

Project ID	DIP047		
Long Title	Heat Smart Orkney		
Short Title			
Keywords	Community; Rural; Domestic; Electricity; Heat; Wind; Thermal Storage; Power Quality & Grid Integration; Smart Grids; Microgrids; Demand Response; LV Grid Monitoring; Smart Devices; Social Impacts;		
Location (Town, Region, Country)	Rousay	Orkney	Scotland
Latitude and Longitude	59.15N	3.02W	
OSGB code	HY 41 29		
Status	Complete		
Start Date	2014		
End Date	2016		
Description	<p>Our turbine was turned off or “curtailed” by 25% over the last year, and instead of turning the turbine off, we want divert that lost power and use it locally.</p> <p>We want to use the curtailed energy to provide cheaper and/or better heating to local homes, initially in Rousay, Egilsay and Wyre, by enhancing the heating systems in any home that agrees to, and can take part in the project. We will then refund some of the running costs of those heaters.</p> <p>By careful and continuous monitoring of the electricity grid measuring points, we aim to anticipate when our turbine is about to be curtailed, and we will automatically switch on a local electrical demand (space and domestic hot water heaters in participating homes). If this is done intelligently (smartly), it will allow the turbine to come back on or keep generating rather than be switched off, increasing the revenue that the turbine is generating, and providing more income for our community fund.</p> <p>The technology to do this is really just a more sophisticated version of the off-peak and Total Heating Total Control technology that SSE already use to reduce peak demand on their user network, however we are trialling control of the proposed domestic devices to coordinate with the times of local grid capacity currently switching off our turbines. We are using established and tested technologies and have also done technical trials to the satisfaction of the grid operator etc. However, we now need to do this on a large enough scale to prove that it can have the required impact on increasing turbine income and hence show that it can add up economically to continue independently and be self sustaining, after completion of the trial.</p> <p>Linked to Mull Access Project</p>		
Sectors	Domestic		

Funding Sources	Local Energy Challenge Fund
Budget £	£954,950
Partners	Rousay, Egilsay and Wyre Development Trust, Heat Smart Orkney, Community Energy Scotland, VCharge
Energy vectors	Electricity, Heat
Scale (lab/site/ small/community/region/national)	Community
Technologies demonstrated	LV grid monitoring, smart controls, demand response devices, thermal storage, microgrids, wind
Economic models demonstrated	Time-of-use tariffs, new commercial models, fuel poverty alleviation
Other concepts demonstrated	Demand response, grid constraint mitigation, generation-demand matching
Industry engagement	
Consumer engagement	
Project Reports (incl. links)	https://www.localenergy.scot/media/94663/GCF138-Heat-Smart-Orkney-Final-Report.pdf
Datasets (incl. links)	
Website/social media	http://rewdt.org/index.php?link=hsoAbout&name=HSO
Information sources	https://www.localenergy.scot/funding/local-energy-challenge-fund/capital-demonstration-projects/round-2-2016/heat-smart-orkney/