TOGETHER FOR THE ENERGY SUPPLY THE FUTURE

Electricity from offshore wind power - turning things around

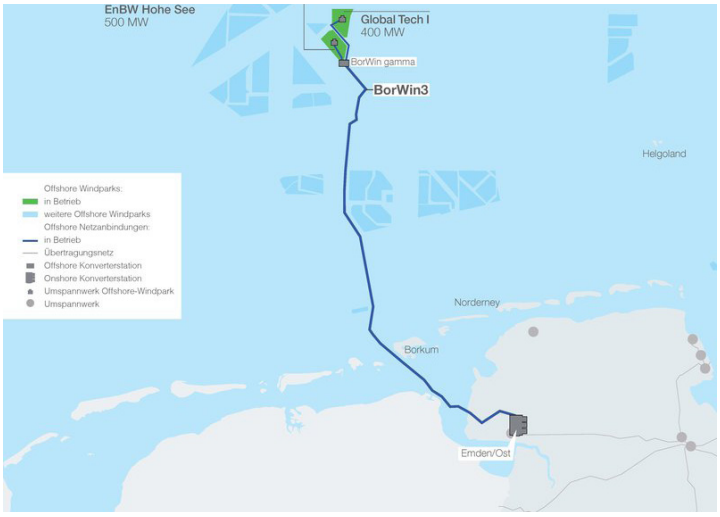
Generating electricity from renewable energy sources is an important contribution to climate protection and a viable business field for the future. Wind turbines convert the kinetic energy of the wind into electricity via their rotors and the associated drive system - of course, only if the wheels keep moving. To have a secure future themselves, wind turbines have to be economical. This requires reliable and continuous operation even under adverse weather conditions. With advanced separation equipment, Filtration Group creates the conditions for this and offers the use of flexible and efficient solutions.

The Global Tech I wind farm is managed from Hamburg

Global Tech I Offshore Wind GmbH operates the 400 megawatt North Sea wind farm Global Tech I, whose business and power plant operations are managed from Hamburg.

At the company's headquarters in Rödingshof in downtown Hamburg, in addition to the management and the commercial and technical departments, is the operations control center, which is responsible for general operational monitoring of the wind farm, grid operations management and sea and weather monitoring. Communication with the direct marketers and the transmission system operator takes place from here.

About 80 people work for Global Tech I Offshore Wind GmbH, with the offshore team consisting of about 30 people. Strong partners are involved in the service and maintenance processes. One of them is FILCOM GmbH, which supplied Global Tech I Offshore Wind GmbH with the bilge alarm unit type OMD-24 series for a bilge water separator from Filtration Group (formerly MAHLE Industriefiltration).



The wind farm is located at a great distance from the German coastline
Picture source: Global Tech I Offshore Wind GmbH

GLOBAL TECH I

ON POSITION IN THE MIDDLE OF THE ROUGH NORTH SEA

The protection of the marine environment and the safety of shipping traffic are important factors in the siting of a wind farm.

Northwest about 180 km from Bremerhaven, the offshore wind farm is located in the German exclusive economic zone (EEZ). Due to this great distance from the North Sea coast, the wind farm is located outside the Wadden Sea National Park and the 12 nautical mile zone. The submarine cable, which transports the electricity from the wind farm to the converter platform and from there as direct current to the mainland, was laid by the responsible transmission system operator TenneT under strict environmental conditions. The wind turbines are located away from busy shipping lanes so that maritime traffic is not affected. The long distance places high demands on the logistics of offshore operation. Crew changes and supply runs to the offshore platform in the wind farm, which is manned around the clock, are carried out from Emden.

POWERFUL POWER PLANTS

80 wind turbines with a capacity of 5 megawatts are installed at Global Tech I over an area of 41 square kilometers. The turbines without rotors have a total height of around 132 meters from the seabed and a water depth of 40 meters.

TOGETHER FOR THE ENERGY SUPPLY THE FUTURE

Clean energy generation at all levels

Renewable energies are conquering the market and wind power is becoming the mainstay of the energy transition. The Global Tech I offshore wind farm alone produces enough electricity for 450,000 households.

PERFECTLY SOLVED

The **transformer platform** is the link between the individual wind turbines of a wind farm. Since it is located either in the sea or sometimes in the rain, spray and control water accumulates on the wind farm's transformer platform. This mixes there with various oils from leaks and chokes. To protect the oceans, the water must not be returned unfiltered to the North Sea, but must be filtered, a process that must also be monitored by highly sensitive measurement. A **bilge water deoiler from Filtration Group** (formerly MAHLE Industriefiltration) was therefore installed on the platform to clean the water in accordance with current environmental regulations. Separated oils and solids are collected in a container and later disposed of properly.

View of the GT I platform
Picture source: Global Tech I Offshore Wind GmbH

EFFICIENT SEPARATION SYSTEMS FOR THE SERVICE PLATFORM AND TRANSFORMER STATION

Bilge water deoilers from Filtration Group Industrial meet the required standards with a separation efficiency of 5 ppm residual oil content. The system is based on the proven coalescer process, which utilizes different physical properties of oil and water. A reliable, fully automatic separation of oils from process waters.

A RELIABLE HELPER

Bilge alarm units are reliable helpers in the special field of „oil-in-water measurements" to monitor and limit oily effluents in shipping.

Our customer Global Tech I Offshore Wind GmbH has a 15 ppm Bilge Alarm Monitor offshore in operation. The **OMD-24 series** device complies with the current regulations of IMO Resolution MEPC.107(49). The device is equipped with two set alarms at 15 ppm. When a set point is exceeded, the system LED on the front of the unit changes from flashing green to permanent red. The overboard valve is immediately closed by the system, as the bilge water is then too contaminated with oil and must not be pumped into the sea. The excessively contaminated bilge water is returned to the collection tank. When the bilge water separator has cleaned the bilge water and the level falls below the setpoint, the overboard valve opens again. A status input is made at the bilge water deoiler and the data is logged accordingly.

Bilge water alarm unit OMD-24 series
Picture source: Deckma

Innovative technologies and proven processes deliver optimum results in bilge water deoiling. That is why Global Tech I Offshore Wind GmbH has relied on bilge water deoilers from Filtration Group Industrial for many years. The long-term availability and efficiency of a plant is the key to high productivity and effectiveness. Here, the **FILCOM logistics concept** was able to ensure an efficient and fast spare parts supply for the customer's bilge alarm unit.