

Project ID	DIP071		
Long Title	Orkney Surf-n-Turf / BIG HIT		
Short Title			
Keywords	Region; Rural; Multi-sector/Grid; Electricity; Transport; Wind; CHP; Hydrogen; Fuel Generation; Fuel Cell; Physical Storage; Alternative Fuel Vehicles; Transport System Enablers; Energy Strategy Development;		
Location (Town, Region, Country)	Various	Orkney	Scotland
Latitude and Longitude	59N	3W	
OSGB code	HY 43 13		
Status	Ongoing		
Start Date	2016		
End Date	Undefined		
Description	<p>Surf-n-Turf: The island of Eday is home to about 150 people. They collectively own a 900kW wind turbine through Eday Renewable Energy. Community-owned turbines do much to create jobs and fund local services in remote areas but Eday's turbine is vulnerable to curtailment because of its location and the way it connects to the grid. The island also hosts the tidal site of the European Marine Energy Centre.</p> <p>On Eday, Surf 'n' Turf brings together the two power sources tidal and wind – with equipment to convert and store energy as hydrogen. In Kirkwall (Orkney's capital) Surf 'n' Turf is developing systems to make use of hydrogen and a training facility to establish local skills. It will encourage future hydrogen opportunities – on land and at sea – and secure local employment. The project will also manage shipment of hydrogen from Eday to Kirkwall.</p> <p>BIG HIT: BIG HIT builds on foundations laid by the Orkney Surf 'n' Turf initiative, which will see production of hydrogen on the islands of Eday and Shapinsay using wind and tidal energy.</p> <p>BIG HIT uses two state-of-the-art proton exchange membrane (PEM) electrolyzers. The Shapinsay electrolyser is 1MW capacity and Eday electrolyser is 0.5MW capacity, both located close to the renewable generation assets. The hydrogen acts as an energy-storage medium that can later be converted back into heat and power for buildings and vessels in Kirkwall harbour, as well as the fuel for the operation of zero-emission hydrogen vehicles in and around Kirkwall.</p>		
Sectors	Non-domestic, transport		
Funding Sources	Local Energy Challenge Fund		
Budget £	£1.46 million (LECF) / €10.9 million (BIG HIT)		
Partners	Community Energy Scotland, Eday Renewable Energy Ltd., EMEC Orkney, ITM Power PLC, Orkney Island Council, Calvera,		

	Shapinsay Renewables Ltd.
Energy vectors	Electricity, Heat, Transport
Scale (lab/site/small /community/region/national)	Region
Technologies demonstrated	Hydrogen generation, hydrogen storage, hydrogen vehicles, CHP, wind
Economic models demonstrated	Hydrogen economy development
Other concepts demonstrated	Fuel generation from constrained renewables, grid constraint mitigation
Industry engagement	Hydrogen infrastructure and rural transportation
Consumer engagement	
Project Reports (incl. links)	https://www.localenergy.scot/media/62260/OIC-Final-Report.pdf
Datasets (incl. links)	
Website/social media	http://www.surfnturf.org.uk/ / https://www.bighit.eu/
Information sources	As above