

14 Future developments

(Discoveries in the planning phase with a development decision expected within four years. This list does not include finds included under new resources in existing fields.)

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2/12-1 Freja*Production licence 113. Operator: Amerada Hess Norge AS***Resources**

Oil: 2.9 mill scm Gas: 0.64 bn scm NGL: 0.05 mill tonnes

Discovered in 1987, Freja lies east of Valhall in about 70 metres of water close to the boundary with the Danish continental shelf. The development concept under consideration involves a subsea installation tied back to Valhall for processing and transport.

3/7-4 Trym*Production licence 147. Operator: A/S Norsk Shell***Resources**

Gas: 3.3 bn scm Condensate: 0.8 mill scm

This small gas/condensate find proven in 1990 lies close to the boundary with the Danish continental shelf. Plans call for it to be developed with a subsea installation. Gas production would be piped eight km to Denmark's Harald platform.

15/5-1 Dagny*Production licences 029 and 048. Operator: Statoil ASA***Resources**

Gas: 3.8 bn scm NGL: 0.2 mill tonnes Condensate: 1.2 mill scm

Proven in 1978, Dagny lies north of Sleipner West. A possible development solution involves a subsea production system tied back to the A or T platforms on Sleipner East when capacity becomes available on one or other of these installations.

15/9-19 S Volve*Production licence 046. Operator: Statoil ASA***Resources**

Oil: 11.7 mill scm Gas: 1.6 bn scm NGL: 0.5 mill tonnes

Proven in 1993, Volve lies in the Sleipner area. Possible development solutions involve a production ship or jack-up platform.

15/12-12 Varg South*Production licence 038. Operator: Pertra AS***Resources**

Oil: 3.2 mill scm Gas: 4.1 bn scm Condensate: 1.1 mill scm

This oil and gas discovery south of Varg was proven in 2001. A development based on a subsea installation or use of an existing wellhead platform is under consideration.

24/6-2 Kameleon *Production licences 036, 088 and 203.
Operator: Marathon Petroleum Norge AS*

Resources Oil: 7.9 mill scm Gas: 3.9 bn scm

Proven in 1998, Kameleon lies just to the west of Heimdal. It comprises a thin oil zone with a gas cap. A number of development solutions have been considered by the licensees, including the use of a production ship to recover the oil and inject the gas back into the reservoir.

25/4-3 Gekko *Production licence 203. Operator: Marathon Petroleum Norge AS*

Resources Gas: 7.6 bn scm Condensate: 1.3 mill scm

This field was discovered as early as 1974 with well 25/4-3, but has only recently been identified as a gas find. Various production solutions are currently under consideration, including a subsea installation tied back to Heimdal.

25/5-5 *Production licence 102. Operator: TotalFinaElf Exploration Norge AS*

Resources Oil: 4.3 mill scm

This 1995 discovery lies about six km east of Heimdal. It extends marginally into block 25/4. A development based on a subsea installation tied back to other infrastructure is under consideration.

25/11-16 *Production licence 169. Operator: Norsk Hydro Produksjon a.s*

Resources Oil: 3.6 mill scm

Proven in 1992, this oil discovery lies south-west of Grane. Development is planned with a subsea installation tied back to Grane after production from the latter field goes off plateau.

30/6-17 Alpha Cook *Production licence 053. Operator: Norsk Hydro Produksjon a.s*

Resources Oil: 0.3 mill scm Gas: 1.7 bn scm

Proven in 1986, Alpha Cook is a small oil and gas find in the Cook formation beneath the main reservoir in Oseberg. It could be produced with a long well drilled from Oseberg B.

30/6-18 Kappa *Production licences 053 and 079. Operator: Norsk Hydro Produksjon a.s*

Resources	Oil: 0.8 mill scm Gas: 2.7 bn scm Condensate: 0.2 mill scm
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Proven in 1986, Kappa is an oil and gas discovery in a Statfjord formation structure west of Oseberg. Two new oil and gas discoveries were made nearby in 2001 - 30/6-26 (Gamma West) and 30/6-27, which is a northern extension of Kappa. A joint development of Kappa and the new discoveries is being considered on the basis of a subsea installation and wellstream transfer to Oseberg for processing.

30/6-26 Gamma West *Production licence 053. Operator: Norsk Hydro Produksjon a.s*

Resources	Oil: 2.1 mill scm Gas: 0.8 bn scm
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30/6-26 Gamma West is an oil discovery made in 2001 in a structure west of Oseberg. A joint development with 30/6-18 Kappa, based on subsea installations and a tie-back to Oseberg for processing, is under consideration.

30/9-19 Delta *Production licences 079 and 190. Operator: Norsk Hydro Produksjon a.s*

Resources	Oil 0.4 mill scm Gas: 7.5 bn scm Condensate 2.2 mill scm
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Delta was proven in 1998 as a gas find with a thin oil zone in the Tarbert formation. This structure could be developed with a long production well from the Oseberg field centre, but a subsea installation tied back to Oseberg is also being considered. The bulk of the resources in this find lie in production licence 079, with a small extension into production licence 190.

35/9-1 Gjoa *Production licence 153. Operator: Norsk Hydro Produksjon a.s*

Resources	Oil: 6.5 mill scm Gas: 29.4 bn scm NGL: 1.5 mill tonnes
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The Gjoa field was proven in 1989 west of Floro and about 42 km north of Fram. Various development options are currently under consideration, including a possible unitisation with other resources in the Fram/Gjoa area.

6305/5-1 Ormen Lange

Blocks and production licences	Block 6305/7 - production licence 208. Awarded 1996. Blocks 6305/ 4 and 5 - production licence 209. Awarded 1996. Block 6305/8 - production licence 250. Awarded 1999.			
Operators	Norsk Hydro Produksjon a.s (development phase) A/S Norske Shell (production phase)			
Licensees		PL 208	PL 209	PL 250
	Petoro AS ¹	30%	35%	45.00%
	Norsk Hydro Produksjon a.s		25%	14.78%
	A/S Norske Shell	25%	15%	16.00%
	BP Norge A/S	45%		9.44%
	Statoil ASA		15%	8.87%
	Esso Expl & Prod Norway AS		10%	5.91%
Resources	Gas: 375.3 bn scm Condensate: 22.1 mill scm			

¹ Petoro AS serves as the licensee for the SDFI.

Proven in 1997, the Ormen Lange gas discovery extends across production licences 208, 209 and 250. The find lies about 140 km west of Kristiansund.

Plans call for the field to be developed using subsea installations tied back to a process plant at Nyhamna on the west Norwegian coast, with gas export from there. A plan for development and operation is due to be submitted in the fourth quarter of 2003. Gas production should start in the autumn of 2007.

6406/2-1 Lavrans *Production licence 199. Operator: Statoil ASA*

Resources	Gas: 26.8 bn scm NGL: 5.0 mill tonnes Condensate: 9.4 mill scm
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Proven in 1994-95, Lavrans lies about five to 10 km south of Kristin in 270-290 metres of water. It is located in production licence 199, part of Halten Bank West. Development could be based on a subsea installation tied back to Kristin, with rich gas being piped through Åsgard Transport to Kårstø for separation of the NGLs while condensate is processed on the Kristin platform. A tie-back of this kind would be accompanied by an adjustment of licence interests in Halten Bank West to reflect it. No development timetable has been clarified.

6407/1-2 / 6407/1-3 Tyrihans South and North

Production licences 073 and 091. Operator: Statoil ASA

Resources Oil: 16.6 mill scm Gas: 26.1 bn scm NGL: 3.6 mill tonnes

This discovery comprises two structures – Tyrihans North and Tyrihans South – located about 40 km south of Åsgard in roughly 285 metres of water. The Tyrihans South gas find was proven in 1983. Tyrihans North, which also contains oil, followed in 1984.

A direct subsea tie-back to Åsgard is being considered for onward transport of rich gas to Kårstø. A plan for development and operation is expected to be submitted in 2004, with production scheduled to start in 2007. A small part of Tyrihans South extends into production licence 091, while Tyrihans North lies entirely within production licence 073.

6507/3-3 Idun

Production licence 159. Operator: Statoil ASA

Resources Oil: 0.6 mill scm Gas: 17.4 bn scm

Idun was discovered in 1998. Two sidetracks have also been drilled in the structure. These wells proved gas in early and middle Jurassic sands. A number of development options are under consideration, and a unitised project with Skarv seems the most likely. A decision on further work and conceptual choice of Skarv is expected in March-April 2003.

6507/5-1 Skarv

Production licences 159, 212 and 262. Operator: BP Norge AS

Resources Oil: 13.5 mill scm Gas: 29.2 bn scm NGL: 3.6 mill tonnes
Condensate: 3.6 mill scm

Proven in 1998, Skarv lies in roughly 400 metres of water about 200 km off the Norwegian coast. It is primarily located in production licence 212, but also extends into production licence 262 and to a small extent into production licence 159. Both a stand-alone concept and a long-distance tie-back are under consideration. Development and the timing of a production start depend on finding an export solution for the gas in the Skarv structures.

6608/10-8 Stær*Production licence 128. Operator: Statoil ASA***Resources**

Oil: 4.7 mill scm Gas: 0.3 bn scm

Stær was proven in 2000. A sidetrack was also drilled on the structure. This discovery lies about 3.5 km north-east of Norne. Plans call for it to be developed with subsea-completed wells tied back to the Norne production ship. The operator is also considering the use of new technology for phasing Stær and other finds in the area into the Norne ship. Such solutions could yield cost savings and boost tie-in capacity on the vessel. A plan for development and operation of Stær is expected in 2004.

7122/7-1 Goliat*Production licence 229. Operator: Norsk Agip AS***Resources**

Oil: 11.3 mill scm

The 7122/7-1 Goliat oil discovery was made in 2000 and lies entirely within production licence 220 between the Snøhvit field and Hammerfest in northern Norway. An appraisal well drilled by Norsk Agip in the autumn of 2002 yielded positive results and is included in further evaluation of the field with a view to development. Another appraisal is planned on the discovery.

