INNOVATION HUB

WORKING TOGETHER FOR A SMARTER, MORE FLEXIBLE ENERGY SYSTEM

beama

ENERGY INNOVATION CENTRE

CATAPULT Energy Systems

Innovate UK

INTRODUCTION

BEAMA, Energy Innovation Centre (EIC), Energy Systems Catapult (ESC) and Innovate UK have partnered to host the Innovation Hub at this year's LCNI Conference.

This is a unique display of what the UK market can deliver and demonstrates the exceptional ability of innovative companies entering the sector. Growth in UK market capabilities in this area is evident, and 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 Innovation Hub and taking part in this year's Dragons Den Event.

INNOVATION HUB

ELe® Extreme Low Energy

EnergyPro

IES

opus one solutions

QBOTS

SCENE

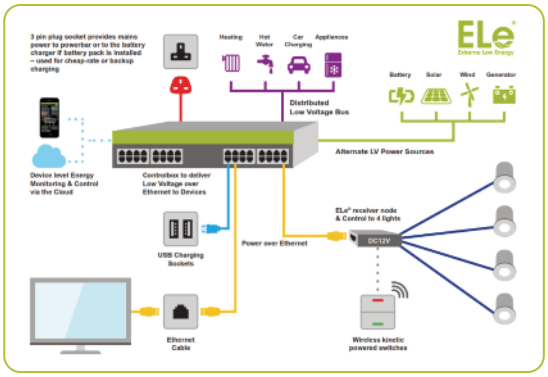
ELe has developed a localised (patent-pending) Smart Microgrid solution for use in buildings to generate, store & distribute electricity locally.

The ELe microgrid grid utilises Low Voltage electrical solutions for Lighting, Heating, Hot Water and powering electronic appliances.

The ELe Microgrid includes:

- Solar PV systems to generate electricity locally
- Ele's Battery system to store energy
- ELe Controlbox to monitor, distribute & control electricity across the Microgrid. The energy data is accessible over the internet via webpages or apps and delivers visibility of energy which drives efficiency improvements through forecasts, planning and behaviour changes.
- A hybrid smart-grid design including a 240V AC supply to power certain appliances and infrastructure, so the buildings typically remain grid connected and will not be completely islanded.

The battery system powers the microgrid and where the power supplied by the PV array is insufficient the battery will be topped up by the main grid making the microgrid the primary power supply and the national grid a secondary provider reducing the buildings impact on the national infrastructure.



The ELe microgrid allows the connection of (physically or virtually) multiple grids to further develop the aggregation of energy generation/ storage and alternate surplus energy schemes such as peer-to-peer /community sharing & trading.

www.extremelowenergy.com/

ENERGYPRO LTD
Real-time metered energy efficiency as a network resource

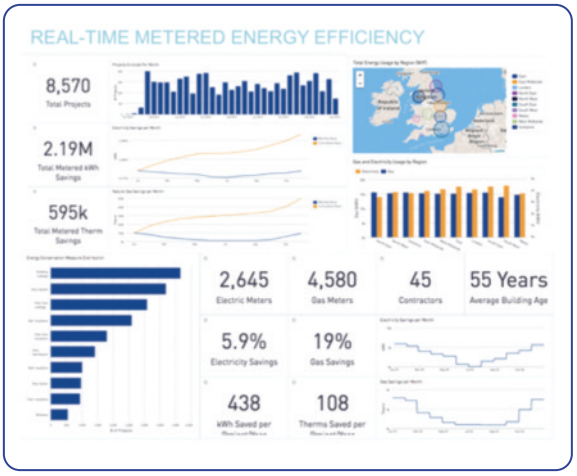
EnergyPro is a UK SME founded by experienced energy professionals dedicated to energy system transformation in the pursuit of low carbon growth and prosperity.

We provide consulting and investment services, and incubate innovative technologies and concepts. We believe the UK's approach to energy efficiency is disconnected from the way we plan and manage our energy system. Decisions about grid reinforcements and integration of renewables and storage are made without data on energy savings being achieved in homes, or the potential for future savings. This acts as a brake on decarbonisation and puts consumers at risk of higher costs and lower standards.

The OpenEEmeter offers a software-as-a-service technology that can be relied upon by network operators to turn efficiency into a smart, measurable resource. It meters energy savings in real time so they can be valued alongside other time and location-specific network resources such as demand response. Efficiency is likely to be a cheaper and simpler alternative in many cases.

This approach is being used in California to deliver pay-for-performance efficiency programmes that support network management and decarbonisation.

We are incubating OpenEEmeter in the UK. We are now testing the technology with BEIS, and seeking industry partners to develop pilot projects



www.energyproltd.com

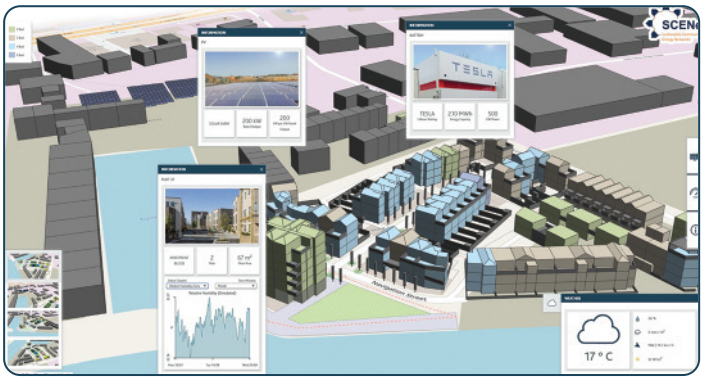
IES: BETTER BUILDINGS, SMARTER CITIES

Headquartered in Glasgow, IES was founded over 20 years ago and is recognised as a leading global innovator of integrated 3D sustainable analysis technology for the measurable creation and management of efficient, healthy and affordable built-environments.

Our technology and consulting services uncover hidden cost, energy and carbon savings that support smarter energy-efficient choices across new building investments, building operation and refurbishment of existing buildings. IES' technology is supported by integrated consulting services and today its capabilities are expanding from use on individual buildings to helping create sustainable cities.

Latest IES technology includes iCD *(intelligent Community Design)* software and iVN (intelligent Virtual Networking) software.

iCAMP allows for the generation of a 3D city-model using a plug-in to Trimble SketchUp. Real data can be integrated from buildings, e.g. BMS, metered or utility data, either manually or automatically, using IES SCAN technology. iVN is a network modelling tool designed to perform "as-is" and future scenario simulations of community's distribution networks. It allows users to model, compare and optimise the design and management of additions to electricity, heating, cooling and waste heat networks. Both tools can transfer data between them to enable full-scale masterplanning analysis with detailed network modelling and scenarios investigation.



www.iesve.com

OPUS ONE SOLUTIONS

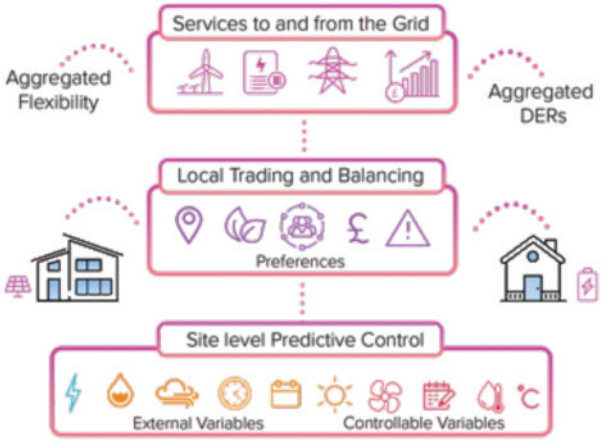
Opus One Solutions is a software engineering and solutions company with the vision of a distributed energy network. Opus One's intelligent energy networking platform, GridOS®, optimizes complex power flows so that it can deliver real-time energy management and integrated planning to distribution utilities and other managers of distributed energy assets.

www.opusonesolutions.com

QBOTS ENERGY

Qbots founded in 2018, provides innovative data analytics and control at the edge enabling the creation of new business models that facilitates the adoption of low carbon technologies and engages customers to become active participants in energy markets.

Qbots provide peak power reduction and energy optimization for buildings, with Artificial Intelligence based model ensuring that the thermal comfort of tenants and any process requirements are maintained, while turning up/down individual systems in the building. By providing the technology to intelligently control the site's energy demand in response to the requirements from the electricity network, Qbots unlocks the value of flexibility in consumer's energy consumption and gets the best returns for their generation, energy storage and EV battery assets. Benefits for energy DSOs include – Detecting and preventing faults, blackouts from happening, Lowering stress on the network and reduce infrastructure reinforcement costs and enable to develop new flexibility services. Qbots are also looking for partners to collaborate on pilot & innovation projects.



www.qbots.ai

SCENE CONNECT LTD

Incorporated in 2011, Scene is an Edinburgh, London and Odisha (India) based business with a mission to expand the small-scale renewable energy sector through project development, ICT development and research.

Scene has helped dozens of community organisations, local authorities and private companies to develop their own projects by providing project management, technical support and stakeholder engagement services, and by innovating on business models for local ownership. Scene has also developed a number of ICT solutions, including a monitoring and evaluation platform for a biogas deployment program in Cameroon and an off-grid solar supply chain tool used in India.

Our international work in energy access and micro-grid control systems also has applications in the UK energy market for local energy systems which have been successfully trialled at the building and community level, including our award-winning system for a care home, integrating grid supply and export, solar pv generation, battery storage, electric vehicles and an energy management system.

www.scene.community

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. BEAMA has taken an industry leadership role in the Each Home Counts and EV Energy TF exercise.

2018/19 is proving a landmark period for BEAMA members as our projections for a decarbonised, smart and flexible energy system become reality. Our '***Electrification by Design***' report series has focused on the pressure points for market transformation and covered smart homes, energy storage, electric transport, electric heating and flexibility. These provide deep insight into opportunities going ahead in support of the Government's Clean Growth Strategy.

www.beama.org.uk **@BEAMASmartGrid**

Putting innovators on a platform

CATAPULT Energy Systems

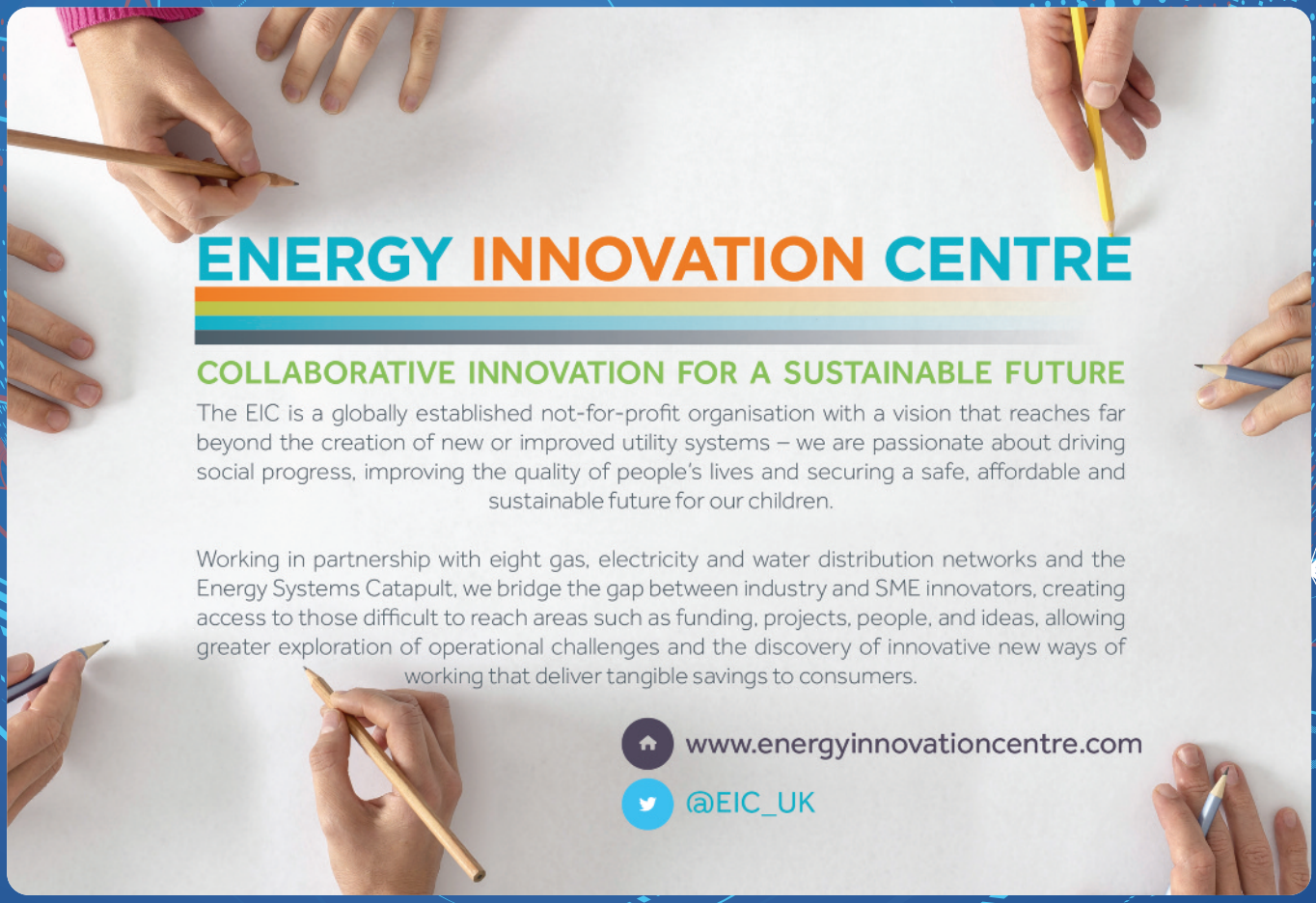
Innovation is crucial to transforming the UK energy system, yet many innovators face systemic barriers preventing products, services and business models getting to market.

Energy Systems Catapult is developing a new Innovator Support Platform (ISP) that will be delivered across three tiers - Universal, Incubation and Acceleration.

Supported by a network of delivery partners, such as pre-existing incubators, the ISP will provide innovators with tailored support to help establish businesses, de-risk innovation and scale and secure investment.

A full programme launch is expected in early 2019.
The Catapult is currently outlining the first challenge calls and workshops to enable SMEs to engage with the platform.

Visit us on the Innovation Hub to find out more.

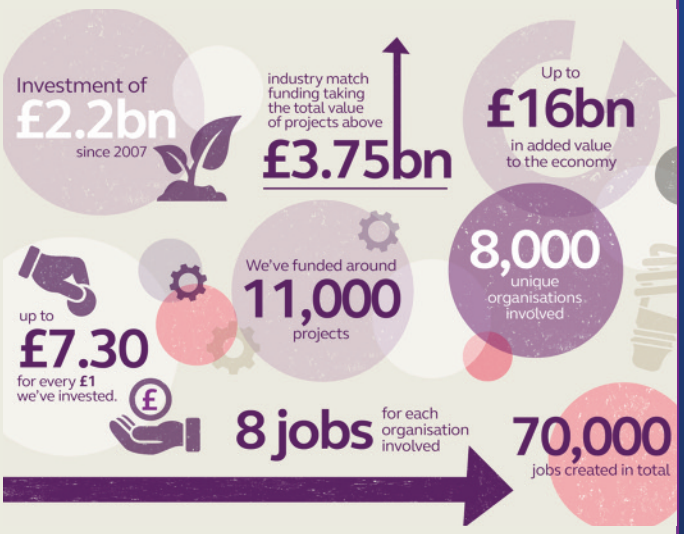


Innovate UK is the UK's innovation agency. We drive productivity and growth by supporting businesses to realise the potential of new technologies, develop ideas and make them a commercial success.

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.



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