



Ministerie van Economische Zaken
en Klimaat



Crucial *to a clean and* **sustainable future**

To keep quality of life in the Netherlands sustainable for future generations, we want our energy supply to be completely clean by 2050. Offshore wind energy is essential to achieve that goal. That clean energy is not only needed to power households, but also to provide industry with electricity and produce hydrogen in a clean way.

More information:
windopzee.nl

Getting clean energy from the winds of the North Sea

The Netherlands is a country of wind and water. We use both to produce clean energy. By 2030, about 75% of our electricity needs will be met by wind farms in the North Sea, totalling 21 gigawatts. Our electricity needs are expected to further increase and that means that we will need even more offshore wind energy beyond 2030. We take people and nature into account when generating that energy and when bringing it onshore. This is how we achieve our climate targets and make the Netherlands a cleaner and better place to live.

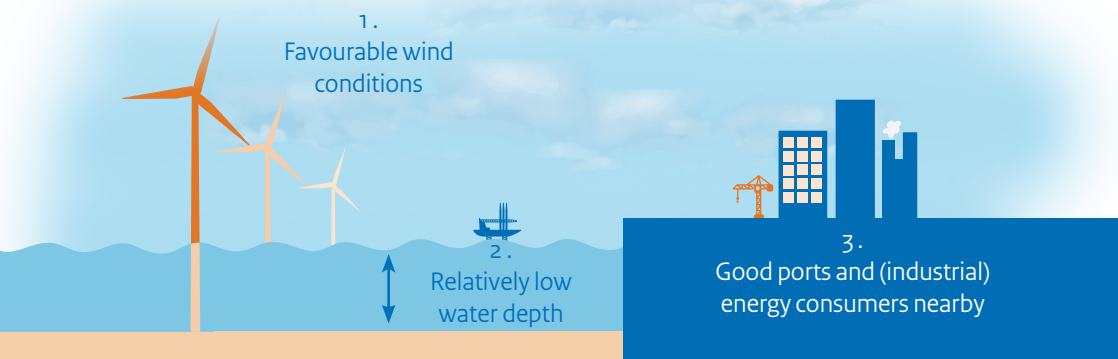
Bringing power onshore

The Netherlands can only benefit from wind energy produced offshore if we can actually use that clean electricity. The energy is brought ashore through underground energy cables and is connected to the high-voltage grid via transformer substations. All the sites where the energy comes ashore are selected carefully. We consider if there is any industry in the area that can benefit from the green

power. This is how we match up supply and demand, boost sustainability, and improve the environment we live in. We involve residents, businesses, and other stakeholders, carefully weighing the various interests at stake. A certain degree of inconvenience, however, is inevitable. Given the huge importance of offshore wind to our energy system and for a clean and sustainable future, as the national government, we have to make choices.

Why the North Sea?

The North Sea is shallow and the wind is stronger there than on land. Construction and maintenance of offshore wind farms can take place from our modern ports. This makes the North Sea a logical place to generate green energy. Even more so because there is more room at sea than there is on land. Nevertheless, the North Sea is still a relatively busy area. Using the scarce amount of space available has proved to be tricky. The national government takes into account the interests of all users of the North Sea, such as shipping and fisheries. We are committed to multiple use of the space in the wind farms where possible. That includes allowing recreational boats to sail through the wind farms and the creation of shipping channels for cargo transport within the wind farms. Sometimes the various interests conflict with one another and we have to decide which interests take priority at different locations.



Nature

The national government has put in place certain conditions for the construction and use of wind farms to prevent disruption to nature. This includes using methods that limit noise pollution and vibration during construction of wind farms, such as bubble screens and a maximum noise level. We are also working on a way to shut down wind turbines during bird and bat migration. The Offshore Wind Ecological Programme (WOZEP) was set up specifically to investigate the effects of construction and operation of wind farms on nature – both above and below the surface of the water. On top of that, we conduct research into the long-term risks. Alongside certain risks, there are also opportunities for nature. For example, we ask developers to build the wind farms in a way that is nature inclusive, which is better for the preservation and recovery of nature below the surface of the water in wind farm areas.

Employment opportunities

Generating energy offshore and then bringing it ashore is a major and long-term activity. This means opportunities for jobs, because there is a high demand for people who can work on the construction and maintenance of the wind turbines and the cable network that brings clean electricity ashore. We are already seeing an increase in employment in ports and industry along the coast. But there are so many more jobs still to come, from catering and cleaning to preparation, logistical planning, and monitoring.

Export opportunities

We are seeing that the wind farms now being built off the coast of Zeeland and South Holland are already leading to investments and are attracting new national and international companies. Offshore wind also provides opportunities for the Netherlands abroad. Our relationship with the North Sea goes back centuries and we are leading experts in working with wind and water. We are known for worldwide for that. Many Dutch companies are working in offshore wind and bringing clean energy ashore all over the world. We are proud of that.



Innovation

Offshore wind leads to innovation. Innovation in generating wind energy more and more efficiently, which has contributed to the sharp drop in costs in recent years. New wind farms are now even being built without subsidy. There has also been innovation in the way we deal with the impact on nature and the environment. We are, for example, increasing biodiversity by using fish hotels and oyster beds at the bottom of the North Sea. In addition, offshore wind provides opportunities for industry to switch to green hydrogen.

Offshore wind and hydrogen: a green combination

Hydrogen and offshore wind make for a great combination. Hydrogen produced through wind energy is clean – we call this ‘green’ hydrogen. At high winds, any surplus electricity generated can be used to produce green hydrogen. Hydrogen is also a way of storing and transporting energy.

The government agencies behind offshore wind

The Ministry of Economic Affairs and Climate Policy is responsible for offshore wind as well as for bringing that energy onshore on behalf of the national government. To this end, the Ministry works closely with other Ministries and executive organisations such

as Rijkswaterstaat and the Netherlands Enterprise Agency. TenneT brings the energy ashore and is a key partner as the operator of the high-voltage grid, alongside the energy companies and consortiums that develop the wind farms and the construction companies that build them. In addition, there are countless other parties involved: from provincial authorities to municipalities, Dutch nature conservation organisations, such as Stichting De Noordzee and Natuur & Milieu, and interest groups working on behalf of the fisheries and shipping.

If you would like to find out more, such as how an offshore wind farm is constructed from start to finish, please go to windopzee.nl



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This publication was commissioned by the Ministry of Economic Affairs and Climate Policy.

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april 2022

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RVO is part of the Ministry of Economic Affairs and Climate Policy.