

Innovate UK

Results of Competition: Energy Catalyst - Late Stage - Round 4
Competition Code: 1604_CRD2_ENRG_ENCATLS4

Total available funding is up to £10m from Innovate UK (projects >12 months only) with co-funding from DFID and EPSRC.

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Dynamic Boosting Systems Ltd Projective Ltd	Commercialisation of Energy Recovery from Low Flow Rate Steam Solution	£626,076	£281,734
Project description - provided by applicants			
This project aims to commercialise a novel, patented, Mechanical Vapour Recompression system that recovers latent heat from low grade steam within industry. This steam is normally vented, wasting the energy contained as there are currently no commercially competitive MVR solutions in the operating range that this consortium is targeting. For this reason, there is a great opportunity to penetrate a large part of an as yet untapped market.			

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Free Running Buildings Ltd University Of Sheffield - AMRC	Final Development of a Zero Energy Dehumidification and Cooling System	£276,665	£169,559
Project description - provided by applicants			
Most modern building cooling systems consume high levels of electrical power, driving energy consumption rates in buildings. The energy burden from AC will rise with growing populations, emerging middle classes, & global warming. Free Running Buildings (FRB) Ltd & the Advanced Manufacturing Research Centre (AMRC) at the University of Sheffield will undertake collaborative development activities to finalise design for manufacture of FREECOOL, a zero-energy passive ventilation with active cooling system, FREECOOL can lower incoming air temperature by 15°C and remove humidity with no requirement for power. The collaborative team will finalise the design for manufacture of flat packed modules, for easy shipping and modular construction. Field trials carried out during this project will demonstrate the ability of FREECOOL to reduce energy consumption in building.			

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BuffaloGrid Ltd Integra Micro Systems (P) Ltd Spark Product Creation Ltd	Buffalito Platform	£596,959	£266,366
Project description - provided by applicants			
1.2bn people in developing regions lack electricity access, essential for development, education and quality of life. Kerosene lamps are used for lighting but are harmful and emit 240m T of CO2-eq annually. BuffaloGrid (BG) has developed solar powered BG Hubs for affordable and safe off-grid phone charging. This project's objective is to bring together a unique consortium to develop the Buffalito platform, incl mass-producible battery unit, LED light and Cooling Unit, with focus on long-term sustainability of solar-power to households, to address the energy trilemma.			

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CCm Research Ltd Viridor Waste Management Ltd	Demonstration of biogenic fertiliser production enhanced by captured carbon utilisation	£1,632,162	£609,041
Project description - provided by applicants			
CCm Research Ltd are developing a transformative technology that successfully addresses key challenges faced by the UK and global energy sector. The chemical process cost-effectively utilises carbon dioxide (CO ₂) arising from greenhouse gases (GHG) in the production of stable value-added materials with multiple uses in agriculture. In addition to direct CO ₂ capture, the patented process displaces energy imports and traditional fertiliser manufacture, presenting significant environmental and economic benefits across power generating and energy-intensive industries. These benefits are achieved by the utilisation of biogenically derived or waste recovered feedstocks to replace existing mineral or energy intensive inputs. The aim of this project is to build a field-scale prototype unit with enhanced heat recovery for operation at an energy generation site.			

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Cybula Limited	Asset Management Platform	£237,354	£106,809
Doosan Babcock Ltd		£102,734	£25,684
Project description - provided by applicants			
Using its' patented pattern matching technologies, Cybula has been developing novel analytics which can be used to detect and diagnose abnormal or changing performance across fleets of complex assets. There is a growing level of interest in data-driven analytics as organisations want to gain greater understanding of the condition of their assets. This is particularly true in the energy sector where sustainable base load power provision has become increasingly critical to maintaining an adequate supply balance yet plant is being operated beyond their intended life span. At the same time, the economic viability of renewable generation relies on improved reliability of the assets and reduced maintenance costs and there are much larger numbers of assets in a fleet. We have early stage versions of an enterprise level software platform to support the use of the various analytical toolkits but for this 15month project, we aim to produce a pre-commercial version of this platform and configure the tools for a commercial use case so they can be evaluated by Doosan Babcock. The intended use case will cover monitoring of fatigue in high pressure components in a UK BioMass station.			

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ITM Power Trading Ltd	Powering Isolated Territories with Hydrogen Energy Systems	£1,752,397	£571,494
Shapinsay Development Trust		£318,286	£74,628
Community Energy Scotland		£612,875	£109,604
The European Marine Energy Centre Limited		£587,541	£137,041
Community Energy Malawi		£60,226	£60,226
The Overseas Development Institute		£43,169	£43,169

Project description - provided by applicants

PITCHES will demonstrate the feasibility of a hydrogen economy in a remote community. PITCHES will deploy and demonstrate an integrated hydrogen solution, including renewably-powered generation, delivery and use of hydrogen, in the Orkney Islands. The project will put in place systems to transport hydrogen from 2 generation locations to a number of end uses, providing electricity to the Kirkwall harbour district, heating local buildings and fuelling a fleet of fuel cell electric vehicles. The PITCHES project will explore the replicability of such systems to isolated, off-grid communities, including in Sub Saharan Africa, by testing configurations of the system, and identifying business models which best suit off-grid communities in developing countries. PITCHES will demonstrate that existing hydrogen technologies can be used to develop a new energy system to meet transport, electricity and heating needs of remote communities, showing that hydrogen based energy systems have the potential to reduce reliance on imported fuels, reduce carbon emissions, and in future as the technology develops, to reduce energy costs.

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