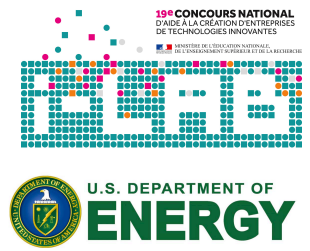


PYTHEAS Technology is a French high-tech SME created in 2015 and based in La Ciotat. The company is composed of 18 people and is specialized in the design, test and manufacture of innovative piezoelectric devices. PYTHEAS Technology particularly works on 3 main markets:

- Acoustic and ultrasonic devices: SONAR, ultrasound probes, non-destructive monitoring
- Damping and energy harvesting from vibrations, embedded structural health monitoring
- Piezoelectric power devices: valves and hydraulic compressor, power generator.

Since its creation, PYTHEAS Technology is working on this last element to develop a unique technology to convert slow and variable movements into electricity. This technology is particularly suitable for renewable energies of mechanical origin (winds, marine or fluvial currents, waves) and aims to replace technologies using rare-earth-based permanent magnets.

This ground-breaking innovation received numerous awards and recognitions, including the 1st Prize for French industrial innovation in 2017 and a H2020 Innosup-01 funding in 2018. Moreover, PYTHEAS Technology's piezoelectric generator was selected by the US Department of Energy (DOE) for its Waves to Water program in 2019.



After successfully demonstrating its technology's feasibility, PYTHEAS Technology sold its first generators to industrial partners for wave energy converters and low-head hydroelectricity in 2019.



PYTHEAS TECHNOLOGY

INSTALLS ITS GENERATOR ON THE WAVEGEM PLATFORM TO COLLECT WAVE ENERGY

Geps | **CENTRALE NANTES**



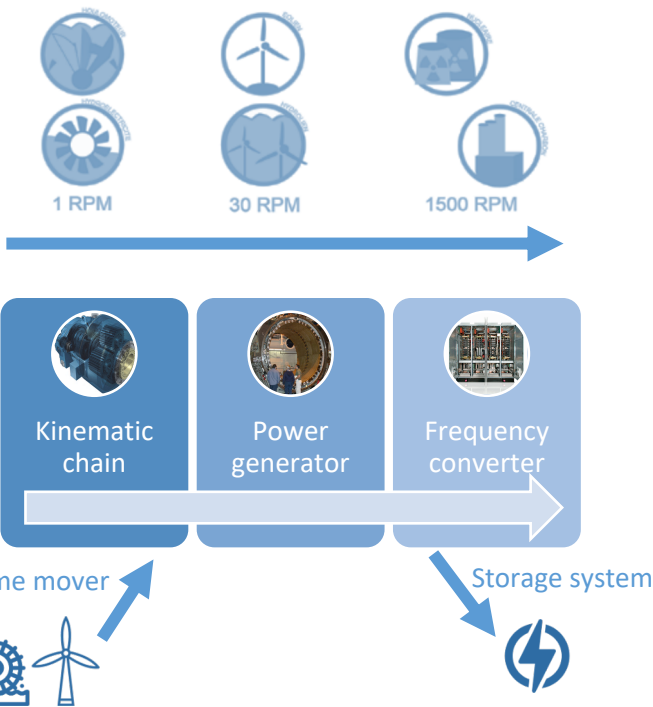
In the same dynamic and as part of the NEREUS project, a contract has been signed with Resolute Marine and the US Department of Energy to equip autonomous drones' charging stations using wave energy.



In August 2020, the generator has been set up on WaveGem, the first system to produce energy from waves on the French coast.

To finance its generator's development and implementation, PYTHEAS Technology is financially supported by its investors since 2017 and several actors of the innovation funding.





Piezoelectric generator designed for slow and variable movements for renewable energies

What is a generator ?

A generator is a system which converts mechanical movement into electricity.

What is the problem ?

Renewable energies generate slow and irregular movements. However, power generators currently on the market work with a fast and regular speed of rotation. Productivity decreases when the speed slows down. These generators are not suitable for renewables energies.

What is our objective ?

Our goal is to increase the renewable energies' efficiency and to reduce the electricity production cost using piezoceramics to stop the use of rare-earth.

What is PYTHEAS Technology's innovation ?

PYTHEAS Technology develops and designs a piezoelectric generator with unique properties which allow reaching several objectives with a common goal to increase the profitability of renewable energies without using rare-earth.

4 attributes	3 objectives
Productivity independent from speed Fully adjustable torque Continuous current production Modular and redundant	Electricity production maximization Maintenance costs' reduction Lifespan's extension

Who are the clients ?

PYTHEAS Technology's generator allows the maximization of electricity production from wind, waves, ocean and fluvial currents. It is aimed at electricity producers for repowering and turbine owners to equip their power plants.

What is next ?

The next step in PYTHEAS Technology's development is to scale up and to address the high-power market, especially the onshore and offshore wind farms.

That is why we are looking for technological partners and pioneer users to work together towards the massive development of renewable energies.

CONTACT

contact@pytheas-technology.com

+33 1.30.08.95.95 / +33 6.20.27.51.26

