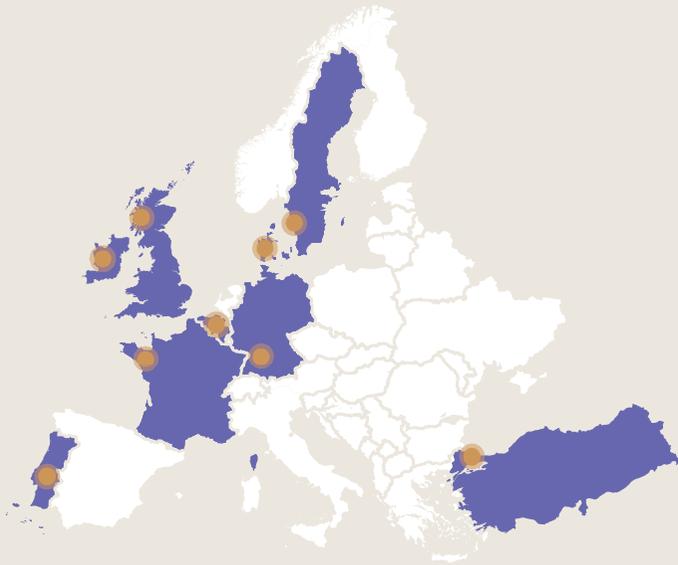


Partners



SEATWIRL®



ZORLUENERJI



sawento



sub connected



PNO INNOVATION



Contact us

PROJECT COORDINATOR

University College Cork

verti-go@ucc.ie

 48
Months

 11
Partners

 09
Countries

 21
Mln € Total budget

 15
Mln € EU Funding budget

FOLLOW US

 VERTI-GO Project



vertigo-project.eu

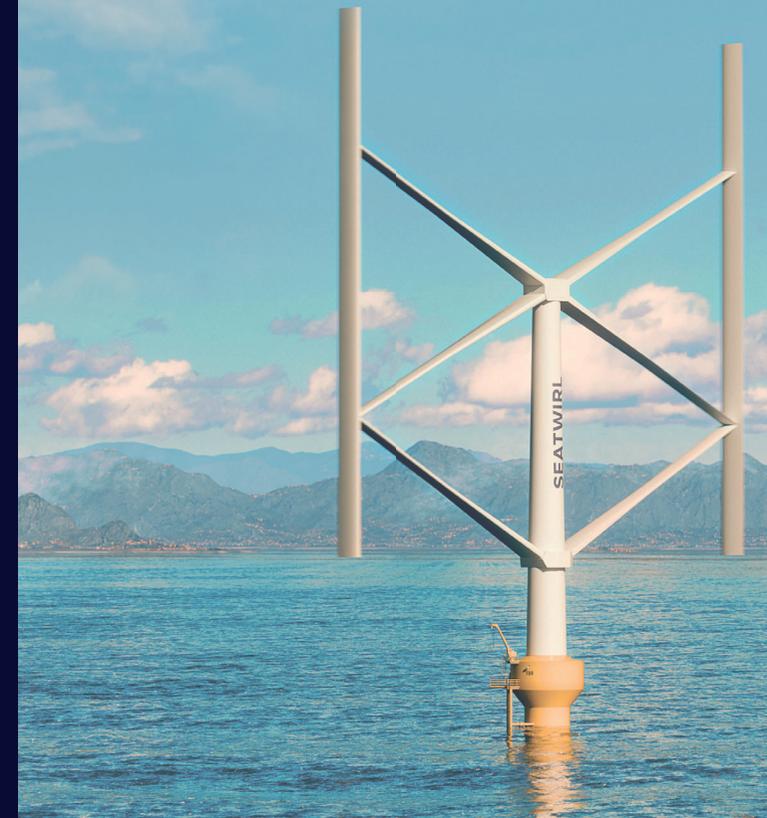


Co-funded by
the European Union

Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them. Grant agreement No. 101235735

VERTI-GO

Demonstration of a
VERTIcal-axis floating wind
turbine for offshore energy
Generation with improved
performance and accessibility
for **O**peration & maintenance



About VERTI-GO

VERTI-GO is pioneering a new generation of floating offshore wind technology with a purpose-built vertical-axis wind turbine designed from the ground up for deep-water conditions. Addressing today's key challenges in the floating wind sector, the project delivers a solution that is more efficient, cost-effective, and simpler to operate than state-of-the-art alternatives. Its integrated design, merging the tower and floater into a single structure, streamlines manufacturing and assembly, resulting in lower CAPEX, enhanced reliability, and improved offshore O&M.

Building on proven TRL5 performance, VERTI-GO now aims to scale up to a 2 MW demonstrator, working with industry partners across the value chain to accelerate the deployment of next-generation floating wind and support Europe's transition to clean, resilient energy.

Which challenges will VERTI-GO address?

- **HIGHER UPFRONT COSTS:**
Floating wind requires 30–50% more CAPEX than fixed-bottom wind technology, with widely varying LCOE (≈95–160 €/MWh).
- **GRID CONNECTION COMPLEXITY:**
Far-offshore locations depend on advanced HVDC systems and major grid upgrades.
- **CAPACITY-CONSTRAINED SUPPLY CHAIN:**
Limited manufacturing capacity for platforms, moorings, and specialised vessels creates bottlenecks.
- **CHALLENGING OPERATING CONDITIONS:**
Harsh offshore environments lead to high O&M demands, which often represent 50–80% of total OPEX.

Objectives

The VERTI-GO project's aim is to address the key challenges faced by floating offshore wind turbines today, offering a solution that is not only more efficient and cost-effective but also simpler to operate compared to state-of-the-art floating wind turbine technologies.

This will be achieved through the following five objectives.



Develop and validate a full-scale 2 MW floating VAWT at an offshore site 8 kilometres from shore, 200 metres in depth. Over a 15 month operational period, it will collect performance data to optimise O&M, targeting a 20% reduction in downtime and progressing towards an LCOE of 85-100€/MWh.



Increase European supply resilience by integrating at least 25% recycled or low-carbon materials and ensuring that a minimum of 50% of components (by weight) are sourced within the EU, supporting an expected 10% reduction in CAPEX per MWh generated.



Develop a Digital Twin using structural, aerodynamic and weather models to improve reliability and design optimisation.



Conduct environmental assessment to achieve reduction of the carbon footprint by 15% and noise emissions by 10%.



Engage stakeholders and build business models to support commercialisation.

Impacts



Technical & Operational

- Demonstrates a 2 MW floating VAWT in real offshore conditions, paving the way to scale-up.
- Improves energy production by 15-30% through advanced control and simulation-driven optimisation, reducing downtime and enhancing rapid responsiveness.
- Enhances reliability through a modular drivetrain and enables significantly higher power density than conventional HAWTs.



Economic

- Targets up to 30% LCOE reduction through higher yield and lower downtime.
- Cuts OPEX through improved access, lower maintenance needs, and service-friendly design.



Environmental

- Reduces lifecycle greenhouse gas emissions through optimised O&M and circular design: prioritises reuse, refurbishment, and recycling of materials.
- Strengthens environmental monitoring through open data and international collaboration.



Social

- Drives local value creation with the full project value retained within Europe.
- Supports skills and safer offshore working conditions through better maintenance strategies, robust risk assessment, and training.

