

NZ GREEN Grid Household Electricity Demand Study

Household attributes (version 1.0)

Anderson, B., Eyers, D., Ford, R., Giraldo Ocampo, D., Peniamina, R., Stephenson, J., Suomalainen, K., Wilcocks, L. and Jack, M.

Last run at: 2018-08-31 09:28:13 (Pacific/Auckland)

1 About

1.1 Report circulation:

- Public – this report is intended to accompany the data release.

1.2 License

This work is made available under the Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0) License (<https://creativecommons.org/licenses/by-sa/4.0/>).

This means you are free to:

- *Share* – copy and redistribute the material in any medium or format
- *Adapt* – remix, transform, and build upon the material for any purpose, even commercially.

Under the following terms:

- *Attribution* – You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
- *ShareAlike* – If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original.
- *No additional restrictions* – You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

Notices:

- You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation.
- No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. #YMMV

For the avoidance of doubt and explanation of terms please refer to the full license notice (<https://creativecommons.org/licenses/by-sa/4.0/>) and legal code (<https://creativecommons.org/licenses/by-sa/4.0/legalcode>).

1.3 Citation

If you wish to use any of the material from this report please cite as:

- Anderson, B., Eyers, D., Ford, R., Giraldo Ocampo, D., Peniamina, R., Stephenson, J., Suomalainen, K., Wilcocks, L. and Jack, M. (2018) NZ GREEN Grid Household Electricity Demand Study Household attributes (version 1.0), Centre for Sustainability (<http://www.otago.ac.nz/centre-sustainability/>), University of Otago: Dunedin.

This work is (c) 2018 the University of Southampton.

1.4 History

You may not be reading the most recent version of this report. Please check:

- the overall package documentation (<https://cfsotago.github.io/GREENGridData/>);
- this report's edit history (<https://github.com/CfSOTago/GREENGridData/commits/master/makeDocs/buildHouseholdAttributesReport.Rmd>)

1.5 Support

This work was supported by:

- The University of Otago (<https://www.otago.ac.nz/>);
- The University of Southampton (<https://www.southampton.ac.uk/>);
- The New Zealand Ministry of Business, Innovation and Employment (MBIE) (<http://www.mbie.govt.nz/>) through the NZ GREEN Grid (<https://www.otago.ac.nz/centre-sustainability/research/energy/otago050285.html>) grant (Contract ID: UOCX1203);
- SPATIALEC (<http://www.energy.soton.ac.uk/tag/spatialec/>) - a Marie Skłodowska-Curie Global Fellowship (http://ec.europa.eu/research/mariecurieactions/about-msca/actions/if/index_en.htm) based at the University of Otago's Centre for Sustainability (<http://www.otago.ac.nz/centre-sustainability/staff/otago673896.html>) (2017-2019) & the University of Southampton's Sustainable Energy Research Group (2019-202).

2 Introduction

The NZ GREEN Grid household electricity demand study (<https://cfsotago.github.io/GREENGridData/>) recruited a sample of c 25 households in each of two regions of New Zealand (Stephenson et al. 2017). The first sample was recruited in early 2014 and the second in early 2015. Research data includes:

- 1 minute electricity power (W) data was collected for each dwelling circuit using GridSpy (<https://gridspy.com/>) monitors on each power circuit (and the incoming power). The power values represent mean(W) over the minute preceding the observation timestamp;
- Dwelling & appliance surveys;
- Occupant time-use diaries (focused on energy use).

NB: Version 1 of the data package does not include the time-use diaries.

The purpose of this report is to:

- create a household attribute file that can be linked to the project power monitoring data;

- describe the household attribute data.

The resulting cleaned data has *no* identifying information such as names, addresses, email addresses, telephone numbers and is therefore safe to share across all partners.

The data contains a unique household id (`linkID`) which can be used to link it to the NZ GREEN Grid time use diaries and dwelling/appliance surveys.

3 Load data

3.1 Household master dataset

Table 3.1 shows the number of households in each area.

Table 3.1: Sample location (master file)

Location	Freq
Hawkes Bay	20
New Plymouth	24
NA	0

In total we have 44 households in two sample areas.

3.2 Appliance data

Household appliance ownership was recorded during recruitment using a detailed survey. However this data is not readily available for all households at present. Table 3.2 shows the number of households in each area for whom summary appliance data exists.

Table 3.2: Sample (appliance summary file, NA indicates no data)

	Yes	NA
Hawkes Bay	19	1
New Plymouth	12	12
NA	0	0

The appliances recorded in this summary are shown in Table 3.3.

Table 3.3: Appliances recorded

x
Oven

x

Fridge / Freezer 1
Fridge / Freezer 2
Fridge / Freezer 3
Dishwasher
Microwave
Washing Machine
Clothes Dryer
Hot water cylinder
Other Appliance
Electric heater
Heated towel rails
Heat pump number
PV Inverter
Energy Storage
Other Generation Device

3.3 Household survey data

The Energy Cultures 2 survey (Wooliscroft 2015) was used to collect data on household energy and transport attitudes/behaviours and usages for one of the regional samples only. The long form of the survey was used for some households and the short form for others.

Table 3.4: Survey responses (NA indicates no survey)

Location	hasLongSurvey	hasShortSurvey	nHouseholds
Hawkes Bay	NA	NA	2
Hawkes Bay	NA	Yes	13
Hawkes Bay	Yes	NA	5
New Plymouth	Yes	NA	24

4 Final household attribute data description

Table ?? reports the final household attribute variables and their internal distributions. The question labels are found in Table 9.1 below.

Skim summary statistics

n obs: 44

n variables: 110

Variable type: character

variable	missing	complete	n	min	max	empty	n_unique
Clothes Dryer	23	21	443	3	0	1	
Dishwasher	15	29	443	3	0	1	
Electric heater	30	14	443	3	0	1	
Energy Storage	43	1	443	3	0	1	
Fridge / Freezer 1	13	31	443	3	0	1	
Fridge / Freezer 2	24	20	443	3	0	1	
Fridge / Freezer 3	38	6	443	3	0	1	
hasApplianceSummary	13	31	443	3	0	1	
hasLongSurvey	15	29	443	3	0	1	
hasShortSurvey	31	13	443	3	0	1	
Heated towel rails	23	21	443	3	0	1	
hhID	0	44	445	5	0	42	
Hot water cylinder	16	28	443	3	0	1	
linkID	0	44	445	6	0	44	
Location	0	44	4410	12	0	2	
Microwave	14	30	443	3	0	1	
notes	39	5	447	81	0	5	
Other Appliance	30	14	443	42	0	8	
Other Generation Device	44	0	44	Inf	-Inf	0	0
Oven	14	30	443	3	0	1	
PV Inverter	40	4	443	3	0	1	
Q19_10	44	0	44	Inf	-Inf	0	0
Q19_10.1	44	0	44	Inf	-Inf	0	0
Q19_17	44	0	44	Inf	-Inf	0	0
Q19_2	44	0	44	Inf	-Inf	0	0
Q19_5	44	0	44	Inf	-Inf	0	0
Q19_9	44	0	44	Inf	-Inf	0	0
StartDate	2	42	4416	16	0	42	
Washing Machine	13	31	443	3	0	1	

Variable type: Date

variable	missing	complete	n	min	max	median	n_unique
r_stopDate	41	3	44	2015-01-15	2016-04-02	2016-03-28	3

Variable type: integer

variable	missing	complete	n	mean	sd	p0	p25	p50	p75	p100	hist
Heat pump number	19	25	44	441.16	0.55	1	1	1	1	3	
nAdults	1	43	44	441.93	0.51	1	2	2	2	3	
nChildren0_12	2	42	44	441.02	1.02	0	0	1	2	3	

variable	missing	complete	n	mean	sd	p0	p25	p50	p75	p100	hist
nTeenagers13_18	2	42	440.26	0.54	0	0	0	0	2	2	
Q10#1_1_1_TEXT	15	29	443.38	0.9	2	3	3	4	6	6	
Q10#1_1_2_TEXT	16	28	441.57	1.4	0	0.75	1.5	2	6	6	
Q10#1_2_1_TEXT	15	29	441.38	0.49	1	1	1	2	2	2	
Q10#1_2_2_TEXT	16	28	441.32	0.67	1	1	1	1.25	4	4	
Q10#1_3_1_TEXT	15	29	441	0	1	1	1	1	1	1	
Q10#1_3_2_TEXT	18	26	440.92	0.27	0	1	1	1	1	1	
Q10#1_4_1_TEXT	15	29	440.14	0.35	0	0	0	0	1	1	
Q10#1_4_2_TEXT	26	18	440.11	0.32	0	0	0	0	1	1	
Q10#1_5_1_TEXT	15	29	440.34	0.48	0	0	0	1	1	1	
Q10#1_5_2_TEXT	24	20	440	0	0	0	0	0	0	0	
Q10#1_6_1_TEXT	15	29	441.62	0.62	1	1	2	2	3	3	
Q10#1_6_2_TEXT	23	21	440.43	0.87	0	0	0	0	3	3	
Q10#1_7_1_TEXT	15	29	440.69	0.54	0	0	1	1	2	2	
Q10#1_7_2_TEXT	26	18	440.056	0.24	0	0	0	0	1	1	
Q10#1_8_1_TEXT	15	29	440.83	0.38	0	1	1	1	1	1	
Q10#1_8_2_TEXT	25	19	440.053	0.23	0	0	0	0	1	1	
Q11_1	15	29	447.76	1.83	4	7	8	9	10	10	
Q15_1	15	29	4414.03	9.76	3	7	10	20	44	44	
Q17_1	28	16	4420.31	1.58	18	19	20	21	24	24	
Q18_1	15	29	4420.69	1.58	18	20	20	22	23	23	
Q19_1	28	16	441	0	1	1	1	1	1	1	
Q19_12	37	7	441	0	1	1	1	1	1	1	
Q19_13	42	2	441	0	1	1	1	1	1	1	
Q19_14	43	1	441	NA	1	1	1	1	1	1	
Q19_15	42	2	441	0	1	1	1	1	1	1	
Q19_16	40	4	441	0	1	1	1	1	1	1	
Q19_3	31	13	441	0	1	1	1	1	1	1	
Q19_4	37	7	441	0	1	1	1	1	1	1	
Q19_6	29	15	441	0	1	1	1	1	1	1	
Q19_7	40	4	441	0	1	1	1	1	1	1	
Q19_8	43	1	441	NA	1	1	1	1	1	1	
Q30_1	36	8	4419	2.07	16	18	18	21	22	22	
Q33_1	28	16	4457.06	4.57	50	54	56	56	65	65	
Q4	2	42	4414.45	3.83	1	15	15	16	17	17	
Q40_1	15	29	441.31	0.54	1	1	1	2	3	3	
Q40_10	15	29	442.55	0.74	1	2	3	3	3	3	
Q40_11	15	29	442	0.93	1	1	2	3	3	3	
Q40_12	15	29	441.97	1.02	1	1	1	3	3	3	
Q40_13	15	29	442.86	0.52	1	3	3	3	3	3	
Q40_14	15	29	442.28	0.84	1	2	3	3	3	3	
Q40_15	15	29	442.1	0.9	1	1	2	3	3	3	
Q40_16	15	29	441	0	1	1	1	1	1	1	
Q40_17	15	29	441.76	0.99	1	1	1	3	3	3	
Q40_18	15	29	442.24	0.99	1	1	3	3	3	3	
Q40_19	15	29	443	0	3	3	3	3	3	3	
Q40_2	15	29	442.79	0.62	1	3	3	3	3	3	
Q40_20	15	29	442.93	0.37	1	3	3	3	3	3	

variable	missing	complete	n	mean	sd	p0	p25	p50	p75	p100	hist
Q40_21	15	29	441.93	0.96	1	1	2	3	3		
Q40_3	15	29	441.93	1	1	1	1	3	3		
Q40_38	15	29	441.24	0.64	1	1	1	1	3		
Q40_4	15	29	443	0	3	3	3	3	3		
Q40_5	15	29	442.31	0.85	1	2	3	3	3		
Q40_6	15	29	441.9	1.01	1	1	1	3	3		
Q40_7	15	29	442.55	0.83	1	3	3	3	3		
Q40_9	15	29	442.14	0.95	1	1	3	3	3		
Q5	15	29	449.66	0.77	8	10	10	10	10		
Q53_1	2	42	44157.24	78.38	50	100.5	140	197.5	429		
Q53_2	25	19	4431.11	23.06	0	9.5	40	50	60		
Q53_3	37	7	440	0	0	0	0	0	0		
Q53_4	34	10	440	0	0	0	0	0	0		
Q53_5	28	16	44224.38	178.13	75	226	352.5	500			
Q53_6	36	8	4416.62	47.02	0	0	0	0	133		
Q53_7	36	8	440	0	0	0	0	0	0		
Q54_1	2	42	44213.62	100.9	60	146.25	200	258.75	485		
Q54_2	24	20	4456.55	51.54	0	19.75	50	80.75	180		
Q54_3	37	7	440	0	0	0	0	0	0		
Q54_4	28	16	4487.38	115.96	18.75	56.5	100.75	451			
Q54_5	29	15	44241.8	172.44	115	252	385	500			
Q54_6	35	9	4415.56	46.67	0	0	0	0	140		
Q54_7	37	7	440	0	0	0	0	0	0		
Q55	2	42	4412.88	4.55	4	10	12.5	16	26		
Q57	2	42	443.17	1.34	1	2	3	4	6		
Q58#2_1	2	42	4442.07	9.29	28	34.25	41.5	49	64		
Q7	2	42	442	1.1	1	1	2	3	4		

Variable type: numeric

variable	missing	complete	n	mean	sd	p0	p25	p50	p75	p100	hist
Q14_1	15	29	445.28	5.03	0	1	3.5	7	20		

Variable type: POSIXct

variable	missing	complete	n	min	max	median	n_unique
surveyStartDate2	42	44	2014-05-14	2015-02-10	2014-06-19	42	

5 Household attribute frequency tables

This section reports tables of the key household attributes by sample location. Note that NA usually means not known.

5.1 Number of adults

Table 5.1: Number of adults in household by location

	Hawkes Bay	New Plymouth	NA
1	1	6	0

	Hawkes Bay	New Plymouth	NA
2	15	17	0
3	4	0	0
NA	0	1	0

5.2 Number of teenagers

Table 5.2: Number of teenagers in household by location

	Hawkes Bay	New Plymouth	NA
0	14	19	0
1	4	3	0
2	2	0	0
NA	0	2	0

5.3 Number of children

Table 5.3: Number of children in household by location

	Hawkes Bay	New Plymouth	NA
0	6	11	0
1	4	7	0
2	7	3	0
3	3	1	0
NA	0	2	0

5.4 Notes variable

The `notes` column may have been set for any number of reasons and mean the monitoring data for a given household should be used with caution.

Table 5.4: Notes by location

	Hawkes Bay	New Plymouth	NA
--	------------	--------------	----

	Hawkes Bay	New Plymouth	NA
Disconnected 15/01/2015. Re-used	0	1	0
Re-user	0	1	0
Re-user. Then disconnected 02/04/2016	0	1	0
Unusual & specialist energy tech configuration. Disconnected 28/03/2016. Re-used.	0	1	0
very large number of circuits	1	0	0
NA	19	20	0

6 Summary

The following table (6.1) shows the key columns of the household attributes file. The data can be linked to the gridSpy data using `linkID`. `linkID` is used to flag the two re-used GridSpy units (`gridSpy1mProcessingReport.html#41_recoding_re-allocated_grid_spy_units`). As an example, unit `rf_15` was re-used in a different household. We have therefore created `linkID` so that the correct household data (`rf_15a` or `rf_15b`) can be linked to the GridSpy data (coded `rf_15`) at the correct date.

Note also that data exists in the GridSpy power demand data for whom no household data exists (e.g. `rf_01` & `rf_02`).

Table 6.1: Household data: key columns

hhID	linkID	Location	nAdults	r_stopDate	notes
rf_06	rf_06	New Plymouth	2	NA	NA
rf_07	rf_07	New Plymouth	2	NA	NA
rf_08	rf_08	New Plymouth	2	NA	NA
rf_09	rf_09	New Plymouth	2	NA	NA
rf_10	rf_10	New Plymouth	2	NA	NA
rf_11	rf_11	New Plymouth	2	NA	NA

hhID	linkID	Location	nAdults	r_stopDate	notes
rf_12	rf_12	New Plymouth	1	NA	NA
rf_13	rf_13	New Plymouth	2	NA	NA
rf_14	rf_14	New Plymouth	1	NA	NA
rf_15	rf_15a	New Plymouth	1	2015-01-15	Disconnected 15/01/2015. Re-used
rf_15	rf_15b	New Plymouth	2	2016-04-02	Re-user. Then disconnected 02/04/2016
rf_16	rf_16	New Plymouth	2	NA	NA
rf_17	rf_17a	New Plymouth	2	2016-03-28	Unusual & specialist energy tech configuration. Disconnected 28/03/2016. Re-used.
rf_17	rf_17b	New Plymouth	NA	NA	Re-user
rf_18	rf_18	New Plymouth	2	NA	NA
rf_19	rf_19	New Plymouth	1	NA	NA
rf_20	rf_20	New Plymouth	2	NA	NA
rf_21	rf_21	New Plymouth	2	NA	NA
rf_22	rf_22	New Plymouth	2	NA	NA
rf_23	rf_23	New Plymouth	1	NA	NA
rf_24	rf_24	New Plymouth	2	NA	NA
rf_25	rf_25	New Plymouth	1	NA	NA

hhID	linkID	Location	nAdults	r_stopDate	notes
rf_26	rf_26	New Plymouth	2	NA	NA
rf_27	rf_27	New Plymouth	2	NA	NA
rf_28	rf_28	Hawkes Bay	2	NA	NA
rf_29	rf_29	Hawkes Bay	2	NA	NA
rf_30	rf_30	Hawkes Bay	2	NA	NA
rf_31	rf_31	Hawkes Bay	3	NA	NA
rf_32	rf_32	Hawkes Bay	2	NA	NA
rf_33	rf_33	Hawkes Bay	2	NA	NA
rf_34	rf_34	Hawkes Bay	3	NA	NA
rf_35	rf_35	Hawkes Bay	2	NA	NA
rf_36	rf_36	Hawkes Bay	1	NA	NA
rf_37	rf_37	Hawkes Bay	2	NA	NA
rf_38	rf_38	Hawkes Bay	2	NA	very large number of circuits
rf_39	rf_39	Hawkes Bay	3	NA	NA
rf_40	rf_40	Hawkes Bay	2	NA	NA
rf_41	rf_41	Hawkes Bay	2	NA	NA

hhID	linkID	Location	nAdults	r_stopDate	notes
rf_42	rf_42	Hawkes Bay	2	NA	NA
rf_43	rf_43	Hawkes Bay	2	NA	NA
rf_44	rf_44	Hawkes Bay	2	NA	NA
rf_45	rf_45	Hawkes Bay	2	NA	NA
rf_46	rf_46	Hawkes Bay	2	NA	NA
rf_47	rf_47	Hawkes Bay	3	NA	NA

7 Runtime

Analysis completed in 1.63 seconds (0.03 minutes) using knitr (<https://cran.r-project.org/package=knitr>) in RStudio (<http://www.rstudio.com>) with R version 3.5.1 (2018-07-02) running on x86_64-apple-darwin15.6.0.

8 R environment

8.1 R packages used

- base R (R Core Team 2016)
- bookdown (Xie 2016a)
- GREENGridData (Anderson and Eyers 2018) which depends on:
 - data.table (Dowle et al. 2015)
 - dplyr (Wickham and Francois 2016)
 - hms (Müller 2018)
 - lubridate (Grolemund and Wickham 2011)
 - progress (Csárdi and FitzJohn 2016)
 - readr (Wickham, Hester, and Francois 2016)
 - readxl (Wickham and Bryan 2017)
 - reshape2 (Wickham 2007)
- kableExtra (Zhu 2018)
- knitr (Xie 2016b)
- rmarkdown (Allaire et al. 2018)
- skimr (Arino de la Rubia et al. 2017)

8.2 Session info

```
## R version 3.5.1 (2018-07-02)
## Platform: x86_64-apple-darwin15.6.0 (64-bit)
## Running under: macOS High Sierra 10.13.6
##
## Matrix products: default
## BLAS: /System/Library/Frameworks/Accelerate.framework/Versions/A/Frameworks
/vecLib.framework/Versions/A/libBLAS.dylib
## LAPACK: /Library/Frameworks/R.framework/Versions/3.5/Resources/lib/libRlapa
ck.dylib
##
## locale:
## [1] en_GB.UTF-8/en_GB.UTF-8/en_GB.UTF-8/C/en_GB.UTF-8/en_GB.UTF-8
##
## attached base packages:
## [1] stats      graphics  grDevices  utils      datasets  methods   base
##
## other attached packages:
## [1] stringr_1.3.1      bindrcpp_0.2.2     kableExtra_0.9.0
## [4] bookdown_0.7       rmarkdown_1.10    knitr_1.20.13
## [7] skimr_1.0.3        readxl_1.1.0      readr_1.1.1
## [10] lubridate_1.7.4   ggplot2_3.0.0     data.table_1.11.4
## [13] GREENGridData_1.0
##
## loaded via a namespace (and not attached):
## [1] progress_1.2.0     tidyselect_0.2.4   xfun_0.3
## [4] purrr_0.2.5       reshape2_1.4.3     colorspace_1.3-2
## [7] htmltools_0.3.6   viridisLite_0.3.0 yaml_2.2.0
## [10] utf8_1.1.4         rlang_0.2.2        pillar_1.3.0
## [13] glue_1.3.0         withr_2.1.2        bindr_0.1.1
## [16] plyr_1.8.4         munsell_0.5.0      gtable_0.2.0
## [19] cellranger_1.1.0  rvest_0.3.2        evaluate_0.11
## [22] labeling_0.3       curl_3.2           fansi_0.3.0
## [25] highr_0.7          Rcpp_0.12.18       scales_1.0.0
## [28] backports_1.1.2   hms_0.4.2          digest_0.6.15
## [31] stringi_1.2.4     dplyr_0.7.6        grid_3.5.1
## [34] rprojroot_1.3-2   cli_1.0.0          tools_3.5.1
## [37] magrittr_1.5      lazyeval_0.2.1     tibble_1.4.2
## [40] crayon_1.3.4      tidyr_0.8.1        pkgconfig_2.0.2
## [43] xml2_1.2.0        prettyunits_1.0.2  assertthat_0.2.0
## [46] httr_1.3.1        rstudioapi_0.7     R6_2.2.2
## [49] compiler_3.5.1
```

9 Energy Cultures 2 Long Survey Questions

Table 9.1 lists the full Energy Cultures 2 survey (Wooliscroft 2015). Only a subset of these variables are currently available in the GREEN Grid safe data package. Requests to add further variables should be made via a GitHub repository issue (<https://github.com/CfSotago/GREENGridData/labels/variableRequest>).

Table 9.1: Energy Cultures 2 Survey labels (long)

question	questionLabel	included in safe data?
linkID	linkID	Yes
StartDate	StartDate	Yes
Q5	The region that you live in is:	NA
Q7	When was your house built?	Yes
Q10#1_1_1_TEXT	How many rooms does your dwelling have and which do you heat / regularly? â€œ (please write the number of rooms in the boxes / provided) : Number of-Bedrooms-Rooms	Yes
Q10#1_1_2_TEXT	How many rooms does your dwelling have and which do you heat / regularly? â€œ (please write the number of rooms in the boxes / provided) : Number of-Bedrooms-Rooms heated regularly	Yes
Q10#1_2_1_TEXT	How many rooms does your dwelling have and which do you heat / regularly? â€œ (please write the number of rooms in the boxes / provided) : Number of-Lounges or living rooms-Rooms	Yes
Q10#1_2_2_TEXT	How many rooms does your dwelling have and which do you heat / regularly? â€œ (please write the number of rooms in the boxes / provided) : Number of-Lounges or living rooms-Rooms heated regularly	Yes
Q10#1_3_1_TEXT	How many rooms does your dwelling have and which do you heat / regularly? â€œ (please write the number of rooms in the boxes / provided) : Number of-Dining rooms or kitchen/dining rooms-Rooms	Yes
Q10#1_3_2_TEXT	How many rooms does your dwelling have and which do you heat / regularly? â€œ (please write the number of rooms in the boxes / provided) : Number of-Dining rooms or kitchen/dining rooms-Rooms heated regularly	Yes
Q10#1_4_1_TEXT	How many rooms does your dwelling have and which do you heat / regularly? â€œ (please write the number of rooms in the boxes / provided) : Number of-Separate Kitchens-Rooms	Yes

question	questionLabel	included in safe data?
Q10#1_4_2_TEXT	How many rooms does your dwelling have and which do you heat / regularly? " (please write the number of rooms in the boxes / provided) : Number of-Separate Kitchens-Rooms heated regularly	Yes
Q10#1_5_1_TEXT	How many rooms does your dwelling have and which do you heat / regularly? " (please write the number of rooms in the boxes / provided) : Number of-Studies or offices-Rooms	Yes
Q10#1_5_2_TEXT	How many rooms does your dwelling have and which do you heat / regularly? " (please write the number of rooms in the boxes / provided) : Number of-Studies or offices-Rooms heated regularly	Yes
Q10#1_6_1_TEXT	How many rooms does your dwelling have and which do you heat / regularly? " (please write the number of rooms in the boxes / provided) : Number of-Bathrooms-Rooms	Yes
Q10#1_6_2_TEXT	How many rooms does your dwelling have and which do you heat / regularly? " (please write the number of rooms in the boxes / provided) : Number of-Bathrooms-Rooms heated regularly	Yes
Q10#1_7_1_TEXT	How many rooms does your dwelling have and which do you heat / regularly? " (please write the number of rooms in the boxes / provided) : Number of-Separate toilets-Rooms	Yes
Q10#1_7_2_TEXT	How many rooms does your dwelling have and which do you heat / regularly? " (please write the number of rooms in the boxes / provided) : Number of-Separate toilets-Rooms heated regularly	Yes
Q10#1_8_1_TEXT	How many rooms does your dwelling have and which do you heat / regularly? " (please write the number of rooms in the boxes / provided) : Number of-Laundries-Rooms	Yes
Q10#1_8_2_TEXT	How many rooms does your dwelling have and which do you heat / regularly? " (please write the number of rooms in the boxes / provided) : Number of-Laundries-Rooms heated regularly	Yes

question	questionLabel	included in safe data?
Q11_1	How many hours of direct sunshine would your house get on a clear / winterâ€™s day in June-July?-Hours	Yes
Q14_1	How long have you lived in your current house? (in years) -Years	Yes
Q15_1	How much longer do you plan to live in your house?-Years	Yes
Q17_1	What temperature do you set your main living area at in degrees / Celsius?-Degrees Celsius	Yes
Q18_1	What temperature would you like your main living area to be, in / degrees Celsius?-Degrees Celsius	Yes
Q30_1	What temperature do you set your heat pump to for cooling, in / degrees Celcius?-Degrees Celsius	Yes
Q33_1	If known, what temperature do you set your hot water to? / (degrees Celsius)-Degrees Celsius	Yes
Q53_1	What are your households approximate monthly energy bills in the / SUMMER? (dollars)-Electricity	Yes
Q53_2	What are your households approximate monthly energy bills in the / SUMMER? (dollars)-Gas	Yes
Q53_3	What are your households approximate monthly energy bills in the / SUMMER? (dollars)-Coal	Yes
Q53_4	What are your households approximate monthly energy bills in the / SUMMER? (dollars)-Wood	Yes
Q53_5	What are your households approximate monthly energy bills in the / SUMMER? (dollars)-Petrol	Yes
Q53_6	What are your households approximate monthly energy bills in the / SUMMER? (dollars)-Diesel	Yes
Q53_7	What are your households approximate monthly energy bills in the / SUMMER? (dollars)-Other	Yes
Q54_1	What are your household approximate monthly energy bills in the / WINTER? (dollars) -Electricity	Yes
Q54_2	What are your household approximate monthly energy bills in the / WINTER? (dollars) -Gas	Yes

question	questionLabel	included in safe data?
Q54_3	What are your household approximate monthly energy bills in the / WINTER? (dollars) -Coal	Yes
Q54_4	What are your household approximate monthly energy bills in the / WINTER? (dollars) -Wood	Yes
Q54_5	What are your household approximate monthly energy bills in the / WINTER? (dollars) -Petrol	Yes
Q54_6	What are your household approximate monthly energy bills in the / WINTER? (dollars) -Diesel	Yes
Q54_7	What are your household approximate monthly energy bills in the / WINTER? (dollars) -Other	Yes
Q57	How many people live in your household?	Yes
Q4	Your age is:	Yes (coded)
Q55	What is your approximate combined household income before / tax?	Yes (coded)
ResponseID	ResponseID	NA
ResponseSet	ResponseSet	NA
Name	Name	NA
ExternalDataReference	ExternalDataReference	NA
EmailAddress	EmailAddress	NA
IPAddress	IPAddress	NA
Status	Status	NA
EndDate	EndDate	NA
Finished	Finished	NA
RespondentID	RespondentID	NA
HomeAddress	HomeAddress	NA
HomeLat	HomeLat	NA

question	questionLabel	included in safe data?
HomeLng	HomeLng	NA
WorkAddress	WorkAddress	NA
WorkLat	WorkLat	NA
WorkLng	WorkLng	NA
PreSchoolAddress	PreSchoolAddress	NA
PreSchoolLat	PreSchoolLat	NA
PreSchoolLng	PreSchoolLng	NA
PriSchoolAddress	PriSchoolAddress	NA
PriSchoolLat	PriSchoolLat	NA
PriSchoolLng	PriSchoolLng	NA
IntSchoolAddress	IntSchoolAddress	NA
IntSchoolLat	IntSchoolLat	NA
IntSchoolLng	IntSchoolLng	NA
SecSchoolAddress	SecSchoolAddress	NA
SecSchoolLat	SecSchoolLat	NA
SecSchoolLng	SecSchoolLng	NA
WorkName	WorkName	NA
ShopName	ShopName	NA
PreSchoolName	PreSchoolName	NA
PriSchoolName	PriSchoolName	NA
IntSchoolName	IntSchoolName	NA
SecSchoolName	SecSchoolName	NA
WorkNameSearched	WorkNameSearched	NA
ShopNameSearched	ShopNameSearched	NA

question	questionLabel	included in safe data?
PreSchoolNameSearched	PreSchoolNameSearched	NA
PriSchoolNameSearched	PriSchoolNameSearched	NA
IntSchoolNameSearched	IntSchoolNameSearched	NA
SecSchoolNameSearched	SecSchoolNameSearched	NA
Q1	The Centre for Sustainability (CSAFE) at the University of Otago, / is researching New Zealanders'...	NA
Q2	By clicking on this link, I confirm that I agree to participate in / this research.	NA
Q3	Before proceeding to the survey I need to check that you would be / representative of the population. That is there aren't too many / people from one area, age or gender. Are you:	NA
Q113	What is the address of your house? (This information is used solely / to identify suitable subjects...	NA
linkID	To link to grid spy data	NA
Q114	What is the best way to contact you? (email address or phone / number)	NA
Q6	What type of dwelling do you live in?Â (please select the / option which applies to you)	NA
Q8	How are your external walls constructed?	NA
Q9	What are the external walls of your house constructed from?	NA
Q12	Do you rent or own the dwelling you live in?	NA
Q13	Please specify your other situation	NA
Q16	Can you apply a temperature setting to your main living area (e.g. / with a thermostat for heat pump or central heating)?	NA
Q19_1	Which of the following methods do you have available for heating / your house? -Heat pump	NA

question	questionLabel	included in safe data?
Q19_2	Which of the following methods do you have available for heating / your house? -Electric night-store	NA
Q19_3	Which of the following methods do you have available for heating / your house? -Portable electric heaters	NA
Q19_4	Which of the following methods do you have available for heating / your house? -Electric heaters fixed in place	NA
Q19_5	Which of the following methods do you have available for heating / your house? -Enclosed coal burner	NA
Q19_6	Which of the following methods do you have available for heating / your house? -Enclosed wood burner	NA
Q19_7	Which of the following methods do you have available for heating / your house? -Portable gas heater	NA
Q19_8	Which of the following methods do you have available for heating / your house? -Gas heaters fixed in place	NA
Q19_9	Which of the following methods do you have available for heating / your house? -Central heating " gas (flued)	NA
Q19_10	Which of the following methods do you have available for heating / your house? -Central heating " electric	NA
Q19_11	Which of the following methods do you have available for heating / your house? -DVS or other heat transfer system	NA
Q19_12	Which of the following methods do you have available for heating / your house? -HRV or other ventilation system	NA
Q19_13	Which of the following methods do you have available for heating / your house? -Underfloor electric heating	NA
Q19_14	Which of the following methods do you have available for heating / your house? -Underfloor gas heating	NA
Q19_15	Which of the following methods do you have available for heating / your house? -Open fire	NA
Q19_16	Which of the following methods do you have available for heating / your house? -Other	NA
Q19_17	Which of the following methods do you have available for heating / your house? -Central heating pellet burner	NA

question	questionLabel	included in safe data?
Q20	Which of the following is your main method of heating?	NA
Q21	Do you use any heat transfer ducts to spread the heat between / rooms?	NA
Q22	Have you changed your main method of heating in the past year?	NA
Q23	What was your main method of heating previously?	NA
Q24	Why did you change your main method of heating?	NA
Q25	How satisfactory is your main method heating? (please choose one)	NA
Q26	Why are you unhappy with your main method of heating?	NA
Q27	What alternative heating method would you consider purchasing?	NA
Q28_1_1	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the week (Monday- Friday)-7am-9am	NA
Q28_1_2	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the week (Monday- Friday)-9am-12pm	NA
Q28_1_3	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the week (Monday- Friday)-12pm-3pm	NA
Q28_1_4	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the week (Monday- Friday)-3pm-6pm	NA
Q28_1_5	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the week (Monday- Friday)-6pm-9pm	NA

question	questionLabel	included in safe data?
Q28_1_6	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the week (Monday- Friday)-9pm-7am	NA
Q28_2_1	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the weekend and holidays-7am-9am	NA
Q28_2_2	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the weekend and holidays-9am-12pm	NA
Q28_2_3	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the weekend and holidays-12pm-3pm	NA
Q28_2_4	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the weekend and holidays-3pm-6pm	NA
Q28_2_5	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the weekend and holidays-6pm-9pm	NA
Q28_2_6	What times during the day do you typically have heating on in your / house (select as many as appropriate for both the week and the / weekend/holidays)?-During the weekend and holidays-9pm-7am	NA
Q29	Do you also use your heat pump for cooling?	NA
Q31_1_1	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week days-7am-9am	NA
Q31_1_2	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week days-9am-12pm	NA

question	questionLabel	included in safe data?
Q31_1_3	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week days-12pm-3pm	NA
Q31_1_4	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week days-3pm-6pm	NA
Q31_1_5	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week days-6pm-9pm	NA
Q31_1_6	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week days-9pm-7am	NA
Q31_2_1	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week ends/holidays-7am-9am	NA
Q31_2_2	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week ends/holidays-9am-12pm	NA
Q31_2_3	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week ends/holidays-12pm-3pm	NA
Q31_2_4	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week ends/holidays-3pm-6pm	NA
Q31_2_5	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week ends/holidays-6pm-9pm	NA
Q31_2_6	When do you typically use your heat pump for cooling (please tick / all appropriate for both week days and weekends/holidays)?-Week ends/holidays-9pm-7am	NA
Q32_1	Which of the following methods do you use for heating your water?-Cylinder - Solar	NA
Q32_2	Which of the following methods do you use for heating your water?-Cylinder - Electric	NA

question	questionLabel	included in safe data?
Q32_3	Which of the following methods do you use for heating your water?-Cylinder - Gas	NA
Q32_4	Which of the following methods do you use for heating your water?-Cylinder - Wood (wetback)	NA
Q32_5	Which of the following methods do you use for heating your water?-Cylinder - Heatpump	NA
Q32_6	Which of the following methods do you use for heating your water?-Instant - Gas	NA
Q32_7	Which of the following methods do you use for heating your water?-Combination (e.g. solar with instant gas or electric backup)	NA
Q32_8	Which of the following methods do you use for heating your water?-Other	NA
Q34_1	What facilities does your household have and use? -Shower	NA
Q34_2	What facilities does your household have and use? -Bath	NA
Q35_1_TEXT	Typically how many baths does your household have each morning?-Week days	NA
Q35_2_TEXT	Typically how many baths does your household have each morning?-Week ends/holidays	NA
Q36_1_TEXT	Typically how many showers does your household have each morning?-Week days	NA
Q36_2_TEXT	Typically how many showers does your household have each morning?-Week ends/holidays	NA
Q37_1_TEXT	Typically how many baths does your household have each evening?-Week days	NA
Q37_2_TEXT	Typically how many baths does your household have each evening?-Week ends/holidays	NA
Q38_1_TEXT	Typically how many showers does your household have each evening?-Week days	NA
Q38_2_TEXT	Typically how many showers does your household have each evening?-Week ends/holidays	NA

question	questionLabel	included in safe data?
Q39	Has your cylinder been fitted with any extra insulation wrapping? / (for example a woollen or fibreglass wrap)	NA
Q40_1	Please indicate which of the following appliances you own and / use:-Dehumidifier	NA
Q40_2	Please indicate which of the following appliances you own and / use:-Dishwasher	NA
Q40_3	Please indicate which of the following appliances you own and / use:-Separate deep-freezer	NA
Q40_4	Please indicate which of the following appliances you own and / use:-Fridge/freezer	NA
Q40_5	Please indicate which of the following appliances you own and / use:-Clothes dryer	NA
Q40_6	Please indicate which of the following appliances you own and / use:-Plasma screen TV	NA
Q40_7	Please indicate which of the following appliances you own and / use:-LCD or LED Screen TV	NA
Q40_9	Please indicate which of the following appliances you own and / use:-Video recorder or Digital recorder (hard disc)	NA
Q40_10	Please indicate which of the following appliances you own and / use:-DVD/Bluray player	NA
Q40_11	Please indicate which of the following appliances you own and / use:-Games console	NA
Q40_12	Please indicate which of the following appliances you own and / use:-Home computer " Desktop	NA
Q40_13	Please indicate which of the following appliances you own and / use:-Laptop computer	NA
Q40_14	Please indicate which of the following appliances you own and / use:-Heated towel rail	NA
Q40_15	Please indicate which of the following appliances you own and / use:-Electric blanket	NA

question	questionLabel	included in safe data?
Q40_16	Please indicate which of the following appliances you own and / use:-Heated swimming pool	NA
Q40_17	Please indicate which of the following appliances you own and / use:-Front load washing machine	NA
Q40_18	Please indicate which of the following appliances you own and / use:-Top load washing machine	NA
Q40_19	Please indicate which of the following appliances you own and / use:-Toaster	NA
Q40_20	Please indicate which of the following appliances you own and / use:-Microwave	NA
Q40_21	Please indicate which of the following appliances you own and / use:-Second fridge/garage fridge	NA
Q40_38	Please indicate which of the following appliances you own and / use:-Spa pool	NA
Q41_x1	Do any of the appliances that you have include a delay function / that you use? -Dehumidifier	NA
Q41_x2	Do any of the appliances that you have include a delay function / that you use? -Dishwasher	NA
Q41_x3	Do any of the appliances that you have include a delay function / that you use? -Separate deep-freezer	NA
Q41_x4	Do any of the appliances that you have include a delay function / that you use? -Fridge/freezer	NA
Q41_x21	Do any of the appliances that you have include a delay function / that you use? -Second fridge/garage fridge	NA
Q41_x5	Do any of the appliances that you have include a delay function / that you use? -Clothes dryer	NA
Q41_x6	Do any of the appliances that you have include a delay function / that you use? -Plasma screen TV	NA
Q41_x7	Do any of the appliances that you have include a delay function / that you use? -LCD or LED Screen TV	NA

question	questionLabel	included in safe data?
Q41_x9	Do any of the appliances that you have include a delay function / that you use? -Video recorder or Digital recorder (hard disc)	NA
Q41_x10	Do any of the appliances that you have include a delay function / that you use? -DVD/Bluray player	NA
Q41_x11	Do any of the appliances that you have include a delay function / that you use? -Games console	NA
Q41_x12	Do any of the appliances that you have include a delay function / that you use? -Home computer " Desktop	NA
Q41_x13	Do any of the appliances that you have include a delay function / that you use? -Laptop computer	NA
Q41_x14	Do any of the appliances that you have include a delay function / that you use? -Heated towel rail	NA
Q41_x15	Do any of the appliances that you have include a delay function / that you use? -Electric blanket	NA
Q41_x16	Do any of the appliances that you have include a delay function / that you use? -Heated swimming pool	NA
Q41_x17	Do any of the appliances that you have include a delay function / that you use? -Front load washing machine	NA
Q41_x18	Do any of the appliances that you have include a delay function / that you use? -Top load washing machine	NA
Q41_x19	Do any of the appliances that you have include a delay function / that you use? -Toaster	NA
Q41_x20	Do any of the appliances that you have include a delay function / that you use? -Microwave	NA
Q41_x38	Do any of the appliances that you have include a delay function / that you use? -Spa pool	NA
Q42_1	How many televisions are there in your household?- 	NA
Q43	What setting do you usually set your washing machine to?	NA

question	questionLabel	included in safe data?
Q44_1	What temperature do you usually wash with?-Degrees Celsius	NA
Q45_1_1	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Weekdays-7am-9am	NA
Q45_1_2	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Weekdays-9am-12pm	NA
Q45_1_3	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Weekdays-12pm-3pm	NA
Q45_1_4	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Weekdays-3pm-6pm	NA
Q45_1_5	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Weekdays-6pm-9pm	NA
Q45_1_6	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Weekdays-9pm-7am	NA
Q45_1_7	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Weekdays-At any time of day	NA
Q45_2_1	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Week ends/holidays-7am-9am	NA
Q45_2_2	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Week ends/holidays-9am-12pm	NA
Q45_2_3	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Week ends/holidays-12pm-3pm	NA
Q45_2_4	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Week ends/holidays-3pm-6pm	NA

question	questionLabel	included in safe data?
Q45_2_5	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Week ends/holidays-6pm-9pm	NA
Q45_2_6	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Week ends/holidays-9pm-7am	NA
Q45_2_7	When do you typically use your washing machine? Please answer for / week days and weekends/holidays.- Week ends/holidays-At any time of day	NA
Q46_1_1	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week days-7am-9am	NA
Q46_1_2	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week days-9am-12pm	NA
Q46_1_3	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week days-12pm-3pm	NA
Q46_1_4	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week days-3pm-6pm	NA
Q46_1_5	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week days-6pm-9pm	NA
Q46_1_6	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week days-9pm-7am	NA
Q46_1_7	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week days-At any time of day	NA
Q46_2_1	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week ends/holidays-7am-9am	NA

question	questionLabel	included in safe data?
Q46_2_2	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week ends/holidays-9am-12pm	NA
Q46_2_3	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week ends/holidays-12pm-3pm	NA
Q46_2_4	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week ends/holidays-3pm-6pm	NA
Q46_2_5	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week ends/holidays-6pm-9pm	NA
Q46_2_6	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week ends/holidays-9pm-7am	NA
Q46_2_7	When do you typically use your dish washer? Please answer for week / days and weekends/holidays. -Week ends/holidays-At any time of day	NA
Q47_1	Which dishwasher settings do you typically use?- Quick/Eco wash	NA
Q47_2	Which dishwasher settings do you typically use?-Normal wash	NA
Q47_3	Which dishwasher settings do you typically use?- Heavy/pot wash	NA
Q48_1	How often do you cook the following?-Breakfast (hot)	NA
Q48_2	How often do you cook the following?-Lunch (cooked)	NA
Q48_3	How often do you cook the following?-Dinner (cooked)	NA
Q48_4	How often do you cook the following?-Baking	NA
Q49	What type are the majority of your light bulbs?	NA
Q50	When do you use your heated towel rail?	NA

question	questionLabel	included in safe data?
Q51_1_1	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Week days-7am-9am	NA
Q51_1_2	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Week days-9am-12pm	NA
Q51_1_3	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Week days-12pm-3pm	NA
Q51_1_4	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Week days-3pm-6pm	NA
Q51_1_5	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Week days-6pm-9pm	NA
Q51_1_6	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Week days-9pm-7am	NA
Q51_2_1	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Weekend/holidays-7am-9am	NA
Q51_2_2	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Weekend/holidays-9am-12pm	NA
Q51_2_3	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Weekend/holidays-12pm-3pm	NA
Q51_2_4	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Weekend/holidays-3pm-6pm	NA
Q51_2_5	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Weekend/holidays-6pm-9pm	NA

question	questionLabel	included in safe data?
Q51_2_6	When is your heated towel rail typically on (please select as many / as appropriate for both week days and weekend/holidays)?-Weekend/holidays-9pm-7am	NA
Q52	What is the main reason you use your heated towel rail?	NA
Q56	Have you ever gone without heating/power because you felt unable to / pay for it?	NA
Q58#1_1	About you and your household members : Gender-You	NA
Q58#2_1	About you and your household members : Year of birth-You	NA
Q58#3_1	About you and your household members : Employment status-You	NA
Q58#4_1	About you and your household members : Highest educational qualification-You	NA
Q59#1_2	About you and your household members : Gender-The second member of your household	NA
Q59#2_2	About you and your household members : Year of birth-The second member of your household	NA
Q59#3_2	About you and your household members : Employment status-The second member of your household	NA
Q59#4_2	About you and your household members : Highest educational qualification-The second member of your household	NA
Q60#1_3	About you and your household members : Gender-The third member of your household	NA
Q60#2_3	About you and your household members : Year of birth-The third member of your household	NA
Q60#3_3	About you and your household members : Employment status-The third member of your household	NA
Q60#4_3	About you and your household members : Highest educational qualification-The third member of your household	NA

question	questionLabel	included in safe data?
Q61#1_4	About you and your household members : Gender-The fourth member of your household	NA
Q61#2_4	About you and your household members : Year of birth-The fourth member of your household	NA
Q61#3_4	About you and your household members : Employment status-The fourth member of your household	NA
Q61#4_4	About you and your household members : Highest educational qualification-The fourth member of your household	NA
Q62#1_5	About you and your household members : Gender-The fifth member of your household	NA
Q62#2_5	About you and your household members : Year of birth-The fifth member of your household	NA
Q62#3_5	About you and your household members : Employment status-The fifth member of your household	NA
Q62#4_5	About you and your household members : Highest educational qualification-The fifth member of your household	NA
Q63#1_6	About you and your household members : Gender-The sixth member of your household	NA
Q63#2_6	About you and your household members : Year of birth-The sixth member of your household	NA
Q63#3_6	About you and your household members : Employment status-The sixth member of your household	NA
Q63#4_6	About you and your household members : Highest educational qualification-The sixth member of your household	NA
Q64#1_1	About you and your household members : Gender-The seventh member of your household	NA
Q64#2_1	About you and your household members : Year of birth-The seventh member of your household	NA

question	questionLabel	included in safe data?
Q64#3_1	About you and your household members : Employment status-The seventh member of your household	NA
Q64#4_1	About you and your household members : Highest educational qualification-The seventh member of your household	NA
Q65#1_1	About you and your household members : Gender-The eighth member of your household	NA
Q65#2_1	About you and your household members : Year of birth-The eighth member of your household	NA
Q65#3_1	About you and your household members : Employment status-The eighth member of your household	NA
Q65#4_1	About you and your household members : Highest educational qualification-The eighth member of your household	NA
Q66#1_1	About you and your household members : Gender-The ninth member of your household	NA
Q66#2_1	About you and your household members : Year of birth-The ninth member of your household	NA
Q66#3_1	About you and your household members : Employment status-The ninth member of your household	NA
Q66#4_1	About you and your household members : Highest educational qualification-The ninth member of your household	NA
Q67#1_1	About you and your household members : Gender-The tenth member of your household	NA
Q67#2_1	About you and your household members : Year of birth-The tenth member of your household	NA
Q67#3_1	About you and your household members : Employment status-The tenth member of your household	NA
Q67#4_1	About you and your household members : Highest educational qualification-The tenth member of your household	NA

question	questionLabel	included in safe data?
Q68#1_1	About you and your household members : Gender-The eleventh member of your household	NA
Q68#2_1	About you and your household members : Year of birth-The eleventh member of your household	NA
Q68#3_1	About you and your household members : Employment status-The eleventh member of your household	NA
Q68#4_1	About you and your household members : Highest educational qualification-The eleventh member of your household	NA
Q69#1_1	About you and your household members : Gender-The twelfth member of your household	NA
Q69#2_1	About you and your household members : Year of birth-The twelfth member of your household	NA
Q69#3_1	About you and your household members : Employment status-The twelfth member of your household	NA
Q69#4_1	About you and your household members : Highest educational qualification-The twelfth member of your household	NA
Q70	What is your ethnicity?	NA
Q71_1	Below are five statements that you may agree or disagree with. / Using the 1 - 7 scale below, indicate your agreement with each item / by placing the appropriate number on the line preceding that item....-In most ways my life is close to my ideal	NA
Q71_2	Below are five statements that you may agree or disagree with. / Using the 1 - 7 scale below, indicate your agreement with each item / by placing the appropriate number on the line preceding that item....-The conditions of my life are excellent	NA
Q71_3	Below are five statements that you may agree or disagree with. / Using the 1 - 7 scale below, indicate your agreement with each item / by placing the appropriate number on the line preceding that item....-I am satisfied with my life	NA

question	questionLabel	included in safe data?
Q71_4	Below are five statements that you may agree or disagree with. / Using the 1 - 7 scale below, indicate your agreement with each item / by placing the appropriate number on the line preceding that item....-So far I have gotten the important things I want in life	NA
Q71_5	Below are five statements that you may agree or disagree with. / Using the 1 - 7 scale below, indicate your agreement with each item / by placing the appropriate number on the line preceding that item....-f I could live my life over, I would change almost nothing	NA
Q72_1	Below are eight / statements with which you may agree or disagree. Using the 1â€“7 / scale below, indicate your agreement with each item by indicating / that response for each statement-I lead a purposeful and meaningful life	NA
Q72_2	Below are eight / statements with which you may agree or disagree. Using the 1â€“7 / scale below, indicate your agreement with each item by indicating / that response for each statement-My social relationships are supportive and rewarding	NA
Q72_3	Below are eight / statements with which you may agree or disagree. Using the 1â€“7 / scale below, indicate your agreement with each item by indicating / that response for each statement-I am engaged and interested in my daily activities	NA
Q72_4	Below are eight / statements with which you may agree or disagree. Using the 1â€“7 / scale below, indicate your agreement with each item by indicating / that response for each statement-I actively contribute to the happiness and well-being of others	NA
Q72_5	Below are eight / statements with which you may agree or disagree. Using the 1â€“7 / scale below, indicate your agreement with each item by indicating / that response for each statement-I am competent and capable in the activities that are important to me	NA

question	questionLabel	included in safe data?
Q72_6	Below are eight / statements with which you may agree or disagree. Using the 1â€“7 / scale below, indicate your agreement with each item by indicating / that response for each statement-I am a good person and live a good life	NA
Q72_7	Below are eight / statements with which you may agree or disagree. Using the 1â€“7 / scale below, indicate your agreement with each item by indicating / that response for each statement-I am optimistic about my future	NA
Q72_8	Below are eight / statements with which you may agree or disagree. Using the 1â€“7 / scale below, indicate your agreement with each item by indicating / that response for each statement-People respect me	NA
Q73_1	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Turning off appliances at the wall	NA
Q73_2	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Rinsing the dishes with cold water	NA
Q73_3	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Reduce heating in unoccupied rooms	NA
Q73_4	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Switching off lights in unused rooms	NA
Q73_5	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Wait for a full load before using the washing machine	NA
Q73_6	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Put on more clothing before turning up heating	NA

question	questionLabel	included in safe data?
Q73_7	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Keep household heating low to save energy (below 18Â°C)	NA
Q73_8	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Line drying of laundry	NA
Q73_9	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Taking shorter showers	NA
Q73_10	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Doing dishes by hand	NA
Q73_11	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Pulling curtains at night	NA
Q73_12	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Wash laundry on cold	NA
Q73_13	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Open a few windows and doors at least once a day to air the house	NA
Q73_14	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Clean windows regularly	NA
Q73_15	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Prune trees to keep windows unshaded	NA
Q73_16	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Monitor the temperature in living room(s)	NA

question	questionLabel	included in safe data?
Q73_17	The following is a list of possible energy-saving / behaviours.Â Please indicate which behaviours you do always / or almost always:-Cover pots when cooking	NA
Q74_x1	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Turning off appliances at the wall	NA
Q74_x2	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Rinsing the dishes with cold water	NA
Q74_x3	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Reduce heating in unoccupied rooms	NA
Q74_x4	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:- Switching off lights in unused rooms	NA
Q74_x5	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Wait for a full load before using the washing machine	NA
Q74_x6	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Put on more clothing before turning up heating	NA
Q74_x7	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Keep household heating low to save energy (below 18Â°C)	NA
Q74_x8	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Line drying of laundry	NA
Q74_x9	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Taking shorter showers	NA
Q74_x10	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Doing dishes by hand	NA

question	questionLabel	included in safe data?
Q74_x11	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Pulling curtains at night	NA
Q74_x12	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Wash laundry on cold	NA
Q74_x13	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Open a few windows and doors at least once a day to air the house	NA
Q74_x14	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Clean windows regularly	NA
Q74_x15	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Prune trees to keep windows unshaded	NA
Q74_x16	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Monitor the temperature in living room(s)	NA
Q74_x17	Please indicate which behaviours you intend to do always or almost / always in the next 12 months:-Cover pots when cooking	NA
Q75_1	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Double glazing	NA
Q75_2	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Ceiling insulation	NA
Q75_3	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Underfloor insulation	NA
Q75_4	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Wall insulation	NA

question	questionLabel	included in safe data?
Q75_5	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Floor coverings (carpet/rugs)	NA
Q75_6	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Solar hot water panels	NA
Q75_7	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Solar electricity panels	NA
Q75_8	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Micro windfarm	NA
Q75_9	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Water proof membrane between ground and house	NA
Q75_10	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Heat pump	NA
Q75_11	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Heat pump hot water cylinder	NA
Q75_12	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Timers on heaters	NA
Q75_13	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Externally vented drier	NA
Q75_14	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Externally vented cooking rangehood	NA

question	questionLabel	included in safe data?
Q75_15	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Low flow shower head	NA
Q75_16	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Washing line outside	NA
Q75_17	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Energy efficient light bulbs in all main rooms	NA
Q75_18	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Thermally lined/heavy curtains installed	NA
Q75_19	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Wrap installed on hot water cylinder	NA
Q75_20	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Lagging (insulation) on hot water pipes	NA
Q75_21	The following is a list of possible energy saving changes that can / be done to a house. Please indicate which items are currently in / your house-Heat transfer system between rooms	NA
Q76_x1	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Double glazing	NA
Q76_x2	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Ceiling insulation	NA
Q76_x3	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Underfloor insulation	NA

question	questionLabel	included in safe data?
Q76_x4	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Wall insulation	NA
Q76_x5	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Floor coverings (carpet/rugs)	NA
Q76_x6	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Solar hot water panels	NA
Q76_x7	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Solar electricity panels	NA
Q76_x8	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Micro windfarm	NA
Q76_x9	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Water proof membrane between ground and house	NA
Q76_x10	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Heat pump	NA
Q76_x11	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Heat pump hot water cylinder	NA
Q76_x12	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Timers on heaters	NA
Q76_x13	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Externally vented drier	NA
Q76_x14	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Externally vented cooking rangehood	NA

question	questionLabel	included in safe data?
Q76_x15	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Low flow shower head	NA
Q76_x16	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Washing line outside	NA
Q76_x17	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Energy efficient light bulbs in all main rooms	NA
Q76_x18	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Thermally lined/heavy curtains installed	NA
Q76_x19	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Wrap installed on hot water cylinder	NA
Q76_x20	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Lagging (insulation) on hot water pipes	NA
Q76_x21	Which of the following energy saving modifications do you intend to / undertake in the next 12 months? -Heat transfer system between rooms	NA
Q77_xx1	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Double glazing	NA
Q77_xx2	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Ceiling insulation	NA
Q77_xx3	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Underfloor insulation	NA
Q77_xx4	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Wall insulation	NA

question	questionLabel	included in safe data?
Q77_xx5	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Floor coverings (carpet/rugs)	NA
Q77_xx6	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Solar hot water panels	NA
Q77_xx7	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Solar electricity panels	NA
Q77_xx8	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Micro windfarm	NA
Q77_xx9	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Water proof membrane between ground and house	NA
Q77_xx10	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Heat pump	NA
Q77_xx11	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Heat pump hot water cylinder	NA
Q77_xx12	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Timers on heaters	NA
Q77_xx13	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Externally vented drier	NA
Q77_xx14	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Externally vented cooking rangehood	NA
Q77_xx15	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Low flow shower head	NA
Q77_xx16	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Washing line outside	NA

question	questionLabel	included in safe data?
Q77_xx17	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Energy efficient light bulbs in all main rooms	NA
Q77_xx18	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Thermally lined/heavy curtains installed	NA
Q77_xx19	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Wrap installed on hot water cylinder	NA
Q77_xx20	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Lagging (insulation) on hot water pipes	NA
Q77_xx21	Which of the following energy saving modifications do you intend to / undertake in the next 5 years?-Heat transfer system between rooms	NA
Q78	Have you made a change recently to help your household use energy / more efficiently? (Within the last year)	NA
Q79_1	Who helped you make decisions about the most recent energy-related / change to your house? (tick all that apply)- Family member	NA
Q79_2	Who helped you make decisions about the most recent energy-related / change to your house? (tick all that apply)- Friend	NA
Q79_3	Who helped you make decisions about the most recent energy-related / change to your house? (tick all that apply)-Work colleague	NA
Q79_4	Who helped you make decisions about the most recent energy-related / change to your house? (tick all that apply)-Neighbour	NA
Q79_5	Who helped you make decisions about the most recent energy-related / change to your house? (tick all that apply)-Another member of the community	NA
Q79_6	Who helped you make decisions about the most recent energy-related / change to your house? (tick all that apply)-Builder/plumber	NA

question	questionLabel	included in safe data?
Q79_7	Who helped you make decisions about the most recent energy-related / change to your house? (tick all that apply)-Building inspector	NA
Q79_8	Who helped you make decisions about the most recent energy-related / change to your house? (tick all that apply)-Television and/or print campaigns	NA
Q79_9	Who helped you make decisions about the most recent energy-related / change to your house? (tick all that apply)-Other	NA
Q79_10	Who helped you make decisions about the most recent energy-related / change to your house? (tick all that apply)-No one helped me	NA
Q79_12	Who helped you make decisions about the most recent energy-related / change to your house? (tick all that apply)-Internet sources	NA
Q80	Please specify the other who helped you make decisions about your / most recent energy-related change to your house	NA
Q81_1	Do you agree or disagree with the following statements?-I only buy appliances with high energy efficiency ratings even if they cost more	NA
Q81_2	Do you agree or disagree with the following statements?-I don't think very much about ways of saving energy in my own home	NA
Q81_3	Do you agree or disagree with the following statements?-I don't pay much attention to what my energy bill is each month	NA
Q81_4	Do you agree or disagree with the following statements?-I find it hard to find information about energy efficiency around the home	NA
Q81_5	Do you agree or disagree with the following statements?-It's difficult to know what information to trust in regards to energy efficiency	NA

question	questionLabel	included in safe data?
Q81_6	Do you agree or disagree with the following statements?- Making choices about energy efficiency in the home is complex	NA
Q81_7	Do you agree or disagree with the following statements?-I am confident I can invest the time and effort to make changes towards being energy efficient	NA
Q81_8	Do you agree or disagree with the following statements?-I know where to find the right information about being energy efficient	NA
Q82	Which of the following statements best describes your overall / attitude to energy usage	NA
Q83	Which of the remaining statements best describes your overall / attitude to energy usage	NA
Q84	Does anyone in your household suffer from an illness that requires / use of energy?	NA
Q85_1	Please indicate below what extra health energy use is required for: / (tick all that apply)-Washing	NA
Q85_2	Please indicate below what extra health energy use is required for: / (tick all that apply)-Heating	NA
Q85_3	Please indicate below what extra health energy use is required for: / (tick all that apply)-Drying	NA
Q85_4	Please indicate below what extra health energy use is required for: / (tick all that apply)-Operating health or medical appliances	NA
Q85_5	Please indicate below what extra health energy use is required for: / (tick all that apply)-Other	NA
Q86	Please specify the other extra health energy use required.	NA
Q87	Is your workplace concerned about energy consumption?	NA
Q88_1	Please indicate the degree to which you agree or disagree with all / of the following statements:-We are approaching the limit of the number of people the Earth can support.	NA

question	questionLabel	included in safe data?
Q88_2	Please indicate the degree to which you agree or disagree with all / of the following statements:-Humans have the right to modify the natural environment to suit their needs.	NA
Q88_3	Please indicate the degree to which you agree or disagree with all / of the following statements:-When humans interfere with nature it often produces disastrous consequences.	NA
Q88_4	Please indicate the degree to which you agree or disagree with all / of the following statements:-Human ingenuity will ensure that we do not make the Earth unlivable.	NA
Q88_5	Please indicate the degree to which you agree or disagree with all / of the following statements:-Humans are seriously abusing the environment.	NA
Q88_6	Please indicate the degree to which you agree or disagree with all / of the following statements:-The Earth has plenty of natural resources if we just learn how to develop them.	NA
Q88_7	Please indicate the degree to which you agree or disagree with all / of the following statements:-Plants and animals have as much right as humans to exist.	NA
Q88_8	Please indicate the degree to which you agree or disagree with all / of the following statements:-The balance of nature is strong enough to cope with the impacts of modern industrial nations.	NA
Q88_9	Please indicate the degree to which you agree or disagree with all / of the following statements:-Despite our special abilities, humans are still subject to the laws of nature.	NA
Q88_10	Please indicate the degree to which you agree or disagree with all / of the following statements:-The so-called "ecological crisis" facing humankind has been greatly exaggerated.	NA
Q88_11	Please indicate the degree to which you agree or disagree with all / of the following statements:-The Earth is like a spaceship with very limited room and resources.	NA

question	questionLabel	included in safe data?
Q88_12	Please indicate the degree to which you agree or disagree with all / of the following statements:-Humans were meant to rule over the rest of nature.	NA
Q88_13	Please indicate the degree to which you agree or disagree with all / of the following statements:-The balance of nature is very delicate and easily upset.	NA
Q88_14	Please indicate the degree to which you agree or disagree with all / of the following statements:-Humans will eventually learn enough about how nature works to be able to control it.	NA
Q88_15	Please indicate the degree to which you agree or disagree with all / of the following statements:-If things continue on their present course, we will soon experience a major ecological catastrophe.	NA
Q89_1	If the government is going to take a lead in order to improve / energy efficiency in NZ households, how do you feel about them / using the following measures?- Applying energy standards that require minimum levels of energy efficiency on most appliances	NA
Q89_2	If the government is going to take a lead in order to improve / energy efficiency in NZ households, how do you feel about them / using the following measures?- Ensuring energy information is provided by requiring labels on appliances that indicate typical energy usage	NA
Q89_3	If the government is going to take a lead in order to improve / energy efficiency in NZ households, how do you feel about them / using the following measures?- Providing customised energy advice: free or low-cost information about energy efficiency improvements	NA
Q89_4	If the government is going to take a lead in order to improve / energy efficiency in NZ households, how do you feel about them / using the following measures?- Providing financing at low or no-interest for energy efficiency improvements	NA

question	questionLabel	included in safe data?
Q89_5	If the government is going to take a lead in order to improve / energy efficiency in NZ households, how do you feel about them / using the following measures?- Banning inefficient technologies, such as incandescent light bulbs where more energy effective options exist	NA
Q89_6	If the government is going to take a lead in order to improve / energy efficiency in NZ households, how do you feel about them / using the following measures?- Granting direct subsidies so that the cost of energy efficient technologies is shared	NA
Q91	Which statement best describes your attitude to electricity supply	NA
Q92_1	To what extent do you agree or disagree with each of the following / statements?-I am prepared to greatly reduce my energy use	NA
Q92_2	To what extent do you agree or disagree with each of the following / statements?-I am not able to reduce my energy use any further	NA
Q92_3	To what extent do you agree or disagree with each of the following / statements?-I want to reduce my energy use	NA
Q92_4	To what extent do you agree or disagree with each of the following / statements?-I am prepared to greatly reduce my energy use but only if I know others are doing the same	NA
Q92_5	To what extent do you agree or disagree with each of the following / statements?-I am prepared to greatly reduce my energy use if support is available to help me do this	NA
Q92_6	To what extent do you agree or disagree with each of the following / statements?-I am prepared to greatly reduce my energy use if that lowers my energy bills	NA
Q93_1	Please indicate whether you would be interested in obtaining any of / this information about your own electricity use. Please select as / many as you like.-Which appliance is using the most electricity	NA

question	questionLabel	included in safe data?
Q93_2	Please indicate whether you would be interested in obtaining any of / this information about your own electricity use. Please select as / many as you like.- Electricity use by appliance	NA
Q93_3	Please indicate whether you would be interested in obtaining any of / this information about your own electricity use. Please select as / many as you like.-How much you are spending on electricity at a given time	NA
Q93_4	Please indicate whether you would be interested in obtaining any of / this information about your own electricity use. Please select as / many as you like.- Overall electricity use	NA
Q93_5	Please indicate whether you would be interested in obtaining any of / this information about your own electricity use. Please select as / many as you like.- Patterns of electricity use over a day, week, month, years	NA
Q93_6	Please indicate whether you would be interested in obtaining any of / this information about your own electricity use. Please select as / many as you like.- Electricity use by room	NA
Q93_7	Please indicate whether you would be interested in obtaining any of / this information about your own electricity use. Please select as / many as you like.- Information about how much electricity is used on average by people in homes like yours	NA
Q93_8	Please indicate whether you would be interested in obtaining any of / this information about your own electricity use. Please select as / many as you like.-None of these	NA
Q93_9	Please indicate whether you would be interested in obtaining any of / this information about your own electricity use. Please select as / many as you like.-Other	NA
Q94	How much, if at all, do you think having this kind of information / would help you reduce your electricity use?	NA
Q95	The information collected by smart meters would also be available / to your electricity supplier. How positively or negatively do you / feel about this?	NA

question	questionLabel	included in safe data?
Q96_1	Here are some examples of how energy use could be managed / differently. Please indicate your view towards the acceptability of / each of the following situations. -Appliances such as digital boxes, TVs and computers automatically turning off if they are left on standby for a considerable amount of time	NA
Q96_2	Here are some examples of how energy use could be managed / differently. Please indicate your view towards the acceptability of / each of the following situations. -Your shower turning off after a set period of time each time you use it (e.g. 10 minutes). You would have to manually turn it on again if you wish to continue showering for longer	NA
Q96_3	Here are some examples of how energy use could be managed / differently. Please indicate your view towards the acceptability of / each of the following situations. -Setting your washing machine to wash clothes before a certain time rather than right away. For example, you would turn on your washing machine and set a time by when the cycle has to be finished, e.g. 10am the next morning. The electricity company would then determine the best time to turn the washing machine on, by sending a signal to the appliance	NA
Q96_4	Here are some examples of how energy use could be managed / differently. Please indicate your view towards the acceptability of / each of the following situations. -Allowing your fridge, or fridge-freezer to be switched off by your electricity company for short periods of time (provided the temperature of the fridge/fridge-freezer remains within a certain specified range	NA
Q96_5	Here are some examples of how energy use could be managed / differently. Please indicate your view towards the acceptability of / each of the following situations. -Allowing your electricity company to decide when to heat your hot water cylinder while maintaining hot water	NA
Q97	How positively or negatively do you feel about your electricity / company controlling some of your appliances for the purpose of / balancing the electricity grid (such as avoiding peaks in / electricity...	NA

question	questionLabel	included in safe data?
Q103_1	How concerned, if at all, are you that in the next 5-10 years...-... electricity and gas will become unaffordable for you?	NA
Q103_2	How concerned, if at all, are you that in the next 5-10 years...-... petrol and diesel will become unaffordable for you?	NA
Q103_3	How concerned, if at all, are you that in the next 5-10 years...-... there will be frequent power cuts?	NA
Q103_4	How concerned, if at all, are you that in the next 5-10 years...-... NZ will become too dependent on energy from other countries?	NA
Q103_5	How concerned, if at all, are you that in the next 5-10 years...-... there will be a national petrol and/or diesel shortage?	NA
Q104	Please select which of the following statements best matches your / opinion about New Zealand's overall energy use.	NA
Q105	To what extent, if any, do you think New Zealand's electricity / market is fair?	NA
Q106	How much do you trust your electricity supplier?	NA
Q107	To what extent do you agree or disagree that we in New Zealand need / to radically change how we produce and use energy by 2050? /	NA
Q108	We might change how we PRODUCE energy (what energy sources we use), / and how we USE energy (how much energy we use and for what). Please / indicate which best describes your opinion.	NA
Q109	Which one of these, if any, do you think should be mainly / responsible for ensuring that appropriate changes are made to the / New Zealand energy system over the next 40 years?	NA
Q139	How positive or negative do you feel about driving an electric car?	NA

question	questionLabel	included in safe data?
Q140	Please indicate how willing you would be, if at all, to drive an / electric car in the future.	NA
Q141	... what if your friends, family and neighbours drove electric / cars? How willing would you be, if at all, to drive an electric car / in the future if this was the case?	NA
Q142	... what if the performance of an electric car was the same as a / petrol car (e.g. speed, range, availability of charging points)? / How willing would you be, if at all, to drive an electric car in / th...	NA
Q143	... what if the cost of buying and running an electric car was / significantly less than the cost of a petrol car? How willing would / you be, if at all, to drive an electric car in the future if this...	NA
Q144	How positive or negative do you feel about photovoltaic panels on / the roof of your dwelling?	NA
Q145	Please indicate how willing you would be, if at all, to / photovoltaic panels in the future.	NA
Q146	... what if the cost of buying and running photovoltaic panels was / significantly less than the cost of a power from the national grid / ? How willing would you be, if at all, to install photovoltaic...	NA
Q147	Thank you for taking part in this research. Your answers are / important to understanding New Zealand's energy use and future.	NA
LocationLatitude	LocationLatitude	NA
LocationLongitude	LocationLongitude	NA
LocationAccuracy	LocationAccuracy	NA

References

- Allaire, JJ, Yihui Xie, Jonathan McPherson, Javier Luraschi, Kevin Ushey, Aron Atkins, Hadley Wickham, Joe Cheng, and Winston Chang. 2018. *Rmarkdown: Dynamic Documents for R*. <https://CRAN.R-project.org/package=rmarkdown> (<https://CRAN.R-project.org/package=rmarkdown>).
- Anderson, Ben, and David Eyers. 2018. *GREENGridData: Processing Nz Green Grid Project Data to Create a 'Safe' Version for Data Archiving and Re-Use*. <https://github.com/CfSOTago/GREENGridData>

(<https://github.com/CfSotago/GREENGridData>).

Arino de la Rubia, Eduardo, Hao Zhu, Shannon Ellis, Elin Waring, and Michael Quinn. 2017. *Skimr*. <https://github.com/ropenscilabs/skimr> (<https://github.com/ropenscilabs/skimr>).

Csárdi, Gábor, and Rich FitzJohn. 2016. *Progress: Terminal Progress Bars*. <https://CRAN.R-project.org/package=progress> (<https://CRAN.R-project.org/package=progress>).

Dowle, M, A Srinivasan, T Short, S Lianoglou with contributions from R Saporta, and E Antonyan. 2015. *Data.table: Extension of Data.frame*. <https://CRAN.R-project.org/package=data.table> (<https://CRAN.R-project.org/package=data.table>).

Grolemund, Garrett, and Hadley Wickham. 2011. “Dates and Times Made Easy with lubridate.” *Journal of Statistical Software* 40 (3): 1–25. <http://www.jstatsoft.org/v40/i03/> (<http://www.jstatsoft.org/v40/i03/>).

Müller, Kirill. 2018. *Hms: Pretty Time of Day*. <https://CRAN.R-project.org/package=hms> (<https://CRAN.R-project.org/package=hms>).

R Core Team. 2016. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/> (<https://www.R-project.org/>).

Stephenson, Janet, Rebecca Ford, Nirmal-Kumar Nair, Neville Watson, Alan Wood, and Allan Miller. 2017. “Smart Grid Research in New Zealand—A Review from the GREEN Grid Research Programme.” *Renewable and Sustainable Energy Reviews* 82 (1): 1636–45. <https://doi.org/10.1016/j.rser.2017.07.010> (<https://doi.org/10.1016/j.rser.2017.07.010>).

Wickham, Hadley. 2007. “Reshaping Data with the reshape Package.” *Journal of Statistical Software* 21 (12): 1–20. <http://www.jstatsoft.org/v21/i12/> (<http://www.jstatsoft.org/v21/i12/>).

Wickham, Hadley, and Jennifer Bryan. 2017. *Readxl: Read Excel Files*. <https://CRAN.R-project.org/package=readxl> (<https://CRAN.R-project.org/package=readxl>).

Wickham, Hadley, and Romain Francois. 2016. *Dplyr: A Grammar of Data Manipulation*. <https://CRAN.R-project.org/package=dplyr> (<https://CRAN.R-project.org/package=dplyr>).

Wickham, Hadley, Jim Hester, and Romain Francois. 2016. *Readr: Read Tabular Data*. <https://CRAN.R-project.org/package=readr> (<https://CRAN.R-project.org/package=readr>).

Wooliscroft, B. 2015. “National Household Survey of Energy and Transportation: Energy Cultures Two.” Centre for Sustainability: University of Otago. <http://hdl.handle.net/10523/5634> (<http://hdl.handle.net/10523/5634>).

Xie, Yihui. 2016a. *Bookdown: Authoring Books and Technical Documents with R Markdown*. Boca Raton, Florida: Chapman; Hall/CRC. <https://github.com/rstudio/bookdown> (<https://github.com/rstudio/bookdown>).

— — —. 2016b. *Knitr: A General-Purpose Package for Dynamic Report Generation in R*. <https://CRAN.R-project.org/package=knitr> (<https://CRAN.R-project.org/package=knitr>).

Zhu, Hao. 2018. *KableExtra: Construct Complex Table with 'Kable' and Pipe Syntax*. <https://CRAN.R-project.org/package=kableExtra> (<https://CRAN.R-project.org/package=kableExtra>).