

CrowdFlex Consumer Segment

Electric Heating Users

Centre for Sustainable Energy

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About CrowdFlex

CrowdFlex is a two-year NESO-led innovation project investigating the potential of domestic flexibility to help operate the grid. Two types of domestic electricity flexibility service were trialled:

- **Utilisation service:** customers were paid to turn up or turn down their electricity usage during notified events.
- **Availability service:** customers were paid to make their electric vehicles available to the grid by plugging in whenever they were at home.

107,000 OVO customers took part in the utilisation trial. CSE carried out customer feedback research throughout the project, surveying over 28,000 people in the utilisation trial to explore the experiences of different consumer groups who took part.

Based on these real experiences within the trial, this series of case studies aims to showcase how different types of households – including those that may face barriers to participating in the energy transition – can benefit from demand shifting services.



Introduction

Around 11% of households in England and Wales rely on electricity for heating (excluding heat pumps, which make up less than 1% of the English housing stock). In Scotland, 10% of households rely on electricity, including those using heat pumps. Electrically heated homes are more likely to be fuel-poor, with 25% and 42% of such households in England and Scotland respectively experiencing fuel poverty, compared to 12% and 27% of gas heated households.

In England, the 2023 average fuel poverty gap for electrically heated homes – i.e. the reduction in fuel costs that would be needed for the household to no longer be in fuel poverty – was £857. This was more than double the national average.

These figures indicate that **electric heating users as a customer segment are particularly vulnerable to financial hardship within the energy system**. Participation in flexibility schemes is therefore an opportunity for households reliant on electric heating to lessen their financial burden.

Sources: [Main fuel type or method of heating used in central heating, England and Wales – Office for National Statistics](#); [Key Attributes of the Scottish Housing Stock – Scottish House Condition Survey: 2024 Key Findings – gov.scot](#); [Fuel poverty gap data for Electrically Heated properties – UK Government Fuel Poverty Statistics England 2024, Table 12](#)

13%

of the CrowdFlex research sample was made up of households with electric heating.

70%

of households with electric heating felt positive overall about taking part.

£26.47

Annual amount earned during the trial by households with electric heating.*

*Based on number of CrowdFlex events during winter 24/25 and summer 25 trials (140) and average reward per notified event during winter trial.

Participation

Households with electric heating made up 13% of the CrowdFlex research sample – just slightly higher than the UK average.

Those with electric heating showed strong levels of engagement in the trial:

- They were more likely to report facing no challenges in participating than those without electric heating (19% compared to 16%).
- They were less likely to forget to take part in events (35% compared to 39%).
- They were more likely than those without electric heating to say they took part in events 'all or most of the time' (42% compared to 39%).
- They found the trial interesting 28% of the time compared to 24% of the time for other respondents.



Customer experiences

70% of customers with electric heating that we surveyed reported feeling positive about taking part in CrowdFlex – around the same as those reporting positive feelings in the survey as a whole (69%).

Interviews with CrowdFlex participants revealed the ways in which those with electric heating were able to take part and save money. Several of these participants talked about finding ways to flex their electricity usage using their heating system during turn-down events without compromising their comfort levels.

Mary switched her electric wall-mounted radiators on earlier than usual to preheat her home in advance of a turn-down event, meaning that she could turn off her heating for the duration of the event.

Rhiannon instead used a portable electric oil-filled radiator. Because this retains heat, the radiator continued to heat Rhiannon's home even when it was switched off during the turn-down events.

Ease of participation

Both Mary and Rhiannon were able to keep warm while receiving a small financial reward. Most customers we interviewed found that making these changes to their heating and other electrical appliances was easy and didn't require much effort.

As Rhiannon commented:

"It's really not much of a bother. We've got only a few rooms here, so it's a 30-second job, quick walk around. ... It was such an easy thing to adjust to."

Appreciation for financial rewards

Participants were generally pleased to find that they could earn financial rewards by making small adjustments to the timing of heating their home. Faced with very high winter energy bills, these rewards made a difference. As Mary commented:

"I'm really pleased that we can actually make a little bit of money."

Mary and Rhiannon's experiences show that for some households that rely on electric heating, flexibility schemes can provide a low-effort option for reducing energy costs.

Conclusions and recommendations

Our analysis of the CrowdFlex trial shows that those with electrically heated homes can participate in and benefit financially from flexibility.

As customer experiences show, shifting energy use by changing heating times doesn't have to result in a cold home. Whether it's by preheating rooms or using heating appliances that retain heat, there are ways to keep warm while benefiting from financial rewards and helping to balance the grid.

Recommendation: Improving energy efficiency can support flexibility, as flexing heating use requires energy efficient homes which can retain heat. Options for driving uptake of flexibility services and supporting people to participate should be considered through the Warm Homes Plan alongside energy efficiency measures and low carbon technology to deliver both system and household benefits.

Alongside this, raising awareness of how to keep the home warm while shifting will be important to ensure that people can take part in flexibility safely and comfortably.

Recommendation: Increasing the range of affordable options for automating electric heating would enable more households to take advantage of flexibility services like CrowdFlex. Automation removes the need to manually turn heating systems on and off, making it easier for customers to participate, and could apply to smart tariffs as well as flexibility services.

More information on CrowdFlex can be found at www.neso.energy/about/our-projects/crowdflex

Customer feedback and trial analysis reports can be found on the ENA portal at <https://smarter.energynetworks.org/projects/10070764/>

