



# Energy Networks

“Take 7”

- 7 Families, 7 Solar Roofs, 7 Prepayment Meters
- 1 Estate

Take 7 explores what happens when you give seven families, with prepayment electricity meters, the opportunity to generate and use renewable energy over four seasons. How do they adapt their daily routines to capture solar power given that its generation is influenced by weather, seasons and changing daylight hours? What impact does it have on their domestic life, finances and wellbeing? Importantly can producing and consuming - ‘prosuming’ - solar power improve wellbeing, but also support moves to a more flexible, low carbon electricity system? It is believed that Take 7 is the UK’s first longitudinal study to explore prosuming and these issues, amongst social housing tenants with solar photovoltaic panels.

The Take 7 study was conducted Nicolette Fox as part of her PhD study funded by the Autonomic Power System grand challenge run in association with HubNet. Key findings include:

- All the households became ‘prosumers’ of renewable energy with most practising across the seasons. Different types emerged including ‘accidental’ and ‘seasonal’ prosumers to ‘committed’ and ‘resourceful’.
- Households reduced their electricity costs – up to half in summer – giving them more money to spend, for example on essential services such as food or gas. But for some it also reduced their worry in running out of credit on their prepayment meters, particularly over the summer.
- Prosuming developed both from ‘know-what’ factual information given by the solar installers, but also ‘know-how’ based on the household’s daily experiences.
- During the study households developed knowledge and skills on how to be prosumers and at times drew on their prepayment electricity meters to monitor progress. Over the winter, solar energy monitors were useful for some households, particularly on cloudy days.
- Prosuming was closely tied to routines that had a degree of flexibility, particularly washing and drying clothes.
- Prosuming involved ‘energy shifting’ of demand to coincide with generation, as long as it fitted round family and work routines. But it also started to embrace wider definitions including ‘reducing energy’ by cutting back on use, and ‘capturing energy’ through line drying. There was also a desire amongst a number of the households for prosuming to involve ‘sharing energy’ within their community.
- The families saw the potential for future flexible electricity tariffs as unattractive because children’s routines invariably fall within peak demand. In return for flexibility, prosuming offered them solar power that would not compromise family life or risk higher bills.

## Achievements:

- The research findings were used by three local authorities to help shape their solar PV engagement programmes for social housing tenants.
- The study also collaborated with research participants and the local authorities to produce information leaflets that were sent to several hundred social housing tenants.
- The 'solar journeys' of the families in the study were turned into the film Take7, which was showcased at a fuel poverty public event and continues to be watched on YouTube.
- The research interviews are also being turned into a short animation for solar PV households in partnership with local authorities.
- The project has also been in contact with consumer organisations, power industry contacts, NGOs and Government about the research.
- Learning from the research will be applied to a new study exploring water debt and high per capita water use amongst social housing tenants.
- The project researcher was awarded the Sussex University Impact Award for Public Engagement

## Feedback



As part of her research Nicolette has undertaken a thorough and highly valued engagement process with families vulnerable to fuel poverty. This has enabled her to offer evidence-based insights on how the council can improve future roll-outs of solar PV for households living in social housing and, where possible, we have taken on board this advice

Alex Fox, Brighton & Hove City Council



Brilliant short film by @SussexUni @SPRU Nicolette Fox showing how solar panels can mitigate families' fuel poverty

Via Twitter, Professor Janet Boddy



I read the booklet and think it's brilliant!

Solar PV social housing tenant

## EPSRC Outcomes Focus:

This case study contribute to the following outcomes: H1, H2 and R4

-  Resilient
-  Connected
-  Productive
-  Healthy

### ACADEMIC PARTERS:

University of Sussex & University of Stirling

### COMMUNITY PARTNERS:

Brighton & Hove City Council, West Sussex County Council and Crawley

The Supergen Programme, part of the Research Councils UK Energy Programme, led by the Engineering and Physical Sciences Research Council (EPSRC), aims to contribute to the UK's environmental emissions targets through a radical improvement in the sustainability of the UK's power generation and supply.