

wintershall dea



FACTS & FIGURES

MITTELPLATE

SWITCH TO GREEN POWER

CO₂-emissions from oil production are significantly reduced

Wintershall Dea has been producing crude oil from the Mittelplate field located in the Wadden Sea in the German state of Schleswig-Holstein for 33 years – safely and without incident. Thanks to state-of-the-art technology, highly qualified staff and complex monitoring and safety systems, oil production and environmental protection are indeed compatible even in this sensitive ecosystem.

Mittelplate is Germany's most productive oil field and is therefore a mainstay of German oil production. To date more than 37 million tonnes of crude oil have already been extracted from the field. The volume of close to 3 million litres of Mittelplate crude produced daily also represents an important driver to the economy and jobs on the west coast of Schleswig-Holstein.

Wintershall Dea operates a state-of-the-art, electrically powered drilling rig on the Mittelplate Drilling and Production island. Thanks to its low noise emission, the rig is ideal for deployment in the Wadden Sea. The current production comes from 20 production wells, sunk from the island itself, which drain the oil-bearing sandstone layers at a depth of 2,000 to 3,000 metres. Using cutting-edge technology, even the more remote parts in the southern part of the reservoir are now also being put on stream using extended-reach horizontal wells up to nine kilometres in length. Operating the T-150 drilling rig in this manner consumes a great deal of electricity. In total, the Mittelplate Drilling and Production island uses around 70 to 75 gigawatt hours (GWh) of electricity annually – equivalent to the yearly power consumption of 24,000 three-person households.

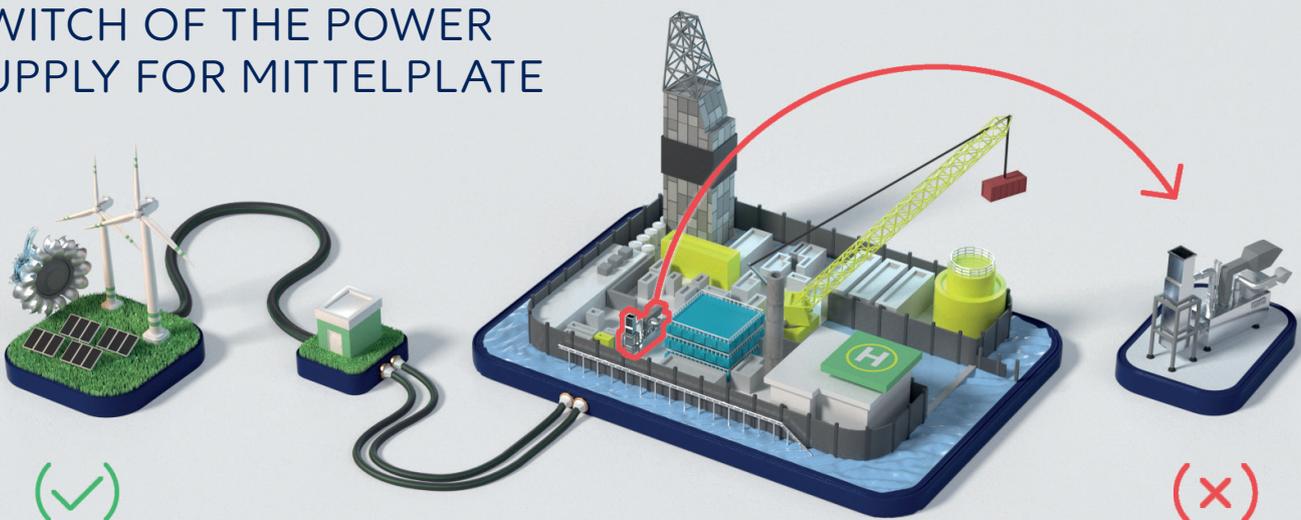
Switch to 100 per cent certified electricity from renewable energies

Until now, about a third of the electricity consumed on Mittelplate had been drawn from the public power grid on the mainland. Two-thirds of the power consumed was generated by means of a turbine that was driven by the associated gas extracted along with the crude oil. In the summer of 2020, electricity generation using the gas turbine was discontinued, and the electricity supply was switched over to 100 per cent certified electricity from renewable energies. All the electricity is now sent from the mainland to the Drilling and Production island by cable. This makes Mittelplate the first oilfield in Germany to be produced solely with green electricity.

The power supply has not only been converted on the Mittelplate island: the entire Holstein production district, including the treatment plants at the Dieksand land station and the docking facilities at Cuxhaven, now use certified electricity from renewable sources of energy. Green electricity is also used for the two recently installed e-charging stations in the production district.

MITTELPLATE DRILLING AND PRODUCTION ISLAND

SWITCH OF THE POWER SUPPLY FOR MITTELPLATE



(✓)
Wind and hydroelectric turbines as well as photovoltaic installations generate the green electricity.

The transition from the shore-based supply to the sea cable takes place in the transmission station on the dyke.

The Mittelplate Drilling and Production island is located in the Wadden Sea in Schleswig-Holstein, the site of Germany's biggest and most productive oil field.

(✗)
Previously, electricity was generated directly on Mittelplate by means of a gas turbine. Wintershall Dea has now switched to alternative power supply generated using 100 per cent renewable energy sources.

Greater energy efficiency – reduced emissions

Wintershall Dea ensures a secure energy supply, and at the same time acts responsibly with regard to climate protection. Increasing energy efficiency and reducing greenhouse gas emissions are important goals at Wintershall Dea sites around the world and part of the corporate strategy. By switching the power supply for the Mittelplate Drilling and Production island to 100 per cent certified green electricity, Wintershall Dea eliminates 36,000 tonnes of CO₂ annually. Given the average CO₂ emissions of a passenger vehicle amount to 157 grams per kilometre, this saving would be enough to circle the globe more than 5,700 times.



Responsible production – as cleanly as possible

The effort to achieve the goal of reducing greenhouse gas emissions worldwide is being hampered by growing demand for energy. Renewable sources of energy alone cannot yet produce an adequate, affordable and socially acceptable energy supply. This means that natural gas and crude oil are still of great importance for the security of supply. Wintershall Dea endeavours to utilise these energy sources in a manner that has minimal impact on the environment and on the climate and therefore pursues a consistent policy of reducing its ecological footprint. In an ongoing process designed to achieve further improvements, the company implements ideas and measures that help optimise ecological sustainability, environmental protection, and the conservation of resources.

Its share of 55 per cent of domestic oil production means that Mittelplate is Germany's most important crude oil field by far. Compliance with the strictest environmental and safety standards has made Wintershall Dea a pioneering force in environmentally sustainable petroleum production on the international stage. Even before the changeover of the power supply, the CO₂ and methane emissions from Mittelplate were far below the international industry average.

As far back as 2005, the former diesel-powered drilling rig was already replaced with the electrically powered T-150 rig. Despite being equipped with a powerful 10,000 horsepower engine, the rig has been operating quietly and with low emissions in the sensitive Wadden Sea for 15 years – and now it is powered by certified green electricity.

Mittelplate also played a pioneering role in advancing the use of shore power. By as early as 2015, the diesel engines of ships could be turned off both in Cuxhaven and in the harbour basin of the Drilling and Production island itself, thanks to the changeover to electricity from the mains power supply. And now these power points are fed entirely with electricity from renewable sources.

Over recent years, work has also been ongoing to reduce the fuel consumption of the fleet of Mittelplate supply vessels, and hence on lowering the associated emissions. Taking into account the parameters of wind, current, loading and tide levels, the ships' propulsion systems were optimally adjusted. The next milestone being approached now is the conversion to hydrogen hybrid propulsion. In future, the vessels are to run emission-free using electricity from fuel cells.

Moreover, the continuing digitalisation of the Mittelplate operation is having a positive effect on the ecological footprint. Wintershall Dea uses a so-called digital twin of the Drilling and Production island which mirrors all procedures and processes in real time. In this way, the workings of the installation, its maintenance and also spare parts management can be controlled extremely efficiently, resulting in continuous further improvements to energy efficiency and reductions in emissions. Wintershall Dea is also planning to switch to electricity generated from renewable resources at all its German production sites from 2021 on, resulting in further reductions in CO₂ emissions.

Domestic production also offers other advantages: every cubic metre of natural gas and every tonne of crude oil produced in Germany does not have to be imported. Shorter transport routes and thus lower greenhouse gas emissions make an additional important contribution to climate protection.



A supply vessel docking at Mittelplate.

Committed to improved climate protection

Wintershall Dea feels committed to the climate targets set out in the Paris Agreement and joined the World Bank's "Zero Routine Flaring by 2030" initiative. Participants undertake to stop the routine flaring and blowing of the gas associated with the process of crude oil extraction. By signing the "Methane Guiding Principles" in 2017, Wintershall Dea further undertook to continually reduce methane emissions along the entire value chain. In September 2020, the company therefore also announced to join the UN-sponsored initiative "Oil and Gas Methane Partnership 2.0".

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