Thornton bank wind

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The Thorntonbank Wind Farm (also known as C-Power) is an offshore wind farm, 30km (19mi) off the Belgian coast, in water ranging from 12 to 27 metres (39 to 89ft) deep. It is the first offshore wind farm in Belgium.

Electricity production started in early 2009, with a capacity of 30 MW.The capacity was increased to a total of 214 MW in 2012 and 325 MW in 2013.[1]

The first phase was built by C-Power and consists of six REpower offshore wind turbines of 5MW capacity on the Thornton sandbank, at a cost of EUR153 million.[2] It was commissioned in June 2009.[3][4] A 37km 150kV undersea cable connects the Thorntonbank Wind Farm to the shore.[5]

The first phase of what will ultimately be a 325MW wind farm was completed in September 2008. The six REpower 5MW turbines, which were installed on concrete gravity foundations, were linked to the Belgian power grid, giving a total rated capacity of 30 MW for the first stage.[6] The full story of the design, engineering, construction and installation of the Thorntonbank Wind Farm (first phase) is told in an illustrated book that was published in November 2010.[7][8]

In these phases, a total of 48 additional wind turbines of 6.15MWp were installed.[9]

Phase 2, completed in October 2012, comprises the installation of 30 of the 48 wind turbines.[1] These wind turbines have been installed on steel jacket foundations designed by OWEC Tower AS and assembled at the Smulders shipyard in Hoboken.[10]

In the third and last phase, completed in September 2013, the remaining 18 wind turbines were installed, bringing the total capacity to around 325MW.[1][11]

To assess the environmental impact C-Power has enlisted the assistance of the Research Institute for Nature and Forest (INBO[12]) and the Institute for Agricultural and Fisheries Research (ILVO [13]) to obtain the most detailed possible information on the occurrence of these animal species at Thornton Bank and to assess the possible effect of a wind farm on them.[14]

How the Wind Farms affect the landscape will be studied by WES-Onderzoek & Advies, who were also involved in earlier research in connection with the perceived impact on the landscape of near shore wind farms.[14]

Offshore wind farms may affect sea fishing. Certain areas may be closed to commercial fishing, as a result of which the total area that can be fished is reduced, but new habitats may also be created as a result. The basis

for this study is a thorough investigation of the importance of the Thornton Bank for sea fishing.[14]

Offshore wind farms create new structures at sea and by definition they therefore pose an additional risk to the safety of shipping. C-Power has, however, chosen a location which is a long way from the most important shipping routes so that this risk can be reduced to a minimum. C-Power will be calling upon the specialised knowledge of German consultants Germanischer Lloyd.[14]

Thorntonbank was only the second offshore wind farm to be project financed.[15]