

Project ID	DIP114		
Long Title	Towards Building Ready for Demand Response		
Short Title	TABEDE		
Keywords	Single Site; Domestic; Electricity; Heat; Power Quality & Grid Integration; Smart Grids; Demand Response; Virtual Power Plant;		
Location (Town, Region, Country)	Cardiff	South Glam.	Wales
Latitude and Longitude	51.49N	3.18W	
OSGB code	ST 182 770		
Status	Ongoing		
Start Date	2017		
End Date	2020		
Description	<p>TABEDE aims to allow all buildings equipped with Building Energy Management Systems to integrate energy grid demand response schemes, overcoming limitations linked to missing interoperability, at reduced cost. For that purpose, TABEDE will allow connection of all dispatch able loads to the Building Energy System through a dedicated TABEDE interface, whatever the communication protocol. A dedicated smart grid communication protocol translator will be provided to ease the acceptance of the TABEDE system as well as a database of dispatch able load drivers. Moreover, in order to improve building efficiency, novel building energy management strategies will be proposed, in terms of electric load and thermal management, adapting to the evolving environment, as well as building continuous monitoring.</p> <p>TABEDE solution will be demonstrated and assessed through extensive simulation-based testing. The proposed solutions will be deployed on three test sites (residential and tertiary) that are representative of EU building stocks and conditions.”</p> <p>Cardiff Test Site: Tÿ Smart is a recently built prototype smart house under development by Cardiff team, representative of contemporary new houses built in the UK. Energy efficiency of the house is rated A (UK Standard Assessment Procedure—SAP score: 96), the highest rating that can be achieved, whilst the average rating of dwellings in the UK is D (60). The rating is a result of high performance envelope (U-values: 0.2, 0.11 and 0.16 W/m<sup>2</sup>K for walls, roofs and floors, respectively), efficient gas boiler and radiators, time and temperature based zone controls using Cardiff’s Smart BMS, low energy LED lighting, whole house heat-recovery ventilation (HRV), 3.9 kWp solar PV and the measured low permeability of 4.8 m<sup>3</sup>/m<sup>2</sup>hr at 50 Pa. Two persons occupy the house which will enable realistic representation and investigation of user behaviour and interaction in demand response, both before and after modification to the energy and environmental systems</p>		

Sectors	Domestic
Funding Sources	Horizon 2020
Budget £	€3.76 million
Partners	Cardiff University
Energy vectors	Electricity, Heat
Scale (lab/site/small /community/region/national)	Small
Technologies demonstrated	Smart controls, low energy buildings
Economic models demonstrated	Grid services, virtual power plant/market aggregation
Other concepts demonstrated	Demand response, grid constraint mitigation
Industry engagement	
Consumer engagement	
Project Reports (incl. links)	
Datasets (incl. links)	
Website/social media	<a href="http://www.tabede.eu/">http://www.tabede.eu/</a>
Information sources	<a href="https://cordis.europa.eu/project/rcn/212352_en.html">https://cordis.europa.eu/project/rcn/212352_en.html</a>