

# Environment

## The North Sea – an area worth protecting

The North Sea has existed in its current form for approximately 11,000 years and its origins can be traced back 350 million years. Countless life forms have taken shape within this area; it has become the ideal habitat for a wide range of plant and animal species and their specific needs. Thanks to special currents, which combine North Atlantic waters with fresh water from rivers, the North Sea has become one of the most biologically productive maritime regions on the planet.



Source: [www.gratis-foto.eu](http://www.gratis-foto.eu)

Protection of this unique natural habitat is of particular importance during construction and operation of the DanTysk wind farm. We have already made sure that the wind farm is located outside of declared 'Nature Habitats' and bird reserves; however, we still strive to ensure that the impact on parallel activities and marine wildlife within the wind farm zone remains as low as possible. The initial results of the 'RAVE' accompanying ecological research study, a project sponsored by the German Federal Environment Ministry which

examined the offshore Alpha Ventus wind farm, prove that this approach can work. This study showed a strong presence of sea bed organisms and fish in the area surrounding the turbine foundations. The bird strike rate is low and marine mammals have started frequenting the waters of the wind farm since construction work was completed.

## **Tourism**

For people, the North Sea is not only a source of raw materials and food and a transport route – it is also a popular holiday destination. The interests of the tourism sector were taken into consideration during site selection. The wind farm will be built at such a distance from the North Sea beaches that even the rotor blades will not be visible from either the mainland or from surrounding islands due to the curvature of the earth. This project will even create new opportunities for the tourism sector; offshore wind farms are becoming a popular tourist attraction. Alpha Ventus is one example of this – one shipping company is offering boat tours for tourists who want to see Germany's first wind farm.

## **Project authorisation – a close examination of environmental impacts**

As with any other infrastructure project, a responsible attitude towards the environment and the natural surroundings is a key aspect of the DanTysk project. As each step in the construction process can cause disruption to the local habitat, the aim is to keep the negative impact any building work has on the environment as low as possible. Making sure this happens is not only a top priority for both project partners; the impacts are also controlled and checked by the relevant authorisation body - the German Office for Seafaring and Hydrography (BSH) in Hamburg. Their legal framework for environmental protection is based around strict requirements. The main focus lies on making sure ecological protection and economic needs remain compatible during the use of wind energy in the German Bight.

The authorisation procedure is a long and arduous process. It involves a great deal of detail as there is a wide range of aspects which need to be taken into consideration. A project such as this can only be approved if:

- The marine environment and all natural species, such as fish, microorganisms, birds and marine mammals, are not put at risk,

- Shipping channels are not restricted, and
- It does not pose a barrier to regional development requirements or other issues of public interest, such as resource safeguarding, national defence and fishing.

The multi-stage authorisation procedure also includes the consideration of assessments carried out by various interest groups, such as environmental protection, large and small-scale shipping, fishing and wind energy associations, as well as the German Federal Environment Agency.

After scientific research documents were submitted and evaluated, and a two-year environmental impact study was completed, nothing stood in the way of project authorisation for the DanTysk wind farm. We will continue to monitor environmental impacts during the building and operating stages in order to gain important knowledge which will aid the eco-friendly operation and construction of subsequent projects.

## **A research field for offshore wind power**



In order to carry out long-term studies on the technical requirements and possible ecological impacts of offshore wind farms, the German government decided in 2002 to build a number of research platforms (FINO) directly alongside Germany's offshore wind farms.

### **FINO 3: a monitor for the DanTysk site**

After FINO1 was built to the north of Borkum and FINO2 to the north west of Rügen, the research platform FINO 3 was installed 80 kilometres west of the island of Sylt in August 2009. Operated by the Research and Development Centre of Kiel University of Applied Sciences GmbH, this is where a research team collects various data whilst also monitoring the entire creation and installation phase of the DanTysk wind farm as part of its research.

The results also aim to provide the wind power industry with more detailed information on the technical requirements of wind turbines, as well as the biotope in this area and how they have changed throughout construction of the offshore wind farm. FINO3 carries out measurements on factors such as sea currents and lightening frequencies, observes bird migration patterns and investigates the consistency of the sea subsoil, as well as the impact wind farms have on the surrounding sea.

To find out more about the goals of the research platforms, click [here](#).