

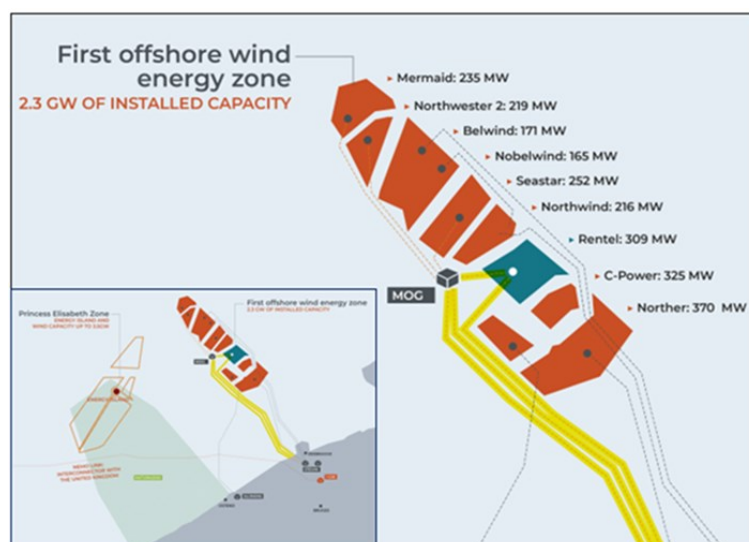


North Sea power hub MOG marks five years of operation with remarkable results

BRUSSELS | Five years ago, Elia Transmission Belgium commissioned the Modular Offshore Grid (MOG), the first power hub in the North Sea, in the presence of His Majesty King Philippe of Belgium. Located 40 km off the coast of Zeebrugge, the platform brings together the electricity generated by four offshore wind farms (Rentel, Seastar, Mermaid and Northwester 2) at a single point to send it to the mainland more efficiently and securely. The MOG has transported more than 14.75 TWh of carbon-free electricity to Belgium since it was commissioned and boasts an impressive availability rate (99.998% in 2020 and 100% in the other years). 456 offshore operations have been carried out there since 2020. The MOG is one of Elia Transmission Belgium's first offshore projects and has enabled our company to gain unique and internationally recognised experience in this field.

Greater efficiency and security

The offshore switchyard (OSY) platform brings together electricity from four of the nine offshore wind farms (Rentel, Seastar, Mermaid and Northwester 2) that make up the first offshore generation zone off the coast of Zeebrugge. The MOG then transports the electricity to the mainland. The electricity is not transformed on the platform; rather, it is pooled there before being sent to the Stevin high-voltage substation in Zeebrugge. Before the MOG was commissioned, each wind farm was connected directly to the coast. This platform provides a more secure and efficient way to transport energy to the mainland. More efficient, because grouping together the cables from four wind farms makes it possible to pool infrastructure and use around 40 km less cable. More secure, because the MOG offers greater security of supply: should one of the cables fail, the meshed system allows the others to take over. This means that we continue to benefit from the optimum capacity of the four wind farms (albeit with limitations in the event of strong winds).



Gradual connections and impressive results

The Rentel wind farm (~300 MW) was the first to be integrated into the MOG on September 2019. It was joined by Northwester 2 (~250 MW) in October 2019, followed by the SeaMade (Mermaid and Seastar) wind farms (~500 MW) in April 2020. In total, around 1,000 MW (equivalent to the consumption of a city with one million inhabitants) can be generated by these wind farms and sent to the mainland via the MOG. This represents almost half of the maximum amount (2.1 GW) that can be generated by this first offshore zone. The future Princess Elisabeth offshore generation zone will provide Belgium with up to a further 3.5 GW of offshore electricity. Since September 2019, the platform has transported more than 14.75 TWh of low-carbon electricity to Belgium, roughly a fifth of the country's annual consumption. The platform has been operating at near-maximum availability (99.998% in 2020 and 100% every year since). 456 offshore operations have been carried out there since 2020 to ensure the smooth running of the platform and offshore facilities.

Optimal generation maintained during a cable incident in early 2024, thanks to the MOG

On 9 January 2024, one of the MOG cables linking the Rentel platform to the mainland failed following an incident. 400 metres of the damaged cable had to be replaced, which took several months. During the highly complex repairs, the alternative transmission route via the OSY platform worked perfectly, enabling the wind farms to continue generating electricity despite the broken cable. Thanks to the meshed high-voltage offshore grid, all four connected wind farms could remain in operation. Without the MOG and the three-way connection, Rentel's 309 MW of wind capacity would have been out of service for the duration of the work. Even so, generation had to be slowed during periods of high wind to avoid overloading the export cables that were still operational. Despite this limitation, we set a new record for offshore and onshore wind generation in the first few months of the year.

Welcome aid for ships during Storm Eunice

On 18 February 2022, Belgium was hit by Storm Eunice, with force 10 winds on land and force 11 at sea. The winds, which at times reached speeds of over 140 km/h at sea, disrupted shipping in the area. These extreme conditions caused two vessels in distress to leave their navigation zone. One of them came dangerously close to the offshore wind turbines and the authorities had to activate the General Emergency and Intervention Plan (GEIP) North Sea. Elia was asked to join the crisis team and our teams were able to share real-time video footage of the situation taken by the MOG's surveillance cameras. This greatly aided the authorities in their decision-making. The vessels were ultimately able to sail safely out of the offshore wind zone.

[View images taken from the platform here](#)

Elia's first steps offshore

The MOG and the Nemo Link cable (the electricity interconnector between Belgium and the UK) marked Elia Transmission Belgium's first forays into offshore activities. The platform has enabled us to gain unique and internationally recognised experience in this field. For Elia Transmission Belgium, these first five years have been a very instructive and exciting period during which we launched our offshore activities from scratch. We have established a strong offshore team that develops our offshore facilities and keeps them operational on a daily basis. In light of the expansion of our offshore activities, Elia Transmission Belgium will soon open a new offshore service centre in Ostend. All this expertise will be key to the success of our offshore projects in the future, particularly with the

commissioning of Princess Elisabeth Island. The island will pool the additional 3.5 GW of offshore generation and transport it to the mainland, and will connect Belgium with its neighbours.

At the time, management decided to set up our own specialised offshore team. This decision has paid off. Having our own team ensures faster intervention times, technical expertise and efficient management, and we are also less dependent on external parties. Thanks to strict safety protocols, thorough maintenance planning and continuous monitoring, the platform has been able to operate for five years without any significant incidents. Alongside our offshore team, we are now mainly looking ahead to the commissioning of Princess Elisabeth Island and the further development of our activities.

Geert Moerkerke, Head of Assets Offshore, Elia Transmission Belgium

This anniversary is also a chance to celebrate the excellent cooperation between our operational teams. Elia's offshore teams understand that scheduling maintenance of offshore facilities is a dynamic task based on weather-related logistical possibilities. Wind that is not converted into electricity is lost forever. Our teams regularly hold consultations, technical information sessions and other meetings so that we (and above all Belgian consumers) can benefit from facilities that generate and transport electricity with maximum efficiency. Mutual understanding is based on trust on both sides, and we are working hard to achieve this. It's also thanks to this mutual understanding that we are celebrating the MOG today with such impressive results.

Kristof Verlinden, Head of O&M, Parkwind

Elia pioneered the development of a meshed offshore grid, which was realised alongside the construction of Belgium's latest offshore wind farms. This grid forms a triangular connection to bring power from four offshore wind farms (with a total capacity of approximately 1 GW) ashore via three export cables. At sea as well as on land, the high-voltage grid is highly efficient. In early 2024, the offshore grid once again demonstrated its worth when, despite the failure of one of the export cables connecting the Rentel wind farm to the mainland, a record amount of electricity from the four wind farms was brought onshore. We are grateful to Elia for repairing the cable under difficult circumstances, thanks to its teams' expertise, knowledge and drive.

Mathias Verkest, CEO of Otary

About Elia Group

One of Europe's top five TSOs

Elia Group is a key player in electricity transmission. We ensure that production and consumption are balanced around the clock, supplying 30 million end users with electricity. Through our subsidiaries in Belgium (Elia) and the north and east of Germany (50Hertz), we operate 19,460.5 km of high-voltage connections, meaning that we are one of Europe's top 5 transmission system operators. With a reliability level of 99.99%, we provide society with a robust power grid, which is important for socioeconomic prosperity. We also aspire to be a catalyst for a successful energy transition, helping to establish a reliable, sustainable and affordable energy system.

We are making the energy transition happen

By expanding international high-voltage connections and incorporating ever-increasing amounts of renewable energy into our grid, we are promoting both the integration of the European energy market and the decarbonisation of society. We also continuously optimise our operational systems and develop new market products so that new technologies and market parties can access our grid, thus further facilitating the energy transition.

In the interest of society

As a key player in the energy system, Elia Group is committed to working in the interest of society. We are responding to the rapid increase in renewable energy by constantly adapting our transmission grid. We also ensure that investments are made on time and within budget, with a maximum focus on safety. In carrying out our projects, we manage stakeholders proactively by establishing two-way communication channels between all relevant parties very early on in the development process. We also offer our expertise to different players across the sector in order to build the energy system of the future.

International focus

In addition to its activities as a transmission system operator, Elia Group provides consulting services to international customers through its subsidiary Elia Grid International. In recent years, the Group has launched new non-regulated activities such as re.alto – the first European marketplace for the exchange of energy data via standardised energy APIs – and WindGrid, a subsidiary which will continue to expand the Group's overseas activities, contributing to the development of offshore electricity grids in Europe and beyond. The legal entity Elia Group is a listed company whose core shareholder is the municipal holding company Publi-T.

eliagroup.eu

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