17

Pipelines and land facilities

Pipelines

Norpipe • Frigg Transport • Frostpipe • Sleipner East condensate
Statpipe • Zeepipe • Europipe I • Troll Oil Pipeline I
Troll Oil Pipeline II • Oseberg Transport System (OSF)
Oseberg Gas Transport (OGT) • Haltenpipe • Franpipe
Europipe II • Åsgard Transport • Norne Gas Export
Heidrun Gas Export • Draugen Gas Export

Land facilities

Kårstø gas treatment and condensate facilities
Kårstø metering and technology laboratory
Bygnes traffic control centre • Kollsnes gas treatment plant
Tjeldbergodden industrial complex
Sture crude oil terminal • Vestprosess

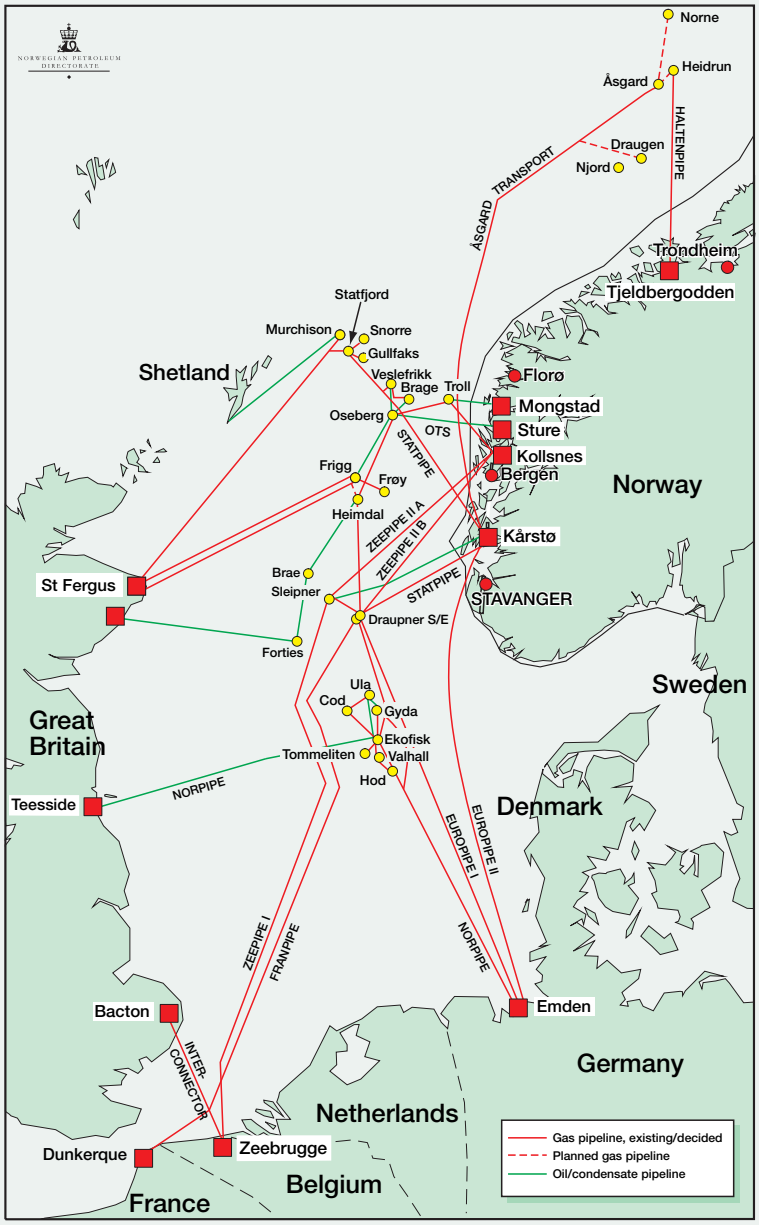

Figure 17.1 shows existing and planned pipelines in the North and Norwegian Seas. This chapter provides a more detailed description of pipelines on the Norwegian continental shelf. The transport capacities given are based on standard assumptions about pressure ratios, energy content of the gas, buyer options for varying daily deliveries, maintenance periods and operational flexibility.

Norpipe: Norpipe Oil AS

Operator	Phillips Petroleum Norsk A/S	
Licensees	Phillips Petroleum Norsk AS	35.05%
	Fina Exploration Norway S.C.A	28.44%
	Den norske stats oljeselskap a.s	20.00%
	Norsk Agip A/S	6.52%
	Elf Petroleum Norge AS	4.47%
	Norsk Hydro Produksjon a.s	3.35%
	Total Norge AS	2.02%
	Saga Petroleum ASA	0.15%
	The SDFI will receive a five per cent interest in Norpipe Oil AS on 15 October 2005 through a similar reduction in the equity interst held by Den norske stats oljeselskap a.s in the company.	

Norpipe: Norsea Gas A/S

Operator	Phillips Petroleum Norsk AS until about 2000, then Den norske stats oljeselskap a.s	
Licensees	Den norske stats oljeselskap a.s	50.00%
	Phillips Petroleum Norsk AS	15.89%
	Fina Exploration Norway S.C.A	12.90%
	Norsk Agip A/S	8.62%
	Elf Petroleum Norge AS	5.60%
	Norsk Hydro Produksjon a.s	4.43%
	Total Norge AS	2.36%
	Saga Petroleum ASA	0.20%
	The SDFI will receive a 20 per cent interest in Norsea Gas A/S on 15 October 2005, and a further 20 per cent on 1 October 2007. Other interests in the company will be reduced proportionally. The equity interest of Den norske stats oljeselskap a.s in Norsea Gas A/S will be 40 per cent on 15 October 2005 and 30 per cent on 1 October 2007.	
Investment	Total investment is likely to be NOK 40 bn (2000 value)	
Operating life	Both pipelines have been designed for an operating life of at least 30 years. Extending the technical life of the pipelines is under consideration.	
Capacity	Design capacities are about 19 bn scm/year (59.3 mill scm/day) for the gas line and around 53 mill scm/year (900 000 barrels/day) for the oil line, which includes the use of friction-inhibiting chemicals.	
Operating organisation	Stavanger	

The Norpipe gas line belongs to Norpipe a.s, a wholly-owned subsidiary of Norsea Gas A/S. Running roughly 440 km to Emden in Germany, this 36-inch line starts at the Ekofisk Centre, where Norpipe has installed four compressors. Two riser platforms, each with three compressors, are positioned on the German continental shelf to pump the gas southwards. Also owned by Norsea Gas A/S, the Emden terminal cleans and dries the gas prior to onward distribution.

Operation of the gas line began in September 1977, and Statpipe was tied to it in 1986. Statpipe has since been tied directly to Norpipe downstream from Ekofisk with the aid of a bypass line.

Owned by Norpipe Oil AS, the 34-inch Norpipe oil pipeline is about 354 km long and again starts at the Ekofisk Centre, where three pumps have been placed. It crosses the UK continental shelf to come ashore at Teesside. A tie-in point for UK fields is located about 50 km downstream of Ekofisk. Two riser platforms, each with three pumps, were abandoned in 1983 and early 1987 respectively.

Two British-registered companies, Norsea Pipeline Ltd and Norpipe Petroleum UK Ltd, own the oil export port and fractionation plant for extracting NGLs in Teesside, and are operated by Phillips Petroleum Company UK. The oil pipeline carries crude from the Ekofisk fields as well as from Valhall, Hod, Ula and Gyda. It also transports production from Britain's J block and Fulmar field.

Frigg Transport

Operator	Total Oil Marine UK	
Progress	The Norwegian pipeline was completed in 1977 and put into service in August 1978. Its licence was awarded in 1974 and expires in 2003, while the UK pipeline licence expires in 2026. The production licence for the Norwegian part of Frigg expires in 2015.	
Licensees	Norsk Hydro Produksjon a.s	32.87%
	Den norske stats oljeselskap a.s	29.00%
	Elf Petroleum Norge AS	21.42%
	Total Norge AS	16.71%
Investment	Total investment in the Norwegian Frigg pipeline and the Norwegian share of MCP01 is about NOK 25.5 bn (2000 value)	
Operating life	The licence expires in 2003	
Capacity	33 mill scm/day. At present limited to 18 mill scm/day because of Frøy (British pipeline: 33 mill scm/day).	
Operating organisation	St Fergus, UK	

The gas transport system from Frigg to St Fergus in Scotland comprises two 32-inch pipelines and a receiving terminal on land, but not the field processing and compression facilities on Frigg. The Norwegian-owned line runs for 350 km, and currently carries gas from Frigg, Lille-Frigg and Frøy as well as Britain's Piper, Tartan and Galley fields. While the UK pipeline was completed in the summer of 1976, the Norwegian facility was ready the following year and came into service in August 1978.

Although the lines are owned by the Norwegian and UK Frigg groups respectively, they are both operated by Total Oil Marine UK.

Frostpipe

Operator	Elf Petroleum Norge AS	
Licensees	Den norske stats oljeselskap a.s (SDFI 30%)	50.00%
	Elf Petroleum Norge AS	22.00%
	Total Norge AS	14.25%
	Norsk Hydro Produksjon a.s	13.75%
Progress	The pipeline was put into service in April 1994	
Investment	Total investment is likely to be NOK 0.8 bn (2000 value)	
Operating life	The licence expires in 2016	
Capacity	About 100 000 barrels/day	

This pipeline carries oil and condensate from Frigg to Oseberg. A plan for installation and operation of Frostpipe was approved by the Storting in April 1992. Initially intended to provide a transport solution for liquids from Lille-Frigg and Frøy, the system has the capacity to pipe volumes from new discoveries in the area.

The 16-inch pipeline is about 82 km long. Liquids are piped on from Oseberg via the Oseberg Transport System (OTS).

Sleipner East condensate

Operator	Den norske stats oljeselskap a.s	
Licensees	Den norske stats oljeselskap a.s (SDFI 29.6%)	49.6%
	Esso Expl & Prod Norway A/S	30.4%
	Norsk Hydro Produksjon a.s	10.0%
	Elf Petroleum Norge AS	10.0%
Investment	Total investment is likely to be NOK 4.3 bn (2000 value)	

Capacity	200 000 barrels/day
Operating organisation	Bygnes, Karmøy

The decision to land condensate from Sleipner East at Kårstø north of Stavanger rather than at Teesside in the UK meant that the field's licensees had to lay a 20-inch pipeline to the Norwegian coast and organise the required expansion of the Kårstø complex.

Unprocessed condensate from Sleipner East began to flow through the 245-km pipeline in 1993. At Kårstø, it is fractionated into NGLs and stabilised condensate for the market. With a daily capacity is 200 000 barrels, this line also began carrying condensate from Sleipner West, Loke and Gungne in 1997.

Statpipe

Operator	Den norske stats oljeselskap a.s	
Licensees	Den norske stats oljeselskap a.s	58.25%
	Elf Petroleum Norge AS	10.00%
	Norsk Hydro Produksjon a.s	8.00%
	Mobil Development of Norway AS	7.00%
	Esso Expl & Prod Norway A/S	5.00%
	A/S Norske Shell	5.00%
	Norske Conoco A/S	2.75%
	Total Norge AS	2.00%
	Saga Petroleum ASA	2.00%
Investment	Total investment is likely to be NOK 24.4 bn (2000 value) excl Kårstø	
Operating life	Designed to operate for 30 years	
Capacities	Rich gas pipeline Statfjord-Kårstø: 25-26 mill scm/day (about eight bn/year). Kårstø terminal: roughly 25 mill scm/day (about eight bn/year). Dry gas pipeline Draupner S-Ekofisk: 53 mill scm/day (about 17 bn scm/year). Capacities vary to a large extent in accordance with rich gas composition and pressure in Statpipe and downstream of the line.	
Operating organisation	Bygnes, Karmøy	

This 880-km pipeline system includes a riser platform and a receiving facility at Kårstø north of Stavanger. Statpipe is tied to the Statfjord, Gullfaks, Tordis, Snorre, Brage, Veslefrikk and Heimdal fields. Rich gas from fields in the northern part of Norway's North Sea sector – Statfjord, Gullfaks and the Oseberg area – is piped to Kårstø for separation and fractionation of the NGLs into commercial products, which are exported by ship. The residual dry gas continues in a 28-inch pipeline to the Draupner S riser platform and on to Emden via Ekofisk. Heimdal is connected to Statpipe via a 36-inch line to Draupner S. Work on the project began in 1981. A 25-year licence was awarded from the start of operation in October 1985 to 1 January 2011. Den norske stats oljeselskap a.s is operator for the I/S Statpipe partnership.

Zeepipe

Operator	Den norske stats oljeselskap a.s	
Licensees	Den norske stats oljeselskap a.s (SDFI 55%)	70.0%
	Norsk Hydro Produksjon a.s	8.0%
	A/S Norske Shell	7.0%
	Esso Expl & Prod Norway A/S	6.0%
	Elf Petroleum Norge AS	3.3%
	Saga Petroleum ASA	3.0%
	Norske Conoco A/S	1.4%
	Total Norge AS	1.3%
Investment	Total investment is likely to be NOK 15.3 bn (2000 value)	
Operating life	Zeepipe is designed to operate for 50 years	
Capacity	Some 13 bn scm/year for the Sleipner-Zeebrugge line	
Operating organisation	Bygnes, Karmøy	

A staged development was adopted for Zeepipe. Phase I comprises a 40-inch pipeline running for 814 km from Sleipner East to Zeebrugge in Belgium and a 30-inch line running 30 km from Sleipner East to the Draupner S riser platform in the Statpipe system. It came into service in 1993.

Phase II consists of two pipelines from the Troll Gas treatment plant at Kollsnes near Bergen. The 40-inch Phase IIA line runs for 303 km to Sleipner East and began operating in 1996. Phase IIB, which is 40 inches in diameter and runs for 304 km to the Draupner E riser platform, came into service in the following year.

The gas receiving station in Zeebrugge belongs to a separate partnership, with the Zeepipe group holding 49 per cent and Distrigaz 51 per cent. Operated by Den norske stats oljeselskap a.s, this facility is built and operated as an integral part of Zeepipe.

Europipe I

Operator	Den norske stats oljeselskap a.s
Licensees	As for Zeepipe
Investment	Total investment is likely to be NOK 17.5 bn (2000 value)
Operating life	Europipe I is designed to operate for 50 years
Capacity	Some 17 bn scm/year
Operating organisation	Bygnes, Karmøy

This 40/42-inch pipeline starts at the Draupner E riser platform and runs for 660 km to the final delivery point at Emden in Germany. Europipe I came into service in 1995.

Troll Oil Pipeline I

Operator	Den norske stats oljeselskap a.s
Licensees	As for the Troll field
Investment	Total investment is likely to be NOK 0.9 bn (2000 value)
Operating life	Troll Oil Pipeline I is designed to operate for 35 years
Capacity	42 500 scm oil/day (265 000 barrels/day), equivalent to the processing capacity of Troll B.
Operating organisation	Bygnes, Karmøy

This 85-km facility transports oil from the Troll B platform to the terminal at Mongstad near Bergen. With the plan for installation and operation approved in December 1993, the 16-inch line was ready in September 1995 and is licensed to 2023.

The Troll licensees have established a separate partnership – owned in the same proportions as the field – to handle operation of the line.

Troll Oil Pipeline II

Operator	Norsk Hydro Produksjon a.s
Licensees	As for the Troll field. Same partnership as Troll Oil Pipeline I
Investment	About NOK 0.7 bn (2000 value)
Operating life	Troll Oil Pipeline II is designed for a lifetime of 35 years
Capacity	47 500 scm oil per day
Operating organisation	Bygnes, Karmøy

A 20-inch pipeline has been built to carry oil over the 80 km from Troll C to the terminal at Mongstad near Bergen. 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. This line is licensed to 2023.

Oseberg Transport System (OTS)

Operator	Norsk Hydro Produksjon a.s
Progress	The pipeline was laid in 1987, the system was ready for start-up in 1988, and first oil arrived at Sture on 20 December of the same year.
Licensees	As for the Oseberg field
Investment	Total investment is likely to be NOK 6.4 bn (2000 value)
Capacity	765 000 barrels/day (technical), 990 000 scm (storage)
Operating life	The pipeline is designed to operate for 40 years. This may be extended.
Operating organisation	Bergen

Oil from Oseberg is piped for 115 km in a 28-inch pipeline from the field's A platform to the terminal at Sture near Bergen. The Oseberg group has established a separate partnership, owned in the same proportions as the unitised field, to operate the line. This partnership has concluded agreements with the licensees for Veslefrikk, Brage, Lille-Frigg, Frøy, Oseberg South, Oseberg East, Tune and Huldra to transport oil from these fields via Oseberg A and the OTS to Sture. Oil and NGLs from Frøy are piped through Frostpipe from the TCP2 platform on Frigg to Oseberg A.

Oseberg Gas Transport (OGT)

Operator	Norsk Hydro Produksjon a.s	
Licensees	Den norske stats oljeselskap a.s (SDFI 50.8%)	64.78%
	Norsk Hydro Produksjon a.s	13.68%
	Saga Petroleum ASA	8.55%
	Elf Petroleum Norge AS	5.77%
	Mobil Development of Norway AS	4.33%
	Total Norge AS	2.88%
Investment	Total investment is likely to be NOK 1.6 bn (2000 value)	
Operating life	The pipeline is designed to operate for 50 years	
Capacity	34 mill scm/day	
Operating organisation	Bergen	

A plan for installation and operation of a gas pipeline from Oseberg, which will tie to Statpipe at the Heimdal platform, was submitted by the field licensees in 1996. The authorities approved these proposals on 11 May 1999. While this 36-inch line is primarily intended for gas from Oseberg, it will have spare capacity to transport supplies from other sources. Running 108 km, it is due to come into service in 2000.

Haltenpipe

Operator	Den norske stats oljeselskap a.s
Progress	Government approval to install and operate Haltenpipe was given in February 1992. Laying began in 1994, and the line came into operation in November 1996.
Licensees	As for the Heidrun field
Investment	Total investment is likely to be NOK 2.3 bn (2000 value)
Operating life	The licence expires on 31.12.2000
Capacity	Minimum 2.2 bn scm/year of gas

This 16-inch gas pipeline runs for 245 km from Heidrun on the Halten Bank in the Norwegian Sea to Tjeldbergodden in mid-Norway, where Statoil and Conoco/Du Pont have built a methanol plant. The latter will use Heidrun gas as feedstock. Annual gas supplies to the methanol plant will total some 0.7 bn scm.

Franpipe

Operator	Den norske stats oljeselskap a.s	
Licensees	Den norske stats oljeselskap a.s (SDFI 60%)	69.71%
	Norsk Hydro Produksjon a.s	6.47%
	Saga Petroleum ASA	5.18%
	Esso Norge a.s	3.88%
	Mobil Development of Norway AS	3.88%
	Total Norge AS	2.91%
	Elf Petroleum Norge AS	2.14%
	Norsk Agip A/S	1.94%
	A/S Norske Shell	1.29%
	Fortum Petroleum AS	1.29%
	Norske Conoco A/S	1.29%
Investment	Total investment is put at roughly NOK 8 bn (2000 value), including a receiving facility in Dunkerque	
Operating life	Technical operating life is 50 years. The licence expires in 2020	
Capacity	About 15 bn scm/year	

Installation and operation of a 42-inch gas pipeline from the Draupner E riser platform in the North Sea to a receiving terminal at Dunkerque in France was approved by the MPE in 1995. The interests listed above could change before 1 October 2000. A separate partnership has been established for the terminal, with the Franpipe group holding a 65 per cent interest and Gaz de France 35 per cent. With an overall pipeline length of 840 km,

the system was completed in 1998. Den norske stats oljeselskap a.s and the Franpipe group were also responsible for establishing a 36-inch direct link – the Ekofisk bypass – between the Statpipe and Norpipe gas pipelines at a total cost of NOK 400 mill. The bypass started up in 1998.

Europipe II

Operator	Den norske stats oljeselskap a.s	
Licensees	Den norske stats oljeselskap a.s (SDFI 60%)	60.01%
	Norsk Hydro Produksjon a.s	4.72%
	Saga Petroleum ASA	10.63%
	A/S Norske Shell	1.18%
	Esso Exploration and Production Norway AS	7.68%
	Elf Petroleum Norge AS	0.01%
	Total Norge AS	5.91%
	Norske Conoco A/S	2.66%
	Mobil Development of Norway AS	1.18%
	Fortum Petroleum AS	3.66%
	Norsk Agip A/S	2.36%
Investment	Total investment is put at NOK 7.8 bn (2000 value)	
Operating life	Technical operating life is 50 years. The licence expires in 2020	
Capacity	About 18 bn scm/year	

The plan for installation and operation of a 42-inch pipeline running for 650 km from Kårstø north of Stavanger to the existing landfall facilities near Dornum in Germany was approved by the MPE in 1996. This line started up on 1 October 1999. The interests listed above could change before 1 October 2000.

Åsgard Transport

Operator	Den norske stats oljeselskap a.s	
Licensees	Den norske stats oljeselskap a.s (SDFI 46.95%)	60.50%
	Saga Petroleum ASA	9.00%
	Norsk Agip A/S	7.90%
	Total Norge AS	7.65%
	Mobil Development of Norway AS	7.35%
	Fortum Petroleum AS	5.00%
	Norsk Hydro Produksjon a.s	2.60%
Investment	Total investment is likely to be NOK 8.7 bn (2000 value)	
Operating life	Technical operating life is 50 years. The licence expires on 31.12.2020	

Capacity	Potential capacity is about 20.5 bn scm/year

Installation and operation of a 42-inch pipeline running the 730 km from Åsgard in the Norwegian Sea to Kårstø north of Stavanger received final approval from the MPE in 1998. This line is due to start up in 2000 In addition to Åsgard gas, this 730-km system is expected to carry production from other fields off mid-Norway. The interests listed above could change before the planned start-up of Åsgard Transport.

Norne Gas Export

Operator	Den norske stats oljeselskap a.s	
Licensees	Den norske stats oljeselskap a.s (SDFI 55.00%)	70.0%
	Saga Petroleum ASA	9.0%
	Norsk Hydro Produksjon a.s	8.1%
	Norsk Agip A/S	6.9%
	Enterprise Oil Norwegian A/S	6.0%
Investment	Total investment is put at roughly NOK 1.5 bn (2000 value)	
Operating life	The technical operating life is 50 years	
Capacity	About 3.6 bn scm/year	

This 16-inch pipeline will run roughly 130 km from Norne to tie to the Åsgard Transport system. Joint pigging with Heidrun Gas Export is planned. The authorities received a plan for installation and operation of Norne Gas Export in 1997, plus a supplement to this in April 1999, and are expected to consider these proposals during the first half of 2000. Plans call for the line to begin operating on 1 October 2000.

Heidrun Gas Export

Operator	Den norske stats oljeselskap a.s	
Licensee	Den norske stats oljeselskap a.s (SDFI 65.00%)	76.87%
	Norske Conoco AS	18.13%
	Fortum Petroleum AS	5.00%
Investment	Total investment is put at NOK 0.9 billion (2000 value)	
Operating life	The technical operating life is 50 years	
Capacity	About 4 bn scm/year	

This 16-inch pipeline will run about 37 km from Heidrun to tie to the Åsgard Transport system. Joint pigging with Norne Gas Export is planned. The authorities received a plan

for installation and operation of Heidrun Gas Export in 1997, plus a supplement to this in April 1999, and are expected to consider these proposals during the first half of 2000. Plans call for the line to begin operating on 1 October 2000.

Draugen Gas Export

Operator	A/S Norske Shell	
Licensees	Den norske stats oljeselskap a.s (SDFI 57.88%)	57.88%
	BP Amoco Norge AS	18.36%
	AS Norske Shell	16.20%
	Norsk Chevron AS	7.56%
Operating life	The technical operating life is about 50 years	
Capacity	About 2 bn scm/year	
Investment	Total investment is put at roughly NOK 0.9 bn (2000 value)	

A plan for installation and operation of Draugen Gas Export was submitted to the MPE in May 1999. The 16-inch pipeline to Åsgard Transport will be 75 km long. The authorities are expected to consider the plan during the first half of 2000. Start-up is planned for 1 October 2000.

Kårstø gas treatment and condensate facilities

Kårstø production in 1998	Propane: 1 832 938 tonnes, iso-butane: 399 654 tonnes, normal butane: 708 550 tonnes, naphtha: 228 146 tonnes, condensate: 3 759 342 tonnes, lean gas: 5.8 bn scm
Interests	Interests in the Kårstø gas treatment and condensate facilities are the same as for Statpipe

The Kårstø gas treatment and condensate plants north of Stavanger form part of the Statpipe system. This complex receives rich gas from Statfjord, Statfjord North and East, Gullfaks, Borg, Snorre, Brage, Tordis and Veslefrikk as well as condensate from the Sleipner fields.

Arriving in the Statpipe trunkline, rich gas is processed to remove the NGLs for fractionation. Residual lean gas can be piped through Statpipe to the Draupner S riser platform and on to Emden in Germany, or through Europipe II from Kårstø to Dornum near Emden. NGLs, naphtha and condensate are stored in tanks before being exported in liquid form by ship. The complex receives more than 400 vessel calls every year.

Treatment facilities comprise two fractionation/distillation trains for methane (lean gas), ethane, propane, butanes and naphtha, plus a fractionation line for stabilising condensate.

Work is now under way on expanding the Kårstø facilities. Rich gas from Åsgard and other fields will start arriving in October 2000 via the Åsgard Transport trunkline. Two new fractionation/distillation trains are under construction to handle these deliveries. A new propane store will also be brought into service.

Plans have been drawn up for minor modifications to increase capacity in the gas treatment facilities from October 2002.

Capacity in the existing treatment plant is 25 mill scm per day (about eight bn scm/year), and the new facility will be able to handle up to 39 mill scm per day. The condensate plant can process roughly 3.6 mill tonnes per year.

Kårstø metering and technology laboratory

The Kårstø metering and technology laboratory (K-lab) offers services relating to the calibration of all types of gas flow meters for pressures from 20-150 bar, testing and qualification of equipment, capacity testing of control valves and research projects. Investment in this facility, which opened in 1988, totals NOK 128 mill (1999 value). The K-lab is wholly owned by Den norske stats oljeselskap a.s.

Bygnes traffic control centre

Interests	Interests in the Bygnes control centre are the same as for Statpipe

The traffic control centre at Bygnes north of Stavanger coordinates gas transport and deliveries through the pipeline network from producers in the North Sea to buyers in continental Europe. It is responsible for operating about 4 500 km of pipelines which transport some 90 per cent of Norwegian gas flowing to European customers.

Kollsnes gas treatment plant

Interests	Interests in the Kollsnes gas treatment plant are the same as for the Troll field

The Kollsnes gas treatment plant near Bergen is part of the Troll Gas facilities, which also include Troll A and the pipelines linking this platform with the treatment plant. Construction work began at Kollsnes in 1991 and was completed by 1 October 1996, the deadline for starting contractual gas deliveries to continental Europe.

Wellstreams from Troll East are carried through two pipelines to the Kollsnes treatment plant for separation into dry gas and condensate. The gas is dried and compressed before being piped through Zeepipe to Zeebrugge, Statpipe/Norpipe to Emden and Franpipe to Dunkerque. Part of the condensate is stabilised and piped to the crude oil terminal

at Sture, while the condensate owned by the majority of the Troll partners is piped to the Vestprosess facility at Mongstad.

The gas treatment plant has been dimensioned to handle 100 mill scm of gas and 3 500 scm of condensate per day. Plans have been drawn up for minor modifications to increase capacity in the gas treatment plant, which will allow it to process possible gas from the Kvitebjørn field.

Tjeldbergodden industrial complex

Ownership of the Tjeldbergodden plants	Statoil Metanol ANS:	
	Den norske stats oljeselskap a.s	81.875%
	Norske Conoco A/S	18.125%

Plans by Den norske stats oljeselskap a.s and Norske Conoco A/S to utilise gas from Heidrun as feedstock for methanol production at Tjeldbergodden in mid-Norway were approved by the Storting (parliament) in 1992. The methanol plant began production on 5 June 1997. Gas deliveries through the Haltenpipe line total 700 mill scm per year, which yields 830 000 tonnes of methanol.

An air separation plant – Tjeldbergodden Luftgassfabrikk DA – has been built in association with the methanol facility. This partnership has also constructed a small gas fractionation and liquefaction plant with an annual capacity of 35 mill scm.

Norferm a.s, owned 50-50 by Den norske stats oljeselskap a.s and Nycomed Amersham, began producing bioproteins at Tjeldbergodden in the winter of 1998-99. With an annual production capacity of 10 000 tonnes, this plant consumes 25 mill scm of methane per year. That corresponds to three per cent of the gas received from Heidrun.

Sture crude oil terminal

Interests	Interests in the Sture terminal are the same as for Oseberg, with the exception of the LPG export facilities. These are owned by Norsk Hydro Produksjon a.s (the refrigerated LPG store and transfer systems to ships) and Vestprosess DA (the transfer system to the Vestprosess pipeline).

The crude oil terminal at Sture near Bergen receives production from Oseberg, Veslefrikk, Brage, Lille-Frigg, Frøy, Oseberg South, Oseberg East, Tune and Huldra. This oil is carried in a 115-km pipeline from Oseberg A. The terminal began operating in December 1988. It incorporates two jetties able to berth oil tankers up to 300 000 tonnes and six storage tanks with a combined capacity of one million scm. A separate unit for recovering volatile organic compounds given off from tankers has been installed. In March 1998, the government approved an upgrading of the facility.

A fractionation plant which came on line in December 1999 receives unstabilised crude from Oseberg and processes it to stabilised oil and a liquefied petroleum gas mix. The latter can either be exported by ship or piped through the Vestprosess line to the Mongstad refinery. Oil from Grane will be piped to Sture through a dedicated pipeline when this field comes on stream.

Vestprosess

Ownership of the Vestprosess facilities	Den norske stats oljeselskap a.s (SDFI 41%)	58%
	Saga Petroleum ASA	17%
	Mobil Development of Norway AS	10%
	A/S Norske Shell	8%
	Total Norge AS	5%
	Norske Conoco A/S	2%

The Vestprosess DA partnership was established in October 1997 with the aim of financing, building, operating and owning a system to transport condensate and NGLs from Kollsnes and Sture to Mongstad, and a new NGL facility at the Mongstad refinery. The Vestprosess facilities came on stream in December 1999. They will initially carry Troll condensate from Kollsnes and Oseberg NGLs from Sture to Mongstad for further processing. The first step involves separating naphtha from the liquefied petroleum gases to serve as refinery feedstock, while the LPG will be fractionated into propane and butane in the new Vestprosess plant. Propane and butane are due to be stored in newly-excavated rock caverns before export. The Vestprosess plant will use waste energy and utilities from the refinery.