

Project ID	DIP012		
Long Title	Combined Heat System by using Solar Energy and Heat Pumps		
Short Title	Chess		
Keywords	Small-scale; Town; Domestic; Electricity; Heat; Solar PV; Solar Thermal; Heat Pumps; Thermal Storage; Seasonal Storage;		
Location (Town, Region, Country)	Corby	Northamptonshire	England
Latitude and Longitude	52.51N	0.64W	
OSGB code	SP 924 908		
Status	Ongoing		
Start Date	2016		
End Date	2019		
Description	<p>The project objective is to design, implement and promote a reliable, efficient and profitable system able to supply heating and hot water in buildings mainly from renewable sources. The proposed system is based in the optimal combination of solar thermal (ST) energy production, seasonal heat storage and high efficient heat pump use. Heat pumps will be improved technically in order to obtain the best performance in the special conditions of the CHESS-SETUP system.</p> <p>The used solar panels will be hybrid photovoltaic and solar thermal (PV-ST) panels, which is a promising solution for also producing the electricity consumed by the heat and water pumps of the heating system and part of the electricity consumed in the building. Hybrid solar panels are a key element to achieving energy self-sufficiency in buildings, especially in dense urban areas where the roof availability is one of the most limiting factors.</p> <p>Also will be considered the integration of other energy sources as biomass or heat waste, to make the system suitable for any climate conditions. The project will also explore the possibility to integrate the system with other electricity or cooling technologies (solar cooling, cogeneration).</p> <p>The system operation will be optimized according to some external factors, as electricity price or user requirements by using a smart control and management systems developed specifically for the project.</p> <p>This proposal will be materialized in three pilot experiences: a small-scale prototype in Lavola's headquarters (Spain), 50 new dwellings located in Corby (England) and a new sport centre located in Sant Cugat (Spain).</p>		
Sectors	Domestic		
Funding Sources	Horizon 2020		
Budget £	€3.7 million		

Partners	University of Ulster, Electric Corby
Energy vectors	Electricity, Heat
Scale (lab/site/small /community/region/national)	Small
Technologies demonstrated	Solar thermal, season thermal storage, solar PV, heat pumps, low energy buildings
Economic models demonstrated	
Other concepts demonstrated	
Industry engagement	Industry partners
Consumer engagement	50 homes
Project Reports (incl. links)	https://www.chess-setup.net/documentation
Datasets (incl. links)	
Website/social media	https://www.chess-setup.net/corby
Information sources	https://cordis.europa.eu/project/rcn/203231_en.html