

The lifecycle of an offshore wind farm

The lifetime of an offshore wind farm can be greater than 30 years, from the initial design work to the final decommissioning of a wind farm. There are different stages to this work, and different skills and companies involved at each of these stages.

Scoping →

Sites for offshore wind are identified through a process called 'scoping.' There are many elements involved in site selection, including – unsurprisingly – wind speed, as well as water depth, seabed conditions and the impact on local people and the environment.



→ Development

A formal consent application is required for an offshore wind site before it can be built. The process of planning a wind farm is usually carried out by a company known as a developer. The application will include details of the number and size of turbines, the location of the wind turbines, environmental impact assessments as well as a host of other considerations looking at every aspect of building and operating an offshore wind farm. These applications are submitted to the UK Government or Scottish Government depending on the location of the site. The applications can be up to 10,000 pages long and are full of details of the projected environmental and social impacts of the wind farm.



→ Installation

After a project has been granted its planning approval, there are a series of activities that take place in preparing a site and manufacturing components for installation. One of the first steps in installing a wind turbine is placing a foundation in the seabed. The most common foundation is called a monopile which is a steel tube and weighs 600 tonnes. A transition piece is put on top of this which connects the turbine's tower, hub and blades.

→ Operation & maintenance

For 20 years or more, the project will generate electricity for the UK's electricity system. The farm will require maintenance throughout this period to guarantee it is running efficiently and to prolong its lifespan. This can include routine inspections to look at the condition of blades, underwater cables and gearboxes



Decommissioning /repowering →

As the majority of offshore wind farms have been constructed in the 21st century, jobs in this area will grow in the 2020s and 2030s.

As the turbines come to the end of their natural life, the developer will decide whether to decommission or repower (with new turbines). If they are repowered, the cycle starts again. ▶