



Household and Community Labour in Smart Local Energy Systems

Community energy organisations are essential partners in Smart Local Energy Systems (SLES) – but the work they do to make these systems successful often goes unrecognised.

This briefing outlines key ideas from existing literature and our ongoing research project led by the University of Sussex in partnership with King's College London and the Centre for Sustainable Energy on labour approaches to understanding SLES.

Key points for community energy organisations

1. Building and operating Smart Local Energy Systems (SLES) depends on substantial work from households and communities – work that's currently undervalued and under-supported.
2. Households do far more than 'adopt' smart energy technologies – they learn, install, troubleshoot, and continuously adapt their daily routines. We call this work 'energy housekeeping'.
3. Community energy organisations are essential for SLES. They translate between technical developers and households, build trust and ensure local needs shape system design.

Introduction

Smart Local Energy Systems coordinate local renewable energy using digital technologies. This includes smart meters, apps, and devices that manage generation, storage, and use across neighbourhoods. As heating and transport electrify, managing these systems smartly becomes crucial. Developers use these technologies and new market measures to encourage flexible household demand and utilise household generation and storage. Estimates suggest widespread adoption of SLES could reduce energy decarbonisation costs by as much as £18bn per year by 2040.¹

While developers focus on innovative technologies, tariffs and markets, successful SLES will also require households and communities to do substantial work to make these systems function in practice. This work receives far less policy attention than technology development, despite being crucial for success.

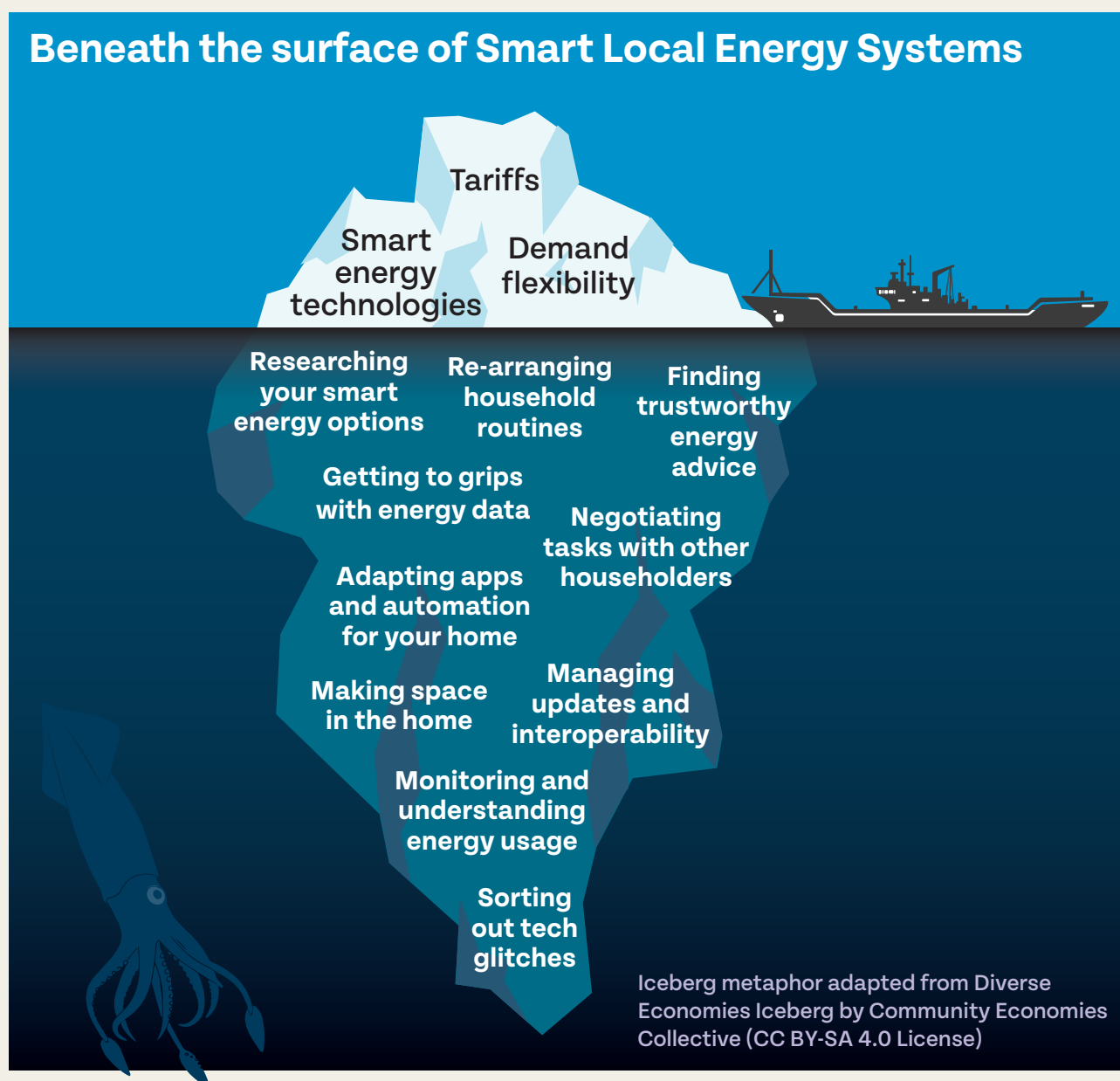
1. Strbac, G., Pudjianto, D., Druce, R. & K. Borkowski (2015) Value of Flexibility in a Decarbonised Grid and System. Report on Externalities of Low-Carbon Generation Technologies: For the Committee on Climate Change.



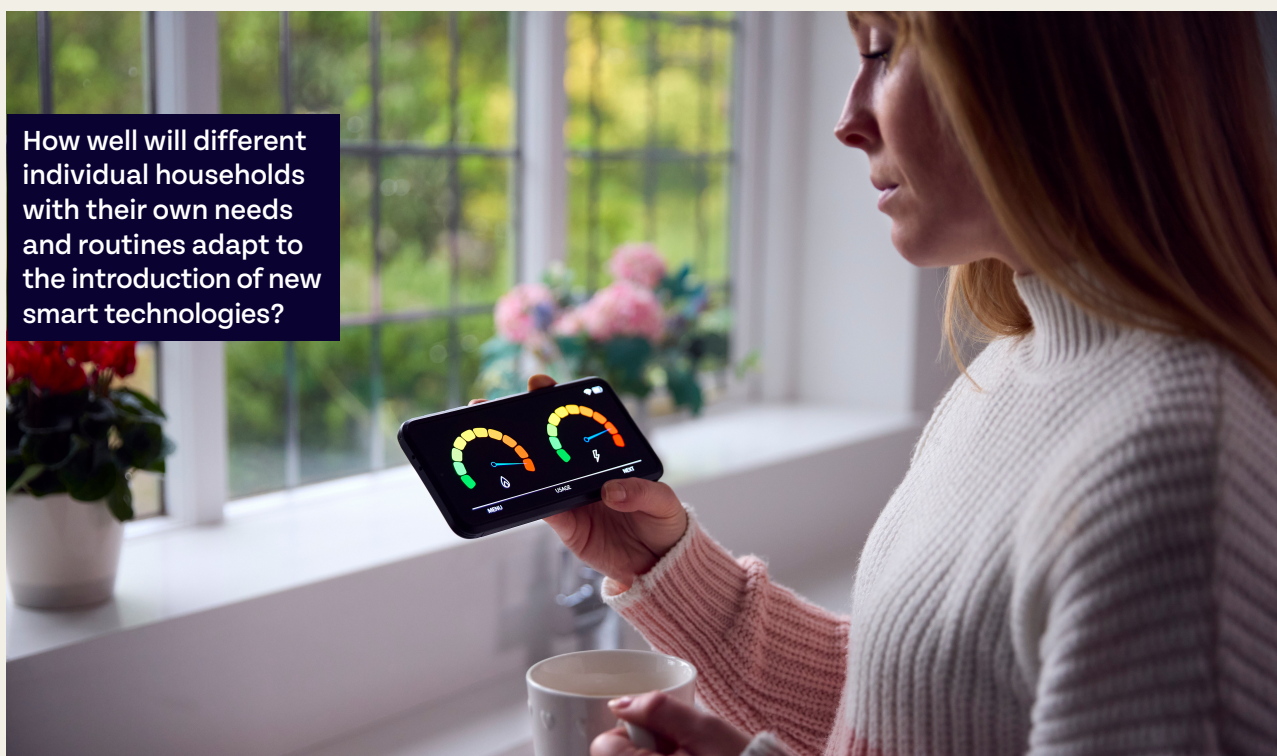
Household work in SLES

There can be a lot going on beneath the surface of SLES (see illustration below). The term ‘energy housekeeping’ describes all the work needed to turn a home into part of a SLES while keeping it comfortable and functional, as the iceberg illustrates.

Research on smart energy technologies analyses how energy-related changes in the home will alter household work, who becomes responsible for this work and how it gets shared out. Historically, labour-saving home technologies often created more work overall for women and caregivers.² However, each home has unique circumstances and social relationships, and so is impacted differently by the introduction of new technologies. It’s important to avoid stereotypes or assumptions about how the work of adapting and using these technologies might be distributed and experienced by individual household members.



2. Ruth Schwartz Cowan (1983) More Work for Mother.



How well will different individual households with their own needs and routines adapt to the introduction of new smart technologies?

Community work in SLES

Public opinion surveys indicate low levels of trust towards the energy sector.³ SLES involve the gathering of data about the home and controls over the energy consumption of household devices and activity – this requires high levels of trust. Local energy groups are well placed to help build this trust, as well as support technology adoption and behaviour change, according to findings from both academic literature and a [community energy workshop we held in July 2025](#). Recognising this, developers of SLES demonstration projects (including network operators and energy suppliers) have partnered with these organisations to recruit participants.

However, earning trust involves work, especially when engaging with households otherwise marginalised by society's energy systems. Households may have heard negative stories about smart meters or heat pumps, for example, or experienced problems directly. Organisations must demonstrate the benefits for households through tailored advice and ongoing support, as well as intermediating between the different partners involved, which can take substantial amounts of time.

Preparing households is also important, such as adapting designs to the needs of diverse homes and neighbourhoods. It also means explaining project aims, accountability structures, how new energy arrangements will operate, and how benefits will be distributed. Despite SLES' technological sophistication, on-the-ground community work is still crucial. Community energy organisations therefore have vital roles to play.

3. Citizens Advice (2015) Trust in the Energy Sector and Billing.



The benefit of a labour perspective

Labour is the value that human work contributes to social and economic activities. Developers and policy makers need to recognise and reward the labour that households and communities contribute, rather than seeing them as barriers to implementation, or assuming they're simply 'rational economic actors' responding to price signals and seeking to maximise their benefits in energy markets. Without households' work, SLES will not be installed or operate effectively. Households and communities play valuable new roles as co-producers of SLES.

For all policies and community programmes, the first step is to better understand the diverse work involved. This can help strengthen the role community energy organisations play in SLES, and advocate for fair, effective and inclusive policies.

How can you use this in your work?

- **To build stronger funding cases:** Recognising the intermediation work you do can help justify dedicated funding for community support roles, not just technology installation.
- **To design better projects:** Understanding household 'energy housekeeping' helps design more realistic timelines and support packages for technology adoption.
- **To enable more inclusive participation:** Acknowledging different households' capacity for energy work can inform targeted and fairer approaches to smart energy advice or projects.

Our research

We are using in-depth interviews with community energy organisations, workshops, and four in-depth case studies and focus groups with households to gather information about the work done in homes and neighbourhoods. Our analysis will consider the value of this work for SLES developments. You can learn more about the project at www.cse.org.uk/SLES

The project is a partnership between a team of researchers based at the Centre for Sustainable Energy (CSE), the University of Sussex and King's College London (KCL), funded by the ESRC (grant number ES/Z503757/1). The project runs from January 2025 until June 2027.

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