



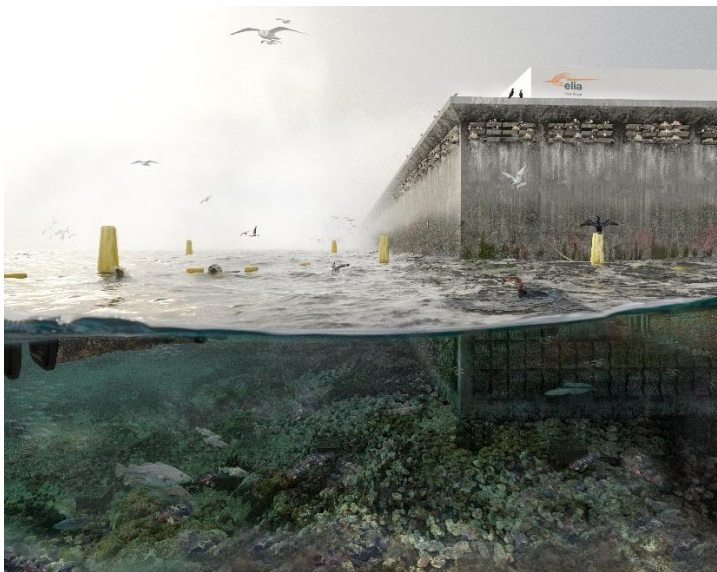
PRESS RELEASE | 13 November 2023

## Elia takes seven tangible measures to enhance biodiversity around the Princess Elisabeth Island

- The Nature Inclusive Design (NID) was developed in partnership with experts in nature conservation and the marine environment
- From the design and construction phase onwards, every effort will be made to strengthen the marine ecosystem
- This initiative dovetails with Elia's ActNow sustainability programme, which specifically targets, among other things, life below water (Sustainable Development Goal 14)

**OSTEND - System operator Elia wants to boost biodiversity around the future energy island in the North Sea. Based on input from a range of experts, the company has developed seven tangible measures. For example, ledges attached to the outer storm walls will provide somewhere for the black-legged kittiwake, a vulnerable bird species, to rest and breed. Below the waterline, several measures will be combined to create a diverse and rich artificial reef. The measures were selected based on their technical feasibility and expected positive impact. Through this initiative, Elia is striving to become a pioneer in the sustainable construction and operation of offshore infrastructure. A scientific monitoring programme will be rolled out to follow up on the results of this unique project and make adjustments if necessary.**

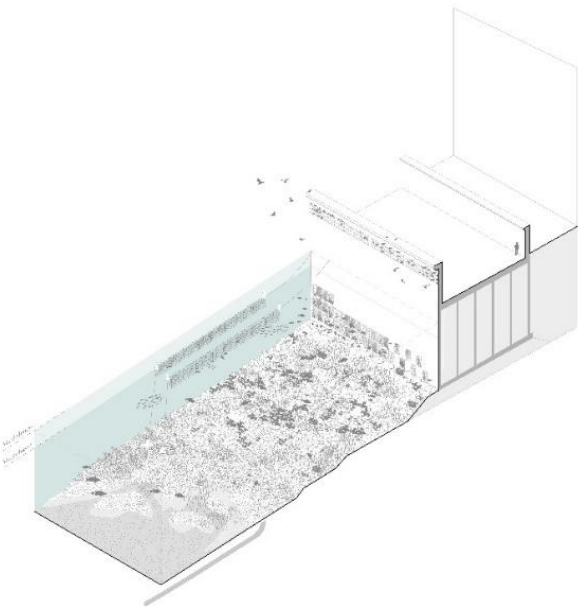
### Images



The artificial Princess Elisabeth Island will be an energy hub 45 km off the Belgian coast connecting new wind farms and additional interconnectors (with the UK and Denmark) to Belgium's onshore power grid. It was clear to Elia from the outset that the island had to be designed with an eye to sustainability and respect for the marine environment. Elia worked with a range of experts to shape this Nature Inclusive Design (NID).

The company wants to minimise the disruptive effects on the marine environment while seizing the momentum to add ecological and environmental value to the project. The NID partnership also aims to enhance scientific knowledge in this area. The results can already serve as a basis for future scientific research or as inspiration when realising other projects.

## Focus on reproduction, foraging and shelter



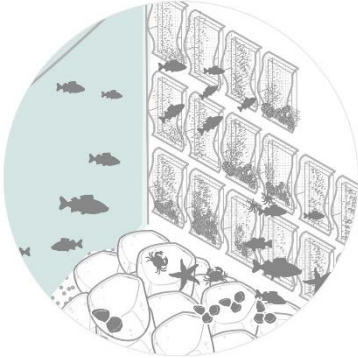
The marine environment is divided into four zones: (1) the supratidal zone (area above the spring tide line), (2) the intertidal zone and the shallow subtidal zone (the area submerged at high tide but lying above the water at low tide), (3) the deep subtidal zone (permanently submerged areas), and (4) the seabed.

During the cooperation process, Elia and the experts examined several NID elements for each of these zones in terms of their contribution to reproduction, foraging and shelter. After analysing the technical feasibility and the expected effects, seven measures were ultimately selected to ecologically enhance the Princess Elisabeth Island.



In the supratidal zone, **ledges will be attached to the storm wall** on the south, west and north sides of the energy island **(1)**, allowing cliff-nesting birds such as the black-legged kittiwake to breed, rest and recuperate.

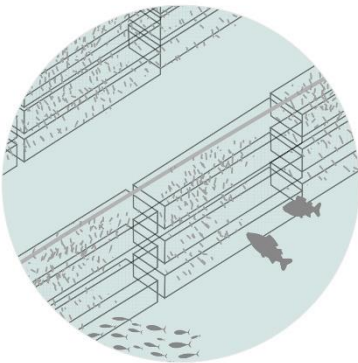
1. Storm wall with ledges for cliff-nesting birds



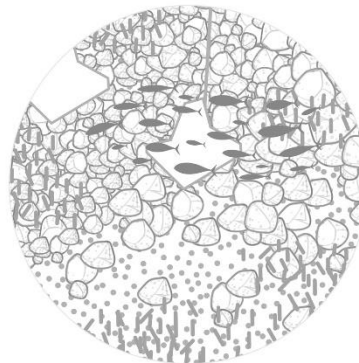
2. Relief panels

In the deep subtidal zone, we will install **relief panels (2)** at the four corners of the Princess Elisabeth Island. The three-dimensional design of these panels will provide a structure to which smaller marine organisms can attach themselves. Smaller fish will also be able to shelter and forage here.

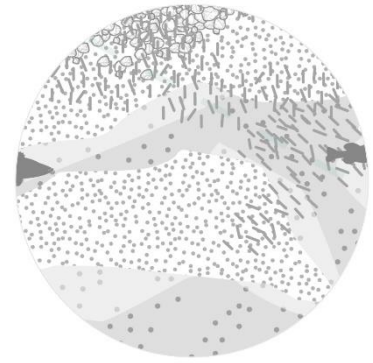
Higher up on the same corners, we will install **longlines with oyster baskets (3)** for the European flat oyster (3). Their larvae can attach themselves to the optimally designed rock revetment around the island, thus promoting the growth of oyster reefs.



3. Longlines for European oysters



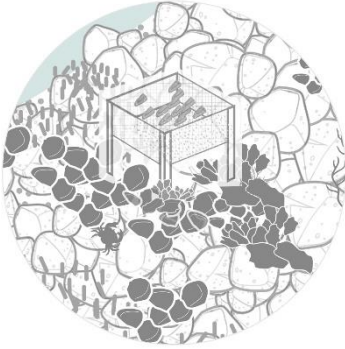
4. Chaotic scour protection with complex edges



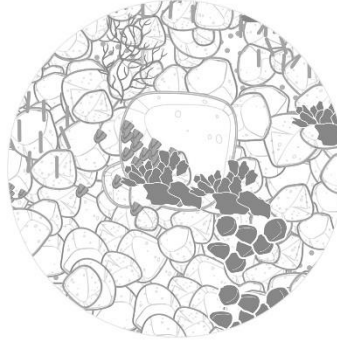
7. Gravel beds

We will create **chaotic scour protection with complex edges (4)** around the entire island. As well as forming a smooth connection to the original **gravel beds (7)**, this will also create a range of diverse habitats where different animal species can forage, shelter and/or rest.

By placing **larger boulders** here and there, we will create additional complexity that will make the environment around the island all the more attractive to marine organisms (6). Near the corners and longlines, we will incorporate **oyster tables (5)** in the chaotic scour protection, providing an extra boost for the creation of oyster reefs for the European flat oyster.



5. Tables for European flat oysters



6. Boulders

## Co-creation with a range of experts

Elia brought together nature conservation and marine environment experts from public and private institutions, universities, consultancies and non-governmental organisations. The process was facilitated by the design agency ORG. At a series of six workshops from March to October 2022, Elia and the experts worked together on an NID strategy for the future Princess Elisabeth Island, taking as their starting point the island design proposed by Elia. During the subsequent Detailed Design Phase in 2023, Elia and the consortium TM EDISON (DEME and Jan De Nul) translated this strategy into technically and economically viable measures.

## The experts

Dr Annelies Boerema – International Marine and Dredging Consultants (IMDC)  
Prof. Dr Steven Degraer – Royal Belgian Institute of Natural Sciences (RBINS)  
Dr Yana Deschutter – Department for the Marine Environment  
Dr Hans Pirllet – Flanders Marine Institute (VLIZ)  
Dr Eric Stienen – Research Institute for Nature and Forest (INBO)  
Sarah Tilkin – Natuurpunt/4Sea  
Dr Sarah Vanden Eede – WWF Belgium  
Dr Katrien Van der Biest – University of Antwerp  
Dr Gert Van Hoey – Flanders Research Institute for Agriculture, Fisheries and Food (ILVO)  
Prof. Dr Ann Vanreusel – Ghent University  
Ir. Kristien Veys – Blue Cluster

Coordination: ORG Permanent Modernity; Mantis Consulting; Marijn Rabaut.

*"Belgium has shown that renewable energy and biodiversity go hand in hand. We are building the world's first energy island while taking into account marine life. The Federal Government is releasing funds to make the Princess Elisabeth Island a nature-inclusive island. We are boosting biodiversity in the Belgian part of the North Sea. This is all thanks to some clever design changes made together with nature conservation organisations. The island will teem with life above and below the water, including seabirds, countless fish, oysters, mussels, algae and sea anemones. Belgium is 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**

*"We've uniquely combined multiple functions in the Belgian part of the North Sea. The Princess Elisabeth Island will become a crucial link in both our offshore energy production and in sustainable nature management in the North Sea. This Nature Inclusive Design marks a major step forward in the protection of the marine environment when building wind turbines in protected marine areas, such as for the European flat oyster, which is reappearing in Belgium's part of the North Sea for the first time in decades. This is further evidence of the power of Belgium's innovative approach to offshore energy, combining economics and ecology."*

**Paul Van Tigchelt, Minister for the North Sea**

*"Europe's seas are becoming the power plants of the future. With this initiative, Elia aims to set the standard for the sustainable construction of future offshore infrastructure. By incorporating biodiversity-enhancing measures from the design and construction phase onwards, we aim to expand and accelerate positive impacts and inspire developers to undertake similar initiatives. This co-creation project with experts has already made an important contribution to scientific development in this field. However, our work is far from over. We will roll out monitoring programmes to follow up on the selected measures and make adjustments if necessary."*

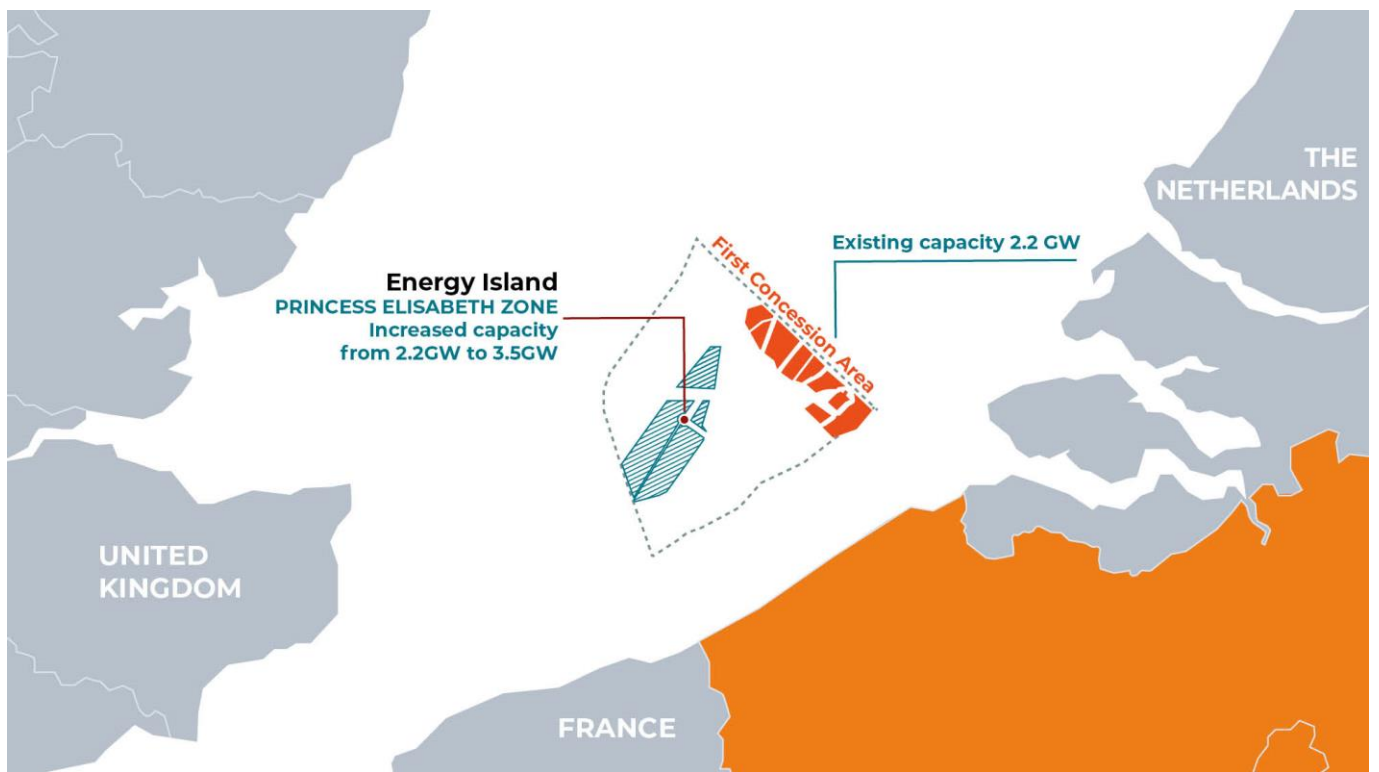
**Nicolas Beck, Head of Community Relations - Elia**

*"DEME and Jan De Nul have been developing methods to make a positive contribution to biodiversity through Flemish and European innovation projects for over a decade. The NID measures selected for the energy island build on this. They represent a huge leap forward due to their integration into the island design and their scale, which will make a significant contribution. This will serve as a new benchmark for nature inclusive design."*

**Hedwig Vanlিশout, Project Manager at TM EDISON**

### Princess Elisabeth Island

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 export cables from the wind farms in the Princess Elisabeth Zone while also serving as a hub for future interconnectors with the United Kingdom (Nautilus) and Denmark (TritonLink). 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 huge offshore wind farms in the North Sea that will eventually supply Belgium with large quantities of renewable energy.



## 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 19,349 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.

[eliagroup.eu](http://eliagroup.eu)



For more information, contact:  
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