

Project ID	DIP070		
Long Title	Orchestration of Renewable Integrated Generation in Neighbourhoods		
Short Title	ORIGIN		
Keywords	Community; Rural; Multi-sector/Grid; Electricity; Heat; Wind; Microgrids; Demand Response; Active Network Management; LV Grid Monitoring; Stakeholder Engagement & Behaviour Change;		
Location (Town, Region, Country)	Findhorn	Moray	Scotland
Latitude and Longitude	57.39N	3.33W	
OSGB code	NJ 040 645		
Status	Complete		
Start Date	2012		
End Date	2015		
Description	<p>The ORIGIN project demonstrated applied and modelled demand side management of energy use in three validation communities in Scotland (Findhorn), Portugal (Tamera) and Italy (Damanhur). The communities were selected based on their prior investment in renewable energy generation systems and commitment to a sustainable approach to energy resources. The project deployed an end to end operation of a new breed of energy control architecture to facilitate demand response in a bespoke form in each of the validation communities. The starting point for the system is a new technology for accurate localised weather (and renewable generation) forecasting. It utilises new software technology for achieving demand-response from community-level energy actions. In order to enable the residents of the communities to participate in active demand response the project developed a web-based graphical and numerical user interface using a participatory design approach to involve the communities in the design process. The user interface was customisable to the needs of the individual participants to ensure effective communication of demand response actions, historical and current energy usage and energy pricing signals.</p> <p>During the project the consortium executed three different demand response models in the validation communities and modelled the potential of three others. The biggest potential positive impact upon increasing uptake of community generated electricity was shown to occur where community generation is curtailed by an inability to export to a national grid infrastructure.</p>		
Sectors	Domestic, non-domestic		
Funding Sources	FP7-ICT		
Budget £	€1.68 million (UK element)		
Partners	Heriot Watt University, University of Strathclyde, Findhorn Foundation		
Energy vectors	Electricity, Heat		
Scale (lab/site/ small/community/region/national)	Community		

Technologies demonstrated	Smart controls, demand response devices, active network management, microgrids, wind
Economic models demonstrated	Private-wire microgrid, customer behaviour change incentives
Other concepts demonstrated	Demand response, grid constraint mitigation, consumer impact analysis, generation-demand matching
Industry engagement	
Consumer engagement	61 homes plus caravan park
Project Reports (incl. links)	<p>Final report:  <a href="http://www.ectp.org/fileadmin/user_upload/documents/E2B/ORIGIN/ORIGIN_Final_Report.pdf">http://www.ectp.org/fileadmin/user_upload/documents/E2B/ORIGIN/ORIGIN_Final_Report.pdf</a></p> <p>Additional report at: <a href="http://www.ectp.org/project-database-list/project-details/orchestration-of-renewable-integrated-generation-in-neighbourhoods/">http://www.ectp.org/project-database-list/project-details/orchestration-of-renewable-integrated-generation-in-neighbourhoods/</a></p> <p>5 academic paper at cordis site (link below)</p> <p>Paper: <a href="https://researchportal.hw.ac.uk/files/10499993/Final_ewenergy_Procedia_Paper.pdf">https://researchportal.hw.ac.uk/files/10499993/Final_ewenergy_Procedia_Paper.pdf</a></p> <p>Paper:  <a href="http://oaktrust.library.tamu.edu/bitstream/handle/1969.1/152329/ESL-IC-14-09-02.pdf">oaktrust.library.tamu.edu/bitstream/handle/1969.1/152329/ESL-IC-14-09-02.pdf</a></p> <p>Paper: <a href="http://www.ibpsa.org/proceedings/BS2015/p2371.pdf">www.ibpsa.org/proceedings/BS2015/p2371.pdf</a></p>
Datasets (incl. links)	
Website/social media	Broken link to project website.
Information sources	<a href="https://cordis.europa.eu/project/rcn/105918_en.html">https://cordis.europa.eu/project/rcn/105918_en.html</a>