Electricity in the Home: How, Why and When do People Use it?

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Introduction

Innovative ways need to be found of fostering a transition to low carbon, secure, affordable energy systems. In addition to developing low carbon forms of energy production, efforts also need to focus on the ways that people can reduce their energy consumption in everyday life, including in the home.

By investigating the ways people relate to and interact with electricity in their homes this project will consider how to best support and facilitate uptake of innovative electricity supply technologies, and attempt to understand how people's relationships with electricity affects their consumption.

Aims

The following research question was devised to outline the aims for the project:

- **How do consumers understand and interact with their existing electricity supply system in the home?**

The research presented in this poster is based on focus groups undertaken in Phase 1 (see Methods) to answer the above question and inform future research to help answer questions relating to research phases 2 and 3.

Methods

- The relationships people have with electricity within their homes.
- The reasons for consumption and meanings this consumption has.
- Lifestyles + routines

Phase 1: Focus Groups
December 2012 – July 2013

Phase 2: Development of Scenarios + Top & Tail Expert Interviews
May 2013 – September 2013

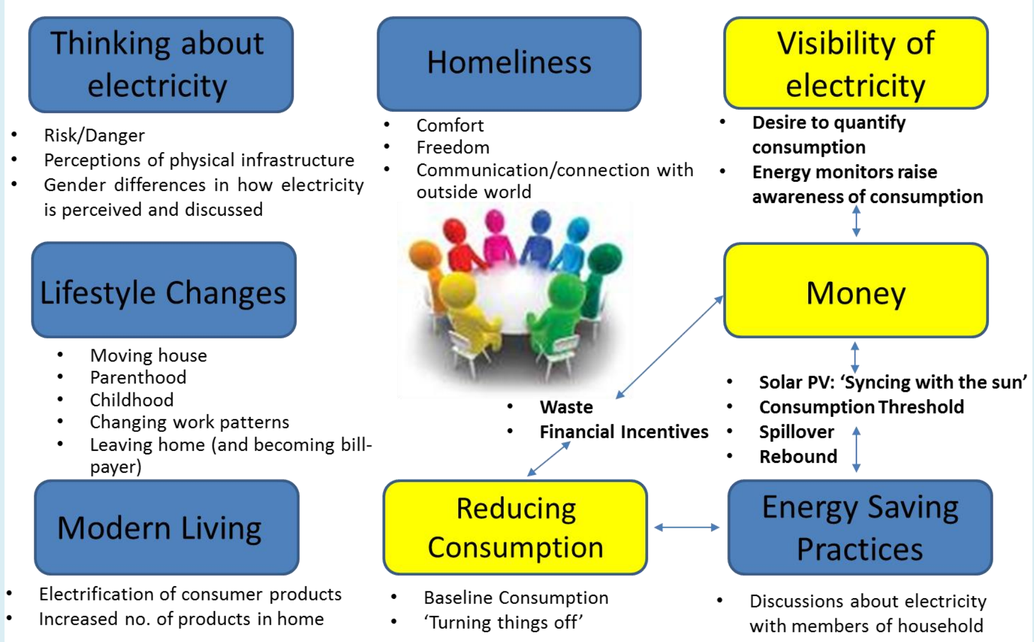
- Vignettes/stories
- Statistics/technical descriptions
- Possible impacts of electricity system change (lifestyle, cost etc.)

- Follow-up interviews with focus group participants.
- Clarify + further investigate themes from Phase 1.
- Present Phase 2 resources to gauge perceptions + attitudes towards scenarios.

Phase 3: Follow-up Interviews
September 2013 – January 2014

5 Homogenous Groups (Young Professionals; Retired Homeowners; Shared Student House; Mothers with young children; Residents with Solar panels)

Findings



Visibility of Electricity

- **Electricity not visible in everyday life.**
- Feedback from **energy monitors raised visibility of electricity** (and is most effective in cost terms).
- However, **short-term interest declines over time**.

Money

- **Economics perceived to be main driver** for consumption-related behaviour.
- **Bill payers think about electricity more**, and therefore context is important (e.g. differences between workplace & home).
- **Contradictions identified** – other important aspects influence behaviour:
  - **Non-negotiable consumption**
  - **Homeliness** and **Comfort**
  - **Leisure**-related consumption
  - **Freedom** – Home is 'your domain'
- **Participants advocated 'techno-fixes' as opposed to behaviour change** as a mechanism for reducing their domestic electricity consumption.

Findings

Solar PV

- Investment due to **financial, as opposed to 'green value' reasons**.
- Solar panels perceived to be a **'respectable' investment**.
- However, **evidence for (financially motivated) unanticipated pro-environmental behaviour change** after installation:
  - **Product changes** (energy-saving light bulbs, timers etc.)
  - **Changing domestic practices** (e.g. cooking, washing)
  - Changing consumption patterns and routines to **sync with the sun**
  - **Raised interest** in other potential energy-related investments

•However, in addition to **positive 'behavioural spillovers',** evidence for **'rebound effects'** was also discovered as participants made use of 'free' electricity and increased consumption on sunny days.

Implications/Next Steps

•Participants invested in Solar PV purely for financial reasons, and then changed their routines, resulting in shifting consumption patterns (helping to reduce peak demand). Further work could **investigate ways this could be applied to other technology and/or policy interventions.**

•**Non-negotiable consumption** and **financial thresholds may have important implications for potential policies** (e.g. tariff interventions). Interesting questions are also raised by the contradiction between participants advocating economics as a driver of consumption-related behaviour, whilst at the same time suggesting that other aspects are as, if not more, important.

• These findings will be considered and further investigated upon in **follow-up interviews** to help understand perceptions of **future domestic electricity use and the implications this may have** for possible innovations in electricity supply and provisions.

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