9 Market status for Norwegian petroleum products

Norm price

Norwegian crude on the world market

Sales of natural gas liquids (NGL)

Dry gas sales

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Retail sales

Petrochemicals

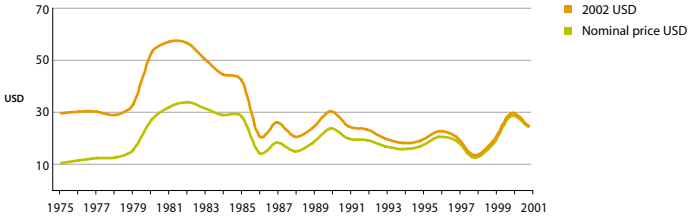

Figure 9.1 Price of Norwegian crude oil 1975-2001. *(Source: MPE)*

A governing principle of Norwegian policies on petroleum sales is that these will be made by commercial companies on the basis of commercial criteria within a general framework determined by the authorities. This means that producers on the NCS sell crude oil on market terms.

Norm price

The Act of 13 June 1975 on taxation of subsea petroleum deposits (the Petroleum Taxation Act) provides the legal basis for an administrative determination of petroleum prices – the norm price – for the purpose of calculating tax and royalty payments. Figure 9.1 shows the trend in prices for Norwegian crude since 1975 in terms of the average norm price.

Authorisation to determine such norm prices for calculating royalty is provided by section 4-9, subsection 6 of the Petroleum Act. The norm price regulations of 25 June 1976, with subsequent amendments, specify guidelines for determining these prices, and are framed to have general validity for these three areas of application. For tax purposes, the norm price is applied to all petroleum transactions, whether traded between independent parties or transferred internally.

Authority to set provisional and final norm prices - and to decide whether such prices should not be determined for specified production areas - has been delegated to the Petroleum Price Board. The latter fixes norm prices in arrears - normally for each quarter, but for a shorter period when this is considered desirable. In recent years, with frequent oil price changes, the board has largely fixed monthly norm prices for crude oil.

The norm price must correspond to the price at which petroleum could have been traded between independent parties in a free market. "Independent parties" are defined as buyers and sellers with no common interests which might influence the price agreed.The norm price is fixed on a discretionary basis after an overall evaluation of market conditions, taking several types of transactions, reference markets and methods of evaluation into account.

Norway's norm price regulations are framed to cover all types of petroleum produced on the NCS. For dry gas, contractual prices provide the basis of calculating liability to tax and royalty because dry gas – unlike crude oil – is sold under long-term contracts.

The Petroleum Price Board has not set any norm prices so far for NGL (ethane, propane, butanes and condensate).When no norm price is fixed, prices actually obtained provide the basis for calculating tax liability.

Norwegian crude on the world market

Daily Norwegian offshore production averaged 3.4 mill barrels of oil (including NGL) in 2001, and Norway ranked sixth among the world's leading oil producers. Crude output was more or less unchanged from 2000.

Since Norway consumes some 200 000 barrels of petroleum products per day, its net exports of crude oil and petroleum products (including NGL)

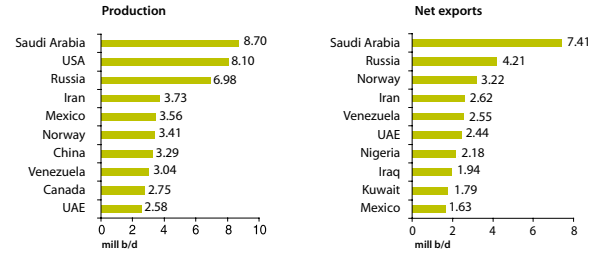

Figure 9.2 Production and net export of crude oil, incl NGL/condensate 2001.
(Source: Petroleum Economics Limited)

Table 9.1 Norwegian crude oils marketed as different blends in 2002.

Norwegian crude oil	Crudes included in the various blends	Shipped from	Estimate for 2002, 1 000 b/d
Ekofisk	Ekofisk Embla Gyda incl Gyda South Hod Eldfisk Tor Valhall Ula Tambar	Terminal (Teesside)	522
Statfjord Blend	Statfjord Snorre Statfjord East Statfjord North Sygna	Buoy/via Mongstad	468
Oseberg Blend	Oseberg incl. Oseberg West Oseberg East Oseberg South Veslefrikk Brage Huldra Tune	Terminal (Sture)	404
Gullfaks Blend	Gullfaks A Gullfaks B Gullfaks West Gullfaks South (incl Rimfaks and Gullveig) Vigdis Visund	Buoy/via Mongstad	311
Gullfaks C	Gullfaks C Tordis incl Borg	Buoy/via Mongstad	75
Brent Blend	Murchison	Terminal (Sullom Voe)	2
Forties	Heimdal condensate Vale	Terminal (Cruden Bay)	10
Draugen	Draugen	Buoy	197
Heidrun	Heidrun	Buoy/via Mongstad	167
Norne	Norne	Buoy	179
Jotun	Jotun	Buoy	54
Balder	Balder Ringhorne	Buoy	68
Njord	Njord	Buoy	36
Glitne	Glitne	Buoy	31
Troll	Oil Troll phase 2	Terminal (Mongstad)	316
Varg	Varg	Buoy	8
Åsgard	Åsgard	Buoy	146

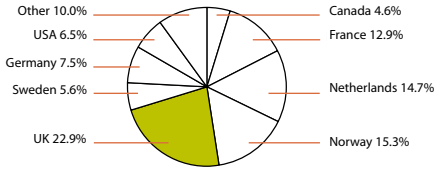

Figure 9.3 Shipments of Norwegian crude oil 2001*. Total:184.3 mill scm oe.
(Source: NPD) *to first recipient

totalled about 3.2 mill b/d (incl NGL/condensate). This puts Norway in third place after Saudi Arabia and Russia among the world's leading net crude exporters.

Figure 9.3 shows shipments of Norwegian crude in 2001 by the first recipient nation. For commercial and technical reasons, various grades of oil are often marketed as a single blend. Both oil quality and flexibility in loading and storage affect the price obtained. Table 9.1 illustrates how Norwegian crudes are marketed as different blends.

Sales of natural gas liquids (NGL)

NGL comprises ethane, propane, normal butane, iso-butane and condensate (see figure 9.4). Roughly 17.4 million scm oe of NGL was produced from the NCS in 2001, including some 7.5 million scm oe in the form of condensate and 9.9 million as NGL. NGL output was about 30 per cent higher than in 2000.

The European market for liquefied petroleum gases (LPG – propane and butanes) can be divided into three main segments: heating (industrial and household fuels), petrochemicals and automotive fuel (directly, blended with petrol or converted by alkylation to high-octane products). Heating constitutes about 60 per cent of the total market, with petrochemical production accounting for 30 per cent and automotive fuels for the remaining 10 per cent.

Demand for LPG from the heating market is high in the six winter months, which drives up the price. That makes these products less attractive as an alternative to naphtha in petrochemicals during the winter season. Figure 9.5 shows shipments of Norwegian NGL to the first recipient in 2001.

Dry gas sales

Norwegian gas sales were negotiated from 1986 to 2001 by the Gas Negotiating Committee (GFU), which comprised Statoil (chair), Norsk Hydro and Saga Petroleum (until Hydro acquired Saga).

The GFU was responsible for preparing and pursuing all gas sales discussions up to the point when contracts were signed. After that, the authorities identified which field would be responsible for fulfilling the contract, and which fields should deliver the gas.

In May 2001, the government resolved that sales of Norwegian gas through the GFU would be discontinued permanently in 2002.

Definition of natural gas

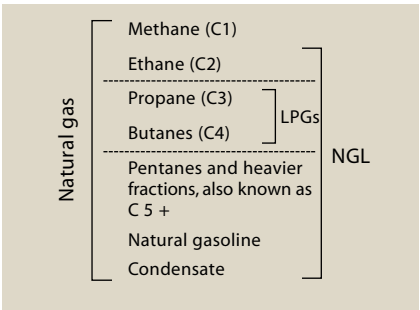

Figure 9.4 Definition of natural gas. *(Source: MPE)*

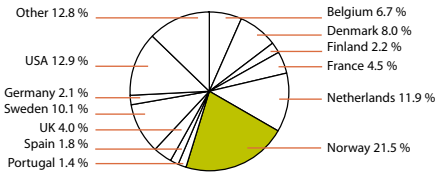

Figure 9.5 Sale of NGL/condensate 2001*. Total: 16.4 mill scm oe.
(Source: NPD) *to first recipient

This decision was based on the view that the growing maturity of the NCS, the opening of European gas markets and changes in company structures along the gas value chain meant that producers on the NCS should have greater commercial freedom of action.

Discontinuing the GFU means that each producer company will henceforth be responsible for marketing its own gas.

Dry gas agreements

Figure 9.6 shows Norwegian dry gas exports in 2001 by recipient.

Gas from Frigg was sold under a contract with British Gas signed in 1973. Supplementary agreements for gas from Odin and the Frigg satellites were signed in 1980. Some fields have already been abandoned and further shutdowns are expected over the next few years.

Gas deliveries from the Ekofisk area are made under four different agreements.The Phillips group signed two contracts in 1973 and 1975 respectively with a buyer group consisting of Germany's Ruhrgas, Dutch Gasunie, Belgium's Distrigaz and Gaz de France. These deals embrace the Phillips group's interests in all eight Ekofisk area fields, and were merged into a single agreement in 1990.

A framework agreement on gas deliveries from Statfjord, Heimdal and Gullfaks phase I was signed with European buyers in 1981 and followed later by final contracts.

In May 1986, an agreement was signed between the Troll licensees and Germany's Ruhrgas, Thyssengas and BEB as well as Distrigaz, Gasunie and Gaz de France. Similar deals were concluded by the Troll group with Austria in November 1986 and with Spain's Enagas in April 1988.

The Gas Negotiating Committee (GFU) signed an agreement with SEP, the Dutch association of power producers, in September 1988.

In 1993, Norwegian gas sellers also concluded contracts on new gas deliveries with Distrigaz for power generation in Belgium, with gas distributor Verbundnetz Gas in eastern Germany, and with Ruhrgas to provide additional supplies.

Further agreements followed with Gaz de France and Meeg (Mobil Germany) in 1994, and a supplementary deal was agreed with the French company in 1995.

Gas from Frøy has been delivered to UK companies since 1995. Irish buyers began receiving part of the gas from this field in 1997. Supplementary deliveries were agreed with Ruhrgas in 1996, while Italy's Snam contracted to buy gas in January 1997. A contract was signed by the GFU with Czech company Transgas in April of the same year.

Associated gas from the Heidrun field is sold as feedstock for methanol production and other applications at the Tjeldbergodden complex in mid-Norway.

A minor gas sales contract with Polish interests was concluded by Norwegian sellers in 1999.

The GFU negotiated a long-term agreement in 2001 on substantial deliveries of gas to Poland, starting in 2007. Gas from the planned Snøhvit development was also sold to US and Spanish

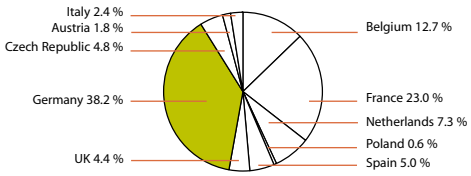

Figure 9.6 Norwegian dry gas exports 2001. Totalt: 50.5 bn scm
(Source: NPD)

buyers, with deliveries due to start in 2006.

Statoil concluded an agreement with BP in 2001 on annual gas deliveries to the UK over a 15-year period.

Norwegian dry gas in an international perspective

Norway's dry gas exports totalled 50.5 bn scm in 2001, an increase of about four per cent from 2000.

Norway ranks as the world's third largest exporter of pipeline gas, and its exports in 2001 represented some two per cent of world gas consumption - which is roughly 2 400 bn scm. The country is an important gas supplier to Europe, with Norwegian deliveries accounting for some 10 per cent of total west European gas consumption.

Refining

The Norwegian refining sector embraces two refineries: the Mongstad facility close to Bergen, and the Esso plant at Slagen near Oslo. Approximate annual capacities are just over 10 and roughly 4.5 million tonnes respectively.

Tables 9.2 and 9.3 illustrate Norwegian production and export of petroleum products in 1997-2001, broken down into the different qualities.

Retail sales

Figure 9.7 provides an overview of most Norwegian companies involved in retailing petroleum products, with their market shares.

Petrochemicals

Statoil owns 50 per cent of the Borealis petrochemicals group, a leading producer of polyolefins (plastic raw materials) with its head office in Copenhagen and some 6 000 employees.

Table 9.2 Norwegian production of petroleum products, 1 000 tonnes. *(Source: IEA reporting)*

Product	1997	1998	1999	2000	2001
Petrol	3 418	3 233	3 204	3 398	3 306
Naphtha/other gasolines	586	778	990	1 324	1 088
Kerosine	1 127	877	875	838	242
Medium distillates	7 126	6 921	7 279	8 174	8 008
Heavy fuel oil	1 878	1 997	1 958	1 856	1 683
Total	14 135	13 806	14 306	15 590	14 328

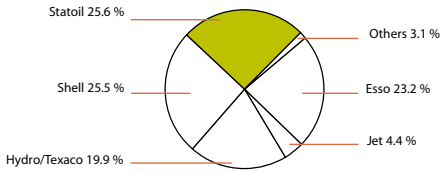

Figure 9.7 Market shares 2001.
(Source: Norwegian Petroleum Institute)

Table 9.3 Norwegian exports of petroleum products, 1 000 tonnes. *(Source: Statistics Norway)*

Product	1997	1998	1999	2000	2001
Petrol	1 806	1 829	1 830	2 068	2 952
Naphtha/other gasolines	4 561	3 563	4 742	3 557	2 128
Kerosine	305	224	200	206	129
Medium distillates	3 681	3 760	3 485	3 501	3 835
Heavy fuel oil	1 637	1 428	1 638	1 488	1 151
Total	11 990	10 804	11 895	10 821	10 195

I/S Noretyl, which produces ethylene and propylene as well as chemicals, is owned 51 per cent by Norsk Hydro (operator) and 49 per cent by Borealis.

This company is located at Rafnes in Bamble local authority south of Oslo, where Hydro also operates chlorine and VCM plants.

In addition, Bamble is the site of Borealis facilities producing plastic raw materials such as polyethylene and polypropylene based on ethylene and propylene supplied by I/S Noretyl.

Statoil and Conoco have a methanol plant at Tjeldbergodden, which started production in 1997.

Jotun Polymer and Dyno Kjemigruppen are also regarded as part of Norway's petrochemicals sector.

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