

OIL AND GAS FIELDS IN NORWAY

INDUSTRIAL HERITAGE PLAN



NORSK OLJEMUSEUM

THE HEIMDAL AREA

The Heimdal area embraces the Heimdal, Skirne and Vale fields in the northern North Sea. Gas from Oseberg and Huldra is also transported via Heimdal. In addition, a pipeline has been laid from Heimdal to support gas injection on Grane. Heimdal is the first Norwegian field to be converted into a transport hub and processing centre, since its own production is nearing the end.

Heimdal

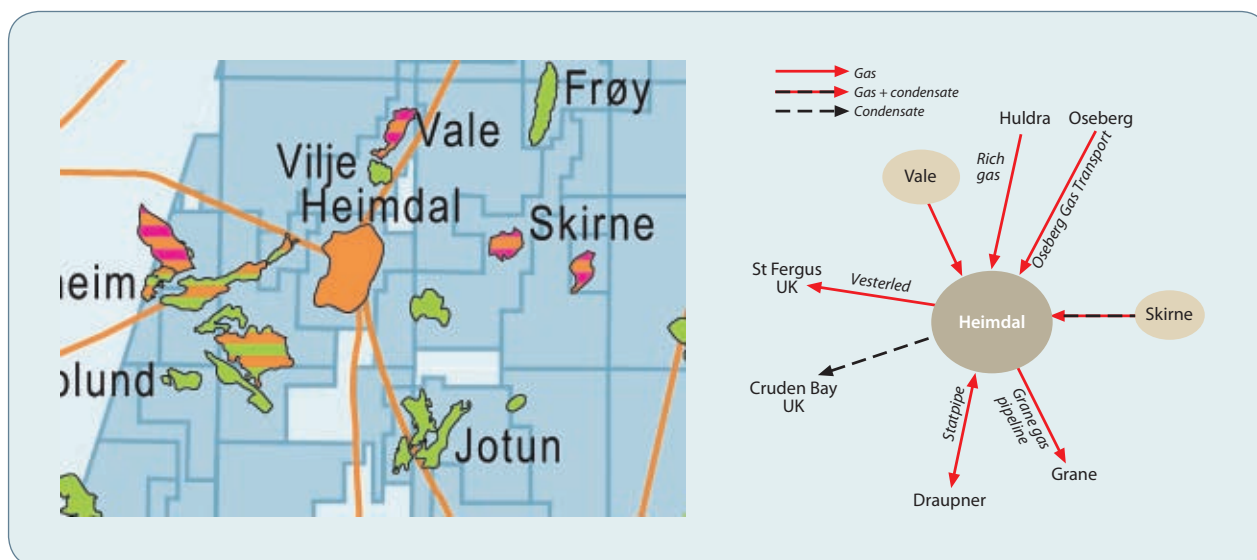
This gas and condensate field lies 180 kilometres west-north-west of Stavanger and roughly 400 north-west of Aberdeen. It was declared commercial in 1974, and the government exercised its option to participate in 1982.

From 1985-2000, Heimdal primarily produced gas and a little condensate. Gas from the field flowed from the start through a spur to the main Statpipe line. As the gas resources approached exhaustion, various options for using the installations were considered.



The Ministry of Petroleum and Energy received a PDO in 1998 for converting Heimdal to a gas transport hub by installing a new riser platform as well as modifying and upgrading the existing installation.

This plan was approved in 1999, with conversion completed the following year. It ensured long-term operation of the Heimdal platform by utilising available capacity to process gas from surrounding fields.





The Heimdal platform, with the riser installation in the foreground. Photo: Kjell Andersen/Statoil

Reservoir and recovery strategy

The Heimdal reservoir is built up from early Tertiary sandstones. Production has been based on natural pressure reduction and is now virtually over.

Transport

Heimdal gas was piped from the start in 1985 through a Statpipe spur via Draupner and Ekofisk to continental Europe. When the field was established as a gas centre, the Vesterled pipeline was tied into the existing line from Frigg to St Fergus. Operational since 2003, the Grane gas pipeline supplies that field with injection gas via Heimdal. Condensate is piped via Britain's Brae field to Cruden Bay in Scotland. At times, gas flows in the reverse direction from Statpipe to Heimdal and on via Vesterled to the UK.

Development solution

The field has been developed with an integrated

production, drilling and quarters platform – HMP1. Following the conversion of Heimdal into a gas hub, a new riser platform – HRP – was installed and tied to HMP1 by a bridge. The field's own gas is processed together with supplies from Vale and Skirne. Gas also comes from the Oseberg field centre via the Oseberg Gas Transport (OGT) line, and rich gas is piped 145 kilometres from Huldra for processing on Heimdal.

Heimdal HMP1

This installation ranked in 1985 as the largest steel structure on the NCS. Its integrated production, drilling and quarters topside is supported by a steel jacket in 120 metres of water.

Heimdal HRP

This riser platform with a steel jacket became operational in 2000 and is operated by Gassco.



Heimdal

Block	25/4
Production licence	036
Awarded	1971
Total recoverable reserves	44.7 mill bbl oil 44.6 bn scm gas
Remaining at 31 Dec 2008	4.4 mill bbl oil 0.3 bn scm gas
Discovery year	1972
Approved for development	10 Jun 1981
On stream	13 Dec 1985
Operator	Statoil
Operations organisation	Bergen
Main supply base	Mongstad
Licensees	
Statoil	39.44%
Centrica	23.80%
Petoro	20.00%
Total E&P Norge	16.76%

Skirne

This gas and condensate field, which includes the Bygve deposit, lies in 120 metres of water east of Heimdal and is operated by Total E&P Norge.

Reservoir and recovery strategy

Skirne's reservoir is built up from middle Jurassic sandstones at a depth of about 2 370 metres, while Bygve lies about 2 900 metres down. Reservoir quality is good. The field is produced through natural pressure reduction.

Transport

The wellstream is piped to Heimdal for processing and onward gas transport through Vesterled and Statpipe, while condensate goes to Brae in the UK sector.

Development solution

Skirne has been developed as a satellite with two subsea templates, each supporting a single well to

Skirne

Block	25/5
Production licence	102
Awarded	1985
Total recoverable reserves	13.2 mill bbl oil 8.2 bn scm gas
Remaining at 31 Dec 2008	5.7 mill bbl oil 3 bn scm gas
Discovery year	1990
Approved for development	5 Jul 2002
On stream	3 Mar 2004
Operator	Total E&P Norge
Operations organisation	Stavanger
Licensees	
Total E&P Norge	40%
Petoro	30%
Centrica	20%
Statoil	10%

produce Skirne and Byggve respectively. These two reservoirs are 24 and 16 kilometres respectively east

of Heimdal. The production wells are tied back by a pipeline to the latter field for processing.

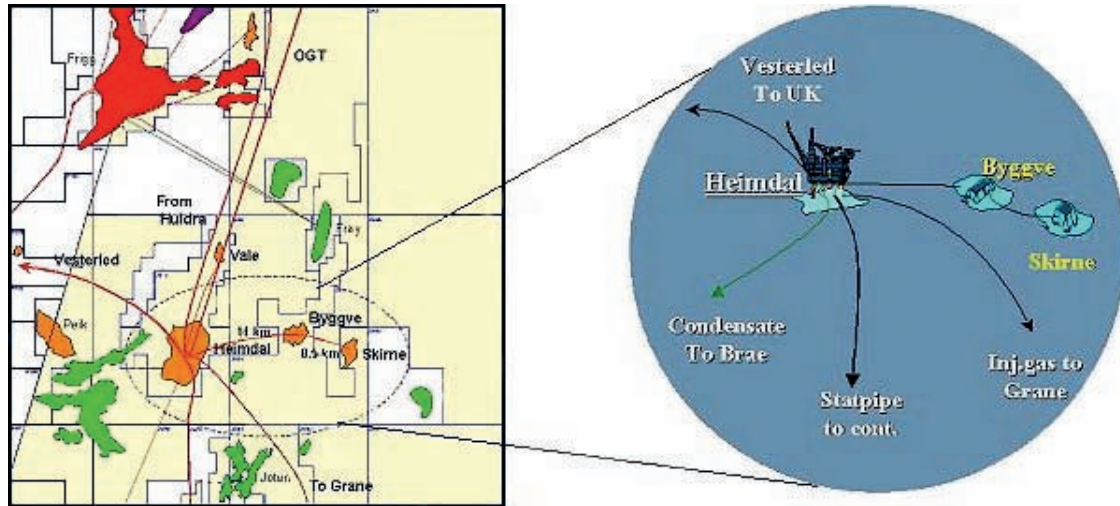


Illustration: Total E&P Norge

Vale

This gas condensate field lies 16 kilometres north of Heimdal and is operated by Statoil.

Reservoir and recovery strategy

Vale's reservoir is built up from middle Jurassic sandstones about 3 700 metres down. The field is produced through pressure reduction.

Transport

The wellstream from Vale is piped 16.5 kilometres to Heimdal for processing and onward export.

Development solution

Vale is a subsea development tied back to the Heimdal platform.

Facilities comprises a single well, a seabed template and a pipeline to Heimdal, where production is processed.

Vale

Block	25/4
Production licence	036
Awarded	1971
Total recoverable reserves	12.6 mill bbl oil 2.2 bn scm gas
Remaining at 31 Dec 2008	6.3 mill bbl oil 1,4 bn scm gas
Discovery year	1991
Approved for development	23 Mar 2001
On stream	31 May 2002
Operator	Statoil
Operations organisation	Bergen
Licensees	
Centrica	46.90%
Statoil	28.85%
Total E&P Norge	24.24%