Project ID	DIP067		
Long Title	Newcastle Helix		
Short Title	Helix		
Keywords	Single site; Urban; Non-domestic; Electricity; Heat; Transport; Solar PV; Solar Thermal; CHP; Smart Grids; Microgrids; District Heating; Active Network Management; Electric & Hybrid Vehicles; Long-term Demonstrator Facility;		
Location (Town, Region, Country)	Gateshead	Tyne and Wear	England
Latitude and Longitude	54.58N	1.37W	
OSGB code	NZ 240 644		
Status	Ongoing		
Start Date	2017		
End Date	Undefined		

Description	Newcastle Helix is Newcastle's £350 million project bringing together university, business and residential buildings. It provides a living laboratory for us to trial innovative urban technologies.
	
	The energy system of Newcastle Helix includes the following infrastructure:
	• 11kV smart grid throughout the site
	• Combined heat and power (CHP) district heating
	• Electric vehicle (EV) fuelling station
	• Low carbon heating
	• Building-mounted solar photovoltaic
	• Solar thermal photovoltaic (PVT), producing power and hot water
	
	The first University teaching building on site is Urban Sciences Building. This is key to our research at Newcastle Helix and is home to CESI HQ.
	
	We are using the Newcastle Helix energy system to learn more about questions such as:
	• What are the effects of operating Newcastle Helix in "islanded mode", with an independent power supply, and comparing
	  • the costs/ benefits of operating in islanded mode from a single energy vector approach
	  • the costs / benefits of operating in islanded mode from a multi-energy vector approach
	• How we can reduce the hacking risks for building control systems
	• How can the USB act as a virtual power plant		

Sectors	Non-domestic, transport		
Funding Sources	Centre for Energy System Integration		

Budget £	Undefined
Partners	University of Newcastle, ESPRC, Northern Powergrid, NWG Living Water, Siemens PLC, UKCRIC
Energy vectors	Electricity, Heat, Transport
Scale (lab/site/mall/community/region/national)	Site
Technologies demonstrated	Smart controls, solar PV, EV charging, microgrids, CHP, heat network, solar thermal
Economic models demonstrated	Private wire microgrid
Other concepts demonstrated	Long-term demonstrator site
Industry engagement	
Consumer engagement	
Project Reports (incl. links)	
Datasets (incl. links)	
Website/social media	http://www.ncl.ac.uk/cesi/research/demo/nclhelix/
Information sources	As above