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Prospering from the Energy Revolution

SmartHubs

Project fact sheet



SmartHubs, focused on the West Sussex region, aimed to use an intelligent virtual power plant concept to help shape the way energy is generated, stored, and supplied to homes and businesses.

The Prospering from the Energy Revolution challenge programme ran from 2018 to 2023.
For more in-depth information on the programme and the projects see:
<https://www.ukri.org/what-we-offer/browse-our-areas-of-investment-and-support/prospering-from-the-energy-revolution/>

SmartHubs

Dates:
April 2019 – March 2021

UKRI funding:
£1.6m

Project partners:
Connected Energy (lead)
PassivSystems
ICAX
Moixa
ITM Power
Newcastle University
West Sussex County Council

SLES components:
Virtual power plant
Heat pumps
Solar photovoltaics (PV)
Hydrogen electrolysis
Batteries

What is the project?

SmartHubs aimed to use an intelligent virtual power plant (VPP) concept to help shape the way energy is generated, stored, and supplied to homes and businesses. The VPP aimed to combine generation and demand of energy across electricity, heat and mobility. The project, based in West Sussex, planned grid connected and behind-the-meter energy storage, a hydrogen electrolyser, PV generation, and a large scale marine source heat pump along with air source heat-pumps in individual buildings. A smart VPP platform aimed to dispatch and optimise the low carbon energy fleet to deliver cheaper energy, the provision of flexibility services and support a stronger, cheaper, cleaner network.

What has been delivered? What has been successful?

- ✓ Shortly after the project was funded the partners identified significant barriers to delivery. This was related to incompatible requirements of the project as initially planned and the public procurement processes that West Sussex County Council are required to use. This led to the project being restructured and restarted in December 2019.
- ✓ Despite the restructure it did not prove possible to deliver the complex, innovative VPP model within the constraints imposed by the public procurement process and project funding. The project was closed early in March 2021.

Barriers encountered and outcomes

Barrier	Public procurement processes: designed to ensure efficient spending of public money, cannot be avoided, require significant resource and time, and place significant constraints on the delivery of an agile, innovative smart local energy system project.
Outcome	Identification of the scale of procurement challenge soon after funding was awarded led to the project being paused and restructured. However, ultimately the project was unable to find a procurement model that matched with the timescale and requirements of innovation funding and closed early.
Barrier	Lack of early engagement with stakeholders: the project lacked implementation of a detailed stakeholder engagement plan or a consortium wide strategy for working with key stakeholders.
Outcome	Additional challenges were created as the needs and potential roles of key stakeholders were not fully understood. The project also faced a lack of support from some stakeholders, such as local councils, early in the project.
Barrier	The objectives and required functionality of the VPP changed several times during the early exploratory phases of the project: this led to a misalignment of expectations across the project.
Outcome	Significant divergence in expectation between project partners and stakeholders as to the role and functionality of the VPP meant ongoing misunderstanding.

Top lessons learnt

1. There is significant value in a feasibility period for the project which would have allowed the consortium to explore procurement approaches and conduct detailed due diligence in collaboration with specialist support such as legal experts. It would have also allowed time to ensure that critical external stakeholders were fully committed at a senior level.
2. Aligning public procurement with complex, multi-party innovation projects can better be achieved with a more flexible project design. For example, a multi-stage funding process could allow significant resource and expertise to be used during phase one to fully scope out requirements prepare for a procurement process, and the flexibility to significantly adjust scope and spend before delivery during phase two.

What's next?

- The grid-scale battery proposal has been taken forward outside the project with a £23 million investment in a 24MW, 20 MWh installation.
- Set up of a Future Energy Transition Hub to harness the skills, knowledge and resources of local organisations.