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| 1. Terms for Privacy | 1. Near terms for Data | 1. Terms of data sharing and privacy behaviours |
| Privacy | Data | Behavior |
| Private | Information | attitude |
| personal |  | Calculus |
| sensitive |  | concern |
| secure |  | “tradeoff” |
| security |  | trade-off |
| Anony\* |  | Intention |
| confidential |  | preserv\* |
| intimate |  | issue\* |
| safety |  | Anxiet\* |
| Data privacy |  | Incentiv\* |
|  |  | "risk perception" |
|  |  | Caution |
|  |  | Paradox |
|  |  | Trust |
|  |  | Barrier |
|  |  | Percept\* |
|  |  | Perceived |
|  |  | "data sharing" |
|  |  | "willingness to disclose" |
|  |  |  |

Guiding principle 1. Recognize the mutual benefits of data sharing for smart local energy systems and work with customers as partners.

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| --- | --- | --- |
| Context | Mechanism | Outcomes |
| Micro and meso system | Communication of a complete and relevant knowledge of risks and benefits to data sharing through usable privacy notices. Knowledge increases, and there is greater understanding and desire for benefits of sharing data | Active and sustained participation of customers in sharing data and involvement in active energy use behaviours |
| Meso system | Recognition and communication of interdependence and mutual benefit.  Partnership working with community groups, individuals, and business | Customer achieve their benefits and SLES System achieves balance and resilience through real time data collection and responsive energy use behaviours of customers’ |
| Meso to micro | Resource. Outreach: Active and ongoing support, education and training | Inclusion of all customers, including those that may be at risk of exclusion. |

Table X Hypothesised contexts, mechanisms and outcomes for Guiding principle 1.

Guiding principle 2. Involve people in the design of data sharing technologies from the start

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| Context | Mechanism | Outcomes |
| Micro system | Individual sense of autonomy, choice and control, self-efficacy, locus of control. | Active or passive resistance or active and continued use |
|  | Active involvement in the design increases sense of control | Trusted devices and technologies are adopted and used |
|  | Tailoring of technologies or service to meet personal goals: whether saving money, or “going green” | Devices and technologies perceived to be compatible with personal values are adopted and used |
| Meso system | Ease of integration, into existing technologies and ways of living. | Devices and technologies perceived to be useful are adopted and used |

Table X Hypothesised contexts, mechanisms and outcomes for Guiding principle 2.

Guiding principle 3. Give people a say on the third parties that they are happy to share data with

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| Context | Mechanism | Outcomes |
| Micro through to meso systems | Existing familiarity of privacy choices and controls.  Usable privacy is accessible and relevant | Sharing or not sharing data can depend on existing knowledge, and how similar or different the privacy notices are compared to what people have already experienced. |
| Micro systems | Having a choice over which third parties to share data with creates trust | Blocking sharing data can be a default position, where the third parties are unknown |

Table X Hypothesised contexts, mechanisms and outcomes for Guiding principle 3.

Guiding principle 4. Empower people to set the boundaries around the flow of information about themselves

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| Context | Mechanism | Outcomes |
| Micro through to macro | Privacy is relational and contextual. Control over information should allow for the setting of boundaries around what is acceptable or not acceptable for each context and time. | Empowerment over the control flow of information. |

Table X Hypothesised contexts, mechanisms and outcomes for Guiding principle 4

Guiding principle 5. Ensure that the purpose and value of the data collected is transparent and fair

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| Context | Mechanism | Outcomes |
| Micro to meso | Ambivalence that people will see any real benefit to themselves | Lack of trust in the extent and purpose of data collection inhibits take up |
| Micro system | Anticipating benefits or Unanticipated consequences of being “flexible” | Resistance or disappointment to unanticipated perceived intrusions into daily life |
| Micro system | Understanding and knowledge of privacy conditions | Withdrawal of consent as a default safety mechanism |
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. Table X Hypothesised contexts, mechanisms and outcomes for Guiding principle 5

Guiding principle 6. Ensure that everyone that is affected by sharing of data is involved in giving their informed consent.

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| Context | Mechanism | Outcomes |
| Meso system | Resource: Methods of accounting and billing allows for multiple account holders. | People who affected by energy use monitoring give their informed consent to the extent and depth of energy data collection. |
| Micro and Meso system | Values and beliefs of the household, differing priorities of members of the household., assumptions made about the use of monitoring technology. | Over-monitoring, energy use data used as a vector of control |
|  | Assumptions of service providers about capacity of customers to receive and understand information about technology and services.  Resource: active outreach for education, demonstration and training | Including or excluding groups of people from decision making around the benefits of data sharing, including financial benefits and efficiencies, or other “off label” benefits. |
| Meso and macro systems | Principle agent problem over investment and benefit. Resource: Incentives for investments and ongoing support | People affected by data sharing are excluded from decision making leading to passive resistance and use of technology is not sustained.  SLES access to data is limited and declines over time. |

Table X Hypothesised contexts, mechanisms and outcomes for Guiding principle 6

Guiding principle 7. Recognize that technologies for revealing and monitoring behaviours in the home can be used in unexpected and unwanted ways.

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| Context | Mechanism | Outcomes |
| Micro and meso systems | Balance of power in a household. The use of energy monitoring data can shift this balance.  Peer pressure to monitor behaviors  Resource: Methods of accounting and billing allows for multiple account holders and permissions to change granularity of data granted to those on the account | Over monitoring, energy use data used as a vector of control.  Multiple account holders should reduce the potential for the use of energy data to be used for gaslighting, or coercive control |
| Meso and macro systems | Ethical design principles Innovative use of detailed energy use data by household may generate unintended consequences | Minimise the impact of unintended consequences |

Table X Hypothesised contexts, mechanisms and outcomes for Guiding principle 7.

Guiding principle 8. Ensure there are channels of feedback and ongoing communication to continuously improve service delivery.

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| Context | Mechanism | Outcomes |
| From micro to macro systems | Open channels of communication | Swiftly address the impact of unintended consequences |
|  | Resources: outreach for stakeholder identification and involvement to Include different perspectives into ethical design principles | An ongoing process of evaluation |

Table X Hypothesised contexts, mechanisms and outcomes for Guiding principle 8.

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