Text VRN Wave Dragon

English Version
TC In: 01:01:00:00
TC Out: :01:05:31:10
Duration: 01:04:31:10

(Voice off)
The destructive power of waves is well known to sailors. Wave energy can, however, be harnessed and provide a source of clean renewable energy. Nowadays many groups in Europe and elsewhere are actively developing technology to do this, known as wave energy converters.

In March 2003, one European team successfully launched a floating 237 ton wave energy prototype at 1:4 scale, baptized the Wave Dragon. That happened in Nissum Bredning in Danemark.

01:01:58:16
ITV Erik Friis-Madsen
Wave Dragon Inventor
Löwenmark, F.R.I.
The Wave Dragon is based on a very simple principle, that of capturing energy from waves. When the waves hit the wave reflectors, they climb the ramp and fall into the tank where the water is stored.
01:02:05:04

The water stored in the tank then flows through the turbines (we see the emerging part here), generating electricity from the water pressure, as summarized in the animation. The wave climbs the ramp, falls in the tank, and flows out through the turbines.

01:02:34:13
ITV Madsen continued:
One of the main principles of the Wave Dragon is to have the ramp shaped as a wide, flat plateau, so that the waves can roll onto it without breaking, thus maintaining their force. This optimizes the volume of water and increases the quantity of water passing through the turbines.
01:02:54:16
The project is the result of cooperation between six different European partners: Denmark, United Kingdom, Ireland, Sweden, Austria and Germany.

The main elements of the turbines we have seen were developed and tested here in Munich.

01:03:13:09
ITV Wilfried Knapp
Technische Universität München
At the Munich Technical University we had to address 3 tasks in the course of this project. First, the basic turbine design to determine what type of turbines to use in this specific case. Then we developed them from a model using a series of tests. Finally, we took charge of the operational strategy and various adjustments, to ensure efficiency and maximum yield from the turbines.
01:03:55:14

The Wave Dragon prototype operates using 7 turbines, which are now working very well and which can generate up to 20 kWe. The prototype has been connected to the electrical network on the mainland, since 27 June 2003.

At full scale, the Wave Dragon would generate 4 MWe in the North Sea. In a perfect location, with stronger wave power, the same unit could produce as much as 7 MWe, enough electricity for about 10,000 homes.

01:04:41:06
ITV Erik Friis-Madsen
Two of the advantages of the floating installation are that can it be produced in large quantities, and it can be placed anywhere in the world – off any coast, beach or cliff.
01:05:04:12

The team now needs to complete the test programme. The next step will then be the construction and testing of a full-scale prototype. The long term objective is to connect several units together in a type of energy farm along available coastlines.

01:05:04:12

ITV Hans-Christian Soerensen
Project coordinator
SPOK ApS
"We are counting on putting several units next to each other in order to
generate 80 to 100 MW.
With 50 units, we could reach the capacity of a normal power plant."
01:05:13:19

In the future, such an energy farm could produce enough electricity for a town like Brest in France.

An ocean of energy for us and future generations.

International Version
TC In: 01:06:00:00
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RUSHES:

ITV Erik Friis-Madsen
01:11:00:00

ITV Erik Friis-Madsen
01:11:07:18

ITV Wilfried Knapp
00:11:27:24

ITV Erik Friis-Madsen
01:12:11:04

ITV Hans-Christian Soerensen
01:12:25:13

Animation of the wave dragon
01:12:40:24