



# Modular Offshore Grid

The Modular Offshore Grid (MOG) is Elia's\* first offshore project in the North Sea and the first in Belgium to group several offshore wind farms and connect them to the mainland.

The switching platform is 40 km off the coast. By the end of 2020, it will combine electricity generated by four offshore wind farms (Rentel, Seastar, Mermaid and Northwester 2) for onward transmission to the

**mainland. This is more efficient than transmitting the power via individual cables and improves security of supply.**

The Modular Offshore Grid is a true milestone in the development of North Sea wind power off the Belgian coast. It is a switching platform only, not a transformer platform, making it unique in Europe. It is connected by 130 km of 220-kV cables to Elia's high-voltage substation in Zeebrugge (Stevin substation), from where the power is transmitted to consumers via the transmission and distribution system.

The platform 40 km off the Belgian coast enables the wind farms to maximise the transmission of the electricity they generate to the mainland. At 28 cm in diameter, these are the thickest subsea cables in the North Sea. The jacket (foundation) was installed in November 2018 and the topside in April 2019. The unmanned platform is controlled from Elia's National Control Centre.

The MOG is a critical link in transmitting the renewable energy generated by wind farms safely and efficiently to the mainland. Bringing together the cables from the four wind farms saves 40 km of cable.

The MOG will also enhance security of supply in that if one of the three export cables goes down, the other two can take over. The MOG has been successfully completed thanks to the many Belgian and international stakeholders involved. The platform was built in the Netherlands while the cable was produced in Greece.

The cable-laying work was done by Belgian marine engineering group DEME.



*The MOG marks a major step forward towards incorporating more renewable energy into our system. As a company, we are especially proud to make this kind of contribution to climate objectives. The project was completed in record time: the first agreements were made with the authorities in March 2016, and now the project is ready ahead of schedule - the result of excellent teamwork and flexibility by everyone working on the project.*



**Chris Peeters, Chief Executive Officer Elia Group**

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\* The Elia Group is active in electricity transmission. They ensure that production and consumption are balanced around the clock, supplying 30 million end users with electricity. With subsidiaries in Belgium (Elia) and north-west Germany (50Hertz), the group operates 18,600 km of high-voltage connections. As such, the group is one of Europe's top five. With a reliability level of 99.999%, they aim to give society a robust power grid, which is important for socio-economic prosperity. They also aspire to be a catalyst for a successful energy transition towards a reliable, sustainable and affordable energy system.