



Government delegation highlights Belgium's pioneering role and expertise in offshore wind during visit to impressive caisson construction site for Princess Elisabeth Island

- The first of 23 caissons is being finalised, ready to be moved into position 45 km offshore.
- The large concrete building blocks will form the outer walls of the future energy island.
- The artificial island is a world first and critical to the success of Belgium's energy transition.

NORTH SEA PORT - VLISSINGEN (NL) | Belgian Prime Minister Alexander De Croo, Energy Minister Tinne Van der Straeten and State Secretary for Economic Recovery and Strategic Investments Thomas Dermine have visited the site in Vlissingen where caissons are being constructed for Princess Elisabeth Island. A Belgian consortium comprising DEME and Jan De Nul (TM Edison) is building the foundations of the energy island on behalf of system operator Elia Transmission. The first of the 23 caissons is almost finished and will be immersed in the North Sea this summer. The Belgian energy island is a world first and will be the first building block in an integrated European high-voltage offshore grid.

Each caisson takes around 3 months to build



Work began in Vlissingen in September 2023, with around 300 staff employed on site each day.

As the first caisson nears completion, the scale of the project is becoming truly apparent for the first time. Each concrete block measures 57 m in length, 30 m in width and 30 m in height, and weighs 22,000 tonnes.

It takes approximately three months to build one caisson. The production process is split into five stages, each lasting 20 days. The caissons are moved between the different work sites using 'runners', which takes about six hours.

The most impressive construction phase is the second, in which slipforming is used to create the caisson walls ([see video](#)). Ten centimetres are added every hour over a period of around ten days.

23 caissons for one island

When the caissons are ready, a semi-submersible vessel will transport them further down the harbour, where they will be placed in the water and temporarily stored. They will then be moved to their final location in the North Sea this summer (weather permitting). The caissons will form the outer walls of the energy island. The island itself will be created using approximately 2.3 million m³ of sand, extracted locally. The island will be finished in late 2026, when the electrical equipment can start to be installed. Contracts for this will be tendered this year.

The energy island is being partly financed by the EU's COVID-19 recovery fund, having been awarded a grant of around €100 million, in consultation with the Belgian government. Both Belgian and European support has also been pledged to implement a series of nature measures. In consultation with conservation and marine environment experts, a nature-inclusive design has been developed that will enhance biodiversity on and around the island.

A feat of innovation

Princess Elisabeth Island will be the first artificial energy island in the world to combine both direct current (HVDC) and alternating current (HVAC). The high-voltage infrastructure on the island will bundle together the electricity cables from the wind farms in the Princess Elisabeth Zone. The island will also become a hub for future interconnectors. In fact, these 'hybrid' interconnectors will have two functions, leading to enhanced efficiency. Not only will they handle power exchanges between countries, but they will also be connected to new offshore wind farms in the northern part of the North Sea that will eventually supply Belgium with large quantities of green electricity.

"The North Sea is set to become the powerhouse of our energy independence, and Princess Elisabeth Island will be a crucial part of this process. Belgium has long been a pioneer in offshore wind, and by continuing to innovate, we are further consolidating our position for the future. This gives our Belgian companies more opportunity to do groundbreaking work, both here and abroad, as well as guaranteeing sustainable, competitively priced energy for our citizens and businesses. Once again, we are putting Belgium on the map."

Alexander De Croo, Prime Minister of Belgium

"Our offshore expertise is now world-renowned. As well as technical knowledge and expertise, Princess Elisabeth Island is also a fine example of participation. It is the first project of its size to take biodiversity into account from the outset, and to do so in consultation with experts in the field. Belgium has shown that renewable energy and biodiversity go hand in hand, and is thereby setting the standard for many future projects in the North Sea, the centre of Europe's ambitions for offshore wind power."

Tinne Van der Straeten, Federal Minister for Energy

"The energy island is a flagship project for the Recovery Plan and embodies three of its defining features: investment in infrastructure, deployment of innovative solutions and acceleration of the ecological transition. The project also illustrates the Recovery Plan's dynamic approach: it will have taken six years to get from the conceptual phase to full completion, which is quite an achievement for a project of this size."

Thomas Dermine, State Secretary for Economic Recovery and Strategic Investments

"The energy island is of strategic importance for the energy transition in Belgium. As well as opening up the second offshore wind zone, the island concept also provides important options for the future. It will be the first energy hub in the North Sea that is connected via interconnectors to wind farms from other countries that have a surplus of renewable energy. Access to massive volumes of sustainable and cheap electricity is important for the competitiveness of our industry and the prosperity of our households."

Catherine Vandendorpe, Interim CEO, Elia Group

"As CEO of Jan De Nul Group, I am particularly proud of the construction of these caissons. They will soon be out at sea, forming the contours of the world's very first artificial energy island. This is a powerful example of co-building the energy transition on water and land, and a big step towards a sustainable future. That is something that we at Jan De Nul Group and as a team at TM Edison and Elia are very passionate about."

Julie De Nul, CEO, Jan De Nul Group

"The close collaboration between the TM Edison and Elia teams over the past few months has led to significant progress in realising the world's first energy island. While construction of the caissons is in full swing, offshore work has also started to enable the installation of these caissons at sea. This unique project, which combines innovative technology with a nature-inclusive design, offers Belgian companies such as DEME another opportunity to demonstrate our pioneering role and expertise in building infrastructure that supports the energy transition."

Luc Vandembulcke, CEO, DEME Group

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 socio-economic 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.

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