

How Offshore Wind Works

Understanding how we convert one of Earth's great natural resources into electricity across the high seas

How does an offshore turbine work?

Offshore wind takes advantage of the wind out at sea where it maintains a constant and higher speed than on land due to lack of any barriers e.g., infrastructure like buildings or bridges and natural barriers like mountains or valleys.

Our turbines are installed in strategic places to harness the wind and capture the most energy before transmitting that clean energy to homes across the U.S.



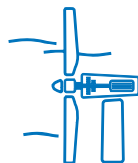
Did you know?

Our V236-15.0 MW turbines produces enough energy to power up to 7,600 US households*



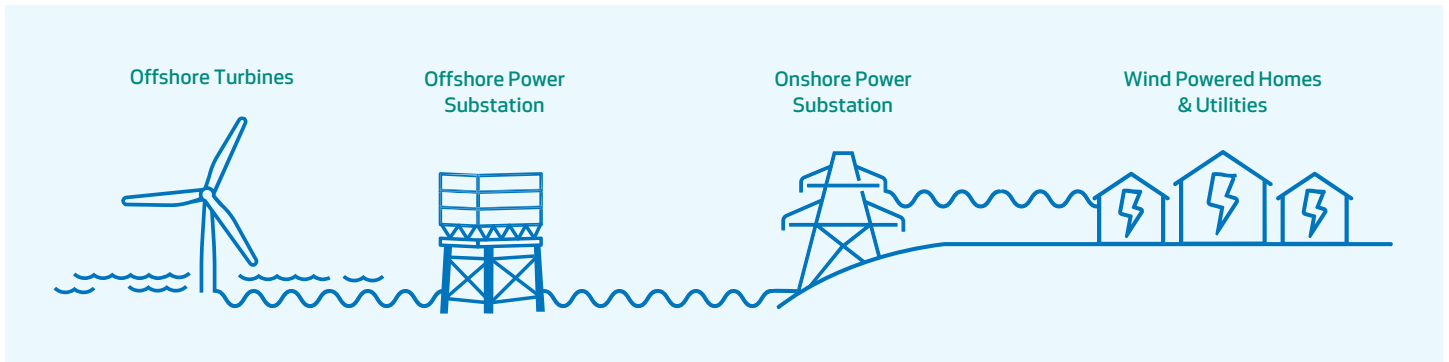
Our offshore wind turbines are specifically designed for offshore wind environments.

From frozen tundras to tropical trade winds and tsunami-stricken waters, our turbines can withstand extreme wind conditions that up to 57 m/s (127mph)



Just like onshore turbines, our offshore turbines include a series of blades mounted around a rotor to catch the wind and translate its kinetic energy into rotational energy. That energy turns a generator to create electricity for millions of homes across the U.S.!

*Calculation is based on name plate capacity divided by energy consumption excluding losses using US EIA 2021 data



How do we send the power from the sea to homes on land?

The electricity the wind turbine produces is transmitted via underwater cables to an offshore substation, before being transported ashore to an onshore substation where it is transformed.

The newly converted electricity is then fed on to the electrical grid and into your homes to power your TVs and charge your phones!



But what about the fish and other marine life?

We care about delivering clean energy to as many homes across the U.S. as we can, but we also believe in doing that sustainably, and that includes protecting the waters where we install our turbines.

To protect marine life during development of offshore wind farms, all stages are subject to rigorous regulation and monitoring requirements, using measures such as mandatory vessel speed restrictions, vessel strike avoidance measures, constant visual and acoustic monitoring, seasonal restrictions, sound reduction technology and other mitigation.

To find out more about how Vestas is driving the U.S. offshore industry forward, scan here:

“The wind is an untamed, and unharnessed force”

– Abraham Lincoln

