# Data disclaimer: monthly energy consumption and half-hourly profiles

Within the outputs are monthly electricity and gas consumption estimates for each archetype. There are also estimates for the half-hourly electricity and gas profiles for different months and types of day for each archetype. These were calculated using the Smart Energy Research Laboratory dataset, which contains half-hourly electricity import, electricity export, and gas consumption data from smart meters running from Jan 2019 to late 2022 for over 10,000 GB households (more details about this dataset in the “method and guidance” document).

The SERL households are broadly representative of the GB population in terms of Index of Multiple Deprivation (IMD) quintile and region and the annual metered energy consumption is consistent with other national datasets such as NEED. However, as stated in the “method and guidance” document, there are limitations to the SERL data:

* It only includes households with a smart meter
* It does not include non-metered fuel consumption data.
* Only one survey (on household and dwelling characteristics) was conducted at the start of the participant’s involvement and household and dwelling characteristics could change during the smart meter data collection time period.
* The data collection period partially overlapped with the COVID-19 lockdowns (although we mitigated this issue by extracting data from time periods outside of lockdowns).

The archetypes were created by splitting the SERL households based on the following variables: LCT ownership, central heating system, number of adults, number of children, and whether the head of household is 65+ (only non-LCT owning mains gas households were split by the last three variables). These variables have a significant influence on either (or both) monthly energy consumption and half-hourly demand profiles. However, there are other variables that also have a significant influence on those two metrics such as geographic location, EPC rating and floor area of the dwelling (to name just a few). Therefore, there will be significant variation in monthly energy consumption and half-hourly demand profiles within each archetype.

**For these reasons, we do not recommend using the archetypes for detailed demand modelling at a geographically granular level.** If the archetypes are used for some form of energy demand modelling, we recommend using accurate local energy consumption data (DESNZ sub-national [electricity](https://www.gov.uk/government/collections/sub-national-electricity-consumption-data) and [gas](https://www.gov.uk/government/collections/sub-national-gas-consumption-data) consumption data) to verify and/or calibrate the monthly energy consumption and half-hourly profiles of the archetypes. Also, bear in mind that as well as providing an estimate for average (mean) monthly energy consumption and average (mean) half-hourly profiles for each archetype we have also provided the median and 10th, 25th, 75th, and 90th percentiles (more details on this in the “method and guidance” document). These might be useful for assisting with adding some variation to the archetypes’ energy consumption based on other known variables such as geographic location, EPC rating, and floor area.

SERL dataset citation:

Smart Energy Research Lab (SERL) Observatory Data Elam, S., Webborn, E., McKenna, E., Oreszczyn, T., Anderson, B., Few, J., Pullinger, M., European Centre for Medium-Range Weather Forecasts, Ministry of Housing, Communities and Local Government, Royal Mail Group Limited. (2022). *Smart Energy Research Lab Observatory Data, 2019-2021: Secure Access*. [data collection]. *5th Edition*. UK Data Service. SN: 8666, DOI: <http://doi.org/10.5255/UKDA-SN-8666-5>