Quarterly report

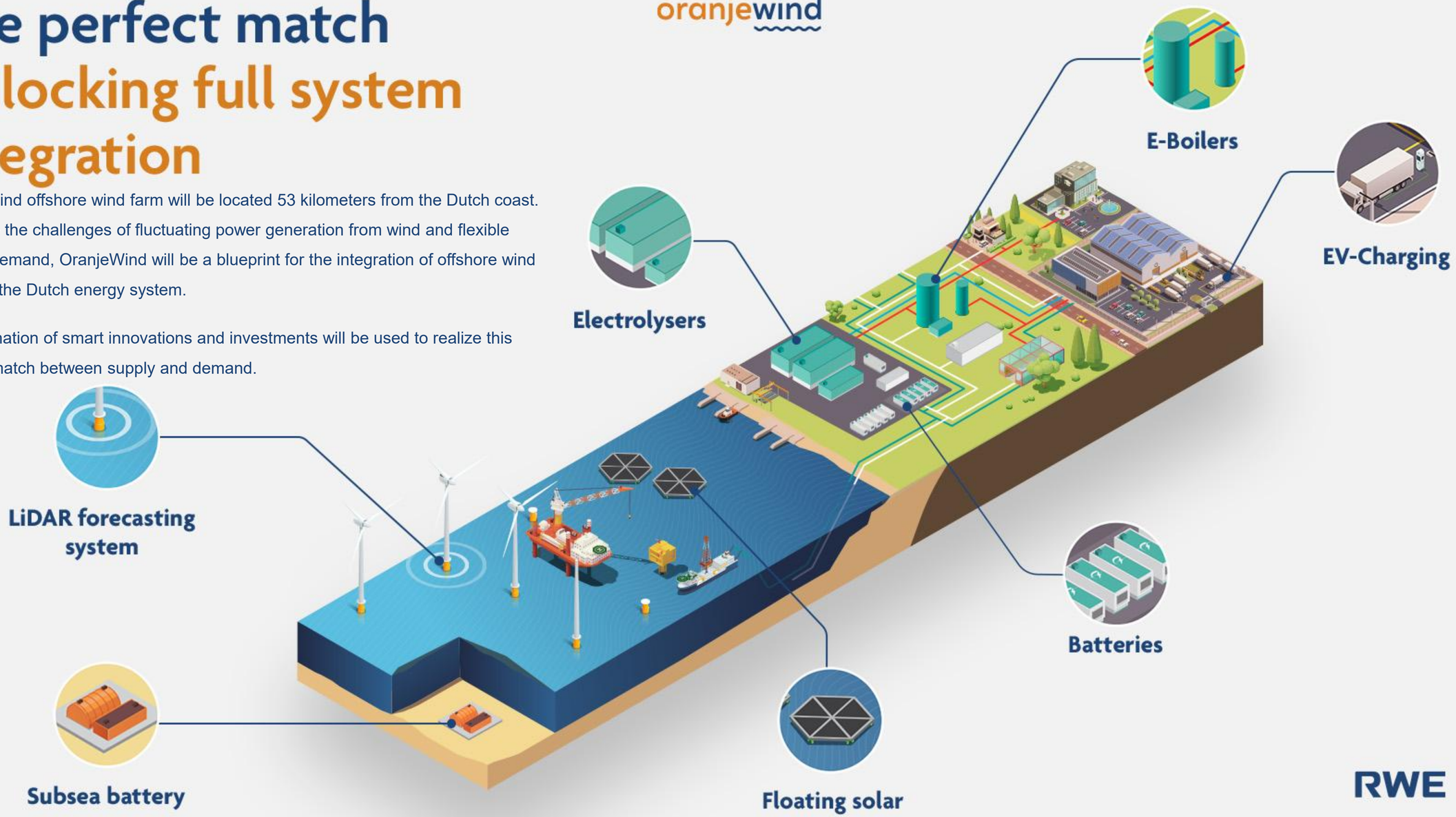
Q2 2026

The perfect match

Unlocking full system integration

OranjeWind offshore wind farm will be located 53 kilometers from the Dutch coast. To tackle the challenges of fluctuating power generation from wind and flexible energy demand, OranjeWind will be a blueprint for the integration of offshore wind farms in the Dutch energy system.

A combination of smart innovations and investments will be used to realize this perfect match between supply and demand.



What’s happening with the wind farm?
Construction update

The planning and production of wind farm components—including cables, foundations, and turbines—are progressing well. This is necessary to launch the foundation installation campaign after the summer.

In May, the offshore installation of the filter layer (scour protection) was completed, marking the first offshore activities.

Additionally, the second OranjeWind Knowledge Symposium was organized. More than 100 guests attended the event, and the Technology Report 2026 was published.

Meanwhile, interior works at the O&M base in Den Helder have commenced and are scheduled for completion after the summer.

Filter layer campaign OranjeWind completed

In March, Jan De Nul launched the filter layer campaign for OranjeWind, marking the start of physical preparations for the project's offshore works. The campaign was completed in May.

This step was essential to enable the subsequent installation of the 53 foundations for the wind farm. The rock material for the filter layer was loaded in Norway and then transported to the site by the installation vessel.

Read the full news release

OranjeWind Knowledge Symposium 2026: Producing with Power

The OranjeWind Knowledge Symposium was held for the second year. Under the theme “Producing with Power,” the event featured the presentation of the Technology Report 2026 and brought together participants from the energy sector, universities and research institutions, and government bodies. Attendees were briefed on project progress and the OranjeWind Knowledge Program, and heard a keynote address by journalist/economist Mathijs Bouman.

Matthias Esken, Project Director for OranjeWind, presented the report to Bart Tonnaer, Director of Climate and Energy Transition at the Netherlands Enterprise Agency (RVO): “The knowledge program stands out because of the close collaboration between universities, policymakers, educational institutions and industry. It provides a blueprint for raising societal awareness of the value of large-scale, integrated sustainable energy solutions.”

OranjeWind Technology Report

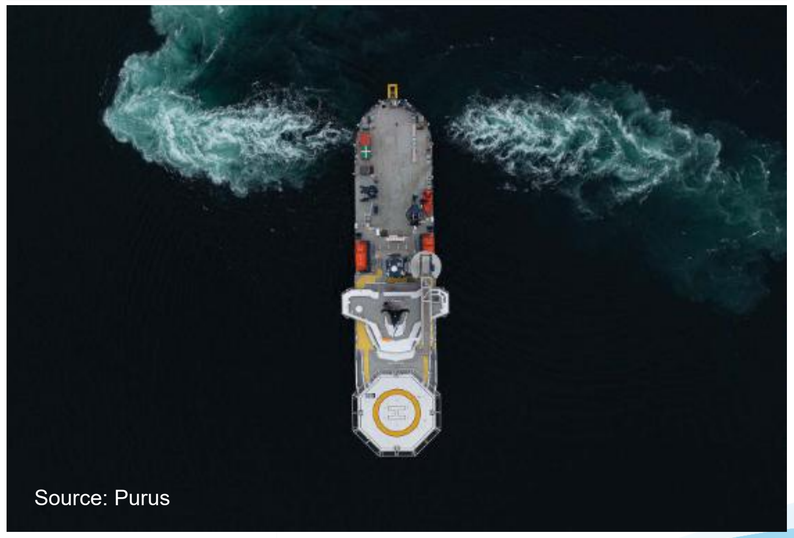
News release

OranjeWind and Purus sign charter agreement

OranjeWind and Purus have signed a five-year charter agreement for the Purus Power, a purpose-built Construction/Service Operation Vessel (C/SOV). The vessel will support both planned and unplanned maintenance operations at the OranjeWind offshore wind farm. The agreement is for five years, with an option to extend.

The Purus Power is designed for the challenging environment of offshore wind operations and for extended stays at sea. It provides cabins, office space, meeting rooms, a gym and a canteen to ensure maximum comfort for maintenance technicians. The vessel also features an integrated walk-to-work system that enables safe transfers between the ship and the wind turbines, along with other advanced systems and equipment.

Source: Purus



Source: Purus

Read the full news release

Innovations at OranjeWind

Intelligent Subsea Energy Storage (Verlume)

Verlume is bringing multi-purpose storage solutions offshore through a subsea lithium-ion battery with integrated intelligent energy management. Ultimately, this technology may contribute to a more balanced power output by shaving the peak power production offshore. Additionally, the storage solution may provide multiple offshore services, such charging of hybrid or fully electric service vessels and providing residency for Autonomous Underwater Vehicles (AUVs). For the OranjeWind project, the goal is to further mature this technology aiming installation of a small version of such a subsea storage system. When successfully operated such technology could potentially be integrated in an offshore wind farm as part of the energy transition.

Status update

- The construction of the subsea battery with the umbilical cable and the cable protection systems are well on track and testing of components and subsystems is ongoing.
- The subsea battery surface equipment for the FOU will be tested in July at Verlume and then shipped to our foundation supplier for pre-installation in the foundation internal cassette of the dedicated innovation WTG location.
- The subsea battery will be installed in a more efficient design, and a new installation procedure was developed.

Innovations at OranjeWind

Floating solar

Offshore floating solar technology can be part of the solution to increasing land scarcity for the generation of renewable energy. The integration of offshore floating solar into an offshore wind farm can lead to a more efficient use of ocean space for energy generation and allow for synergies in construction and maintenance of the multi-source renewable energy plant. This could result in a more balanced production profile due to the complementary nature of wind and solar resources.

Status update

- Offshore floating proves being a challenging innovation at the North Sea for its harsh environment, which was also experienced in earlier demonstration projects. OranjeWind is taking these learnings to improve the design for a safe and reliable demonstration.
- The development and concept clarifications have been progressed.

Innovations at OranjeWind

LiDAR power forecasting (ForWind – Oldenburg University)

The innovative power forecasting methodology based on LiDAR (Light Detection And Ranging) accurately forecasts sudden changes in power production caused by wind ramp events - strong variations of wind speed over a short period of time. These may cause sudden and strong changes in power leading to a significant and unexpected drop or increase of energy supply to the grid. If not forecasted accurately, these can result in critical grid imbalances and hamper the further implementation of wind energy. With OranjeWind, we aim to demonstrate and further develop this innovative technology. Plan is to install at least 2 LiDARs, and 1 optional XXL LiDAR, on the corners of the windfarm.

Status update

- One of the 2 LiDAR's at Amrumbank West is still acquiring wind ramp data for developing "forward scanning" algorithms. These algorithms will be implemented at the OranjeWind project.
- The second LiDAR that was to be brought back to shore for an overhaul in Q4-2025. It shall be brought back offshore soon.
- The development of the XXL LiDAR with a measurement range up to 30 km was finished end of 2025 and the onshore testing is ongoing.

Innovations and system integrations at OranjeWind

OranjeWind aims to achieve the perfect match between green electricity supply and demand. The project balances the intermittent power generation of offshore wind with a variety of innovative and flexible demand assets such as batteries, e-boilers and electrolysers. With these investments and innovations, OranjeWind serves as the blueprint for the future offshore wind farm.

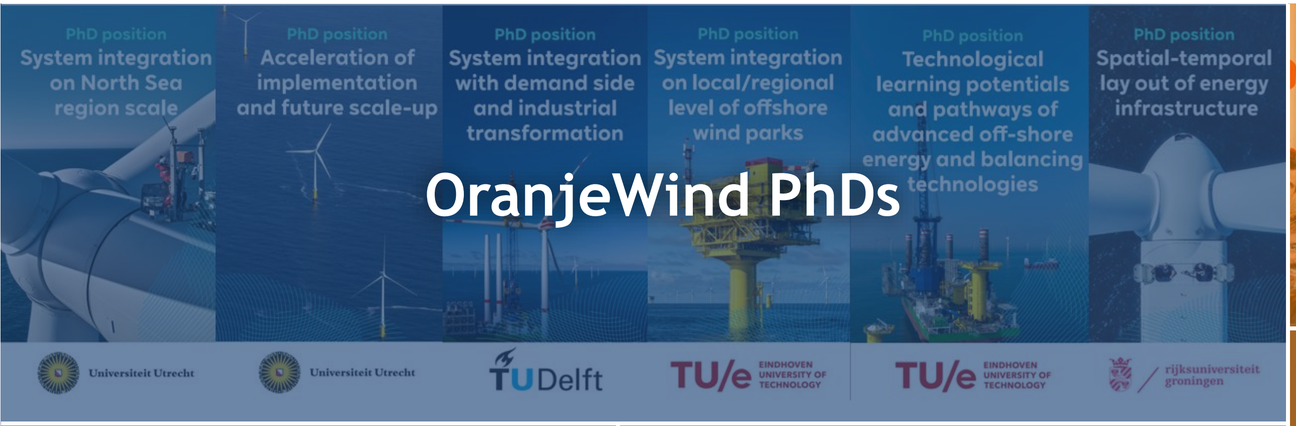
Inertia battery Moerdijk

Status update

- E-boiler Eemshaven is successfully in operation. It supports start-up of the Eemshaven power plant and provides secondary reserves.
- E-boiler project together with Ennatuurlijk in Geertruidenberg is under construction.
- Battery system Eemshaven is successfully in operation.
- Innovation: Inertia battery is successfully operating, testing phase ongoing. Results are very promising: System was capable to react adequately on frequency drop Spain in 2025.
- Further planning and detailing works have been performed, and progress is being made as planned.

OranjeWind KnowledgeProgram

Generating knowledge via…



Projects & programs

DEFLAME

OESTER

MODES | SLDbatt | Phynix | CO2URAGE

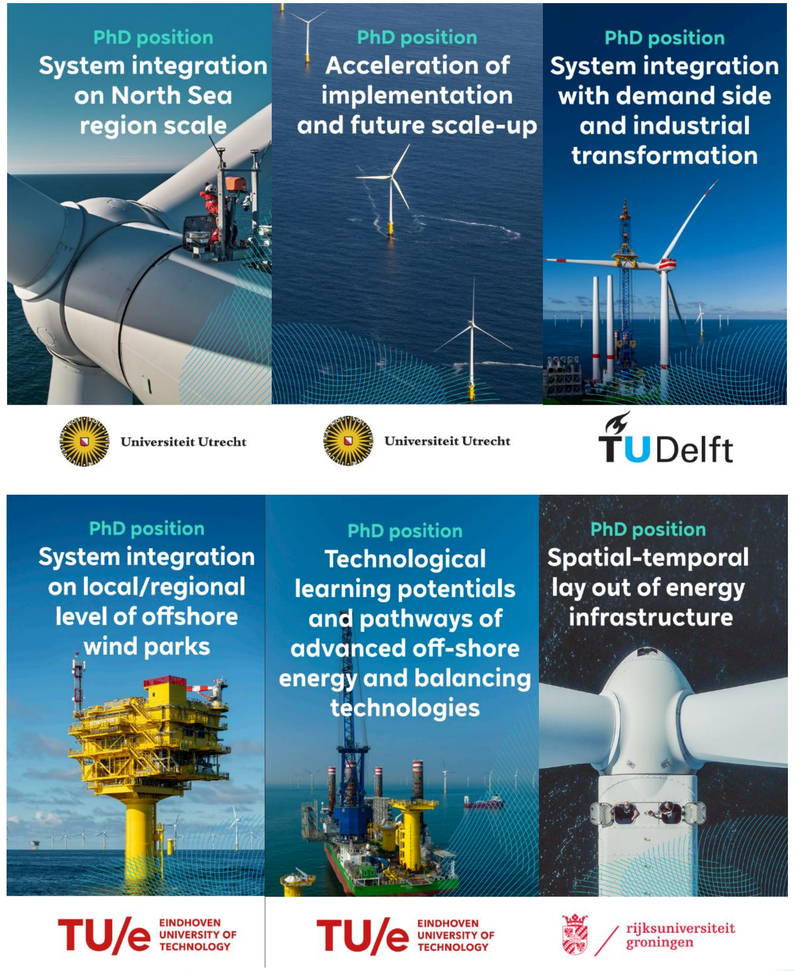
Thesis Interns | PD Flex | North Sea Energy 6

Sharing knowledge via…

OranjeWind Knowlegde
Research programme

- The CO2URAGE project, led by TU Eindhoven with OranjeWind as a partner, received NWO Perspectief funding to develop CO2 utilization via reactive adsorption using green electricity in a flexible manner. The consortium includes four Dutch technical universities and 26 partners.
- The SLDbatt project, involving OranjeWind, secured funding to develop sustainable long-duration batteries from local materials, to alleviate grid congestion and enhance the Netherlands' battery market position.
- The sixth edition of the North Sea Energy consortium began in February, with OranjeWind as a key partner in this project to progress the North Sea energy transition.

OranjeWind PhD programme



About RWE

RWE is leading the way to a clean energy world. With its investment and growth strategy Growing Green, RWE is contributing significantly to the success of the energy transition and the decarbonisation of the energy system. Around 20,000 employees work for the company in almost 30 countries worldwide. RWE is already one of the leading companies in the field of renewable energy. RWE is investing billions of euros in expanding its generation portfolio, in particular in offshore and onshore wind, solar energy and batteries. It is perfectly complemented by its global energy trading business. RWE is decarbonising its business in line with the 1.5-degree reduction pathway and will phase out coal by 2030. RWE will be net zero by 2040. Fully in line with the company's purpose - Our energy for a sustainable life.

TotalEnergies and electricity

TotalEnergies is building a competitive portfolio that combines renewables (solar, onshore wind, offshore wind) and flexible assets (CCGT, storage) to deliver clean firm power to its customers. At the beginning of 2026, TotalEnergies has more than 34 GW of gross renewable power generation capacity and aims to achieve over 100 TWh of net electricity production by 2030

About TotalEnergies

TotalEnergies is a global integrated energy company that produces and markets energies: oil and biofuels, natural gas, biogas and low-carbon hydrogen, renewables and electricity. Our more than 100,000 employees are committed to provide as many people as possible with energy that is more reliable, more affordable and more sustainable. Active in about 120 countries, TotalEnergies places sustainability at the heart of its strategy, its projects and its operations.