PYTHEAS TECHNOLOGY

Power Take Off for renewable energy sources

The founding team

GILLES GROSSO
President
Mechanics Expert

- Former researcher at DGA
- Founder and Director of ERAMER for 18 years
- >30 years' experience in marine mechanics
- >12 patents

FREDERIC MOSCA
Managing Director

- Ecole Centrale engineer, Télécom ParisTech Doctor
- Former researcher at Stanford University
- Former head of R&D at iXBlue SSBU, 8 patents
- HEC Paris Challenge +

LAURENT KOPP
Scientific Advisor

- Télécom alumnus (71)
- Former researcher at Schlumberger, Thomson, Thales
- Sciences & Défenses Prize 1987, >10 brevets
- Founder and Scientific Director of 5 start-ups

VINCENT ALCANIZ
Co-founder, Administration and Finance

- Lawyer at the Marseille bar
- Corporate law/Renewable Marine Energy law
- Legal and regulatory advisor to RME start-ups
- HEC Paris Challenge +

Since it was founded, the PYTHEAS Technology team has been growing steadily and now employs ten or so staff members from technical and commercial backgrounds.

Power Take Off for Renewable Energy Sources

Rotation speed of the main electricity production methods.

Renewable energy sources of mechanical origin (wind, current, wave) mainly generate slow movements (<30RPM) and variable speeds.

To meet this technological need, **PYTHEAS Technology** designs and develops an innovative **PTO** using the piezoelectric effect and dedicated to the renewable energy industry

Improving renewable energy profitability

PYTHEAS Technology possesses unique expertise in the implementation of high power density piezo materials for electricity production.

Robust design

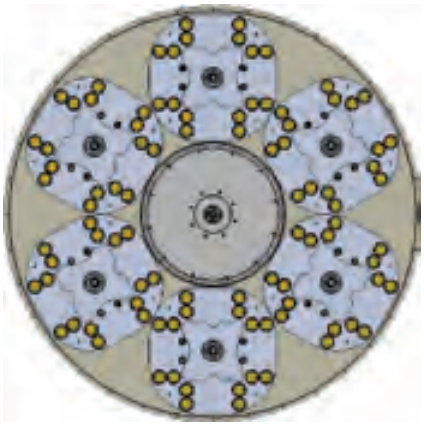
Single-level, semi-rapid gear box.

Internal redundancy.

Reduced breakdown risk.

Torque splitting.

Improved robustness.



High yield

PTO yield is independent of speed (including very low speeds) and load.

A breakthrough **PTO** designed for renewables using the piezoelectric effect.

Constant and controllable reactive torque

Reactive torque (or electrical torque) is constant.

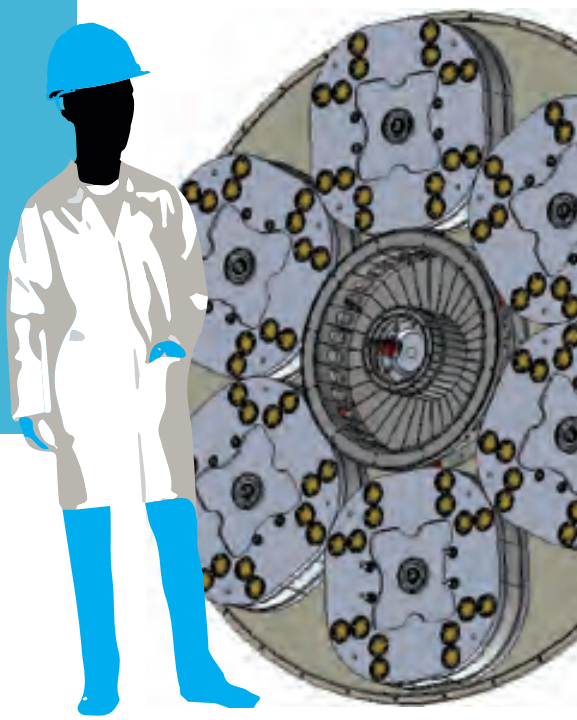
It does not depend on speed.

Direct current

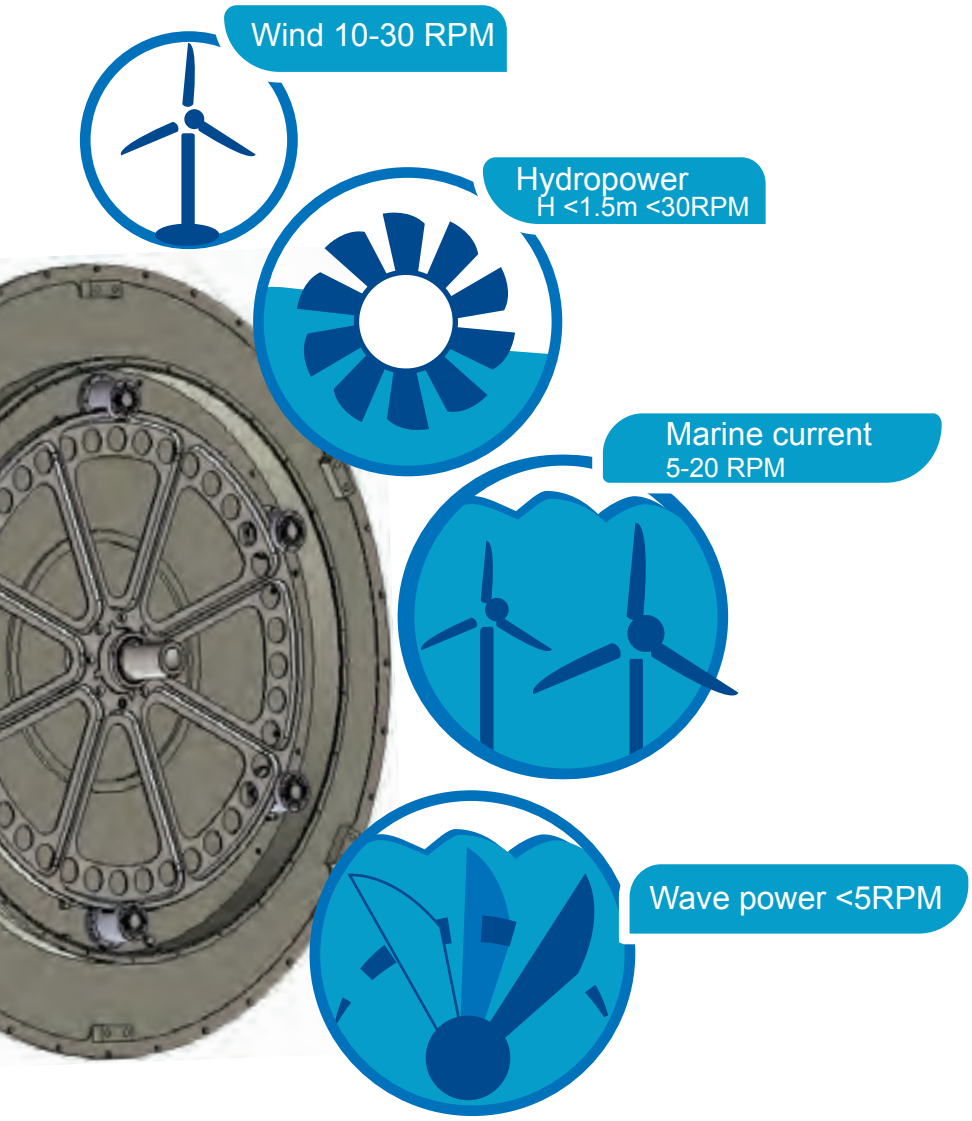
The **PYTHEAS Technology's PTO** is a synchronous generator **producing DC**.

It requires only **one power conversion stage** for the production of grid code complient electric power.

A **modular solution** with a range of options.



1 Market 4 industries

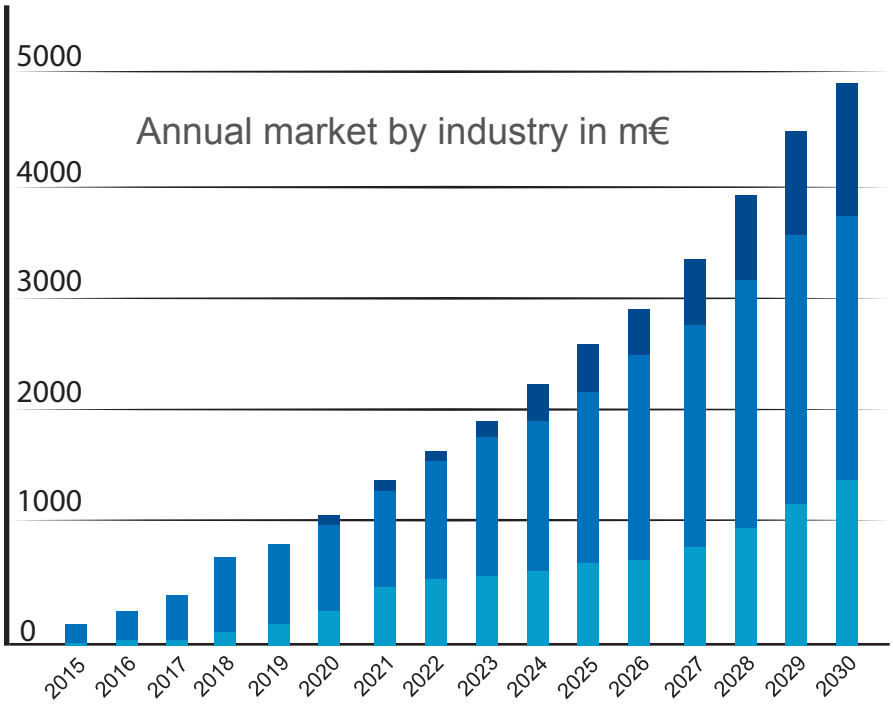


The solution offered by **PYTHEAS Technology** is positioned on the low-speed, medium-power power take off market for “medium current” Marine or River Hydrokinetic (<2m/s), very low head hydropower (VLH: <1.5m) and wave energy.

The wind power sector is part of a long-term strategy.

Initially, the power take off range offers a power range between **30kW** and **300kW** for a rotation speed below 30RPM.

The **PYTHEAS Technology** Power Take Off reduces the cost of electricity production for the targeted industries.



The annual target market is worth more than €1 billion in

2020

Our projects

PyWEC

15 KW power take off installed in the sea on the 1st French wave energy converter.

22nd FUI (French Single Interministerial Fund).

Budget: € 2.78M

PyGEN

1KW basic module

Budget: € 450K

PyRIVER

Power take off demonstrator for very low head hydropower.

Partners

ARTS ET MÉTIERS ParisTech

cea

DCNS

Geps Techno

ECN Centrale Nantes

ENSTA Bretagne

SCP

SEMREV

PYTHEAS TECHNOLOGY

Our supporters

Awards

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