

The future of floating offshore wind

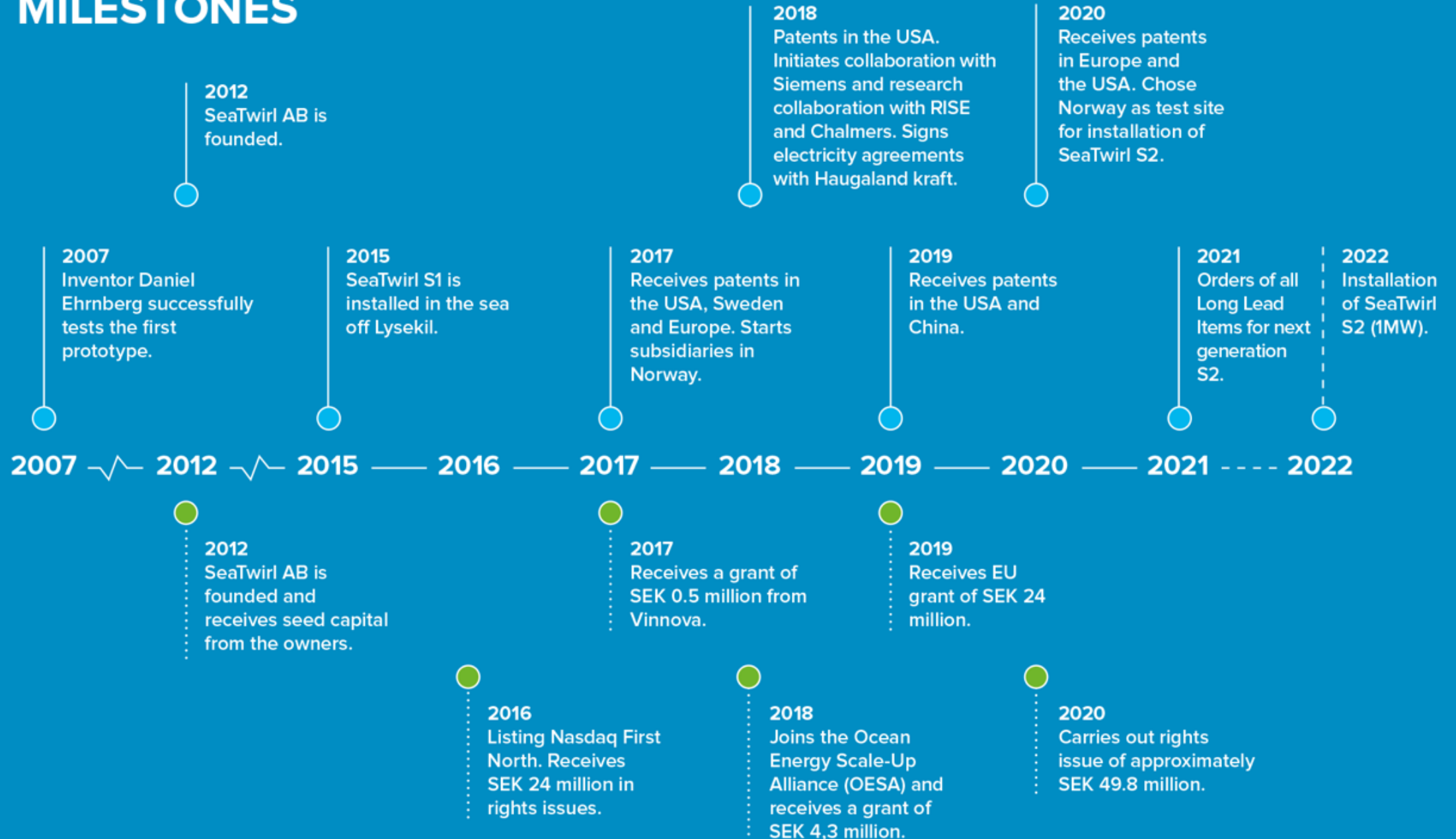
Our business idea

To develop, produce and sell robust, simple and cost-efficient floating offshore wind turbines

Our vision

To become a global leader within floating offshore wind power

MILESTONES



A photograph of a SeaTwirl S1 wave energy converter in the ocean. The device is a white, box-like structure mounted on a dark, vertical post. It has a small red and white logo on its side. The device is surrounded by choppy, dark blue water. In the background, other similar structures are visible. The text "2015: SeaTwirl is launched outside Lysekil" is overlaid in white on the lower left. The text "S1: 30 kW" is overlaid in large white font in the center.

2015: SeaTwirl is launched outside Lysekil

S1: 30 kW

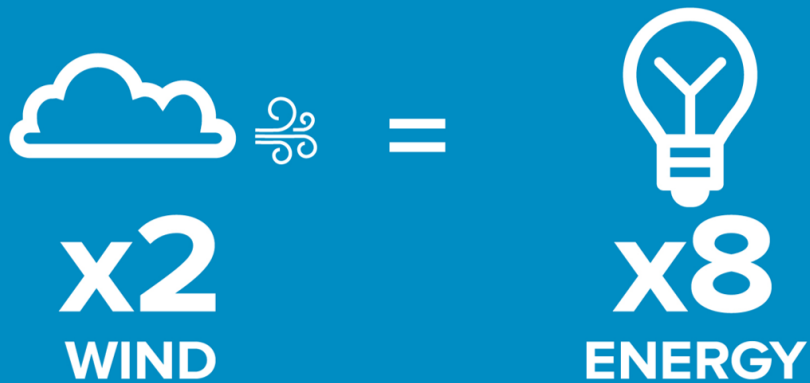


Market trends and driving forces

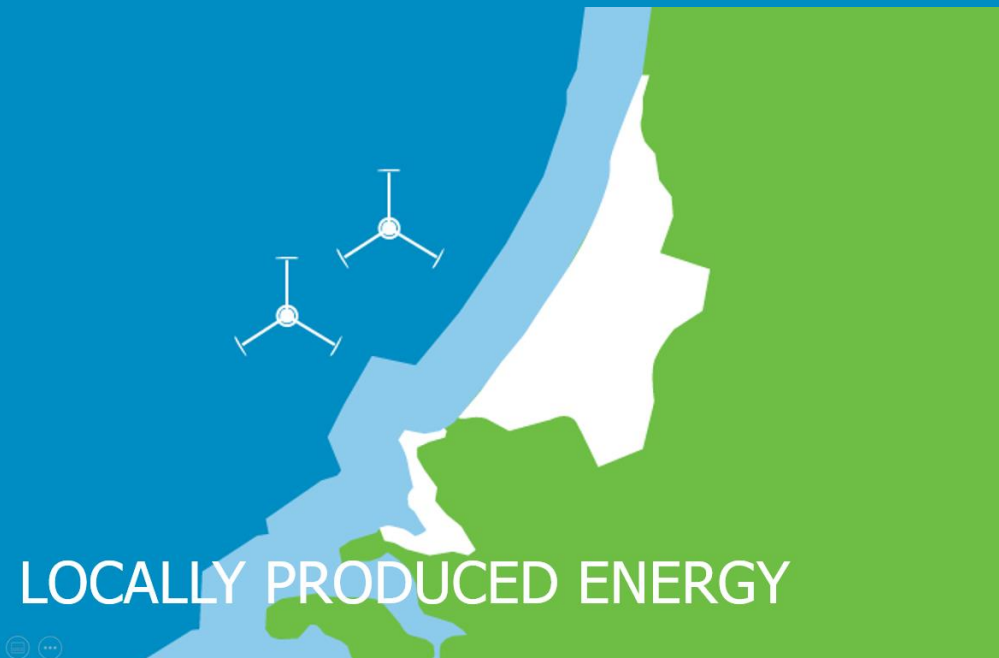
- Climate changes – Global warming
- Paris agreement, reduce greenhouse gas emission by 40% by 2030 compared to 1990. EU included. Britain takes the lead!
- Oil and gas companies want to broaden their offerings
- The need for energy in the world is increasing
- In Europe, renewable energy is forecast to be 90% of the energy mix by 2050
- Globally, wind and sun are forecast to cover almost 50% of global energy needs by 2050, the so called "50 by 50"
- Countries are phasing out fossil fuels to meet their climate commitments

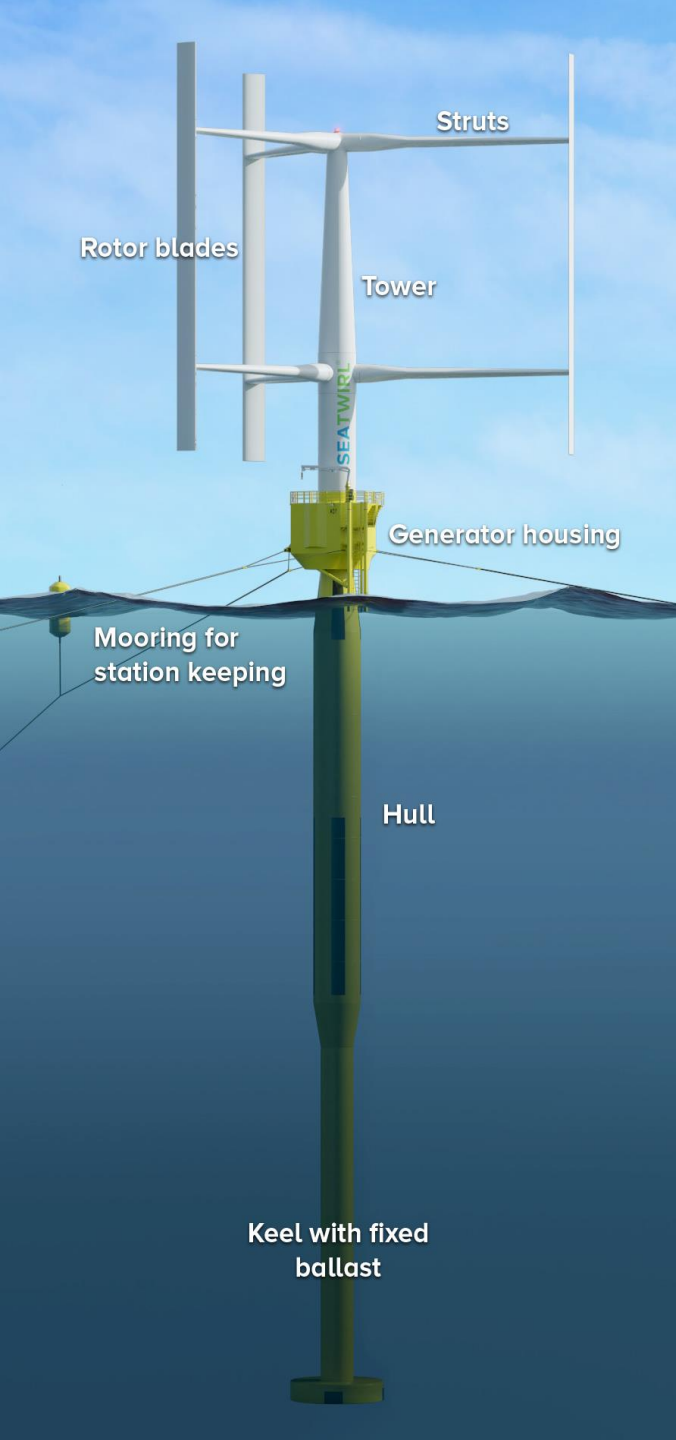


THE OCEAN – AN UNUSED RESOURCE



POWERFUL WINDS

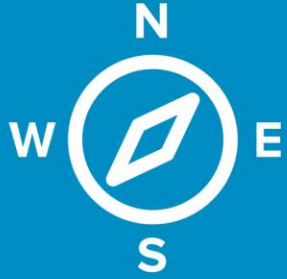




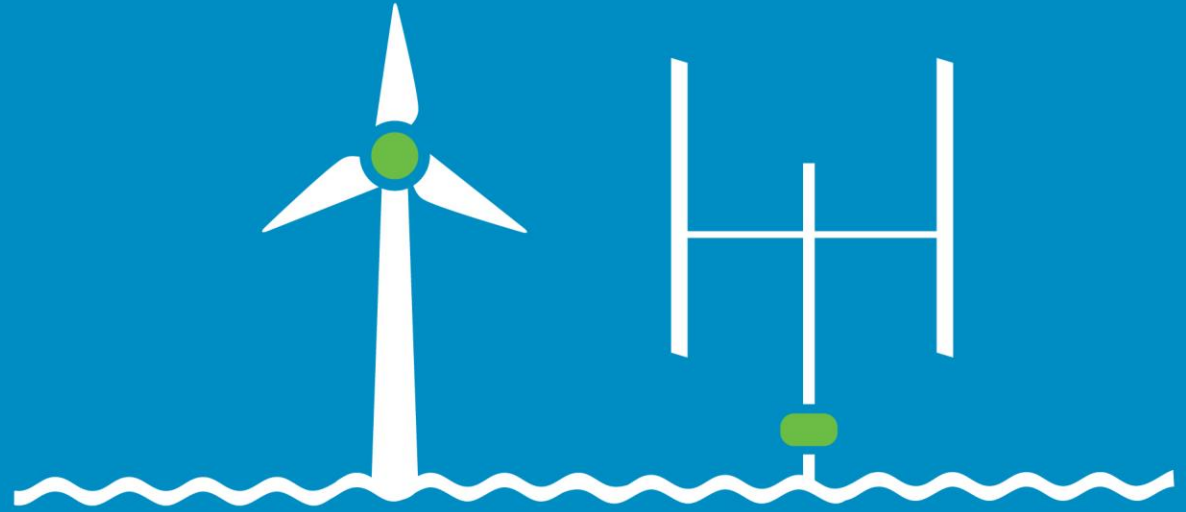
SeaTwirl explained

The heart of the SeaTwirl concept is the vertical-axis wind turbine with its tower connected to a spar hull with fixed ballast in the bottom part to increase stability, just like the keel on a sailboat.

The turbine, tower and underwater part rotate as one unit whereas the generator housing is moored to the seabed and keeps the rotating unit in position.



Any
WIND DIRECTION



GREEN
FOOTPRINT



FRIENDLY
OUT OF SIGHT

SeaTwirl's goal is to offer the lowest **LCOE** on the market.



- CAPEX
- OPEX
- DECEX



Patent

A STRONG PATENT PORTFOLIO



Scalability

1 MW - 30 MW



Grid stability



SeaTwirl's advantages compared to competing solutions:

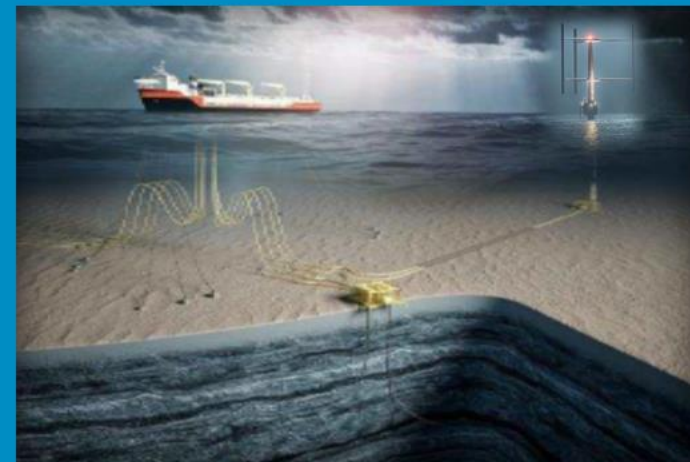
- We design the entire system **for offshore from the beginning**, that gives a great potential to achieve a complete solution best suited for floating offshore wind power
- **Lower center of gravity** as generators and drivelines are further down. Parts requiring maintenance are inside the generator housing, which is easily accessible, right above water level and below the wind turbine
- Our wind turbine **is independent of the wind direction and therefore has fewer moving parts**. The design is also based up on standard components as far as possible to enable lower production cost
- **Low tip speed ratio (TSR)**, which means that the blades are not exposed to erosion and therefore produces lower noise when rotating
- SeaTwirl's wind turbines could contribute to **electricity grid stabilization**. Since the entire wind turbine rotates as a unit, provides several benefits, both in the fast support services (the inertia of the large rotating mass), but also in the slightly slower ones due to its ability to "lend / store" kinetic energy
- Our wind turbine design **enables smart and efficient installations** and **is scalable** in all disciplines from start
- Third-party verified analyzes show that SeaTwirl's wind turbines will be able **to produce energy for less than € 50 / MWh** when the technology is proven, commercial and fully developed

Exampels of applications from SeaTwirl

Local solutions "Local grid"



Islands and remote locations



Oil & gas processes



Fish farms



Wind farms (Utility Grid)
SX (3-8 MW)

SeaTwirl's main focus is to develop, produce and install
SeaTwirl S2 (1MW) in Norway, during 2022



S2, 1MW

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