Dutch company specialized in wave energy converter (WEC) for offshore renewable energy solutions is looking for partners active in the maritime sector.

Summary

Profile type	Company's country	POD reference
Technology offer	**Netherlands**	**TONL20250310023**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Commercial agreement with technical assistance** **Research and development cooperation agreement**	**• World**
Contact Person	**Term of validity**	**Last update**
Enrico FRANZIN	**10 Mar 2025** **10 Mar 2026**	**10 Mar 2025**

General Information

Short summary

A Dutch SME has developed an innovative Wave Energy Converter (WEC) that efficiently harnesses the horizontal motion of waves to generate electricity. The company seeks commercial agreements with technical assistance or partnerships for joint venture and pilot projects in the maritime and offshore renewable energy.

Full description

Wave energy is a renewable and sustainable power source that comes from the natural movement of ocean waves. It captures the energy from the rhythmic motion of water to generate electricity. This energy is created by the swell and wind transferring their energy to the ocean's surface.

One major benefit of wave energy is its reliability. Unlike solar or wind power, the ocean's waves are consistent and predictable throughout the year, providing a steady source of power. Additionally, wave energy systems have a much lower environmental impact compared to fossil fuels. They don’t require fuel and produce no greenhouse gases, making them a cleaner energy option.

A Dutch company specializes in the development of innovative wave energy technology that complements existing offshore renewable energy sources, such as wind farms. Unlike conventional Wave Energy Converters (WECs) that

rely on vertical movement, this novel approach significantly increases efficiency, reduces costs, and enhances survivability in extreme weather conditions.

This company's Wave Energy Converter (WEC) works different then other wave technologies. Unlike conventional WECs, this system captures the kinetic energy of ocean waves by focusing specifically on the horizontal movement of waves, optimizing efficiency and energy output.

The technology features several key components working together:

- Frame: Supports the entire system structure.
- Energy Capture Screen: Attached to the frame, it absorbs energy from the horizontal movement of waves.
- Floaters: Keep the system afloat while ensuring stability.
- Anchoring System: Connected to the main shaft via a belt, this acts as a spring for easy movement and stabilization.
- Belt System: Designed for maximum efficiency, one pair of belts unrolls while the other rolls up when waves push the device, creating torque. This torque is then converted into electrical power via an attached generator.

Control System

The Kaizen WEC's control system optimizes performance by anticipating incoming waves and adjusting speed and positioning accordingly. This enhances energy capture efficiency. Various sensors provide real-time data for precise control:

- Load Cells: Measure pulling forces on the belts.
- Rotation Sensor: Monitors the generator shaft's speed.
- IMU (Inertial Measurement Unit): Tracks the system’s movements.
- Collaboration Opportunities

The company is looking for partners to further develop, test, and deploy its technology in real-world offshore environments. Potential collaboration models include joint development projects, commercial agreements with technical assistance, and pilot installations with industry stakeholders.

By integrating this WEC technology into offshore energy infrastructure, a more resilient and sustainable energy ecosystem for the future can be created.

Advantages and innovations

Efficiency: Utilizes a unique horizontal motion conversion system for superior energy capture.

Cost-effective solution: Reduced infrastructure, maintenance, and operational costs compared to conventional WECs.

High survivability: Designed to flexibly adapt to harsh maritime environments, enhancing reliability.

Scalability: Suitable for integration with existing offshore renewable energy infrastructure, including offshore wind farms.

Sustainability: Provides a 100% renewable energy solution, contributing to global decarbonization efforts.

Technical specification or expertise sought

Stage of development

Lab tested

IPR Status

IPR applied but not yet granted

IPR Notes

Sustainable Development goals

- **Goal 7: Affordable and Clean Energy**

Partner Sought

Expected role of the partner

The company is interested in collaborating with:

- Offshore energy companies and wind farm operators looking to diversify energy sources.
- Maritime industry stakeholders exploring sustainable power solutions.
- Research institutions and technology developers working on renewable energy innovations.
- Governmental bodies and organizations promoting clean energy initiatives.

Type of partnership

Type and size of the partner

Commercial agreement with technical assistance

Research and development cooperation agreement

- **SME 50 - 249**
- **SME <=10**
- **Big company**
- **Other**
- **R&D Institution**

Dissemination

Technology keywords

- **04002012 - Other energy related machinery**

Market keywords

- **06003004 - Marine energy**

Targeted countries

- **World**

Sector groups involved

- **Renewable Energy**