



SMART INTEGRATED ENERGY SYSTEMS

# SIES 2022

## Smart Integrated Energy Systems 2022:

Enhanced Virtual Power Plant (VPP+) system for Energy Pool Integration supporting Local and Regional network resilience.

*"We aim to identify and unlock the value of energy assets such as renewable generation, storage, hydrogen, power, heat and transport loads, within electricity distribution and transmission networks and emerging flexibility markets. We will establish a Technology Demonstration and Development Centre and support commercial deployments across a range of sites. Innovations will include new algorithms, modeling of value propositions, model based controls and smart local networks and transformers."*

SIES2022 will support the transition to a decentralised multi-sector and multi-energy vector, low CO2 Smart Integrated Energy System by developing Digital Energy Utility Management Services (DEUMS). These will provide solutions and establish routes-to-market for need-owners and businesses. An existing digital Virtual Power Plant (VPP) platform will be incorporated into an Enhanced Virtual Power Plant (VPP+) development, demonstration and test centre (SIES2022 Centre) capable of managing the interface between local and regional energy systems and markets. SIES2022 will develop and demonstrate: need-owner engagement, business and technical processes for VPP+ deployment; trading and technical algorithms; cross-sector applications; a 'Powershift' module; and modelling to support optimum design and control of future systems. Outputs will be shared through solutions-libraries, roadmaps, and investment ready plans for distributed Knowledge Communities and Energy Pools.

### Project Duration

15.12.2019 - 30.06.2023

### Project Budget

Total Budget: € 2,400,000

Funding: € 1,700,000

### Project Coordinator

University of Strathclyde (Scotland)

### Project Partners

- Energy Technology Centre (ETC) (Scotland)
- University of Strathclyde (Scotland)
- Best Transformer (Turkey)
- Magtel (Spain)

### Project Website

Energy Technology Centre -ETC  
<http://www.e-t-c.co.uk>

### Contacts

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ERA-Net Smart Energy Systems



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### ERA-Net Smart Energy Systems Joint Call 2018

This project has been awarded funding within the ERA-Net SES Joint Call 2018 for transnational research, development and demonstration projects. EUR 33.4 Mio of funding have been granted to 23 projects from 16 regions and countries.

## Main Objectives

To establish a SIES2022 Centre as a catalyst for leadership, innovation and impact.

To develop a deployment process and operational framework for DEUMS to drive uptake of new SIES technologies.

To develop innovative VPP+ technology sets and deliver these to industry.

## Expected Main Results

A SIES2022 Centre based at the Energy Technology Centre site in East Kilbride (with connection to the remote Wind Test Site at Myres Hill), which will demonstrate the technical and business and need-owner engagement processes and value propositions. The Centre will be operated through the Company 'Hy2Go VPP' formed in the project which will have the necessary skills, knowledge base and resources to be able to support Commercial deployment of DEUMS to distributed Energy Pools.

The SIES2022 Centre will demonstrate wind and PV and CHP generation, battery, hydrogen and thermal storage, power, heat and transport loads operating in local and regional energy flexibility markets.

Value propositions and commercial and technical and need-owner engagement processes will be applied to 12 'energy pools' (groups of assets) to underpin the deployment of the developed DEUMS.



**Joint Programming for Flourishing Innovation from Local and Regional Trials towards a Transnational Knowledge Community**

[www.eranet-smartenergysystems.eu](http://www.eranet-smartenergysystems.eu)



**Magtel**

