Pilot 3: Oxford Street

Here, the solution for rooftop PV on an apartment building is an array split into 8 separate systems, each connected to a single apartment.
Oxford Street is a renovation project, converting an old office building into new temporary accommodation apartments for people on the housing waiting list.
The 9.6 kWp rooftop array is split into 8 individual, 1.2 kWp arrays, each of which is wired directly into a consumer unit within each flat. This allows tenants to consume free electricity when their system is generating, without the need for complex metering equipment.
This will be an important contribution to cutting residents' fuel bills. Residents will be advised how to make best use of the solar electricity, for example running appliances during the daytime.

Key figures

Size: 9.6 kWp.
Energy production per year: 9,811 kWh.
Energy use: estimated 60-80 % self-consumption.
Technology: 400 W panels, string inverters.

Lessons learned

Initial monitoring and analysis of Buckley Close from Sept 20 to July 21 (includes use of modelled results for one meter per block from Sept to March):

- 3 solar systems totalling 28 kWp capacity
- Projected solar generation per year of 14,456 kWh, saving 4,263 kg CO_2/year
- All 12 residents have signed up as customers of scheme
- Very high solar productivity since March, with 52 % supplied to customers and only 48 % exported. Productivity will increase significantly in the winter.
- 42 % of customers' demand since March 2021 has been served by solar
- On current pricing, by comparison to the large electricity supply companies, customers are saving around 35% on their electricity unit costs and 27 % on standing charges.

Contact

Kirsten Firth, Carbon Neutral Programme Manager,
Sustainability Team, Brighton & Hove City Council
Kirsten.firth@brighton-hove.gov.uk

Miles Davidson, Housing Sustainability Manager &
Interim Mechanical & Electrical Team Manager,
Housing Strategy, Property & Investment,
Brighton & Hove City Council
Miles.Davidson@brighton-hove.gov.uk

Useful links

The BHCC housing pilots are featured in this publication:
How Solar Energy Can Deliver for Climate and Communities
https://solarenergyuk.org/resource/how-solar-energy-can-deliver-for-climate-and-communities/

Interreg 2 Seas Mers Zeeën SOLARISE
European Regional Development Fund

Interreg 2 Seas Mers Zeeën SOLARISE

EUROPEAN UNION

European Regional Development Fund

Brighton & Hove City Council - Solar energy in apartment buildings

www.interregsolarise.eu

CO_2
Low-Carbon technologies

TOTAL PROJECT BUDGET:
4,18 M €
INCLUDING AN ERDF BUDGET OF:
2,51 M €

Budget

€ 163,000 of total partner budget € 534,000.

Goal

Accessible solar energy directly benefiting local residents in multi-tenant buildings to address energy poverty.

Description

Brighton & Hove City Council's (BHCC) goal was to trial new ways of making solar energy more accessible to local residents on low incomes. The council ran pilots in council-owned housing, each one demonstrating a different way to maximise on-site consumption of the solar electricity and help keep residents' fuel bills low.

Pilot 1: Buckley Close

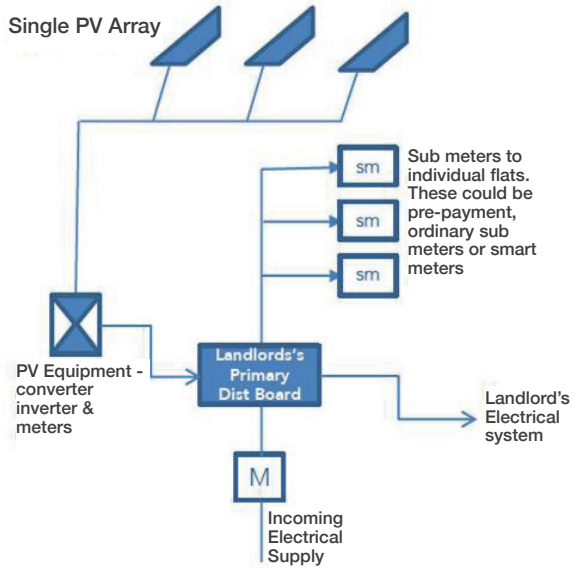
The goal at Buckley Close was to enable council tenants to maximise self-consumption of solar electricity in 3 housing blocks, via a common electricity meter and sub-metering tenants' consumption.

Buckley Close is a new development of 12 social housing flats within three blocks. Each block only has one MPAN (grid connection point), with tenants' supplies sub-metered by BHCC. This allows solar PV electricity to be consumed by tenants before exporting the remainder to the National Grid.

As a responsible landlord, the self-consumption achieved by putting tenant supplies behind the meter allows BHCC to charge tenants a reduced rate for electricity.

Key figures

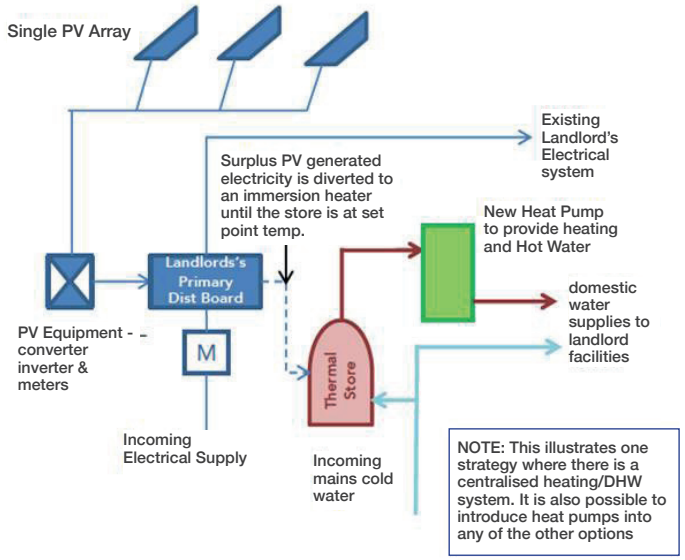
Size: 14.91 kWp.
Energy production per year: 15,718 kWh.
Energy use: estimated 60-80 % self-consumption.
Technology: LG Monocrystalline 355 W PV panels, SolarEdge inverters.



Pilot 2: Elwyn Jones Court

The rooftop PV energy will be mainly targeted at running a ground source heat pump for the whole building.

Elwyn Jones Court is seniors' accommodation owned by BHCC, currently heated by night storage heaters run from the landlord supply. These storage heaters are due to be replaced with a Ground Source Heat Pump (outside scope of SOLARISE), which will significantly flatten the electricity demand curve at the site.



Two large solar arrays are installed to part-run these GSHPs, maximising the self-consumption of solar PV on-site and enabling a renewable heating solution to be driven by renewable electricity.

This accommodation is for older people and so it is important for the heating to be available throughout the year. Demand for hot water is also higher than usual. The cost of heating affects residents' service charges, so affordability is crucial. The solar-generated energy means that residents, most of whom are on fixed incomes, are partially protected from the steep rises in electricity prices seen in late 2021 onwards.

Key figures

Size: 55.6 kWp.
Energy production per year: 56,381 kWh.
Energy use: estimated 60% self-consumption.
Technology: 400 Wp panels, string inverters.