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SERL Laboratory: summary for third party researchers

The Smart Energy Research Lab has developed infrastructure and procedures to collect smart meter data with informed consent for residential households in GB, to link this data to rich contextual data, and for this data to be used in scientific research projects in the public interest.

SERL is recruiting a representative sample of 8k-10k GB households to create an 'Observatory' data resource and make this data available to the UK energy research community. Access to this data is free however researchers are required to gain accredited researcher status, and must have their projects approved by SERL's independent Data Governance Board. Further information about how researchers can apply to access the Observatory data via the Data Governance Board can be found at https://serl.ac.uk/researchers

In addition to the Observatory, SERL supports a 'Laboratory' function whereby third-party researchers may collaborate with SERL to recruit their own participants and use SERL to gain access to smart meter data and other linked contextual data for these participants.

Use of the Laboratory requires additional support from SERL and comes with additional requirements of third-party researchers.

This document provides a brief summary of the functionality and support SERL provides for the Laboratory, and the requirements of Laboratory research users.

SERL data

SERL can remotely access the following data (with consent) from any GB household (households in Northern Ireland are not included in the DCC) with a valid smart meter (gas or electricity) that is enrolled in the DCC (i.e. SMETS2 meters, or DCC-enrolled SMETS1 meters):

- Gas and electricity consumption data
  - Half-hourly and daily resolution available
  - Historic data for up to 13 months is stored on the smart meter and available
- Smart inventory
  - Technical information about any smart devices installed and registered against the property (gas/electricity meter, comms hub, in-home display)
- Tariff
  - Data which can be combined with consumption data to calculate the household's energy costs.

SERL can link this data to the following data:

- Energy Performance Certificate data (where available)
- Weather data

Our research partners

SERL Research Portal

All data is securely stored at the UK Data Archive and is made available via SERL's Research Portal, a secure virtual remote workspace developed by UK Data Archive with a standard suite of analysis software. While this is the default option for third party researchers wanting to access data for their participants, it will also be possible for third party researchers to access the data via a secure file transfer. Researchers will also be able to bring their own data and code into the research portal.

SERL survey

SERL has developed a survey for participants. It contains approx. 40 questions covering energy and heating practices, accommodation, and household composition. We strongly recommend third party researchers use (or adapt) the SERL survey to collect contextual data for their participants to harmonise collection of contextual data across the UK energy research community. Also, collecting this data will enable a subsample of SERL Observatory sample to be selected and be used as a control group

Support from SERL

SERL can offer the following support to third party researchers:

- Providing information about SERL and answering questions including giving feedback on project feasibility, and discussing collaboration opportunities.
- We cannot guarantee that we can help with writing proposals however we can provide feedback on proposals and letters of support where relevant.
- For smart meter data collected via SERL, we can provide:
    - Daily (overnight) collection of smart meter data
    - Access to the data (via research portal or secure data transfer)
    - Linking data (EPC data, weather data)
    - Upload and linking of your own data to the SERL Research Portal (given reasonable expectations about size of data)
- SERL survey: you can use or adapt the SERL survey questions for your own survey
- Smart meter check: For addresses you provide to us, and provided a lawful, ethical basis is established for the processing of such data, we can provide information about which of these have valid smart meter devices installed. Note: as we cannot guarantee addresses will be successfully recognised by the DCC, we recommend use of UPRN or ideally MPAN as primary identifiers for participants.

Additional support

If third party researchers require any of the following then additional support will be required and they should contact SERL to discuss how this can be accommodated:

- Sample design and creation – SERL can create stratified random samples of addresses and determine which have eligible smart meter devices.
- Recruitment of participants
- Survey provision - SERL can provide a survey platform (creation, distribution, data collection and access).
- Survey design
- Participant consent management (obtaining, authentication, withdrawals)
- Participant portal – SERL can provide a portal for participants to sign-up online
- Analysis of data
- Reporting: data quality, participant onboarding, offboarding.
- Project applications