

Partner Search: HORIZON-CL5-2026-09-D3-03 – Advanced Smart Modular Wind Energy Systems for Future Wind Power Solutions

Summary

Profile type

Research & Development Request Latvia

Company's country

POD reference

RDRLV20260716012

Profile status

PUBLISHED

Type of partnership

**Research and development
cooperation agreement**

Targeted countries

• All countries

Contact Person

[Enrico FRANZIN](#)

Term of validity

24 Jul 2026**24 Jul 2027**

Last update

24 Jul 2026

General Information

Short summary

Latvian SME developing innovative smart modular wind generators and smart wind turbines to replace conventional wind energy systems. We are seeking partners and consortium members for the HORIZON-CL5-2026-09-D3-03 call. The technology concept and development plan are defined, with patent application in progress. We offer collaboration as a technology provider, project partner, and initiator for pilot and demonstration activities.

Full description

Latvian SME is preparing a proposal under HORIZON-CL5-2026-09-D3-03: Innovative technologies and solutions to improve wind energy systems supporting the Strategic Energy Technology (SET) Plan on Wind.

The project aims to address current challenges in onshore and offshore wind energy generation by developing and implementing a new modular, scalable technology for continuous and stable electricity production using high-energy wind flows. The technology is designed to complement and gradually replace conventional wind farms.

The project will contribute to the SET-Plan objectives by:

- Advancing research and innovation priorities in the wind energy sector;
- Strengthening cooperation between stakeholders and avoiding fragmented innovation efforts;
- Improving wind energy efficiency, flexibility, reliability, safety, and lifecycle performance while reducing costs;
- Increasing the contribution of wind energy to the European energy system with reduced environmental impact.

Key objectives:

- Reduce LCOE compared with conventional onshore and floating wind turbines;
- Develop next-generation wind technologies to increase European wind energy capacity;
- Support sustainable supply chains and reduce dependence on critical raw materials.

Challenges addressed:

1. Atmospheric and operational challenges: Low-altitude wind limitations, turbulence, space constraints, high mechanical loads, and accelerated equipment fatigue reduce efficiency and increase maintenance needs.
2. Scale and lifecycle challenges: Conventional turbines are reaching practical design limits. Large structures require significant amounts of concrete, steel, composites, and rare-earth materials, creating environmental, recycling, transportation, and maintenance challenges.
3. Grid integration challenges: The best wind resources are often located far from demand centres, requiring costly transmission infrastructure and causing energy losses. Remote locations also increase access and maintenance difficulties.
4. Operation and maintenance risks: Harsh conditions, high-altitude operation, complex repairs, and downtime create significant economic and safety challenges.

The proposed technology addresses these issues by introducing a new generation of modular wind energy systems. A new type of modular wind generator has already been developed and patented, while a new modular wind turbine concept is under development with a patent application submitted.

Advantages and innovations

Project has distinctive features:

- Development of new equipment and technologies in line with the requirements of the SET Plan for the development of the wind energy sector in the EU through 2050
 - Patent protection for the technology being developed
 - Modular, easily scalable, compatible architecture that ensures widespread implementation across different locations and countries
 - Alignment with current and future EU initiatives in the areas of wind power generation, circular economy, climate neutrality, and competitiveness
 - Access to demonstration environments, research activities, and EU innovation networks in the wind energy sector
- Results of this project: In accordance with the ETIP Wind Strategic Research & Innovation Agenda 2025–2027, the Latvian project will address several challenges identified in Section 4 of the ETIP Wind R&I Agenda for 2025–2027
- 4.1-Will reduce the time, materials, and costs involved in manufacturing both onshore and offshore turbines
 - Will significantly address the need to design and manufacture massive components for standard wind turbines

- Will solve the problem of costly and dangerous construction and maintenance of large offshore wind turbines
- 4.2-New AI-based tools for monitoring,analysing,forecasting operational performance,and wind conditions
- Automated manufacturing capabilities and automated inspection methods for repairs
- Use of advanced sensors to monitor all processes
- Solves the problems related to the dangers and difficulties involved in replacing very large parts
- 4.3-Modular system enhances the flexibility and stability of power systems
- Expanded power grid capacity for wind turbine facilities
- Standardisation of data structures and communication systems
- Solutions for effective management of generation constraints
- Wind Power-to-X hybrid project
- Solutions for DC applications
- 4.4Up to 90% reduction of steel,concrete,and fiberglass use in manufacturing;use of recycled materials only.
- 4.5Creation of new jobs for highly skilled employees

Technical specification or expertise sought

Industrial Demonstration Site and Pilot Project Partners

- Grid Integration & Power Topologies
- Aerodynamic & Hydrodynamic Simulation
- Flight Dynamics & Tether Mechanics
- Physics of Materials and Shells
- Digital Twin & Simulation Modeling
- Component & Rig Testing

Experts in Power Systems and Grid Integration:

- Grid Modeling & Stability Studies
- Renewable & Distributed Energy Integration (DER)
- Power Electronics & High-Voltage Technologies
- Market Design & Flexibility
- Sector Coupling

Supply Chain and Materials Specialists

- Procurement and Supplier Management
- Materials and Inventory Management
- Technical Proficiency and Digital Tools

Experts in Environmental Impact Assessment and Sustainable Development

- Technical & Environmental Disciplines
- EIA Process & Methods
- Policy, Legal & Regulatory Compliance
- Sustainability & Strategic Integration
- Sustainability & Strategic Integration
- Regulatory & Reporting Fluency
- Financial Integration
- Operational & Technological Execution
- Leadership & Change Management

Stage of development

Concept stage

Sustainable Development goals

- **Goal 8: Decent Work and Economic Growth**
- **Goal 7: Affordable and Clean Energy**
- **Goal 13: Climate Action**
- **Goal 9: Industry, Innovation and Infrastructure**

- **Goal 11: Sustainable Cities and Communities**
- **Goal 15: Life on Land**
- **Goal 17: Partnerships to achieve the Goal**

IPR Status

IPR granted

IPR Notes

Confirmation of the grant of a patent for a new type of Smart Modular Wind Turbine Generator, European patent

The second patent for a new technology, for which I am currently applying for a grant, has so far only passed the preliminary examination. I would prefer not to disclose its trade secret without being able to protect my interests. However, I can assure you that the technology is unique and is eligible for a patent.

Partner Sought

Expected role of the partner

Currently, the Latvian partner is the project initiator, founder, and technology developer, as well as the intellectual property owner of several key technologies used in the project. A key European partner has also been identified, possessing unique patented technology and launching production of key components for a new type of wind turbine.

The consortium is seeking:

1. Project Coordinator

Partner with experience in large-scale Horizon projects, as well as environmental and/or wind energy projects.

Expected expertise:

- Horizon Europe grant management.
- Knowledge of environmental standards.
- Wind energy technical infrastructure.
- Consortium administration.
- Impact mitigation.

2. Research and Technology Development Partners

Academic institutions, research centres, or technology companies specialising in wind energy systems.

Expected expertise:

- Wind flow data science.
- Artificial intelligence for atmospheric remote sensing applications.
- Wind mass observation systems.
- Wind energy data interoperability standards and integration.

Expected role:

- Leading or co-leading scientific verification activities.
- Supporting Technology Readiness Level (TRL) improvement and performance assessment.
- Defining testing methodologies and validation protocols.
- Contributing to information dissemination and scientific publications.

3. Industrial Demonstration Site and Pilot Project Partners

Partner type: Large companies or industrial end users of wind energy technologies.

Expected role:

- Supporting demonstration and pilot projects.
- Validating practical application cases.
- Verifying the industrial applicability of project results.
- Supporting operational planning and market entry.
- Acting as potential early adopters of the developed solutions.

4. Experts in Power Systems and Grid Integration

Expected role:

- Planning: Designing systems for energy transmission over local and long distances, including solutions for the "Duck Curve" challenge.
- Integration: Connecting to the grid and increasing decentralisation for a more stable and secure energy system.
- Balance: Forecasting and monitoring energy production.
- Management: Implementing digital technologies to ensure safe grid operation.

5. Supply Chain and Materials Specialists

Expected role:

- Proposing reliable European supply chains.
- Planning project procurement at all stages.
- Supporting operational planning and market entry.
- Acting as potential materials suppliers.

6. Experts in Environmental Impact Assessment and Sustainable Development

Expected role:

- Conducting Environmental Impact Assessments (EIA).
- Forecasting short-term and long-term impacts.
- Comparing results with current wind energy sector practices.
- Supporting mitigation of anticipated and actual impacts during the project, if required.

7. Partners in Digitalisation, Artificial Intelligence, and Data Management

Expected role:

- AI implementation: Integrating intelligent models (such as neural networks) into operational processes.
- Data management: Supporting data collection, cleaning, and database organisation.
- Automation: Replacing routine tasks with software solutions and monitoring daily plant operations.
- Forecasting: Using AI to analyse electricity generation and predict future performance.
- Cybersecurity: Protecting corporate information from data leaks and cyber threats.

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **SME 11-49**
- **R&D Institution**
- **SME <=10**
- **SME 50 - 249**
- **University**
- **Big company**

Call Details

Framework program

Horizon Europe

Call title and identifier

Innovative technologies and solutions to improve wind energy systems supporting the Strategic Energy Technology (SET) Plan on wind HORIZON-CL5-2026-09-D3-03

Submission and evaluation scheme

Electronic submission, one-step verification

Anticipated project budget

93 mil.

Coordinator required

No

Deadline for EoI

30 Aug 2026

Deadline of the call

15 Sep 2026

Project duration in weeks

3120

Web link to the call

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/HORIZON-CL5-2026-09-D3-03?order=DESC&pageNumber=1&pageSize=50&sortBy=relevance&keywords=HORIZON-CL5-2026-09-D3-03&isExactMatch=true&status=31094501,31094502,3>

Project title and acronym

Smart Hydrogen Buoyant Airborne Turbines

Dissemination

Technology keywords

- **04005008 - Wind energy**
- **01003003 - Artificial Intelligence (AI)**

Targeted countries

- **All countries**

Market keywords

- **06009 - Energy Distribution**
- **06010002 - Energy for the community/public sector**
- **06010001 - Energy for private/domestic housing**
- **06011 - Energy for Transport**
- **09008001 - Electric companies**

Sector groups involved

- **Renewable Energy**

Media

PDF documents

[Extra info about project_0.pdf](#)

0