Privacy and data sharing in smart local energy systems: insights and recommendations

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Data are the lifeblood of smart local energy systems (SLES). Such systems can help deliver energy services efficiently by automating complex processes, self-regulating, learning user preferences, and helping inform effective decisions. They cannot do this without data in many different forms, from second-by-second updates on the charge of batteries to the addresses of users' homes. Often, this means that users must actively choose to share such data.

The General Data Protection Regulation puts SLES providers under legal obligations regarding the processing of personal data, including energy data. Equally important, data privacy is a prominent concern for potential SLES users. Get it wrong on the data – even if only in appearance – and trust, participation, and data sharing in the SLES could be seriously damaged.

Because of data privacy concerns around smart technology in general, lots of research has been conducted on the form these concerns take and why they occur.

We have reviewed evidence on this topic from the energy field, with the aim of **providing insights for SLES providers on how they can work with users to get the data they need to operate, while respecting and addressing users' privacy concerns**.

The main privacy concern for which we found evidence was that sharing detailed energy use data had the potential to reveal information about home life, and to intrude upon autonomy, choice and control. Many people feel strongly about retaining control over information about themselves, their home life, and ways of living. Setting privacy controls are a part of modern life. People are accustomed to make decisions around sharing data on accepting cookies on websites, and setting privacy controls in social media, ticking boxes to not receive marketing material and so on.

While there has been a lot of research to understand concerns around privacy and data sharing in energy, there has been little publicly available direct testing of what works in appropriately addressing such concerns. Nevertheless, existing studies can still be helpful in creating recommendations where they shed light on the mechanisms that underlie concerns.

Based on these and other identified mechanisms, we derived the following guiding principles for the SLES providers. These are:

• Recognise the mutual benefits of data sharing for smart local energy systems and work with customers as partners

• Involve people in the design of data sharing technologies from the start

• Give people a say on the third parties that they are happy to share data with

• Empower people to set the boundaries around the flow of information about themselves

• Ensure that the purpose and value of the data collected is transparent and fair

• Ensure that everyone that is affected by sharing of data is involved in giving their informed consent

• Recognise that technologies for revealing and monitoring behaviors in the home can be used in unexpected and unwanted ways and anticipate this in service design

• Ensure there are channels of feedback and ongoing communication to continuously improve service delivery

These principles run through and inform the recommendations set out in the remainder of this section.

To address user privacy concerns and maximise (appropriate) data sharing, SLES providers should:

1. Build on existing trust to deliver mutually beneficial outcomes

• Seek to include partners who are viewed as having minimal vested interest and/or relevant expertise. This could include government bodies and energy suppliers, or a data trust to act as an independent intermediary.

• Involve future users early on to help ensure the most appropriate, trusted organisations are brought on board for that locality.

• Don't be afraid to seek to collect and use data where it is of clear benefit to users. An example of this is providing expert guidance, which is likely to be expected where unfamiliar products or services are involved.

2. Ensure people feel in control of both their data and environment

• Make it easy for customers to choose the level of data sharing that they are happy with, and be clear what this means for the kind of benefits or services they can expect to receive.

• Consent to share data should be amendable (with periodic reminders to do so); bounded (stating what the data will be used for) and specific and clear about what data is being shared, and with whom.

• Provide simple processes for customers to express their "red lines", both on what energy providers can control, and the extent to which they can control it (e.g. by time of day, or by appliances).

3. Help people to understand new products and services

• Consider offering customers an option to trial new products or services which require data sharing.

4. Design SLES around user priorities and make these benefits clear

• Use participatory, community/user-centred processes to develop services. This will help ensure they align with users' values and priorities, improving the chances the users will be happy to share their data.

• Ensure that customers can anticipate benefits from data sharing. These could include cost savings, the reliability and fairness of accurate billing and the environmental benefits of more efficient energy use. This could be done by presenting bills that compare energy usage to similar local households.

5. Monitor and use a variety of approaches to actively widen engagement

- Consider engaging with existing local/community groups and networks to identify and proactively target underrepresented groups. Tailor methods to engage directly with all groups of people to ensure that no one is left behind.

- Provide ongoing and proactive communication and support for sustained data sharing for mutual benefit. Consider a range of different means of communication, from personal visits, telephone calls and emails. Make websites easy to access and understand.

6. Consider everyone affected by data sharing when seeking consent to share data

- Reflect the fact that most households consist of more than one person when considering user privacy. Service designers should incorporate the 5 Coercive Control Resistant Design Principles developed by IBM and Refuge, which are based around diversity, privacy/choice, security, combatting gaslighting, and technical ability.

7. Provide clarity on how data will be used and how misuse will be prevented

- Be clear with customers about how their data will be used and how misuse will be prevented.

- This includes not only restricting access to authorised parties, but also limiting data analysis to specific purposes and contexts where consent has been given (and/or policymakers should regulate energy companies to enforce this). It also includes developing clear plans for how data loss will be handled which can be made available to customers on request.

8. Consider leveraging 'horizontal sharing' where appropriate

- Consider how to enable and encourage peers to support each other towards mutual goals.

- Use accessible and, where possible, trusted technology to help to generate uptake. Promoting this uptake can, in turn, generate further uptake.

For the detailed report, please see LINK to: Privacy and data sharing in smart local energy systems: insights and recommendations.

About EnergyREV

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