill scm Gas: 2.3 bn scm	
Investment	Total investment is likely to be NOK 1.2 bn (2002 value)	

Proven in 1991, Vale lies 16 km north of Heimdal and has been developed with a single subsea well, a seabed template and a 16.5-km flowline. The latter is tied back to the Heimdal platform for processing the wellstream. Existing pipeline systems will be used to export the field's output.

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Valhall flanks

Blocks and production licences	Block 2/8 - production licence 006B. Carve-out 2000. Block 2/11 - production licence 033B. Carve-out 2001.	
Progress	Government approval: November 2001. Planned production start-up: 1st quarter, 2003.	
Operator	BP Norge AS	
Licensees (rounded off to two decimal places)	BP Norge AS Amerada Hess Norge AS Enterprise Oil Norge AS TotalFinaElf Exploration Norge AS	28.09% 28.09% 28.09% 15.72%
Recoverable reserves	See chapter 14, Valhall The flanks project is expected to enhance the recovery factor on Valhall to 42 per cent, increasing production from the field by the order of 20 mill scm oe up to 2028.	
Investment	Total investment is likely to be NOK 4.4 bn (2002 value).	

Various problems, such as seabed subsidence, have made it difficult to drain the flanks of Valhall from existing installations. The licensees accordingly want to install two unstaffed platforms on the flanks so that drilling and drainage can be accomplished faster, more cheaply and more efficiently. The south flank is under development, with production scheduled to start in early 2003.

Valhall water injection

Blocks and production licences	Block 2/8 - production licence 006B. Carve-out 2000. Block 2/11 - production licence 033B. Carve-out 2001.	
Progress	Government approval: September 2000. Planned production start-up: January 2003.	
Operator	BP Norge AS	
Licensees (rounded off to two decimal places)	BP Norge AS Amerada Hess Norge AS Enterprise Oil Norge AS TotalFinaElf Exploration Norge AS	28.09% 28.09% 28.09% 15.72%
Recoverable reserves	See chapter 14, Valhall Water injection is expected to improve the oil recovery factor from 31 to 38 per cent. This would yield roughly 29 mill scm in additional oil.	
Investment	Total investment is likely to be NOK 5.2 bn (2002 value).	

The water injection project on Valhall involves constructing a platform connected to the existing wellhead installation. Fourteen wells for water injection and an additional production well are planned in addition to the seven extra producers already due to be drilled before the licensees decided to invest in water injection.

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