Special EU Programmes Body
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SPECIAL EU PROGRAMMES BODY

Project Case Study: Storage Platform for the Integration of Renewable Energy (SPIRE 2) Progress Update

THEME:

Research and Innovation

FUNDING (ERDF+MATCH):

€6,462,927.87

MATCH FUNDERS:

Department of Business, Enterprise and Innovation, Ireland and the Department for the Economy, Northern Ireland

LEAD PARTNER:

Ulster University

PROJECT PARTNERS

Queens University Belfast; Ulster University; Arbarr; Dundalk Institute of Technology; University of Strathclyde and Sunamp.

Start Date: 01/01/2017

End Date: 30/09/2022

https://www.ulster.ac.uk/spire2/the-project

@Spire2Project

SPIRE 2 involves collaboration between lead coordinator Ulster University, along with three research institutes and 12 businesses and enterprises via a cross-border Virtual Research Graduate School. It's exploring how homes and businesses can store renewable energy (RE) effectively, allowing very high levels of RE to be integrated into power grids globally, at the same time as maximising the benefits to consumers.

Electric Vehicle Research

In late 2019 researchers at Ulster University acquired an electric vehicle (EV) to help support the essential research that is being undertaken to tackle the power network and design challenges faced by the impact of EV. Due to their high energy capacity, mass deployment of EVs will have significant impact on power networks, dictating not only the design of the EV interface and charging devices but the way future power networks will be designed and controlled. Through the acquisition of this new EV the project will be better placed to understand the impact of EV on existing power distribution networks and information to the policymakers and key stakeholders associated with manufacturing and marketing of EV.

"Our researchers will be analysing vehicle-to-grid technology which enables energy stored in electric vehicles to be fed back into the electricity network to help supply energy at times of peak demand. This innovative research project will highlight the effects of EV uptake on the electricity network and recommend how to avoid network capacity constraints obstructing the roll-out of EVs."

Professor Neil Hewitt, Professor of Energy and Director of Centre for Sustainable Technologies at Ulster University

SPIRE 2 to Benefit Social Housing

SPIRE 2, UU and NIHE are participating in a joint research project to assess how electrical heating, energy storage and smart control technologies could create new business and ownership models for flexible heat demand in social housing. Ulster based SPIRE 2 project researchers will design and coordinate a field trial of a range of domestic technologies provided by project partners Climote, Grant Boilers and Sunamp. A sample of houses will be fitted with standalone or hybrid Air Source Heat Pump heating, along with thermal storage and smart controls. In parallel, UU will work with NIE Networks and SONI to model the impacts of extensive uptake of flexible electrical heating systems in NIHE dwellings.

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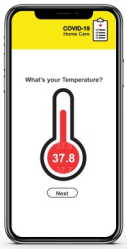
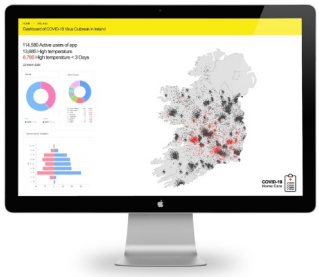
Project Stakeholder Climote Helping Track COVID-19





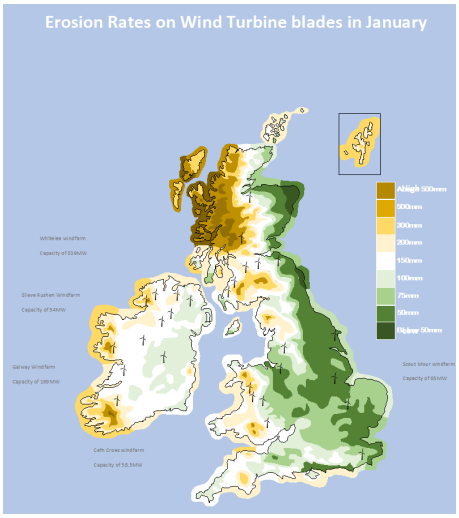
Project stakeholder Climote developed a system to record and track vital individual health statistics using a simple app / web interface called Covid19 Home Health app. The app, which was suitable for Smartphone and web devices, was capable of gathering critical data, allowing it to be shared with a GP / health-care provider. The app also provided a simple and inexpensive way for the Health Service Executive Ireland to record, track and share emerging trends in the public well-being ahead of the availability of widespread community testing.

Without collecting personal identity data, the system was able to collect an individual's location, together with their temperature and any perceived Covid-19 symptoms. The individual data was then mapped to determine whether, and where, there were any potential Covid-19 clusters. Such clusters were then prioritised for further analysis and targeted Covid-19 testing.

Project Partner Developing Mobile COVID-19 Handwash

Project partner Sunamp recently won £50,000 in Government funding to support the development of a mobile handwash unit that could be used in the fight against COVID-19. It is anticipated that the units will be able to supply clean hot water to help people maintain hand hygiene. It's envisioned that the units could be used in multiple settings such as the workplace to ensure that standards are maintained.

University of Strathclyde Erosion Studies



New research into erosion studies was recently conducted by the University of Strathclyde, using meteorological data to estimate the weathering effects of climate variables, including rain drop and hail impact intensity. PhD student Kieran Pugh mapped out the rain erosion potential of the UK and Ireland using data from the UK MET office and Met Éireann, as well as data from laboratory studies. The map highlights the distribution of average rainfall in January over the last 20 years and its effect on the erosion rate. As windfarms are typically located in areas of high erosion the map also includes some of the largest windfarms in the UK region. This work is to be published in Journal of Bio and Tribo-Corrosion.