



LOCATION: FLINTSHIRE, WALES



The project

Blue Lab, EDF Energy's innovation accelerator, has partnered with Flintshire County Council and Warmer Energy Services to develop an effective and sustainable replacement for off-gas heating systems, which provide affordable heat and comfort for vulnerable tenants.

It's estimated over 1m UK households use electric storage heaters and another 1m use other fuel types for heating rather than gas. Affordability is a chief concern for tenants occupying social housing and those in off-gas properties have few options for affordable heat, most coming with significant disadvantages.

In line with our commitment to Energy Company Obligation, EDF Energy is undertaking several consumer trials through Blue Lab, in relation to solar PV, battery storage, electric heat and electric vehicles. We are creating opportunities for start-ups to help develop and shape ideas into a reality.

PROPERTY:

29 OFF-GAS SOCIAL HOUSING PROPERTIES

MIXED TENANTS

PREVIOUS FUEL:

MIX OF ECLECTIC STORAGE HEATERS AND OIL BOILERS

TECHNOLOGIES USED:

CAVITY AND LOFT INSULATION	✓
SOLAR PV	✓
SOLAR BATTERY STORAGE	✓
AIR SOURCE HEAT PUMP	✓
ENVIRONMENTAL SENSORS	✓

Specification

In 24 of the 29 properties, night storage heaters have been replaced with the new system at an estimated cost of £15,800 per property. All installations have been provided and installed at no cost to the occupant.

Solar PV and battery storage power the heat pump in a low cost, low carbon way. In addition to powering the pump, it is estimated up to 70% of the household's electricity will come from solar energy, significantly reducing their energy bills.

The battery allows for unused solar energy to be stored to run the heat pump in the evening and benefits the grid by shifting load away from peak time.

Sensors will be used to measure the health of the environment, which will help us to understand if we can help maintain home air quality.

Benefits

Tenants will have freedom to move away from Economy 7 tariffs, giving them a cheaper daytime tariff for general usage. A heat pump can produce three units of useful heat for every unit of electricity, making it cheaper than a storage heater on Economy 7. Unlike storage heaters, heat pumps can be used at any time of the day.

Each property will be eligible for a combined Feed-in Tariff and Renewable Heat Incentive of £10,800 over the 20 year lifetime of the project.



"The whole system's very good. I would think we're going to save a quarter (on our energy bill) It's a definite improvement. The main problem with storage heaters was you didn't have any control over it at all." – Mr Davies, Gwaenesor