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# REFIT: Electrical Load Measurements (Cleaned)

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[Electronic And Electrical Engineering](#)

*Dataset*

## Description

The REFIT Electrical Load Measurements dataset includes cleaned electrical consumption data in Watts for 20 households at aggregate and appliance level, timestamped and sampled at 8 second intervals. This dataset is intended to be used for research into energy conservation and advanced energy services, ranging from non-intrusive appliance load monitoring, demand response measures, tailored energy and retrofit advice, appliance usage analysis, consumption and time-use statistics and smart home/building automation.

When using this dataset please cite the following paper in Scientific Data, <http://dx.doi.org/10.1038/sdata.2016.122>

This version of the dataset has been cleaned in the following ways:  
- Timestamp duplicates have been merged.

## Contact

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## DOI

[10.15129/9ab14b0e-19ac-4279-938f-27f643078cec](https://doi.org/10.15129/9ab14b0e-19ac-4279-938f-27f643078cec)

## Access

## Dataset

[REFIT\\_Readme.t](#)

- IAM (Individual Appliance Monitor) readings set to 0 Watts if above 4000 Watts (above the rated limit of the sensor).
- Each IAM has been processed to ensure that it only shows readings for one appliance, where possible.
- The ReadMe file has been updated with information about monitored appliance changes.
- NaN values have been forward filled (< 2 minute gaps) or zeroed (> 2 minute gaps).

This work has been carried out as part of the REFIT project ('Personalised Retrofit Decision Support Tools for UK Homes using Smart Home Technology', Grant Reference EP/K002368/1/1). REFIT is a consortium of three universities - Loughborough, Strathclyde and East Anglia - and ten industry stakeholders funded by the Engineering and Physical Sciences Research Council (EPSRC) under the Transforming Energy Demand in Buildings through Digital Innovation (BuildTEDDI) funding programme.

A raw data version of this dataset (deposited 23/09/2015) is also available from the Data Sets link below.

DATE MADE AVAILABLE	16 Jun 2016
PUBLISHER	University of Strathclyde
TEMPORAL COVERAGE	Oct 2013 - Jun 2015
DATE OF DATA PRODUCTION	16 Jun 2016
GEOGRAPHICAL COVERAGE	United Kingdom, Loughborough

### Cite this

DataSetCite

Murray, D. (Creator), Stankovic, L. (Supervisor). (16 Jun 2016). REFIT: Electrical Load Measurements (Cleaned). University of Strathclyde. REFIT\_Readme(.txt), Processed\_Data\_CSV(.7z), CLEAN\_READ\_ME\_081116(.txt), CLEAN\_REFIT\_081116(.7z), MetaData\_Tables(.xlsx). 10.15129/9ab14b0e-19ac-4279-938f-27f643078cec

xt

File: text/plain, 9 KB

Type: Text

Licence: CC BY 4.0

Processed\_Data\_CSV.7z

File: application/octet-stream, 488 MB

Type: Dataset

Licence: CC BY 4.0

CLEAN\_READ\_ME\_081116.txt

File: text/plain, 11 KB

Type: Text

CLEAN\_REFIT\_081116.7z

File: application/octet-stream, 490 MB

Type: Dataset

MetaData\_Tables.xlsx

File: application/vnd.openxmlformats-officedocument.spreadsheetml.sheet, 28 KB

Type: Other

- REFIT: Smart Homes and Energy Demand Reduction
- Engineering and Physical Sciences Research Council (EPSRC)
- UK Data Service:

Qualitative data were also collected from households using interviews and surveys at several points during the measurement period. This supplementary data offers some contextual background on the households and their domestic routines using electric appliances. Phase 1: Survey Data



UK Data Service: Qualitative data were also collected from households using interviews and surveys at several points during the measurement period. This supplementary data offers some contextual background on the households and their domestic routines using electric appliances. Phase 2: Smart home

[interviews](#)

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### Datasets

[REFIT: Electrical  
Load](#)

Measurements

## Research Output

A data  
management  
platform for  
personalised real-  
time energy  
feedback

Measuring the  
energy intensity  
of domestic  
activities from  
smart meter data

Non-intrusive  
appliance load  
monitoring using  
low-resolution  
smart meter data

A generic  
optimisation-  
based approach  
for improving  
non-intrusive load  
monitoring

Improving event-  
based non-  
intrusive load  
monitoring using  
graph signal  
processing

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enabled by load  
disaggregation

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disaggregation  
using appliance  
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measurements  
dataset of United  
Kingdom  
households from  
a two-year  
longitudinal study

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efficient use of  
kettles:  
understanding  
usage patterns

Non-intrusive  
load  
disaggregation  
using graph  
signal processing

On a training-less  
solution for non-  
intrusive  
appliance load  
monitoring using  
graph signal  
processing

Online accuracy  
estimation and  
improvement of  
event-based  
NILM algorithms  
without resorting  
to submetered  
individual loads

Understanding  
domestic

appliance use  
through their  
linkages to  
common activities

Understanding  
usage patterns of  
electric kettle and  
energy saving  
potential

## Projects

Smart Building  
Energy  
Management  
System (BEMS)  
Personalised  
Retrofit Decision  
Support Tools For  
Uk Homes Using  
Smart Home  
Technology

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