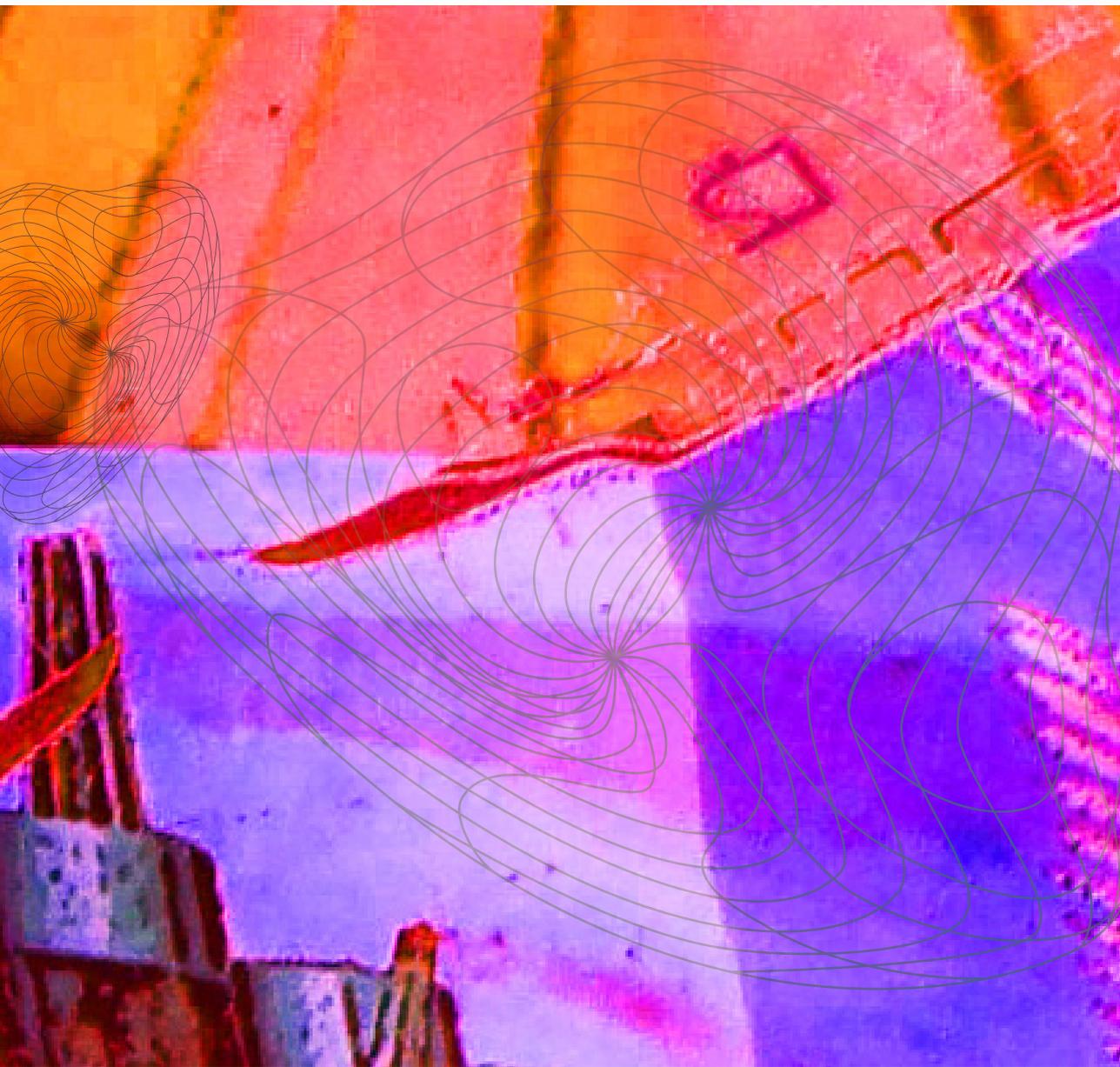


# 15 Pipelines and onshore facilities





**Figure 15.1** Existing and projected pipelines  
 (Source: Norwegian Petroleum Directorate)

The transport capacities are based on standard assumptions for pressure and gas energy content, maintenance downtime and operational flexibility

## Gassled pipelines

### Operator: Gassco AS

#### Licensees:

Petoro AS <sup>1</sup>	38.459 %
StatoilHydro ASA	20.474 %
StatoilHydro Petroleum AS	11.628 %
Total E&P Norge AS	7.783 %
ExxonMobil Exploration and Production Norway AS	5.286 %
Mobil Development Norway AS	4.142 %
Norske Shell Pipelines AS	3.974 %
Norsea Gas AS	2.726 %
ConocoPhillips Skandinavia AS	1.996 %
Eni Norge AS	1.525 %
A/S Norske Shell	1.345 %
DONG E&P Norge AS	0.662 %

<sup>1</sup> Petoro is the licensee for the State's Direct Financial Interest (SDFI). Petoro's participating interest in Gassled will be increased by approximately 8 per cent with effect from 1 January 2011, and the other parties' participating interests will be adjusted with effect from the same date.

In the spring of 2001, the government asked the relevant companies to establish a unified ownership structure for gas export. Gassled represents the merger of nine gas transport facilities into a single partnership. The Gassled ownership agreement was signed on 20 December 2002, and came into effect on 1 January 2003. Gassled's licence runs to 2028

Gassled encompasses: Europipe I, Europipe II, Franpipe, Norpipe, Oseberg Gas Transport, Statpipe, Tampen Link, Vesterled, Zeepipe, Åsgard Transport, Langeled, Norne Gas Transport System, Kvittebjørn Gas pipeline, Kollsnes gas processing plant and Kårstø gas and condensate processing plant. Gassled is organised into various zones for access and tariffs. Gassco coordinates and controls the flow of gas through a network of pipelines about 7 800 kilometres long, and handles all transport of Norwegian gas to the markets.

### Europipe I

This 40-inch pipeline starts at the Draupner E riser facility and runs for 660 kilometres, ending at Emden in Germany. Europipe I came into operation in 1995. The pipeline has a diameter of 40 inches, is 620 kilometres long and has a capacity of about 45-54 million scm per day, depending on operating mode. The pipeline has been built for an operating life of 50 years and total investment at start-up was approximately NOK 22.7 billion (2009 value). In addition to the pipeline, investments also include the terminal in Dornum and the Europipe Metering Station (EMS) in Emden.

(Agreement between Norway and Germany concerning the transmission of gas from the Norwegian continental shelf and other areas through a pipeline to the Federal Republic of Germany. (The Europipe Agreement), ref. Storting Proposition No. 60 (1992-1993) and Recommendation No. 164 (1992-1993).)

## Europipe II

This 42-inch pipeline runs for 658 kilometres from Kårstø to Dornum in Germany, Europipe Receiving Facilities (ERF), and became operational in 1999. With a capacity of about 74 million scm per day, Europipe II has been built for an operating life of 50 years. Total investment at start-up was approximately NOK 10.2 billion (2009 value).

(Supplementary agreement of 19 May 1999 to the Europipe agreement (see Storting Proposition No. 60 (1992-1993) and Recommendation No. 164 (1992-1993)) concerning the transmission of gas from Norway through a new pipeline (Europipe II) to Germany, ratified in accordance with Royal Decree of 14 September 2001).

## Franpipe

This 42-inch gas pipeline runs for 840 kilometres from the Draupner E riser facility in the North Sea to a receiving terminal at Dunkerque in France. The Gassled partnership owns 65 per cent of the terminal, while GDF SUEZ owns 35 per cent. The pipeline became operational in 1998. Franpipe has a capacity of about 54 million scm per day. It has been built for an operating life of 50 years. The total investment at start-up was approximately NOK 10.6 billion (2009 value).

(Agreement between Norway and France concerning the transmission of gas from the Norwegian continental shelf and other areas through a pipeline to France. See Storting Proposition No. 44 (1996-1997) and Recommendation No. 172 (1996-1997).)

## Norpipe Gas pipeline

This 36-inch pipeline starts at Ekofisk and runs for 440 kilometres to the Norsea Gas terminal in Emden, Germany. Also owned by Gassled, the Emden terminal cleans and meters the gas prior to onward distribution. The line became operational in 1977. Two riser facilities, H7 and B11, each with three compressors, are positioned on the German continental shelf. In 2007 a bypass was installed at H7, and H7 has now been shut down. The transport capacity is approximately 32 million scm per day without using the compressor capacity on the B11 riser facility. Capacity will increase to 44 million scm per day if the B11 compressors are used. Norpipe has been built for an operating life of at least 30 years. An application for extension of the lifetime of both Norpipe Gas pipeline and B11 is being considered by the authorities. Total investment at start-up was approximately NOK 28.2 billion (2009 value).

(Agreement between Norway and Germany concerning the transmission of petroleum through a pipeline from the Ekofisk field and adjacent areas to Germany. See Storting Proposition No. 88 (1973-1974) and Recommendation No. 250 (1973-1974).)

## Oseberg Gas Transport (OGT)

This 36-inch line starts at Oseberg and runs for roughly 109 kilometres to the riser facility at Heimdal (HRP). The pipeline became operational in 2000 and has a capacity of approximately 40 million scm per day. OGT has been built for an operating life of 50 years, and total investment at start-up was approximately NOK 2.1 billion (2009 value).

## Statpipe

This 880-kilometres pipeline system includes a riser facility and a gas processing plant at Kårstø. The system became operational in 1985. Statpipe Rich Gas, with a diameter of 30 inches, starts at Statfjord and runs for 308 kilometres to Kårstø, with a capacity of about 24 million scm per day. Statpipe Dry Gas has three components. One of these comprises a 28-inch pipeline running for about 228 kilometres from Kårstø to the Draupner S riser facility, with a capacity of roughly 20 million scm per day, depending on operating mode. The second component is a 36-inch pipeline running for about 155 kilometres from the the main facility at Heimdal (HMP) to Draupner S, with a capacity of about 30 million scm per day. The third is a 36-inch pipeline running for roughly 203 kilometres from Draupner S to Ekofisk-Y, with a capacity of about 30 million scm per day. The Heimdal-Draupner S and Kårstø-Draupner S pipelines can also be used for reversed flow. Total investment at start-up was approximately NOK 48.7 billion (2009 value).

## Tampen Link

The pipeline Tampen Link starts at the Statfjord field and ends at the FLAGS pipeline, 1.4 kilometres south of the Brent Alpha facility. About 15.5 kilometres of the new gas export pipeline lie on the British side of the border. Tampen Link was included in Gassled in 2007. The pipeline has a diameter of 32 inches, runs for 23 kilometres and has a capacity of approximately 25 million scm per day. The capacity is dependent upon inlet conditions at the connection points in the Statfjord area. Total investment at start-up was approximately 2.1 billion 2009-NOK. The investments include, in addition to the pipeline, necessary modifications on Statfjord B. Tampen Link has been built for an operating life of 30 years. (See plan for installation and operation referred to in St.prp. No. 53 (2004-2005).

## Vesterled

This 32-inch pipeline runs for about 360 kilometres from the Heimdal riser facility (HRP) to the receiving terminal at St. Fergus in the UK and became operational in 1978. It has a capacity of approximately 38.0 million scm per day. Total investment in Vesterled at start-up was approximately NOK 34.4 billion (2009 value). In addition to the pipeline, this total investment includes investments associated with construction of the St. Fergus terminal.

(Agreement between Norway and the UK concerning amendments to the Frigg treaty of 10 May 1976. Referred to in St.prp. No. 73 (1998–1999) and Recommendation No. 219 (1998–1999)).

## Zeepipe

Zeepipe I comprises a 40-inch pipeline running for about 813 kilometres from Sleipner (SLR) to the receiving terminal in Zeebrugge, Belgium. The terminal in Zeebrugge belongs to a separate partnership, with the Gassled partners holding 49 per cent and the Belgian Fluxys company holding 51 per cent. Zeepipe I became operational in 1993 and has a capacity of roughly 42 million scm per day. Zeepipe I also includes a 30-inch pipeline between Sleipner (SLR) and Draupner S.

Zeepipe II A starts at the Kollsnes gas processing plant and ends at the Sleipner riser facility. This pipeline became operational in 1996. Zeepipe II A is a 40-inch pipeline which is 299 kilometres long and has a capacity of 72 million scm per day.

Zeepipe II B starts at the Kollsnes gas treatment plant and ends at Draupner E. The pipeline became operational in 1997. Zeepipe II B has a 40-inch diameter, runs for about 301 kilometres and has a capacity of 71 million scm per day. The Zeepipe system has been built for an operating life of 50 years. Total investment at start-up is approximately NOK 25.7 billion (2009 value).

(Agreement between Norway and Belgium concerning the transmission of gas from the Norwegian continental shelf and other areas through a pipeline to Belgium. See Storting Proposition No. 148 (1987–1988) and Recommendation No. 21 (1988–1989).)

## Åsgard Transport

This 42-inch pipeline runs for about 707 kilometres from the Åsgard field to Kårstø. It became operational in 2000, with a capacity of approximately 69 million scm per day. Åsgard Transport is built for an operating life of 50 years. Total investment at start-up was approximately NOK 11.2 billion (2009 value).

## Langeled

The Langeled gas transport system runs from the onshore facilities for Ormen Lange at Nyhamna, via a tie-in point at the Sleipner riser facility to a new receiving terminal at Easington on the eastern coast of the UK. The system comprises a 42-inch pipeline from Nyhamna to the Sleipner riser (northern leg) and a 44-inch line from Sleipner to Easington (southern leg). Capacity is approximately 80 million scm per day in the northern leg and about 70 million scm per day in the southern leg.

The system has an overall length of roughly 1 200 kilometres. The southern pipeline became operational in October 2006, with the northern pipeline following in October 2007. Norsk Hydro was the operator for the development phase of the southern leg, while Gassco AS is the operator for the development phase of the northern leg and the operating phase of the whole transport system. Langedled was included in Gassled in the autumn of 2006. Total investment at start-up was approximately NOK 18.1 billion (2009 values).

### **Norne Gas Transport System (NGTS)**

The 16 inch pipeline runs for about 126 kilometres and connects the Norne field to Åsgard Transport. The pipeline has a capacity of approximately 3.6 billion scm per year. The Norne Gas Transport System has been built for an operating life of 50 years. The pipeline became operational in 2001. Total investment at start-up was approximately NOK 1.3 billion (2009 values). Norne Gas Transport System was included in Gassled as of 01.01.2009.

### **Kvitebjørn Gas Pipeline**

The 30 inch pipeline runs for about 147 kilometres and transports rich gas from Kvitebjørn and Visund to Kollsnes. The pipeline has a capacity of approximately 26.5 million scm per day and became operational in 2004, at the same time as the Kvitebjørn field. Total investment at start-up was approximately NOK 954 million 2002-values. There are plans to include the pipeline in Gassled in the autumn of 2009.

### **Kollsnes gas processing plant**

The gas processing plant at Kollsnes forms part of Gassled. Wellstreams are separated at Kollsnes into gas and condensate. The gas is dried and compressed before being sent to the Continent via two pipelines to Sleipner and Draupner.

Kollsnes also delivers a small amount of gas to the LNG plant at the Gasnor-Kollsnes Industrial Park. Following a stabilisation process, the condensate is sent on to the Vestprosess plant at Mongstad. This plant was upgraded in 2004 with an NGL extraction plant for processing gas from Kvitebjørn and Visund. After the upgrade, the capacity is 143 million scm dry gas per day and 9 780 scm condensate per day. In order to ensure that the plant can deliver 143 million scm dry gas per day, a new export compressor was put into operation from 1 October 2006.

### **Kårstø gas and condensate processing plant**

Rich gas and unstabilised condensate are transported to Kårstø. At the processing plant, these products are separated to dry gas and to six different liquid products. In addition to methane the rich gas contains the components ethane, propane, normal butane, iso-butane and naphtha. The products are separated and stored for shipping. The dry gas, which largely contains methane and ethane, is transported by two pipelines from Kårstø, Europipe II to Germany and Statpipe to Draupner. The Kårstø condensate facility receives unstabilised condensate from the Sleipner fields. The condensate is stabilised by separating out the lightest components. Ethane, iso-butane and normal butane are stored in refrigerated tanks, while naphtha and condensate are held in tanks at ambient temperature. Propane is stored in large refrigerated rock caverns. These products are exported from Kårstø in liquid form by ship.

Processing facilities at Kårstø comprise four extraction/fractionation lines for methane, ethane, propane, butanes and naphtha, plus a fractionation line for stabilising condensate. The condensate plant has a capacity of approximately 5.5 million tonnes of unstabilised condensate per year. After the last expansion, the KEP-2005 project, the capacity for recovering ethane at Kårstø has increased to 950,000 tonnes per year. At the same time, the gas processing facility was upgraded to handle 88 million scm rich gas per day.

## Other pipelines

### Draugen Gas Export

<b>Operator</b>	A/S Norske Shell	
<b>Licensees</b>	Petoro AS	47.88%
	BP Norge AS	18.36%
	A/S Norske Shell	26.20%
	Chevron Norge AS	7.56%
<b>Investment</b>	Total investment at start-up was approximately NOK 1.2 billion (2009 value)	
<b>Operating lifetime</b>	The technical operating lifetime is 50 years	
<b>Capacity</b>	Approximately 2 billion scm per year	

This 16-inch pipeline links the Draugen field to Åsgard Transport, and provides opportunities for possible tie-ins of other fields in the area. The pipeline is 78 kilometres long and commenced operation in November 2000.

### Grane Gas Pipeline

<b>Operator</b>	StatoilHydro Petroleum AS	
<b>Licensees</b>	As for the Grane field	
<b>Investment</b>	Total investment at start-up was approximately NOK 0.3 billion (2009 value)	
<b>Operating lifetime</b>	The technical operating life is 30 years	
<b>Capacity</b>	Approximately 3.6 billion scm per year	

The pipeline commenced operation in September 2003. Gas injection is required in order to produce the oil from the Grane field. This gas is transported to the field through the Grane Gas Pipeline. The 50 kilometres long pipeline runs from the Heimdal riser facility to Grane. The diameter of the pipeline is 18 inches.

### Grane Oil Pipeline

<b>Operator</b>	StatoilHydro Petroleum AS	
<b>Licensees</b>	Petoro AS	43.60 %
	ExxonMobil Exploration and Production Norway AS	25.60 %
	StatoilHydro Petroleum AS	24.40 %
	ConocoPhillips Skandinavia AS	6.40 %
<b>Investment</b>	Total investment at start-up was approximately NOK 1.7 billion (2009 value)	
<b>Operating lifetime</b>	The technical operating lifetime is 30 years	
<b>Capacity</b>	34 000 scm oil per day	

This pipeline became operational at the same time as the Grane field, in September 2003. The pipeline links the Grane field to the Sture terminal. It is 220 kilometres long and has a diameter of 29 inches.

## Haltenpipe

<b>Operator</b>	Gassco AS	
<b>Licensees</b>	Petoro AS	57.81%
	StatoilHydro ASA	19.06%
	ConocoPhillips Skandinavia AS	18.13%
	Eni Norge AS	5.00%
<b>Investment</b>	Total investment at start-up was approximately NOK 3.1 billion (2009 value) in pipelines and the terminal	
<b>Operating lifetime</b>	The licence expires on 31 December 2020	
<b>Capacity</b>	Approximately 2 billion scm gas per year	

This 16-inch gas pipeline runs for 250 kilometres from the Heidrun field in the Norwegian Sea to Tjeldbergodden, where StatoilHydro ASA and ConocoPhillips Skandinavia AS have built a methanol plant close to the receiving terminal. This plant uses Heidrun gas to produce methanol. Gas deliveries to the methanol plant are approximately 0.7 billion scm per year.

## Heidrun Gas Export

<b>Operator</b>	StatoilHydro ASA <sup>1</sup>	
<b>Licensees</b>	Petoro AS	58.16%
	ConocoPhillips Skandinavia AS	24.31%
	StatoilHydro ASA	12.41%
	Eni Norge AS	5.12%
<b>Investment</b>	Total investment at start-up was approximately NOK 1.0 billion (2009 value)	
<b>Operating lifetime</b>	The technical operating lifetime is 50 years	
<b>Capacity</b>	Approximately 4.0 billion scm per year	

<sup>1</sup> The operatorship is due to be transferred to Gassco AS.

This 16-inch pipeline runs roughly 37 kilometres from the Heidrun field to the Åsgard Transport system. It became operational in February 2001.

### Kvitebjørn Oil Pipeline (KOR)

<b>Operator</b>	StatoilHydro ASA	
<b>Licensees</b>	StatoilHydro ASA	43.55 %
	Petoro AS	30.00 %
	StatoilHydro Petroleum AS	15.00 %
	Total E&P Norge AS	5.00 %
	Enterprise Oil Norge AS	6.45 %
<b>Investment</b>	Total investment at start-up was approximately NOK 0.5 billion (2009 value)	
<b>Operating lifetime</b>	The technical operating lifetime is 25 years	
<b>Capacity</b>	Approximately 10 000 scm per day	

Kvitebjørn Oil Pipeline (KOR) transports condensate from Kvitebjørn to the Mongstad oil terminal. This 16-inch line runs for about 90 kilometres to tie in to the Y-connection on Troll Oil Pipeline II. The pipeline became operational in the second half of 2004.

### Norpipe Oil Pipeline

<b>Owner</b>	Norpipe Oil AS	
<b>Operator</b>	ConocoPhillips Skandinavia AS	
<b>Ownership in Norpipe Oil AS</b>	ConocoPhillips Skandinavia AS	35.05%
	Total E&P Norge AS	34.93%
	StatoilHydro ASA	15.00%
	Eni Norge AS	6.52%
	StatoilHydro Petroleum AS	3.50%
	Petoro AS	5.00%
<b>Investment</b>	Total investment at start-up was approximately NOK 17.4 billion (2009 value)	
<b>Operating lifetime</b>	The pipeline has been designed for an operating life of at least 30 years. The technical lifetime is under constant review.	
<b>Capacity</b>	Design capacity for the oil pipeline is about 53 million scm per year (900.000 bbls/day), including the use of friction-inhibiting chemicals. The receiving facilities restrict capacity to 128 776 scm per day.	

The Norpipe Oil Pipeline crosses the British continental shelf, with landfall at Teesside in the UK. The 34-inch Norpipe oil pipeline is about 354 kilometres long and starts at the Ekofisk Centre, where three pumps have been placed. A tie-in point for UK fields is located about 50 kilometres downstream of Ekofisk. Two riser facilities, each with three pumps, were previously tied to the pipeline, but were bypassed in 1991 and 1994 respectively.

Two British-registered companies, Norse Pipeline Ltd and Norpipe Petroleum UK Ltd, own the oil export port and fractionation plant for extracting NGL in Teesside. The pipeline carries crude from the four Ekofisk fields (Ekofisk, Eldfisk, Embla and Tor) as well as from Valhall, Hod, Ula, Gyda and Tambar, and from several British fields.

(Agreement between Norway and the UK concerning the transmission of petroleum through a pipeline from the Ekofisk field and adjacent areas to the UK. See Storting Proposition No. 110 (1972–1973) and Recommendation No. 262 (1972–1973).)

## Oseberg Transport System (OTS)

<b>Operator</b>	StatoilHydro Petroleum AS	
<b>Licensees</b>	Petoro AS	48.38%
	StatoilHydro Petroleum AS	22.24%
	StatoilHydro ASA	14.00%
	Total E&P Norge AS	8.65%
	Mobil Development Norway AS	4.33%
	ConocoPhillips Skandinavia AS	2.40%
<b>Investment</b>	Total investment at start-up was approximately NOK 10.2 billion. (2009 value)	
<b>Operating lifetime</b>	The pipeline is designed for a lifetime of 40 years	
<b>Capacity</b>	121.000 scm per day (technical), 990.000 scm (storage)	

Oil from the Oseberg field is transported in a 115 kilometres long, 28-inch line from the Oseberg A facility to the crude oil terminal at Stura in Øygarden municipality. The Oseberg licensees have established a separate partnership to operate this pipeline.

## Sleipner Øst Condensate pipeline

<b>Operator</b>	StatoilHydro ASA	
<b>Licensees</b>	StatoilHydro ASA	49.60%
	ExxonMobil Exploration and Production Norway AS	30.40%
	StatoilHydro Petroleum AS	10.00%
	Total E&P Norge AS	10.00%
<b>Investment</b>	Total investment at start-up was approximately NOK 1.7 billion. (2009 value)	
<b>Capacity</b>	32 000 scm oil per day	

This 20-inch pipeline transports unstabilised condensate from Sleipner A to Kårstø.

## Troll Oil Pipeline I

<b>Operator</b>	StatoilHydro ASA	
<b>Licensees</b>	Petoro AS	55.77%
	StatoilHydro ASA	20.85%
	StatoilHydro Petroleum AS	9.73%
	A/S Norske Shell	8.29%
	Total E&P Norge AS	3.71%
	ConocoPhillips Skandinavia AS	1.66%
<b>Investment</b>	Total investment at start-up was approximately NOK 1.3 billion. (2009 value)	
<b>Operating lifetime</b>	Troll Oil Pipeline I is designed to operate for 35 years	
<b>Capacity</b>	42 500 scm per day of oil with use of friction inhibitors	

Troll Oil Pipeline I was built to transport oil from Troll B to the oil terminal at Mongstad. The pipeline has a diameter of 16 inches and a length of 85 kilometres. The Troll licensees have established a separate partnership to handle operation of the line. Troll Oil Pipeline I was in place and ready to receive oil production from Troll B, which started in September 1995.

## Troll Oil Pipeline II

<b>Operator</b>	StatoilHydro ASA	
<b>Licensees</b>	Petoro AS	55.77%
	StatoilHydro ASA	20.85 %
	StatoilHydro Petroleum AS	9.73%
	A/S Norske Shell	8.29%
	Total E&P Norge AS	3.71%
	ConocoPhillips Skandinavia AS	1.66%
<b>Investment</b>	Total investment at start-up was approximately NOK 1.2 billion.(2009 value)	
<b>Operating lifetime</b>	Troll Oil Pipeline II is designed for a lifetime of 35 years	
<b>Capacity</b>	Current capacity is 40.000 scm per day. The hydraulic capacity is 47 500 scm per day (without use of friction inhibitors)	

This 20-inch pipeline has been built to transport oil over the 80 kilometres from Troll C to the terminal at Mongstad. The plan for installation and operation was approved in March 1998, and Troll Oil Pipeline II was ready to begin operation when Troll C started production on 1 November 1999. Oil from Fram and Kvitebjørn is transported through Troll Oil Pipeline II. The licence period for the pipeline lasts to 2023. The oil pipeline from Gjøa will be connected to Troll Oil Pipeline II, and oil from Gjøa, Vega and Vega Sør will use available capacity in the pipeline.

## Onshore facilities

### Mongstad crude oil terminal

<b>Owner</b>	StatoilHydro ASA	65.00%
	Petoro AS	35.00%

The terminal at Mongstad incorporates three jetties able to receive vessels up to 440.000 tonnes, as well as six caverns blasted in the bedrock 50 metres below ground. These caverns have a total storage capacity of 1.5 million m<sup>3</sup> of crude oil.

This facility was constructed to support the marketing of crude oil loaded offshore. Crude oil from fields with buoy loading (including Gullfaks, Statfjord, Draugen, Norne, Åsgard and Heidrun) is loaded offshore onto buoy loader shuttle tankers, which have a sailing range confined to northwest Europe. By storing and transshipping crude at Mongstad, however, Statoil can sell the oil to more distant destinations. Mongstad is also the receiving terminal for the oil pipelines from Troll B, Troll C, Troll Blend (Fram) and Kvitbjørn fields, as well as shuttle tankers from Heidrun.

### Ormen Lange onshore facility

<b>Owner</b>	As for the Ormen Lange field.
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The process plant for Ormen Lange at Nyhamna is a conventional plant for gas drying, compression, gas export, condensate separation/stabilisation/storage and fiscal measurement of gas and condensate. The condensate is being exported by ship from Nyhamna. The plant became operational in September 2007. The land facility has been designed for an operating life of 30 years, while part of the main infrastructure has been designed for 50 years. The plant has a capacity of 70 million scm dry gas per day gas at a receiving pressure of 90 bar.

### Snøhvit onshore facility

<b>Owner</b>	As for the Snøhvit field.
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The unprocessed well stream from the Snøhvit field is transported through a 143 kilometres long pipeline to the facility at Melkøya for processing and export. Condensate, water and CO<sub>2</sub> are separated from the well stream on the onshore facility before the natural gas is being cooled down to liquid form (LNG) and stored in dedicated tanks. The pipeline became operational in 2007 and has an available technical capacity of 7.7 million scm per year. Power is normally supplied by five gas turbines at the facility. Condensate and LPG products are stored in tanks for export. Separated CO<sub>2</sub> is sent in return to the Snøhvit field and injected into a separate formation below the oil and gas.

## Sture terminal

<b>Owner</b>	The Sture terminal forms part of the joint venture for the Oseberg Transport System (OTS), with the same ownership interests. The exception is the LPG export facilities, which are owned by StatoilHydro Petroleum AS (the refrigerated LPG storage and transfer system to ships) and Vestprosess DA (export facility to Vestprosess).
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The Sture oil terminal receives oil and condensate via the pipeline from the Oseberg A facility from the Oseberg, Veslefrikk, Brage, Oseberg Sør, Oseberg Øst, Tune and Huldra fields. The terminal also receives Grane oil through the Grane Oil Pipeline. The terminal began operating in December 1988. It incorporates two jet-ties able to berth oil tankers up to 300.000 tonnes, five rock caverns for storing crude oil with a combined capacity of 1 million scm, a 60.000 m<sup>3</sup> rock cavern storage for LPG and a 200.000 m<sup>3</sup> ballast water cavern. A separate unit for recovering volatile organic compounds (VOC) has been installed.

A fractionation plant which came in operation in December 1999 processes unstabilised crude from Oseberg into stabilised oil and an LPG blend. The produced LPG blend can either be exported by ship from the terminal or sent through the Vestprosess pipeline between Kollsnes, Stura and Mongstad.

## Tjeldbergodden

<b>Owner</b>	Statoil Metanol ANS	
<b>Owners in Statoil Metanol ANS</b>	StatoilHydro ASA	81.70 %
	ConocoPhillips Skandinavia AS	18.30 %

The methanol plant at Tjeldbergodden began production on 5 June 1997. Gas deliveries through the Haltenpipe total 0.7 billion scm annually, which yield 830.000 tonnes of methanol.

An air separation plant, Tjeldbergodden Luftgassfabrikk DA, has been built in connection with the methanol facility. This company has also constructed a small gas fractionation and liquefaction plant with an annual capacity of 35 million scm.

## Vestprosess

<b>Owner</b>	Petoro AS	41.00 %
	StatoilHydro ASA	17.00 %
	StatoilHydro Petroleum AS	17.00 %
	Mobil Exploration Norway Inc	10.00 %
	A/S Norske Shell	8.00 %
	Total E&P Norge AS	5.00 %
	ConocoPhillips Skandinavia AS	2.00 %

The Vestprosess DA partnership owns and operates a gas transport system and a gas separation facility for NGL. These facilities came on stream in December 1999. A 56 kilometres pipeline carries unstabilised NGL from the Kollsnes gas terminal, via the oil terminal at Stura, to Mongstad.

At Mongstad, processing starts by separating out naphtha and LPG. The naphtha serves as refinery feedstock, while the LPG is fractionated in a dedicated process into propane and butane. These products are stored in rock caverns before export.