

Facts & Figures BlueTEC Texel Tidal Project

Who initiated the project and who are the partners?

Bluewater Energy Services started developing the BlueTEC floating tidal energy platform in 2009 and initiated the Texel project. Two years ago we started the partnership cooperation for this very first BlueTEC Texel Tidal platform with our partners Damen/Niron Staal, Van Oord/Acta Marine, Vryhof Anchors, Tocardo, Schottel Hydro, TKF Twentse Kabel Fabriek, Nylacast, NIOZ and Tidal Testing Centre.

What is BlueTEC and how will the platform supply electricity?

BlueTEC is short for Bluewater's Tidal Energy Converter. It is a floating platform at sea which holds tidal turbines in the ocean. The flow of water current causes the turbines to rotate, which in turn drives the generator, generating electricity which is then supplied to the electricity grid on the main land via a power cable. The platform is anchored just like a boat.

Where will the first BlueTEC platform be located?

The floating BlueTEC Texel platform will be installed at the Marsdiep, anchored like a boat, near the ferry harbour of the island Texel.

When will the BlueTEC Texel platform be launched and installed?

The BlueTEC Texel platform will be installed and operational before the summer of 2015.

Why are we doing this?

Energy:

The world's population is steadily increasing, requiring more and more energy. The challenge is to generate this electricity in the cleanest possible way. The BlueTEC tidal energy platform provides a means of generating clean electricity by using the water current. Tidal energy is clean, local and infinite.

Export product:

The BlueTEC Texel platform is a ready-to-market export product and is supplied as a complete system (platform, turbines, electronics, anchoring system, power cable etc.) and can be used anywhere in the world to generate electricity, even in the most remote areas of the world, such as the Philippines, Indonesia and the Pacific.

Scaling up:

This Texel platform is just our first step; we are looking to scale up to platforms that can generate 2 to 3 MW. We can place these platforms in farm configurations in areas where there is a strong water current, resulting in a tidal farm that can generate a couple of hundred Megawatts.

How much will it cost to install the BlueTEC platform in remote areas?

The BlueTEC platform, including 200 kW turbine, anchoring system, electronics, power cable etc. will cost around EUR 1 million. This results in an electricity price of 20-30 cents per kWh, which is well below the cost price of diesel generation per kWh.

The platform is made up out of sea container sized modules, making it easy to transport to any location in the world. I can see the container shape and the typical corner locks of the container sections, but at the same time I see the deckhouse sticking out at the top, and the bow modules are pointed. Can you explain why?

The BlueTEC Texel platform consists of sea container sized modules, making it easy to transport to any location in the world. The bow sections are rectangular on one side with container corner locks, while the other side will be given a temporary frame for transport, creating a rectangular structure including corner locks.

The deck house has been raised only for this first platform, as one electrical cabinet was expected to require additional height. This will not be necessary for future projects, hence as of now the mid-section will be a standard rectangular container.

How large is the BlueTEC Texel platform?

The BlueTEC Texel platform is 24 meters long and 2.40 meters wide, made up of standard container dimensions (40' + 2 x 20' length by 8' by 8').

How big are the rotating blades of the turbines?

The length of the blades of the turbines varies between four to ten meters, depending on the type of turbine that is attached under the platform.

Does the BlueTEC Texel platform have a damaging effect on marine life?

Research has shown that fishes and mammals see the platform and turbine and swim around it. The turbines turns very slowly, approximately 20 revolutions per minute (ship propellers usually rotate several hundred revolutions per minute). We will continue to monitor and research the impact the platforms have on their environment, together with research institutes and environmental organizations.

Can the BlueTEC Texel platform be seen once it has been launched?

The floating platform only sticks out approx. two meters above the water surface (comparison offshore wind turbines: up 150 meters high). This means the platform is not or hardly visible from a distance.

How many households will the BlueTEC Texel Platform supply electricity to?

Based on a typical current location, the platform with a 200 kW turbine will be able to supply electricity to 200 Dutch households. In remote locations this amount can have an enormous positive impact for residents of small islands, as they no longer need to depend on the supply of fuel for cooling and lighting. Besides the amount of electricity, very important is the regular and predictable nature of the tidal current, as it brings stability to a local electricity grid.