

INNOVATION ZONE

**WORKING TOGETHER TO PROMOTE
INNOVATION AND ACCELERATE THE
TRANSITION TOWARDS A SMARTER,
MORE FLEXIBLE ENERGY SYSTEM**



**ENERGY
INNOVATION
CENTRE**

CATAPULT
Energy Systems

Innovate UK

INTRODUCTION

BEAMA, Energy Innovation Centre (EIC), Energy Systems Catapult (ESC) and Innovate UK are partnering to host the Innovation Zone at this year's LCNI Conference 2017. This is a dedicated showcase for emerging innovation for utilities, electricity and gas networks. We are hosting 11 UK start-up companies all with solutions for UK utilities and network operators.

This is a unique display of what the UK market can deliver and demonstrates the exceptional ability of the UK market which is seeing significant growth in innovation and new companies entering the market for this sector. A lot of this can be attributed to the degree of innovation funding available today and in the past 5 years, through the Low Carbon Network Fund, Network Innovation Allowance

and Competition. BEAMA, ESC, EIC and Innovate UK are working together to help support these companies and promote UK capabilities for the industry.

Importantly we hope to help facilitate activity that will ensure new technologies are driven into business as usual and gain market volumes. There are also significant export opportunities for all UK businesses involved in innovation projects across the UK and BEAMA, EIC, ESC and Innovate UK are working hard to provide a platform on which UK expertise can be promoted to a range of potential customers and markets.

This document provides further information on the hosting associations and a summary of all the companies who are exhibiting on the 2017 Innovation Zone.

BEAMA is the lead trade association representing over 200 manufacturers of electrical infrastructure products and systems from transmission through distribution to the environmental systems and services in the built environment. Our expertise also stretches beyond electrical products into water safety & hygiene and water treatment.



2017/18 is proving a landmark period for BEAMA members as our projections for a decarbonised, smart and flexible energy system become reality. Our latest market design report focuses on the pressure points for market transformation and offers insight into opportunities going ahead. The Government's publication of its Clean Growth Strategy and the Flexible Energy Systems Plan naturally correlate closely with our views for growing electrification of the UK grid.



www.beama.org.uk

 @BEAMASmartGrid

The UK is facing rapid change.

The transition to electric vehicles (EVs) is accelerating as government policy and funding, combined with quickly changing consumer preferences, sees the automotive industry launch a growing range of EV options. In fact, several major automotive manufacturers have announced that all their vehicles will be electric or hybrid by 2020.

As a result, we must ensure new technologies, like EVs, can integrate seamlessly into our energy system.

The **Energy Systems Catapult** is helping UK innovators to overcome the barriers to transforming our energy system and driving economic growth. This includes vehicle-to-grid interfacing, data exchange, new commercial models for charging and discharging electricity, and the energy infrastructure transition, among others.



CATAPULT
Energy Systems

Between now and 2030, the UK will spend £2 trillion on new cars and to 60% of these could be electric vehicles.

How can we support you? Visit us in the **Innovation Zone** to find out more about unleashing energy innovation.

es.catapult.org.uk



ENERGY INNOVATION CENTRE

The Energy Innovation Centre is established, expert and connected.

Linking industry with innovators, we accelerate the discovery, development and deployment of innovation across the energy landscape, with the aim of securing a demonstrable return for the energy customer.

We scout for bright ideas, bring the right people together, explore the challenges that impact our tomorrow, deliver game-changing projects and foster meaningful collaboration.

www.energyinnovationcentre.com

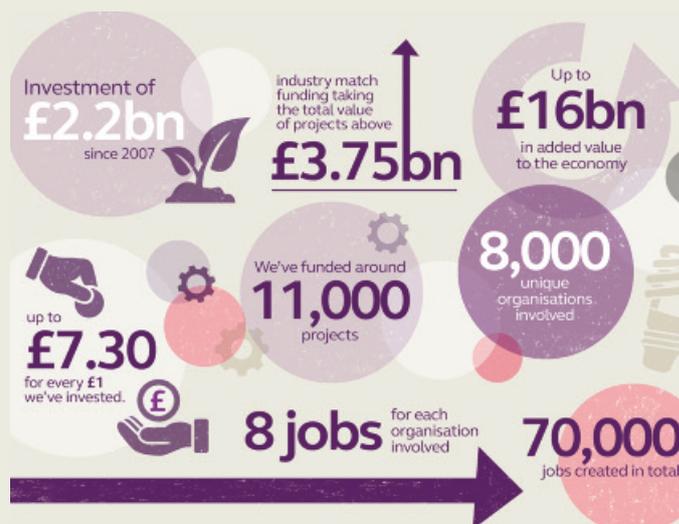
 @EIC_UK

Innovate UK is the UK's innovation agency. We drive productivity and growth by supporting businesses to realise the potential of new technologies, develop ideas and make them a commercial success.

Innovate UK has been successfully helping industry to commercialise world-class UK research for the last 10 years. We help businesses to identify the potential in new technologies and to turn them into the new products, processes and services that will significantly grow the UK economy.

We do that by providing the funding to help businesses to develop the new products, processes and services that will meet or define the markets of the future. We also connect businesses with the right partners, expertise, facilities, financiers and influencers that can help them bring their ideas to market.

Energy is an important area for us and we've found that supporting technologies in the energy sector provides societal benefits as well as clean growth for the UK economy.



Innovate UK

www.InnovateUK.gov.uk

 @Innovateuk

INNOVATION ZONE



Bristol BlueGreen Limited was established in 2013 with the aim of becoming a world leader in voltage management technology. With products in production and development, the Company is attracting interest across Europe, as well as in South America and Australia.



BlueGreen products may be equipped with communications to allow remote monitoring and control of the load voltage.

CNIguard specializes in producing and licensing ruggedized sensing systems to monitor and safeguard critical infrastructure across networks (pipelines, bridges, tunnels, roads, railways, power lines), facilities (buildings, factories, reservoirs, ports, refineries, substations, storage tanks, masts, platforms) and nodes (cabinets, chambers, covers, doors, hatches, ladders, manholes, manifolds, pylons, towers).

Approved for UK Government Use and USA SAFETY Act Designated, CNIguard products are engineered to operate with *maximum reliability and minimum false alarms* in the most hostile environments. With an installed base of thousands of units, enabled by CNIguard's existing and individually tailored solutions, customers realize superior resilience, manpower savings, higher service standards, streamlined operations and improved compliance. CNIguard is ISO 9001:2008 certified and holds GSA Schedule GS-07F-134CA for Total Solutions for Law Enforcement, Security, Facilities Management, Fire, Rescue, Clothing, Marine Craft and Emergency/ Disaster Response.



CNIguard's SENSORCORE® is a proprietary smart sensing platform with multi-purpose security and safety applications to monitor and protect critical infrastructure and key resources. The system has been designed, tested, and approved to deliver the highest level of performance in the most hostile operating environments.

Customers include blue chip utilities and infrastructure operators in the UK and USA.



www.cniguard.com

FAULT CURRENT^{LTD}

FaultCurrent Ltd is a spin-out from research initially undertaken at Cardiff University's Wolfson Institute for Magnetics into novel ways to extend the capacity of the existing power grid by increasing the system 'headroom' for fault currents.

FaultCurrent's innovation will help to defer/avoid costly power network reinforcement investment, avoid long connection lead-times for low-carbon/distributed generation, increase network efficiency and reduce customer interruptions/ minutes lost and enable long-term sustainable and affordable electricity supply through the connection of alternative generation such as CHP.

FaultCurrent's patented innovation employs a 'fit & forget' design philosophy using low-cost and abundant ferrite magnetics at its core. There is no need for auxiliary systems, no specialist cooling or controls. Importantly the product introduces only minimal network losses and exhibits no potentially harmful stray magnetic radiation.

www.faultcurrentltd.com

Free Running Buildings is a spin-out company from the University of Sheffield and University of Leeds, specialising in building technologies for end user energy use reduction.

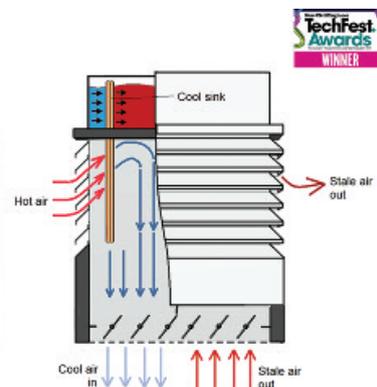


**FREE RUNNING
BUILDINGS**

Free Running Buildings provides a commercialisation pathway for leading energy research from Energy2050 at the University of Sheffield, such as temperature regulating passive ventilation systems, flutter induced wind energy harvesting technology and 3D cloud point data management and manipulation for rapid building energy modelling applications. By developing technology that reduces the demand on buildings, which accounts for up to 40% of total demand, lower demand is placed on network providers, reducing associated carbon emissions.

Free Running Buildings, in collaboration with the University of Sheffield's Advanced Manufacturing Research Centre, are developing a zero energy dehumidification and cooling passive ventilation system, FREECOOL. This system will be deployed in Abu Dhabi, UAE, creating the region's first

passively cooling school campus, reducing the energy demand for mechanical air-conditioning by up to 60%. A further system, FREEHEAT, capable of integrating into the same passive ventilation system is under development to reduce space heating demand by up to 20% in the UK.



MGISS delivers a full range of geospatial solutions and services that help businesses capture, analyse and visualise spatial data with intelligent asset management software and hardware mapping solutions.



We work with energy companies such as Northern Gas and SP Energy Networks as well as engineering service providers like LSTC, independently advising on smart use of data, technology and digital transformation. This allows organisations in the Infrastructure, Environment and Energy sectors manage their assets more efficiently.

During the conference, we will be showcasing the outputs of a 'Magic Maps' project delivered to Northern Gas Networks.

Boost Productivity, Workplace Safety and Asset Reliability with integrated mobile solutions.



We are a niche IT company offering Enterprise Mobility services and products. We help you get anywhere and anytime access to information stored in your enterprise systems like SAP and unlock its value.

Companies have seen productivity increasing by 50%, preventable failures coming down by 90% and other improvements by replacing paper based processes with a mobile solution.

We deploy best consultants who work with you throughout your mobile journey. Our consultants leverage a set of tools and methodologies we have developed working with various clients in UK utilities sector.



Our flagship product "myJobCard" is a mobile Work and Asset Management application which integrates with SAP ERP out of the box. Some differentiators of myJobCard are:

1. Native UI for best performance and higher user adoption.
2. Tailor solution to your needs through a built-in dynamic form engine
3. Supervisor view in the field
4. Smart Glass prototype available.

Pollywood Ltd with the support of EIC, Northern Powergrid and Innovate UK are developing a composite wooden pole to replace creosoted poles.



The Pollywood Pole will bring many advantages to users. The principal material is still wood. The Pollywood Power Pole will require the fewest changes to current working practices. It will be lighter and easy to handle in difficult urban and rural locations. The rapid process will enable us to make to order any specification agreed.



Finnish Birch Forests

The trees are from sustainable forests, where each tree taken is replaced by a minimum of 2 trees. The product uses the wood so efficiently, that each tree currently used, will produce several Pollywood Poles sharply reducing the ship journeys required. The use of low quantities of electricity and no water, make it substantially eco-friendlier than either the existing pole, or potential replacements from any other materials.

Pollywood Ltd are not trading yet, because our total focus is on developing this much needed product. For more information, contact either steve@pollywood-natural.com our MD or Chairman quentin@pollywood-natural.com

www.Pollywood-natural.com



Smart Renewable Heat is a leading installer of renewable heat systems in the UK with unparalleled experience of over 240 collective years and nationwide capability. We design, supply, install, commission and maintain, bespoke energy efficient heating solutions with innovative remote monitoring and financed solutions which we call 'heat as a service'.



Working closely with manufacturers, and specialising in a large range of high quality heat pump equipment means we can provide the most appropriate heating and hot water solution for any given situation.

Smart Renewable Heat are your Renewable Heat experts

0800 865 4328 | hello@smartreheat.com | www.smartrenewableheat.com



Smart Energy Storage – Swanbarton Ltd

Energy Storage Management

Intelligent control of small battery systems for domestic energy security in Sub-Saharan Africa.

Local system control using recycled smartphone hardware

Cloud service defers charging to avoid network load peaks

Trials in Botswana commence February 2018

Peer-to-Peer Trading

Unmediated trading within a Low-Voltage Feeder delivers:

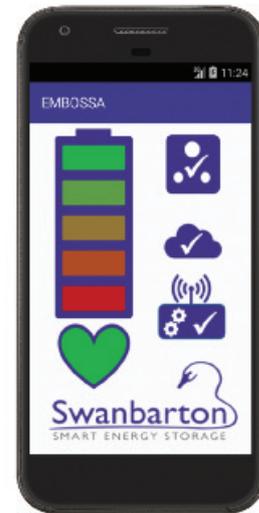
- Local network balancing without central intervention
- Reduced network peak load
- Increased opportunity for distributed renewable generation

Trials on Iona commence August 2018

Demand Management

Balancing services from aggregation of domestic loads

Trials in Wiltshire commence December 2018



www.swanbarton.com

Synaptec enhance protection & performance of modern power networks through passive photonic multiplexing – a new technology which delivers better monitoring, safety and security for lower deployment and outage costs.

Our unique, passive sensor technology provides light-speed awareness of voltage, current, temperature, and vibration through only a single optical fibre, streaming data back from up to 50 locations over 100 km away. Critically this requires no buildings, power, GPS, copper windings, telecoms equipment, or installation requiring de-energising of circuits. This range and scalability can save \$millions in Capex and Opex in

Renewables (offshore fault location automation)

Hybrid Circuits (discrete protection for underground sections)

Transmission and Distribution (where realising WAMS and remote DER monitoring & control requires monitoring for less than half the cost of today's PMUs)

synapt.ec

LinkedIn: Synaptec



At LCNI this year we want to speak anyone who actually reads this and takes the time to come and ask us about what the future of measurement looks like – you will get a Scottish prize!



triOpsis provides mobile enabled works management solutions for utilities and contractors. Clients include ENWL, WPD, SSE, EDF and Morrison Utility Services.



Whether managing a contract or delivering against regulatory targets there are numerous challenges to align work and incentives in a changing business environment. The costs of misaligned systems and processes can be substantial with penalties ranging from reputational damage to fines and increased costs.

triOpsis works management solutions build in your KPIs and goals from the start so benefits are not just improved productivity and efficiency of day to day operations but deliver value at every level of the organisation. Core KPIs include contract reporting against Service Level Agreements, regulatory reporting such as EGS8 for appointments, billing, aborted works etc.

Rapid and efficient project implementation is essential to success and triOpsis has developed an implementation toolkit which allows a typical project to be fully customised and rolled out in 3 months.

triOpsis has numerous solutions which can be quickly and easily tailored to your needs including; cut out work, revenue protection, debt, wayleaves, metering, reinstatements, excavations, traffic management, large power metering etc.



beama.org.uk
info@beama.org.uk
Tel: 0207 793 3000



es.catapult.org.uk
info@es.catapult.org.uk
Tel: 0121 203 3700

ENERGY INNOVATION CENTRE

www.energyinnovationcentre.com
enquiries@energyinnovationcentre.com
Tel: 0151 348 8040

Innovate UK

www.innovateuk.gov.uk
support@innovateuk.gov.uk
Tel: 0300 3214 357

