



Future Frontiers Fund; Novel vertical axis wind turbine (J-shaped based VAWT)



THE SOLUTION

Small-scale wind turbines present an opportunity to reduce energy demand and carbon emissions by complementing the domestic take-up of small-scale solar panels. A solution that is particularly practical in the UK, given the weather patterns.

Dr Patrick Verdin, Senior Lecturer in Energy Fluid Dynamics at Cranfield University has developed a new type of Vertical Axis Wind Turbine (VAWT), addressing previous barriers to mass take-up;

- Improved self-starting capabilities compared to traditional VAWTs
- Improved efficiency under low wind conditions
- Lower cost compared to the current average for small-scale residential turbines

Funding from Green Future Investments has allowed Dr Patrick Verdin to build a 3D printed prototype of the VAWT and for the first time, compare numerical results with experimental data. The fund has also helped to secure internal funding to hire a research assistant, with the aim of bringing this technology to commercialisation in the near future.

ABOUT THE FUND

The Future Frontiers Fund supports the generation of fresh and highly novel ideas, technologies, products and services that address challenges related to tackling climate change, protecting our environment, and delivering a Net Zero future. We are looking to support truly innovative leaps through small grants of approximately £10,000 to test 'might work' concepts.

The fund is open to UK-based SMEs, start-ups,, sole traders, individual entrepreneurs, academics and students with early-stage ideas (TRL 1-3)

AT A GLANCE

The Solution

- Small-scale wind turbines for domestic use
- Low cost and straight-forward maintenance

The Fund

- Net zero technologies or services
- Small grants of approximately £10,000
- Early stage ideas (TRL 1 - 3)



"The fund allowed us to build a 3D-printed prototype and test it in one of the university wind tunnels. As a costly experiment, this would not have been possible without financial support.

The FFF has also helped us to secure additional internal funding to improve further the technology and bring it closer to commercialisation"

Patrick Verdin

Senior Lecturer in Energy Fluid Dynamics at Cranfield University