



Installation on the quay: The 10 ENERCON E-115/3 MW WECs lend the port a characteristic image.

New skyline for the port of Antwerp

ENERCON is currently building a new wind farm in the region of the port of Antwerp for its long-standing Belgian customer Vleemo NV. The project comprises a total of 18 E-115/3 MW wind energy converters, each at a hub height of 135 metres. 10 of these have already been commissioned and the remaining eight are currently under construction, with the aim that they will be connected to the grid by the end of the year. "The project has already changed the port's skyline", says Bernhard Fink, Country Manager for Belgium and Luxembourg at ENERCON Sales International. Until the installation work began, the mighty port cranes were the highest structures which could be seen for miles. But even they are towered over by the E-115 WECs.

The wind energy converters are the first thing that the crews of incoming ships see when they arrive in Antwerp. Most of the WECs are located directly on the quay in amongst the container terminals, warehouses and loading sidings, often just a few metres from the harbour basin. "It really is an impressive sight when the container ship giants sail directly in front of our turbines, or moor just a few metres away to load and unload", says Bernhard Fink.

Belgium, and in particular the Flemish part to which Antwerp

belongs, is one of the most densely populated areas in Europe. The Flemish government therefore declared industry and port areas to be designated wind power zones right from the start. The few agricultural areas which are left are not to be built on at all if possible. New wind farms are only approved if they are in the immediate vicinity of an existing infrastructure with corresponding emission points – for example, canals, motorways or industrial plants. This explains why a large-scale wind farm is being built in a complex port area, something which would be regarded as unusual in other countries.

In the development phase, the port operator Port of Antwerp selected Vleemo NV. The company was founded in 1999 as one of the first project developers in Belgium and has been awarded the concession to operate wind farms in the "Rechter Oever" (right bank) area until 2060. Due to its size and its potential, the wind farm is crucial for the attainment of the Belgian climate protection targets. It also marks the 1 GW milestone for onshore wind energy capacity installed in Flanders to date. The project is supported by the top levels of government, not least for the aforementioned reasons: in June 2016 the official starting signal was given together with the Flemish Minister-President Geert Bour-

geois. The Flemish Minister for Finance and Energy, Bart Tommelen, visited the construction site in December to get a picture of the building progress.

The immediate vicinity to the port infrastructure presents one of the biggest challenges during the installation phase. "It places great demands on project coordination and timing, and above all occupational health and safety", says Bernhard Fink. The installation teams often only have a few metres between buildings, roads, sidings and harbour basin in which to work. On top of this, installation is carried out while the port is in operation. "We have to coordinate the schedule and the space requirements with each individual company", explains Fink.

The project logistics also proved particularly challenging as a result of the complex location. A large storage area was set up in the port to optimise the delivery of the components to the individual WEC sites. The components are transported there by ship, unloaded and stored temporarily. They are then delivered to the respective site "just-in-time". A logistics company was commissioned to do this job. It handles the unloading, temporary storage and delivery of the components.

