

## RESEARCH AND DEVELOPMENT FUND PROJECT SPOTLIGHT

# HARNESS ENERGY

## AN ENERGY-EFFICIENT AND RECHARGEABLE SOLAR PEDESTAL FAN

**This project will develop a robust solar fan. It will be powered by a Brushless DC (BLDC) motor, which will run on a standalone basis or within a solar home system.**

Pakistan is one of the hottest countries in the world where demand for ventilation and cooling represents about half of all electricity usage annually. Over 25% of households live in off-grid settings and scorching heat for eight months of the year. Fans that run for 18-20 hours per day are needed to avoid dehydration and help children sleep in peace. Fans dominate Pakistan's solar market, but there is no focus on efficiency.

This project aims to address this challenge by developing an indigenous rechargeable solar fan powered by a BLDC motor. Robust materials will be used to ensure it can withstand rough outdoor usage in rural areas without compromising on quality and service. The project will first focus on introducing a BLDC motor, which will drastically improve the fan lifespan compared to existing alternatives.

This fan will be able to run on a 12V solar system, any battery, or on any AC/DC adapter. The battery will have a rechargeability feature and will be integrated inside the fan. This will enable it to produce five–six hours in back-up time at night. This technology can help dramatically improve quality of life for over 100 million Pakistanis who live in very hot, off- and weak-grid areas.



### AT A GLANCE

**R&D Partner**  
Harness Energy

**Efficiency for Access  
Funding**  
£ 71,200

**R&D Funding Unlocked  
from Harness Energy**  
£ 7,303

**Project Location**  
Pakistan

