

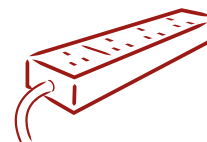
energywise recruited social housing tenants living in part of East London to participate in a trial involving smart meters, energy efficiency devices and Time of Use tariffs/rebates.

The aims of the project were to:

- Understand how to engage fuel poor customers with smart metering, energy efficiency and demand side response;
- Understand how fuel poor customers and hard to reach customers can benefit from energy efficiency and participate in demand side response;
- Quantify the demand reduction and time-shifting these customers could provide. Reducing evening peak demand is important as high demand places extra strain on the current electricity network infrastructure. (Peak time for domestic electricity consumption is typically 5-8pm in the UK.)

Trial 1 – Smart meters and energy efficiency devices

Trial 1 involved the installation of smart meters in participants' homes, as well as the provision of energy efficiency devices and advice (LED lightbulbs, an eco-kettle, a 'standby saver', and an energy efficiency advice leaflet).



Network impacts



TRIAL 1 ACHIEVED A 5.2% REDUCTION in average evening peak demand per **PARTICIPATING HOUSEHOLD**

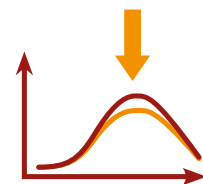
Participant impacts



PARTICIPANTS with prepayment meters **BENEFITED FROM EASIER TOP-UP OPTIONS**



PARTICIPANTS saved an average of **£14 ANNUALLY**







PARTICIPANTS REDUCED their energy consumption by an **AVERAGE OF 3.3%**

Trial 2 – Time of Use tariff and Critical Peak Rebate

Trial 2 focused on encouraging customers to shift their electricity use at certain times through Time of Use tariffs/rebates.

- Prepayment customers were offered **Bonus Time** – a dynamic, non-punitive, Critical Peak Rebate. In **Bonus Time**, customers who reduced their demand during notified periods were rewarded with additional credit on their meters. The price for electricity during these periods remained the same, but each customer was credited 10 units back for every unit of energy they saved. Notifications were provided via SMS (plus email where desired).
- Credit customers** were offered **HomeEnergy FreeTime** – a static, non-punitive, Time of Use tariff. Customers could choose to receive free electricity on either Saturdays or Sundays between 09:00-17:00.



Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
				→			
			→				→
					→		
	→					→	

Network impacts

Trial 2 achieved the following reduction in peak demand.

2.2%
reduction



TIME OF USE TARIFF (HomeEnergy FreeTime)

2.2% REDUCTION in **EVENING PEAK**

demand but a **22.2% INCREASE** in the **WEEKEND PEAK**



1.5%
reduction



CRITICAL PEAK REBATE

(Bonus Time) **1.5% REDUCTION** in **EVENING PEAK** demand



If the **energywise Trial 1 energy savings** and **Trial 2 Bonus Time** peak reductions¹ were realised by all households classified as fuel poor within the UK Power Networks licence areas, an estimated annual reduction in electricity consumption of **86 GWh** could be achieved in total (equating to a total saving to customers of approximately £11.2M²) and a network peak reduction of **27 MW**.

Participant impacts

Critical Peak Rebate (Bonus Time):

£37
per year



Customers earned **REBATES RANGING FROM £3 TO £111 PER YEAR**, with the **AVERAGE** rebate comprising **£37 PER YEAR**

18.7%
reductions



The top **10%** of households achieved **AVERAGE DEMAND REDUCTIONS** of **18.7%**

Static Time of Use Tariff (HomeEnergy FreeTime):

£6.24
per year



Customers on **AVERAGE SHIFTED 0.92 KWH PER WEEK** into the free time, **SAVING 12P/WEEK** and **OVER £1/WEEK** in a couple of cases

FREE
time



These results **REFER TO ENERGY SHIFTED** out of the paid time into the **FREE TIME**. In addition, **PARTICIPANTS** enjoyed the **BENEFITS** of **HIGHER ENERGY** use in the **FREE TIME** period

8KWH
per week



The **HIGHEST SHIFTING** from the paid to the **FREE TIME** was **8 KWH PER WEEK**

Impacts across both trials

Energy Social Capital

energywise also measured participants' 'energy social capital' – i.e. the social resources they had available to help them save or shift energy.

- Energy social capital has increased over the course of the **energywise** project
- Participants are very satisfied with the project and feel it has benefited them
- The number of people stating they had at least one person to ask about various energy saving and shifting issues increased throughout the project to 90%
- Family members were most frequently identified as suitable to ask for advice
- After the shifting trial, more conversations were reported about shifting the times at which energy is used.



Participant attitudes

The project has examined qualitatively how participants use energy. Participants' attitudes and behaviours towards energy saving during Trial 1 and 2 of the project can be summarised as fitting one of three modes:

- Those who feel that they were already energy conscious and the project has not had a big impact on their energy saving habits
- Those who feel the project has helped them understand more about electricity use in their homes and are actively taking steps to save
- Those who feel confused about how electricity is used at home and how they can or are making savings.



Benefits from the project

Of those responding to the project's final Energy Social Capital survey:

Over
65%



SAID they are more aware of how to **SAVE ENERGY** since **PARTICIPATING** in the project.

Over
45%



REPORTED that the **SMART ENERGY MONITOR** helped them manage their **ELECTRICITY** use.

Over
20%



REPORTED that the **INFORMATION SHEETS** helped them **MANAGE** their electricity.

For more information on **energywise** please visit the project website:

<http://innovation.ukpowernetworks.co.uk/innovation/en/Projects/tier-2-projects/Energywise/>

Email: innovation@ukpowernetworks.co.uk



¹The Bonus Time impact on peak reduction was used rather than that of HomeEnergy FreeTime due to the potential creation of new secondary substation peak loads during the free electricity periods of the HomeEnergy FreeTime tariff. Please see "The Energy Shifting Trial Report" from **energywise** for further details. ²Based on 13p/kWh