

Energy consortium launches UK's largest domestic flexibility study

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- **Mass market study to demonstrate the potential of home energy flexibility in a renewable world**
- **Analysis to involve over 25,000 homes with electric vehicles, heat pumps and home batteries**
- **Joint project by National Grid ESO, SSEN, Octopus Energy and Ohme**

National Grid Electricity System Operator (ESO) and Scottish and Southern Electricity Networks (SSEN) have teamed up with entech pioneers Octopus Energy and Ohme for the UK's largest ever home energy flexibility study.

CrowdFlex, as the study will be called, will start in June and involve over 25,000 households. It will analyse customer energy use patterns to demonstrate how they might change their behaviour and charge electric vehicles, heat pumps and home batteries at different times to access cheaper, greener power.

The analysis will look at how those usage patterns change in response to price signals from Octopus Energy's smart tariffs and direct instructions from Ohme's smart electric vehicle chargers and mobile app.

The findings will show how changes in energy price and demand affect consumers and what impact that has on a flexible smart grid powered increasingly by renewables.

Electric vehicles and heat pumps both represent a huge opportunity for the UK's electricity system. According to National Grid ESO's Future Energy Scenarios, there will be 11 million EVs on British roads by 2030, and there is a government target to install 600,000 pumps a year by 2028.

Effective use of the flexibility of both electric vehicles and heat pumps will be key to the future power grid. It will encourage consumers to use even more renewable energy by shifting electricity demand into off-peak hours.

The consortium will gain unparalleled insight into EV driver behaviour using consumer, energy and transport data from Ohme and Octopus Energy.

National Grid ESO and SSEN will use the results to better understand how customers respond to these opportunities and the potential of domestic flexibility in national and local grid balancing. This will pave the way for households to provide more flexibility to grids.

James Eddison, CTO and co-founder of Octopus Energy Group, comments:

“Our customers are some of the most engaged and climate-conscious in the country. Many of them are already using smart energy technologies to move their energy usage when energy is cheaper and greener and the grid is less stressed.

“By scaling up our previous demand-side-response trials and joining forces with other key players in energy, we will for the first time be able to find out how big the role is that our homes can play in providing grid flexibility. This research project will help us demonstrate how we can use energy storage in our homes and flexible energy demand to exploit renewable energy and bring about the clean, green grid of the future, globally.”

Carolina Tortora, Head of innovation strategy and digital transformation at National Grid ESO, comments:

“Technologies like electric cars and heat pumps have a key role in helping Britain to reach net zero. But there’s a lot for us to learn about how consumer behaviour can shape that journey.

“This project will give us some really exciting insight into how smart tariffs and technologies can influence the way people consume electricity and help us balance the grid. As greater volumes of less controllable renewable power join the system, electricity consumers are only going to become more important in that balancing act.”

David Watson, CEO and Founder of Ohme, comments:

“The journey to electrification is well underway in the UK but there’s a pressing need for more sophisticated collection and analysis of real-world data in order to maximise grid capacity to cope with increasing demand.

“Ohme’s intelligent charging technology can harness consumer data, energy data and transport data to gain unparalleled insight into actual EV driver behaviour, which has the potential to unlock a new universe of mass-market flexibility.

“We believe that by working in partnership across the entire mobility-energy value chain and sharing these valuable insights, we can transform energy use in the UK.

Stewart Reid, Head of Future Networks at SSEN, comments:

“CrowdFlex is an exciting project which will support the unlocking of domestic flexibility. As we move to a smarter energy system utilising flexibility can help delay and avoid network reinforcement, and creates opportunities for households and businesses to play an active role in the energy system that serves them. This will be key in delivering a cost-effective, secure and inclusive transition to net zero.

“We are excited to be working in this cross-industry project to better understand how households react to changing energy prices and how domestic flexibility can be best used for local and national grid balancing. This project will play a key role in building our knowledge base and highlighting the exciting opportunities that the transition to net zero will create.”

The project will be funded by National Grid ESO and SSEN's Network Innovation Allowance (NIA), which provides an annual allowance to fund innovation projects that create value for National Grid ESO's customers, reduce costs for electricity consumers and accelerate progress towards net zero.

ENDS

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About Octopus Energy Group

Octopus Energy Group was launched in 2016 with a vision of using technology to make the green energy revolution affordable whilst transforming customer experiences. Its domestic energy arm already serves 2 million customers with cheaper greener power, through Octopus Energy, M&S Energy, Affect Energy, London Power and Co-op Energy.

Octopus Energy for Business manages over 25,000 customers with proprietary energy offerings. Octopus Electric Vehicles is helping make clean transport cheaper and easier, and Octopus Energy Services is bringing smart products to thousands of homes.

All of these are made possible by OEG's tech arm, Kraken Technologies, which offers a proprietary, in-house platform based on advanced data and machine learning capabilities, Kraken automates much of the energy supply chain to allow outstanding service and efficiency as the world transitions to a decentralised,

decarbonised energy system. This technology has been licensed to support over 17 million accounts worldwide, through deals with Good Energy, E.ON energy and Origin Energy.

In December 2020, Octopus Energy Group was valued at over \$2 billion after closing its second investment round of the year led by international energy companies Tokyo Gas and Origin Energy. With operations in the US, Japan, Germany, New Zealand and Australia, Octopus Energy Group's mission to drive the affordable green revolution is going global.

About Ohme

Ohme is a UK technology company that brings down the cost and complexity of electric vehicle ownership and helps to increase the amount of renewable energy on the National Grid.

The company's smart charging technology enables electric vehicles to take surplus energy produced by renewables overnight, saving customers money by enabling them to charge their vehicles when electricity is at its cheapest.

Ohme's smart charging platform and intelligent cable are core technologies powering the transition to zero-carbon transport, proactively managing consumer demand, optimising charging, and balancing the National Grid.

About National Grid Electricity System Operator (ESO)

National Grid ESO – a legally separate business within the National Grid group – sits at the heart of the electricity system in Great Britain, keeping the lights on around the clock for energy consumers.

We move electricity around the country's high-voltage network to balance supply and demand in real-time, using a mix of power sources to make sure electricity is available wherever and whenever it's needed.

Our mission is to enable a sustainable energy system and ensure the delivery of reliable, affordable energy for consumers. We work with stakeholders across the whole energy industry to plan for future network needs, using our insight to make sure we can balance the system today and find opportunities to transform the way we operate it tomorrow.

About Scottish and Southern Electricity Network

Scottish and Southern Electricity Networks (SSEN), operating as Scottish Hydro Electric Power Distribution (SHEPD) and Southern Electric Power Distribution (SEPD) under licence, is responsible for operating and maintaining the electricity distribution networks supplying over 3.8 million homes and businesses across central southern England and north of the central belt of Scotland, the Mull of Kintyre and the Scottish islands.