



Elia temporarily postpones signing HVDC contracts for Princess Elisabeth Island to weigh multiple options with government in changing market context

- Unilateral decision by Elia Transmission Belgium (ETB) without further political dialogue would be inappropriate in today's highly tense context of the HVDC supply market.
- On 4 February 2025, the Board of Directors decided to temporarily postpone signing HVDC contracts.
- The reference scenario remains positive. In the current market context, alternative designs also have strengths but are uncertain and require an action plan with regulatory adjustments.
- Postponed signing causes approximately 3-year delay on overall project but gives the Belgian government more time to reach a decision.

BRUSSELS | Due to the price increase for high-voltage direct current (HVDC) infrastructure, Elia Transmission Belgium (ETB) is temporarily postponing the signing of the final contracts for Princess Elisabeth Island. Postponing the signing of the contracts is not without consequences but provides extra time to weigh the current design against alternative concepts in the changing market context. These alternatives are also feasible but require a joint action plan with all the parties involved, as there are currently too many uncertainties both in policy and regulation. Given the strategic importance of the Belgian energy island and its crucial role in the country's electricity supply in the coming decades, Elia wishes to keep all options open by postponing the signing. The government bodies involved now have more time to make a final decision and possibly take additional measures.

Construction of island and AC contracts continue unabated

Princess Elisabeth Island is one of the most important projects in the Federal Development Plan for the Belgian high-voltage grid, which was approved by the federal government in 2023. Elia is carrying out this project within a legal framework but is not indifferent to growing concerns about the increased cost of HVDC technology. Meanwhile, the construction of the artificial island (foundations) and the implementation of the already-signed alternating current (HVAC) contracts remain on track. This ensures the realisation of two (700 MW + 1400 MW) of the three future offshore wind farms. Thus, 60% of the new Princess Elisabeth wind zone is already being implemented.

Uncertainty exclusively about the HVDC contracts

To connect the third wind farm (1,400 MW), Elia is currently negotiating for two HVDC converters (one on the island and one on the Belgian coast). These converters must, in addition to connecting this wind farm, also enable the development of a hybrid interconnector to the UK (Nautilus project).

The international tender that Elia has set up for these direct current components shows an overheated supply chain with significant price increases. Although the terms from the supplier involved are comparable to those of other European grid operators, they are - despite our efforts - much higher than our initial estimates.

This significant cost increase - specific to HVDC - is due to scarcity, combined with the rise in material costs and inflation. Elia does not experience this to the same extent for other ongoing investment projects. To realise the HVDC contracts within the set timeframe (by 2032), the chosen supplier has given us a deadline to award the proposed contract by mid-February 2025 at the latest.

Since Elia, as a grid operator, implements decided policies, it seems inappropriate to us, in the current exceptional market conditions, to make a unilateral decision without further political support. To keep all options open, Elia has analysed various alternatives over the past few weeks, weighing the pros and cons and taking a range of uncertainties into account. These are complex analyses that require considerable expertise and are currently being discussed calmly with all stakeholders.

Choosing between the reference scenario and (uncertain) alternatives

Despite the identified cost increases, the reference scenario (a combination of AC and DC infrastructure and a hybrid interconnector to the UK) remains a financially viable option as it has a positive net present value (NPV). This means that over the entire project duration, there is a positive ratio between the benefits (expected decrease in electricity prices) and the costs (increase in network costs). Postponing the DC portion of Princess Elisabeth Island for a few years does not change this positive ratio, provided market conditions do not further deteriorate. At the current stage of the project, the risks associated with the implementation of the reference solution have been largely identified, along with actions to control their impact.

Our analyses show that in the current market conditions, it is also possible to develop alternative designs that fit the concept of an energy hub and also have a positive net present value. These alternatives had been considered in the past but presented less favourable outcomes in various aspects under the market conditions then.

The alternative requires an action plan

Although these alternatives have a more limited impact (in the short term) on future transmission network tariffs, they are also subject to the upward evolution of electrical equipment costs observed in the markets, but also bring with them a number of uncertainties and have direct consequences. For example, they could delay Belgium's initial targets for the development of its own decarbonised electricity generation. Alternative scenarios could also negatively affect the downward pressure on electricity prices and the security of supply.

Should the new government opt for one of the proposed alternatives, a joint action plan is required between the government, the regulator, and Elia. Additionally, the UK regulator (Ofgem) and the UK transmission system operator need to be consulted (for the Nautilus project). As these alternatives differ from the reference scenario, an amendment to the ministerial decree on offshore grid design and a revision of the Federal Development Plan would also be necessary.

Postponement of decision

As choosing between the reference scenario and alternatives takes time, Elia will not sign the HVDC contracts for the Belgian energy island for the time being. This gives the authorities more time to weigh the different options and take additional measures.

As Elia will not be awarding the negotiated HVDC contract in February 2025, the HVDC converters will not be built to the original schedule. It will be up to the government to confirm or revise the reference concept. This is a strategic decision regarding Belgium's electricity supply for the coming decades. If the reference concept is chosen, the construction of the HVDC converters will be postponed to a date to be determined with the equipment manufacturers. The project's overall lead time is estimated at around three years.

Additional information

In 2021, the Belgian federal government decided to more than double the capacity for offshore wind. In addition to the already operational 2.3 GW (orange areas on the map), up to 3.5 GW of offshore wind capacity will be added by 2032 (non-coloured areas on the map). This will be developed in the new Princess Elisabeth wind zone, which consists of three plots (wind farms) that will be awarded to wind developers through a tender process.



As Belgium's own offshore wind potential is limited, our country is looking to collaborate with other European countries such as the UK and the northern North Sea countries. Their offshore wind potential is much greater, and the wind conditions there are generally different. If it is not windy here, cheap electricity can be imported from other regions. This makes long-distance interconnection interesting. Additional interconnections strengthen our security of supply and provide access to attractive energy prices. This enhances the competitiveness of our energy-intensive industry.

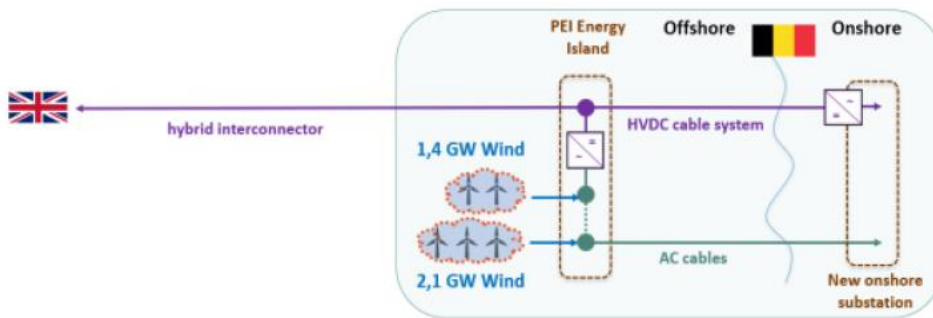
Why an island concept with a combination of AC and DC?

To combine access to 3.5 GW offshore wind capacity with the increasing need for more interconnections, Elia has developed an innovative design that offers the best technical and economic options. Instead of building multiple offshore wind platforms, an artificial island - Princess Elisabeth Island - has been chosen to bundle all high-voltage infrastructure. By combining components of both alternating current (AC) and direct current (DC) on this island, additional functionalities are created. As we also aim to connect the island with sustainable electricity production abroad in the future (via hybrid interconnectors), the island will become an energy hub. It is the first building block of an integrated European grid.

What are hybrid interconnectors?

Hybrid interconnectors are interesting because they have a dual function. They are electrical connections between two countries that are also linked to a (large-scale) offshore wind farm. When there is sufficient wind, the transmission cable is used to bring the wind production to shore. When there is insufficient wind, electricity can be imported from the other country via the same cable. Hybrid interconnectors are therefore more efficient. While a traditional radial connection (between an offshore wind farm and the mainland) is used for 40%-50% of the time (as it is not always windy), the utilisation capacity of a hybrid interconnector is 65% to 85% (depending on the type of turbine, wind conditions, etc.).

By integrating an HVDC converter on the island, the possibility is created to connect a hybrid interconnector to the UK (Nautilus project) from 2032, without the need for an additional converter station or extra cables between the island and the Belgian mainland. In a later phase (from 2036), the HVDC infrastructure can even be used to connect a second interconnector with one of the northern North Sea countries.



By combining AC and DC technology at one location, you also ensure greater security of supply for wind developers. Seven high-voltage cables (six AC and one DC) will run from the island to the mainland. If one of these cables goes out of service, the others can (partially) take over. The January 2024 cable incident with the Rentel wind farm clearly demonstrated the benefits of a meshed high-voltage grid.

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 19,192 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 that 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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