



Background

Solar Thermal systems are one of the most popular renewable energy technologies. However, many homes have combination boilers and integrating solar heat with these devices is technically more challenging and carries greater risk, especially for retrofit.

A “big six” energy supplier engaged Narec Distributed Energy to study the reliability and energy performance of two combi boiler systems fitted with different solar collectors and compare with that of a standard combi.

Project outline

Planning discussions were held with the client to advice on currently available solar preheat technology, integration with combi boilers and potential test regimes. Three identical combi boilers were procured and installed in a test room, with the two solar collectors located side by side on the roof at 30° tilt, facing due south.

Pipe routing was carefully selected to closely match domestic practice as far as possible, with EU tapping cycle no.2 (EN13203) chosen as the hot water load.

EU tapping cycle no. 2 draws 120 litres of hot water @60°C every day, providing a typical, but moderate, DHW energy use of 5.845 kWh / day.

A sophisticated data logging system was used to record the system temperatures, solar irradiance and energy consumption at one minute intervals for analysis.

Project Outcomes

The results of this trial have given the client an informed understanding of the technical and commercial potential of these systems.



Advancing Renewable Energy

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