



wintershall dea

NORWAY

WINTERSHALL DEA

LONG-TERM COMMITMENT AND CLOSE PARTNERSHIP

Gas and oil production for Europe's energy supply

After Russia, Norway is Europe's most important supplier of natural gas and oil. Every year, Germany imports almost every third cubic metre of its natural gas from Norway. Wintershall Dea, Germany's largest internationally active producer of natural gas and crude oil, has been active in Norway for over 45 years.

Wintershall Dea is among the largest gas producers on the Norwegian Continental Shelf (NCS). Today it has more than 100 licenses – around a third of them as operator – and a production volume of 154,000 barrels of oil equivalent per day (2020). At the same time Wintershall Dea continues to work on transferring new discoveries on the shelf into the development and production phase.

The company operates the manned offshore production platform Brage as well as the subsea Vega and Maria fields, which are tied back to existing manned facilities on the shelf. Additionally, the company develops its operated field Nova, and first gas flow from the operated Dvalin-field was achieved in late 2020. The company also has interest in producing fields and developments as a license partner, including, Skarv, Njord, Aasta Hansteen, Snorre, Gjøa and Snøhvit.



Norway is one of the core regions for Wintershall Dea. The company is exploring and producing in the North Sea, Norwegian Sea and Barents Sea.

EXPLORATION

The search for gas and oil

Wintershall Dea holds more than 50 promising exploration licenses on the entire Norwegian Continental Shelf. Most of them are located in the Norwegian Sea and the North Sea. In the 2020 APA round (Awards in Predefined Areas) Wintershall Dea in Norway was awarded 16 licenses, four as operator. The majority of the licenses are situated in core areas for Wintershall Dea, most within tie-back distance of existing infrastructure allowing for a quick value creation with potential discoveries. The other licenses are located in less mature areas where high-impact discoveries could lead to development of new facilities.

A template for subsea production is loaded onto a vessel.



DEVELOPMENTS

Dvalin: Subsea production of natural gas

The heavy lifting vessel Saipem 7000 lifts the Dvalin gas treatment module onto the Heidrun platform.

The Dvalin gas field in the Norwegian Sea, about 15 kilometres northwest of the Heidrun field, is operated by Wintershall Dea. As planned, first gas flow was achieved in late 2020. However, during the commissioning phase, measurements showed that gas flow contained a level of mercury that exceeded the maximum amount in the system. A technical solution is currently being investigated. Until



an appropriate remediation solution is implemented, gas flow from the field will be curtailed. The Dvalin recoverable resources, which amount to 113 million boe, remain unaffected by the mercury issue. The field is being developed using a subsea production system including a template on the seabed with four production wells, connected to the Heidrun platform. The gas will be exported via the Polarled pipeline from the Heidrun platform and transported to the Nyhamna gas terminal, before being exported to customers in Europe.

Nova: Subsea installation made in Norway

The Nova field, close to Gjøa in the northern North Sea is currently being developed by Wintershall Dea. Together with its license partners, Wintershall Dea is tying the field back to the neighboring Gjøa platform via a subsea installation. This will enable the existing infrastructure to be utilised and the full potential of the field to be developed. Drilling of the Nova wells started in October 2020 with an expected duration of more than a year. Field production start is planned in the second half of 2022. The production volume is estimated at around 80 million barrels of oil equivalent.

Njord: Restarting for more yield

Production on the Equinor-operated Njord oil field, which is 50 per cent owned by Wintershall Dea, started in 1997. Njord Future has been shut in since 2016 for extensive onshore upgrades on the floating platform used. This aims to add an additional 20 years of production from the field. For example, ten new production wells are planned as part of the Njord Future project. First production from Njord is expected in the first half of 2022.

PRODUCTION

Maria: Subsea installation in the Norwegian Sea

One of the milestones in each offshore production: drilling the production wells.

Maria is the first field that Wintershall Dea has brought from discovery to production as operator in Norway. Having been discovered by Wintershall Dea in 2010, the PDO was approved in 2015 and the field came into production in December 2017. Two infill wells were delivered in 2020 as a measure to improve pressure support and recovery.



The field is located in the Haltenbanken area in the southern Norwegian Sea, about 200 kilometres off the coast of Kristiansund. The field was developed with two subsea templates at a depth of 300 metres tied back to the nearby Kristin, Heidrun and Åsgard B platforms. With this development concept, Wintershall Dea is using existing infrastructure to produce hydrocarbons from Maria, while also extending the lifetime of the surrounding fields.

Brage: Wintershall Dea's first own production platform

The Brage platform has been producing crude oil at the Brage field since 1993. Wintershall Dea became operator of Brage in 2013 as part of an asset swap with Equinor. Wintershall Dea has since carried out extensive modernisation measures on the platform. New wells continue to be drilled, extending the commercial lifetime of the field. Wintershall Dea Norge is currently conducting a two-year feasibility study to investigate using injected CO₂ for enhanced oil recovery (EOR) on the field. It assesses how a mature field like Brage can be used for permanent CO₂ storage after the production period is completed. In the study, it is assumed that CO₂ will be transported by ship for direct injection into the reservoir.

Aasta Hansteen: Norway largest floating SPAR platform

With the production start of the Equinor-operated Aasta Hansteen gas field at the end of 2018, Wintershall Dea has further strengthened its position as one of the largest producers in Norway. Aasta Hansteen is the deepest field in Norway, and one of the most technically advanced projects on the shelf. The operator together with the license partners successfully developed the first floating SPAR platform in Norway – the largest of its kind in the world.

The field is making a significant contribution to Norway's overall annual gas production – further securing Europe's energy supply. The recoverable reserves in the Aasta Hansteen and Snefrid Nord fields, which are being developed jointly with the main Aasta Hansteen field, are expected to amount to 55.6 billion standard cubic metres (Sm³) of natural gas and 0.6 million Sm³ of condensate. Wintershall Dea is the second largest shareholder in Aasta Hansteen with 24 per cent.

Skarv: Major production from the Norwegian Sea

The Skarv field was discovered in 1998 and is located just south of the polar circle, 210 kilometres off the coast of Sandnessjøen. Wintershall Dea is one of the main owners of field, and production from Skarv plays an important part of the company's diversified portfolio. The Skarv FPSO serves as a hub for other developments in the area, and the last one, Ærfugl came on stream in 2020, adding more resources to the field. Phase 1 developed the southern part of the field and is producing from three wells since November 2020. Phase 2 is focused on the northern part of the field and started production early from one well in April 2020. The following two wells are expected to come on stream in 2021.



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Questions?

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Wintershall Dea in Norway: at a glance

- **Country entry:** 1973
- **Operated fields:** Brage, Maria, Vega, Dvalin, Nova
- **Key partner operated:** Aasta Hansteen, Skarv, Gjøa, Edvard Grieg, Njord
- **Production (2020):** 154 mboe per day
- **Licences:** over 100
- **Norway's hydrocarbon recoverable resources*:** 8.3 billion Sm³
- **Norway's total recoverable resources*:** 15,7 billion Sm³, including quantities already produced
- Roughly half the total resources in the discovery portfolio lie in the North Sea, just under a third in the Norwegian Sea and about a fifth in the Barents Sea

* Source: The Norwegian Petroleum Directorate Resource Report 2020 (<https://www.npd.no/globalassets/1-npd/publikasjoner/rapporter/ressursrapporter/2020/en/resource-report-exploration-2020-final.pdf>)