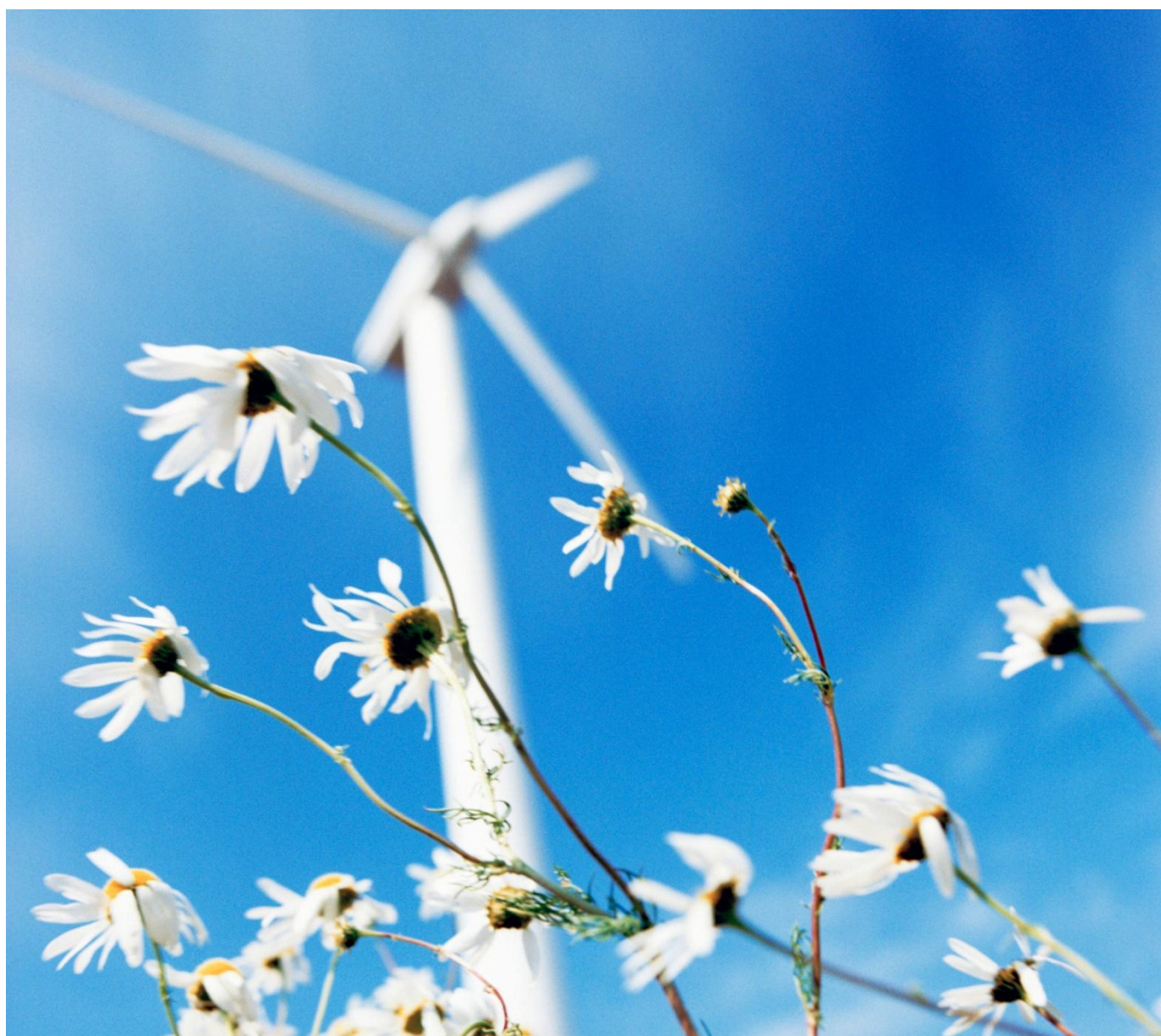


Energy Demand Research Project: Final Analysis

Appendix E: Additional Data Tables



Prepared by: Gary Raw and David Ross
Regional Directors

Checked by: David Ross
Regional Director

Approved by: Andrew Cripps
Regional Director

Energy Demand Research Project: Final Analysis

Rev No	Comments	Checked by	Approved by	Date
2.2	Final version	David Ross	Andrew Cripps	21/06/11

AECOM House, 63-77 Victoria Street, St Albans, Hertfordshire, AL1 3ER
Telephone: 01727 535000 Website: <http://www.aecom.com>

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Appendix E: Additional Data Tables

For brevity, Sections 4 to 7 only include the results from AECOM's analyses of the energy consumption data that are necessary to explain the key findings. For completeness, we include here other results from AECOM's analysis of EDF's and E.ON's energy consumption data. Each table in this Appendix is referenced in Sections 4 and 5.

Statistics based on small samples are identified by being printed in grey.

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Appendix E1 Additional Details from Analysis of EDF Data

Note: some tables in this appendix show the median energy consumption for different trial groups. The number of households with valid data differs between the pretrial year and in-trial years. Our comparison between pretrial and in-trial consumption (Section 4.1) used only those households with valid data in both comparison years. For this reason, the differences determined in the analysis should not be compared with the differences between medians in the appendix tables, which are based on all households with data in the particular year only.

Table E1.1 Electricity consumption of the Trial Groups¹

Trial Group		Pretrial	Year 1	Year 2
Paper _{EO}	Number of Households	127	145	117
	Median Energy Consumption (kWh)	4995	4693	4908
Paper _{DF}	Number of Households	92	120	41
	Median Energy Consumption (kWh)	4654	4512	3988
Wall Panel _{EO}	Number of Households	100	110	23
	Median Energy Consumption (kWh)	4799	4428	4615
Wall Panel _{DF}	Number of Households	101	140	38
	Median Energy Consumption (kWh)	4241	4387	4657
TV _{EO}	Number of Households	60	11	0
	Median Energy Consumption (kWh)	4695	6410	n/a
TV _{DF}	Number of Households	32	4	0
	Median Energy Consumption (kWh)	5113	5577	n/a
URA	Number of Households	124	145	3
	Median Energy Consumption (kWh)	4593	4207	2780
TOUT	Number of Households	4	144	10
	Median Energy Consumption (kWh)	3695	3394	3162
HEC	Number of Households	110	104	0
	Median Energy Consumption (kWh)	4161	3964	n/a
Control _{EO}	Number of Households	98	127	61
	Median Energy Consumption (kWh)	4918	4597	5083
Control _{DF}	Number of Households	130	137	45
	Median Energy Consumption (kWh)	4261	4090	4325
Web	Number of Households	78	71	0
	Median Energy Consumption (kWh)	4691	4333	n/a
Paper _{EO+DF}	Number of Households	219	265	158
	Median Energy Consumption (kWh)	4820	4641	4739
Wall Panel _{EO+DF}	Number of Households	201	250	61
	Median Energy Consumption (kWh)	4551	4414	4642
TV _{EO+DF}	Number of Households	92	15	0
	Median Energy Consumption (kWh)	4957	5876	n/a
Control _{EO+DF}	Number of Households	228	264	106
	Median Energy Consumption (kWh)	4579	4424	4924

¹ The number of households with valid data for the pretrial year and in-trial years 1 and 2 differs for a number of reasons. For example, sufficient pretrial data were not available for all households in the trial groups and some households were recruited too late into the trial to have a complete second year of in-trial data. Households that left the study for whatever reason during the trial have been omitted from the data.

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Table E1.2 Changes in electricity consumption from pretrial to in-trial

Trial Group		Pretrial to In-Trial Year 1	Pretrial to In-Trial Year 2
Paper _{EO}	Number of Households	102	93
	Median change in consumption (kWh)	-150	-504
	Median % change in consumption	-3.0	-8.9
Paper _{DF}	Number of Households	81	31
	Median change in consumption (kWh)	-206	-528
	Median % change in consumption	-6.2	-10.1
Wall Panel _{EO}	Number of Households	81	22
	Median change in consumption (kWh)	-346	-708
	Median % change in consumption	-9.3	-14.9
Wall Panel _{DF}	Number of Households	87	30
	Median change in consumption (kWh)	-77	-425
	Median % change in consumption	-2.6	-9.1
TV _{EO}	Number of Households	9	0
	Median change in consumption (kWh)	-422	n/a
	Median % change in consumption	-5.6	n/a
TV _{DF}	Number of Households	4	0
	Median change in consumption (kWh)	-300	n/a
	Median % change in consumption	-5.6	n/a
URA	Number of Households	108	2
	Median change in consumption (kWh)	-391	-591
	Median % change in consumption	-9.4	-15.2
TOUT	Number of Households	4	3
	Median change in consumption (kWh)	-490	-292
	Median % change in consumption	-14.9	-9.7
HEC	Number of Households	91	0
	Median change in consumption (kWh)	-131	n/a
	Median % change in consumption	-3.3	n/a
Control _{EO}	Number of Households	91	54
	Median change in consumption (kWh)	-90	-197
	Median % change in consumption	-2.1	-3.9
Control _{DF}	Number of Households	112	41
	Median change in consumption (kWh)	-59	-216
	Median % change in consumption	-1.6	-7.7
Web	Number of Households	64	0
	Median change in consumption (kWh)	-147	n/a
	Median % change in consumption	-2.6	n/a
Paper _{EO+DF}	Number of Households	183	124
	Median change in consumption (kWh)	-171	-527
	Median % change in consumption	-4.1	-9.5
Wall Panel _{EO+DF}	Number of Households	168	52
	Median change in consumption (kWh)	-227	-514
	Median % change in consumption	-5.8	-11.3
TV _{EO+DF}	Number of Households	13	0
	Median change in consumption (kWh)	-422	n/a
	Median % change in consumption	-5.6	n/a
Control _{EO+DF}	Number of Households	203	95
	Median change in consumption (kWh)	-61	-216
	Median % change in consumption	-1.8	-5.5

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Table E1.3 Comparisons of consumption in the pretrial year¹

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
Paper _{EO}	127	Control _{EO}	98	4995	4918	0.911
Paper _{DF}	92	Control _{DF}	130	4654	4261	0.344
Wall Panel _{EO}	100	Control _{EO}	98	4799	4918	0.868
Wall Panel _{DF}	101	Control _{DF}	130	4241	4261	0.642
TV _{EO}	60	Control _{EO}	98	4695	4918	0.900
TV _{DF}	32	Control _{DF}	130	5113	4261	0.185
URA	124	Control _{EO}	98	4593	4918	0.522
TOUT	4	Control _{EO}	98	3695	4918	0.208
HEC	110	Control _{DF}	130	4161	4261	0.853
Web	78	Control _{DF}	130	4691	4261	0.116
URA	124	Wall Panel _{EO}	100	4593	4799	0.486
TOUT	4	Wall Panel _{EO}	100	3695	4799	0.302
HEC	110	Wall Panel _{DF}	101	4161	4241	0.523
Paper _{EO+DF}	219	Control _{EO+DF}	228	4821	4579	0.385
Wall Panel _{EO+DF}	201	Control _{EO+DF}	228	4551	4579	0.827
TV _{EO+DF}	92	Control _{EO+DF}	228	4957	4579	0.302

¹ The number of households with valid data differs from trial group to trial group. In particular, TOUT does not have sufficient data for a meaningful analysis to be done but is retained for completeness.

Table E1.4 Comparisons of changes in electricity consumption from pretrial to in-trial year 1

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
Paper _{EO}	102	Control _{EO}	91	-150	-90	0.325
Paper _{DF}	81	Control _{DF}	112	-206	-59	0.025*
Wall Panel _{EO}	81	Control _{EO}	91	-346	-90	0.007**
Wall Panel _{DF}	87	Control _{DF}	112	-77	-59	0.980
TV _{EO}	9	Control _{EO}	91	-422	-90	0.383
TV _{DF}	4	Control _{DF}	112	-300	-59	0.618
URA	108	Control _{EO}	91	-391	-90	0.011*
TOUT	4	Control _{EO}	91	-490	-90	0.221
HEC	91	Control _{DF}	112	-131	-59	0.339
Web	64	Control _{DF}	112	-147	-59	0.322
URA	108	Wall Panel _{EO}	81	-391	-346	0.757
TOUT	4	Wall Panel _{EO}	81	-490	-346	0.693
HEC	91	Wall Panel _{DF}	87	-131	-77	0.464
Paper _{EO+DF}	183	Control _{EO+DF}	203	-171	-61	0.020*
Wall Panel _{EO+DF}	168	Control _{EO+DF}	203	-227	-61	0.047*
TV _{EO+DF}	13	Control _{EO+DF}	203	-422	-61	0.250

* p<0.05; ** p<0.001

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Table E1.5 Comparisons of changes in consumption from pretrial to in-trial year 2

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
Paper _{EO}	93	Control _{EO}	54	-504	-197	0.045*
Paper _{DF}	31	Control _{DF}	41	-528	-216	0.029*
Wall Panel _{EO}	22	Control _{EO}	54	-708	-197	0.004**
Wall Panel _{DF}	30	Control _{DF}	41	-425	-216	0.871
TV _{EO}	0	Control _{EO}	54	n/a	-197	n/a
TV _{DF}	0	Control _{DF}	41	n/a	-216	n/a
URA	2	Control _{EO}	54	-591	-197	0.427
TOUT	3	Control _{EO}	54	-292	-197	0.886
HEC	0	Control _{DF}	41	n/a	-216	n/a
Web	0	Control _{DF}	41	n/a	-216	n/a
URA	2	Wall Panel _{EO}	22	-591	-708	0.531
TOUT	3	Wall Panel _{EO}	22	-292	-708	0.210
HEC	0	Wall Panel _{DF}	30	n/a	-425	n/a
Paper _{EO+DF}	124	Control _{EO+DF}	95	-527	-216	0.004**
Wall Panel _{EO+DF}	52	Control _{EO+DF}	95	-514	-216	0.061~
TV _{EO+DF}	0	Control _{EO+DF}	95	n/a	-216	n/a

~ p<0.1; * p<0.05; ** p<0.01

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Appendix E2 Additional Details from Analysis of E.ON Data

Some tables in this appendix show the median energy consumption for different trial groups. The number of households with valid data differs between the pretrial year and in-trial years. Our comparison between pretrial and in-trial consumption (Section 5.1) used only those households with valid data in both comparison years. For this reason, the differences determined in the analysis should not be compared with the differences between medians in the appendix tables, which are based on all households with data in the particular year only.

Table E2.1 Electricity consumption for pretrial year¹

Trial/Control	Households with valid data	Median Consumption (kWh)	Interquartile range
TG5-FP _{EO}	295	2895	1932 to 4145
TG5-FP	214	3230	2371 to 4559
TG5-NFP	401	3457	2511 to 5050
TG5-HU _{DF}	441	6527	4382 to 8427
TG5-E7	261	3623	2531 to 5405
TG7-FP _{EO}	227	3146	2295 to 4447
TG7-FP	192	3445	2339 to 4994
TG7-HU _{DF}	445	6933	4147 to 8393
TG8-FP _{EO}	268	3250	2235 to 4836
TG8-FP	203	3444	2341 to 5009
TG8-HU _{DF}	429	6619	4385 to 8601
TG9-FP	430	3489	2304 to 5017
TG9-NFP	410	3521	2299 to 5098
TG9-HU _{DF}	460	6073	3886 to 8032
TG9-E7	267	3977	2775 to 5584
C1+C2	1807	3294	2146 to 4711
C3+C4	1594	3367	2284 to 4903
C7	879	3534	2359 to 5154
C8	1090	4783	3007 to 7368
C2+C6+C9	1549	4004	2763 to 5493

¹ The number of households with valid data varies between the pretrial year and in-trial periods. This is due to a number of reasons, for example sufficient pretrial data were not available for all households in the trial groups. Households that left the study for whatever reason during the trial have been omitted from the data.

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Table E2.2 Electricity consumption for in-trial year 1

Trial/Control	Households with valid data	Median Consumption (kWh)	Interquartile range
TG5-FP _{EO}	313	2867	1880 to 3954
TG5-FP	230	3097	2200 to 4573
TG5-NFP	434	3353	2298 to 4656
TG5-HU _{DF}	458	6010	3844 to 7971
TG5-E7	291	3481	2322 to 5210
TG7-FP _{EO}	244	2790	2102 to 4264
TG7-FP	214	3206	2236 to 4714
TG7-HU _{DF}	463	6036	3626 to 7626
TG8-FP _{EO}	285	3044	2055 to 4525
TG8-FP	219	3337	2300 to 4897
TG8-HU _{DF}	461	6209	4052 to 7917
TG9-FP	448	3201	2149 to 4626
TG9-NFP	440	3314	2209 to 4751
TG9-HU _{DF}	486	5288	3626 to 7385
TG9-E7	285	3640	2394 to 5062
C1+C2	1674	3036	1951 to 4398
C3+C4	1508	3153	2154 to 4687
C7	872	3390	2182 to 5008
C8	1318	4297	2831 to 6626
C2+C6+C9	1339	3726	2513 to 5205

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Table E2.3 Electricity consumption for in-trial year 1 plus 1 quarter

Trial/Control	Households with valid data	Median Consumption (kWh)	Interquartile range
TG5-FP _{EO}	317	2851	1886 to 4143
TG5-FP	233	3082	2165 to 4676
TG5-NFP	437	3359	2295 to 4647
TG5-HU _{DF}	461	6033	3819 to 7915
TG5-E7	291	3486	2357 to 5049
TG7-FP _{EO}	244	2876	2115 to 4280
TG7-FP	214	3272	2257 to 4724
TG7-HU _{DF}	468	6087	3782 to 7684
TG8-FP _{EO}	287	3064	2093 to 4570
TG8-FP	219	3385	2379 to 4920
TG8-HU _{DF}	466	6283	4111 to 7911
TG9-FP	448	3249	2161 to 4660
TG9-NFP	443	3393	2258 to 4726
TG9-HU _{DF}	488	5380	3583 to 7392
TG9-E7	285	3616	2453 to 5189
C1+C2	1666	3013	1963 to 4394
C3+C4	1503	3171	2150 to 4698
C7	871	3356	2182 to 4968
C8	1317	4206	2727 to 6508
C2+C6+C9	1338	3693	2525 to 5157

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Table E2.4 Electricity consumption for in-trial year 1 plus 2 quarters

Trial/Control	Households with valid data	Median Consumption (kWh)	Interquartile range
TG5-FP _{EO}	316	2838	1913 to 4028
TG5-FP	236	2961	2145 to 4618
TG5-NFP	435	3361	2279 to 4765
TG5-HU _{DF}	461	5923	3758 to 8022
TG5-E7	291	3431	2362 to 4903
TG7-FP _{EO}	244	2879	2092 to 4291
TG7-FP	211	3233	2273 to 4716
TG7-HU _{DF}	468	6049	3814 to 7799
TG8-FP _{EO}	286	3022	2127 to 4623
TG8-FP	218	3408	2400 to 5012
TG8-HU _{DF}	464	6179	4121 to 7892
TG9-FP	448	3221	2109 to 4715
TG9-NFP	441	3346	2242 to 4732
TG9-HU _{DF}	488	5356	3548 to 7402
TG9-E7	287	3535	2436 to 5065
C1+C2	1651	3061	1968 to 4414
C3+C4	1482	3230	2178 to 4748
C7	852	3382	2183 to 4988
C8	1288	4203	2738 to 6513
C2+C6+C9	1338	3641	2501 to 5131

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Table E2.5 Electricity consumption for in-trial year 1 plus 3 quarters

Trial/Control	Households with valid data	Median Consumption (kWh)	Interquartile range
TG5-FP _{EO}	311	2837	1917 to 4051
TG5-FP	232	2961	2148 to 4433
TG5-NFP	422	3379	2270 to 4745
TG5-HU _{DF}	453	5887	3835 to 7978
TG5-E7	289	3309	2420 to 4853
TG7-FP _{EO}	243	2898	2049 to 4232
TG7-FP	211	3334	2270 to 4779
TG7-HU _{DF}	459	6072	3926 to 7782
TG8-FP _{EO}	284	2965	2131 to 4624
TG8-FP	214	3329	2406 to 5027
TG8-HU _{DF}	458	6080	4053 to 7894
TG9-FP	438	3213	2107 to 4743
TG9-NFP	432	3367	2282 to 4701
TG9-HU _{DF}	483	5329	3617 to 7510
TG9-E7	279	3548	2413 to 5115
C1+C2	1550	3018	1965 to 4392
C3+C4	1408	3246	2205 to 4795
C7	813	3422	2169 to 5001
C8	1196	4230	2787 to 6538
C2+C6+C9	1253	3633	2487 to 5095

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Table E2.6 Change in Electricity Consumption from pretrial year to in-trial year 1

Trial/ Control	Households with valid data	Median change in consumption (kWh)	Interquartile range	Median % change in consumption	Interquartile range
TG5-FP _{EO}	292	-74	-372 to 106	-3.6	-12.2 to 5.0
TG5-FP	207	-114	-383 to 154	-4.1	-12.4 to 5.0
TG5-NFP	396	-128	-545 to 112	-3.9	-14.0 to 4.3
TG5-HU _{DF}	437	-341	-959 to 67	-6.1	-15.1 to 1.8
TG5-E7	261	-209	-585 to 39	-6.6	-14.9 to 1.2
TG7-FP _{EO}	226	-97	-438 to 103	-3.8	-13.1 to 4.0
TG7-FP	190	-113	-515 to 206	-4.0	-13.1 to 7.4
TG7-HU _{DF}	434	-448	-1132 to -4	-7.6	-17.0 to -0.1
TG8-FP _{EO}	266	-165	-562 to 72	-5.6	-15.1 to 2.3
TG8-FP	202	-86	-411 to 194	-2.7	-13.2 to 6.3
TG8-HU _{DF}	424	-380	-1019 to 92	-6.6	-14.2 to 2.4
TG9-FP	425	-220	-601 to 29	-6.9	-16.5 to 1.3
TG9-NFP	405	-169	-597 to 137	-6.2	-14.8 to 4.0
TG9-HU _{DF}	457	-397	-1081 to 69	-8.1	-16.6 to 1.2
TG9-E7	265	-341	-869 to -18	-9.9	-19.5 to -0.5
C1+C2	1645	-168	-526 to 82	-5.9	-15.0 to 2.8
C3+C4	1430	-148	-548 to 154	-5.2	-14.6 to 5.0
C7	804	-145	-567 to 162	-4.9	-14.8 to 5.4
C8	956	-175	-820 to 428	-4.2	-16.9 to 10.1
C2+C6+C9	1317	-246	-675 to 41	-7.0	-15.9 to 1.3

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Table E2.7 Change in electricity consumption from pretrial year to in-trial year 1 plus 1 quarter

Trial/ Control	Households with valid data	Median change in consumption (kWh)	Interquartile range	Median % change in consumption	Interquartile range
TG5-FP _{EO}	295	-82	-390 to 157	-3.4	-12.4 to 6.4
TG5-FP	210	-96	-427 to 162	-4.0	-13.4 to 6.8
TG5-NFP	397	-109	-552 to 180	-3.3	-13.7 to 5.7
TG5-HU _{DF}	440	-343	-1035 to 123	-6.2	-15.5 to 2.3
TG5-E7	261	-199	-594 to 58	-5.4	-15.9 to 1.7
TG7-FP _{EO}	226	-102	-474 to 132	-3.8	-13.9 to 4.9
TG7-FP	190	-90	-504 to 309	-2.7	-13.5 to 8.3
TG7-HU _{DF}	438	-438	-1169 to 49	-7.7	-16.9 to 1.3
TG8-FP _{EO}	267	-177	-562 to 120	-5.4	-16.5 to 4.1
TG8-FP	203	-71	-429 to 284	-2.6	-14.2 to 8.1
TG8-HU _{DF}	429	-378	-1047 to 151	-6.2	-15.9 to 3.4
TG9-FP	425	-197	-584 to 83	-5.8	-17.0 to 2.8
TG9-NFP	408	-191	-601 to 164	-6.0	-15.9 to 5.2
TG9-HU _{DF}	458	-372	-1098 to 137	-7.6	-17.3 to 2.5
TG9-E7	265	-329	-930 to -3	-9.5	-19.3 to -0.3
C1+C2	1638	-166	-548 to 102	-6.1	-16.0 to 4.0
C3+C4	1422	-136	-569 to 176	-5.1	-15.2 to 5.9
C7	798	-143	-659 to 164	-5.2	-16.6 to 5.7
C8	945	-219	-842 to 410	-4.3	-17.0 to 10.1
C2+C6+C9	1315	-246	-709 to 77	-6.8	-17.5 to 2.3

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Table E2.8 Change in electricity consumption from pretrial year to in-trial year 1 plus 2 quarters

Trial/ Control	Households with valid data	Median change in consumption (kWh)	Interquartile range	Median % change in consumption	Interquartile range
TG5-FP _{EO}	294	-97	-403 to 184	-4.7	-12.7 to 6.7
TG5-FP	213	-93	-487 to 220	-4.2	-15.7 to 7.9
TG5-NFP	395	-157	-608 to 206	-4.7	-15.4 to 6.4
TG5-HU _{DF}	440	-338	-1074 to 214	-6.8	-17.0 to 4.3
TG5-E7	261	-200	-682 to 72	-6.3	-16.3 to 1.8
TG7-FP _{EO}	226	-122	-466 to 120	-4.4	-13.8 to 5.2
TG7-FP	188	-105	-593 to 236	-3.2	-12.7 to 8.4
TG7-HU _{DF}	439	-394	-1183 to 115	-7.2	-16.9 to 2.2
TG8-FP _{EO}	267	-190	-643 to 110	-5.8	-16.7 to 4.2
TG8-FP	202	-87	-446 to 316	-3.0	-16.6 to 9.5
TG8-HU _{DF}	429	-363	-1084 to 199	-6.4	-16.6 to 3.9
TG9-FP	425	-221	-617 to 123	-6.4	-17.2 to 3.9
TG9-NFP	406	-197	-701 to 208	-6.0	-17.1 to 5.6
TG9-HU _{DF}	458	-363	-1123 to 123	-7.4	-18.3 to 2.6
TG9-E7	267	-328	-904 to -8	-9.6	-20.3 to -0.4
C1+C2	1625	-158	-575 to 127	-5.8	-16.3 to 4.7
C3+C4	1401	-134	-606 to 246	-4.8	-15.9 to 7.6
C7	781	-162	-704 to 179	-5.5	-17.2 to 5.8
C8	930	-181	-851 to 462	-4.3	-17.5 to 11.3
C2+C6+C9	1315	-249	-732 to 104	-6.8	-17.6 to 2.8

Capabilities on project:
Building Engineering

Table E2.9 Change in electricity consumption from pretrial year to in-trial year 1 plus 3 quarters

Trial/ Control	Households with valid data	Median change in consumption (kWh)	Interquartile range	Median % change in consumption	Interquartile range
TG5-FP _{EO}	289	-100	-395 to 201	-4.3	-13.8 to 8.0
TG5-FP	211	-110	-558 to 249	-3.7	-17.5 to 8.9
TG5-NFP	383	-173	-623 to 243	-5.7	-15.3 to 7.4
TG5-HU _{DF}	433	-347	-1093 to 237	-7.3	-17.6 to 4.5
TG5-E7	259	-159	-698 to 119	-5.7	-16.7 to 2.7
TG7-FP _{EO}	225	-137	-443 to 157	-4.5	-14.5 to 5.9
TG7-FP	187	-107	-613 to 298	-3.8	-13.6 to 9.3
TG7-HU _{DF}	433	-391	-1231 to 106	-7.2	-17.6 to 2.4
TG8-FP _{EO}	266	-218	-662 to 122	-7.4	-17.8 to 4.6
TG8-FP	199	-86	-473 to 290	-3.0	-16.6 to 9.4
TG8-HU _{DF}	423	-399	-1177 to 253	-6.9	-17.6 to 4.8
TG9-FP	416	-221	-680 to 102	-6.5	-18.8 to 3.6
TG9-NFP	398	-196	-763 to 235	-5.9	-18.2 to 6.4
TG9-HU _{DF}	452	-382	-1168 to 165	-7.9	-19.1 to 3.8
TG9-E7	261	-302	-939 to -7	-9.5	-19.7 to -0.3
C1+C2	1525	-149	-589 to 161	-5.4	-17.5 to 6.0
C3+C4	1328	-112	-576 to 277	-3.9	-15.2 to 8.7
C7	742	-174	-665 to 210	-5.4	-17.8 to 5.9
C8	874	-155	-824 to 552	-3.7	-16.7 to 12.4
C2+C6+C9	1230	-235	-736 to 144	-6.7	-18.0 to 4.0

Capabilities on project:
Building Engineering

Table E2.10 Comparisons of electricity consumption in pretrial year

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
TG5-FP _{EO}	295	C1+C2	1807	2895.3	3293.5	0.001**
TG5-FP	214	C3+C4	1594	3230.0	3366.9	0.240
TG5-NFP	401	C7	879	3456.6	3534.5	0.973
TG5-HU _{DF}	441	C8	1090	6527.0	4782.6	0.000**
TG5-E7	261	C2+C6+C9	1549	3623.2	4003.6	0.112
TG7-FP _{EO}	227	C1+C2	1807	3145.6	3293.5	0.979
TG7-FP	192	C3+C4	1594	3445.4	3366.9	0.842
TG7-HU _{DF}	445	C8	1090	6932.7	4782.6	0.000**
TG8-FP _{EO}	268	C1+C2	1807	3249.6	3293.5	0.604
TG8-FP	203	C3+C4	1594	3444.5	3366.9	0.758
TG8-HU _{DF}	429	C8	1090	6619.0	4782.6	0.000**
TG9-FP	430	C3+C4	1594	3488.6	3366.9	0.577
TG9-NFP	410	C7	879	3521.4	3534.5	0.724
TG9-HU _{DF}	460	C8	1090	6072.8	4782.6	0.000**
TG9-E7	267	C2+C6+C9	1549	3976.7	4003.6	0.666
TG7-FP _{EO}	227	TG5-FP _{EO}	295	3145.6	2895.3	0.012*
TG8-FP _{EO}	268	TG5-FP _{EO}	295	3249.6	2895.3	0.003**
TG7-FP	192	TG5-FP	214	3445.4	3230.0	0.329
TG8-FP	203	TG5-FP	214	3444.5	3230.0	0.236
TG9-FP	430	TG5-FP	214	3488.6	3230.0	0.153
TG9-NFP	410	TG5-NFP	401	3521.4	3456.6	0.774
TG7-HU _{DF}	445	TG5-HU _{DF}	441	6932.7	6527.0	0.524
TG8-HU _{DF}	429	TG5-HU _{DF}	441	6619.0	6527.0	0.560
TG9-HU _{DF}	460	TG5-HU _{DF}	441	6072.8	6527.0	0.043*
TG9-E7	267	TG5-E7	261	3976.7	3623.2	0.109
TG8-FP _{EO}	268	TG7-FP _{EO}	227	3249.6	3145.6	0.659
TG8-FP	203	TG7-FP	192	3444.5	3445.4	0.959
TG9-FP	430	TG7-FP	192	3488.6	3445.4	0.840
TG8-HU _{DF}	429	TG7-HU _{DF}	445	6619.0	6932.7	0.968
TG9-HU _{DF}	460	TG7-HU _{DF}	445	6072.8	6932.7	0.010*
TG9-FP	430	TG8-FP	203	3488.6	3444.5	0.914
TG9-HU _{DF}	460	TG8-HU _{DF}	429	6072.8	6619.0	0.010*

**p<0.01; *p<0.05

Capabilities on project:
Building Engineering

Table E2.11 Comparisons of changes in electricity consumption from pretrial to in-trial year 1

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
TG5-FP _{EO}	313	C1+C2	1674	-74.5	-167.7	0.004**
TG5-FP	230	C3+C4	1508	-113.7	-148.2	0.173
TG5-NFP	434	C7	872	-128.4	-144.6	0.886
TG5-HU _{DF}	458	C8	1318	-340.5	-174.7	0.000**
TG5-E7	291	C2+C6+C9	1339	-209.5	-246.4	0.466
TG7-FP _{EO}	244	C1+C2	1674	-97.1	-167.7	0.092~
TG7-FP	214	C3+C4	1508	-113.5	-148.2	0.389
TG7-HU _{DF}	463	C8	1318	-448.2	-174.7	0.000**
TG8-FP _{EO}	285	C1+C2	1674	-165.1	-167.7	0.950
TG8-FP	219	C3+C4	1508	-85.5	-148.2	0.117
TG8-HU _{DF}	461	C8	1318	-379.6	-174.7	0.000**
TG9-FP	448	C3+C4	1508	-219.8	-148.2	0.010*
TG9-NFP	440	C7	872	-169.4	-144.6	0.425
TG9-HU _{DF}	486	C8	1318	-397.2	-174.7	0.000**
TG9-E7	285	C2+C6+C9	1339	-341.5	-246.4	0.003**
TG7-FP _{EO}	244	TG5-FP _{EO}	313	-97.1	-74.5	0.577
TG8-FP _{EO}	285	TG5-FP _{EO}	313	-165.1	-74.5	0.036*
TG7-FP	214	TG5-FP	230	-113.5	-113.7	0.772
TG8-FP	219	TG5-FP	230	-85.5	-113.7	0.830
TG9-FP	448	TG5-FP	230	-219.8	-113.7	0.002**
TG9-NFP	440	TG5-NFP	434	-169.4	-128.4	0.425
TG7-HU _{DF}	463	TG5-HU _{DF}	458	-448.2	-340.5	0.097~
TG8-HU _{DF}	461	TG5-HU _{DF}	458	-379.6	-340.5	0.913
TG9-HU _{DF}	486	TG5-HU _{DF}	458	-397.2	-340.5	0.534
TG9-E7	285	TG5-E7	291	-341.5	-209.5	0.004**
TG8-FP _{EO}	285	TG7-FP _{EO}	244	-165.1	-97.1	0.210
TG8-FP	219	TG7-FP	214	-85.5	-113.5	0.662
TG9-FP	448	TG7-FP	214	-219.8	-113.5	0.019*
TG8-HU _{DF}	461	TG7-HU _{DF}	463	-379.6	-448.2	0.120
TG9-HU _{DF}	486	TG7-HU _{DF}	463	-397.2	-448.2	0.318
TG9-FP	448	TG8-FP	219	-219.8	-85.5	0.002**
TG9-HU _{DF}	486	TG8-HU _{DF}	461	-397.2	-379.6	0.602

**p<0.01; *p<0.05; ~p<0.1

Capabilities on project:
Building Engineering

Table E2.12 Comparisons of changes in electricity consumption from pretrial to in-trial year 1 plus 1 quarter

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
TG5-FP _{EO}	317	C1+C2	1666	-82.4	-166.2	0.005**
TG5-FP	233	C3+C4	1503	-95.5	-135.6	0.227
TG5-NFP	437	C7	871	-108.8	-143.4	0.197
TG5-HU _{DF}	461	C8	1317	-342.8	-218.8	0.002**
TG5-E7	291	C2+C6+C9	1338	-199.1	-246.5	0.370
TG7-FP _{EO}	244	C1+C2	1666	-102.3	-166.2	0.216
TG7-FP	214	C3+C4	1503	-90.3	-135.6	0.186
TG7-HU _{DF}	468	C8	1317	-438.2	-218.8	0.000**
TG8-FP _{EO}	287	C1+C2	1666	-176.6	-166.2	0.740
TG8-FP	219	C3+C4	1503	-70.9	-135.6	0.073~
TG8-HU _{DF}	466	C8	1317	-377.6	-218.8	0.002**
TG9-FP	448	C3+C4	1503	-197.1	-135.6	0.091~
TG9-NFP	443	C7	871	-191.1	-143.4	0.934
TG9-HU _{DF}	488	C8	1317	-372.4	-218.8	0.001**
TG9-E7	285	C2+C6+C9	1338	-329.4	-246.5	0.006**
TG7-FP _{EO}	244	TG5-FP _{EO}	317	-102.3	-82.4	0.331
TG8-FP _{EO}	287	TG5-FP _{EO}	317	-176.6	-82.4	0.059~
TG7-FP	214	TG5-FP	233	-90.3	-95.5	0.807
TG8-FP	219	TG5-FP	233	-70.9	-95.5	0.571
TG9-FP	448	TG5-FP	233	-197.1	-95.5	0.023*
TG9-NFP	443	TG5-NFP	437	-191.1	-108.8	0.217
TG7-HU _{DF}	468	TG5-HU _{DF}	461	-438.2	-342.8	0.114
TG8-HU _{DF}	466	TG5-HU _{DF}	461	-377.6	-342.8	0.984
TG9-HU _{DF}	488	TG5-HU _{DF}	461	-372.4	-342.8	0.793
TG9-E7	285	TG5-E7	291	-329.4	-199.1	0.005**
TG8-FP _{EO}	287	TG7-FP _{EO}	244	-176.6	-102.3	0.509
TG8-FP	219	TG7-FP	214	-70.9	-90.3	0.796
TG9-FP	448	TG7-FP	214	-197.1	-90.3	0.020*
TG8-HU _{DF}	466	TG7-HU _{DF}	468	-377.6	-438.2	0.144
TG9-HU _{DF}	488	TG7-HU _{DF}	468	-372.4	-438.2	0.202
TG9-FP	448	TG8-FP	219	-197.1	-70.9	0.006**
TG9-HU _{DF}	488	TG8-HU _{DF}	466	-372.4	-377.6	0.841

**p<0.01; *p<0.05; ~p<0.1

Capabilities on project:
Building Engineering

Table E2.13 Comparisons of changes in electricity consumption from pretrial to in-trial year 1 plus 2 quarters

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
TG5-FP _{EO}	316	C1+C2	1651	-97.0	-158.4	0.024*
TG5-FP	236	C3+C4	1482	-92.6	-134.3	0.363
TG5-NFP	435	C7	852	-157.3	-162.2	0.321
TG5-HU _{DF}	461	C8	1288	-337.9	-180.6	0.002**
TG5-E7	291	C2+C6+C9	1338	-199.5	-248.6	0.504
TG7-FP _{EO}	244	C1+C2	1651	-121.8	-158.4	0.389
TG7-FP	211	C3+C4	1482	-104.7	-134.3	0.500
TG7-HU _{DF}	468	C8	1288	-393.7	-180.6	0.000**
TG8-FP _{EO}	286	C1+C2	1651	-189.8	-158.4	0.599
TG8-FP	218	C3+C4	1482	-86.7	-134.3	0.163
TG8-HU _{DF}	464	C8	1288	-362.8	-180.6	0.001**
TG9-FP	448	C3+C4	1482	-220.7	-134.3	0.043*
TG9-NFP	441	C7	852	-196.8	-162.2	0.997
TG9-HU _{DF}	488	C8	1288	-362.6	-180.6	0.001**
TG9-E7	287	C2+C6+C9	1338	-327.7	-248.6	0.007**
TG7-FP _{EO}	244	TG5-FP _{EO}	316	-121.8	-97.0	0.394
TG8-FP _{EO}	286	TG5-FP _{EO}	316	-189.8	-97.0	0.029*
TG7-FP	211	TG5-FP	236	-104.7	-92.6	0.853
TG8-FP	218	TG5-FP	236	-86.7	-92.6	0.684
TG9-FP	448	TG5-FP	236	-220.7	-92.6	0.023*
TG9-NFP	441	TG5-NFP	435	-196.8	-157.3	0.398
TG7-HU _{DF}	468	TG5-HU _{DF}	461	-393.7	-337.9	0.285
TG8-HU _{DF}	464	TG5-HU _{DF}	461	-362.8	-337.9	0.796
TG9-HU _{DF}	488	TG5-HU _{DF}	461	-362.6	-337.9	0.782
TG9-E7	287	TG5-E7	291	-327.7	-199.5	0.008**
TG8-FP _{EO}	286	TG7-FP _{EO}	244	-189.8	-121.8	0.289
TG8-FP	218	TG7-FP	211	-86.7	-104.7	0.625
TG9-FP	448	TG7-FP	211	-220.7	-104.7	0.054~
TG8-HU _{DF}	464	TG7-HU _{DF}	468	-362.8	-393.7	0.442
TG9-HU _{DF}	488	TG7-HU _{DF}	468	-362.6	-393.7	0.455
TG9-FP	448	TG8-FP	218	-220.7	-86.7	0.008**
TG9-HU _{DF}	488	TG8-HU _{DF}	464	-362.6	-362.8	0.992

**p<0.01; *p<0.05; ~p<0.1

Capabilities on project:
Building Engineering

Table E2.14 Comparisons of changes in electricity consumption from pretrial to in-trial year 1 plus 3 quarters

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
TG5-FP _{EO}	311	C1+C2	1550	-99.9	-149.1	0.082~
TG5-FP	232	C3+C4	1408	-109.8	-111.9	0.843
TG5-NFP	422	C7	813	-173.3	-174.1	0.666
TG5-HU _{DF}	453	C8	1196	-347.0	-155.5	0.000**
TG5-E7	289	C2+C6+C9	1253	-158.8	-234.9	0.554
TG7-FP _{EO}	243	C1+C2	1550	-137.0	-149.1	0.791
TG7-FP	211	C3+C4	1408	-106.7	-111.9	0.898
TG7-HU _{DF}	459	C8	1196	-390.8	-155.5	0.000**
TG8-FP _{EO}	284	C1+C2	1550	-217.7	-149.1	0.249
TG8-FP	214	C3+C4	1408	-86.1	-111.9	0.444
TG8-HU _{DF}	458	C8	1196	-399.1	-155.5	0.000**
TG9-FP	438	C3+C4	1408	-220.5	-111.9	0.001**
TG9-NFP	432	C7	813	-196.0	-174.1	0.657
TG9-HU _{DF}	483	C8	1196	-382.2	-155.5	0.000**
TG9-E7	279	C2+C6+C9	1253	-302.1	-234.9	0.003**
TG7-FP _{EO}	243	TG5-FP _{EO}	311	-137.0	-99.9	0.313
TG8-FP _{EO}	284	TG5-FP _{EO}	311	-217.7	-99.9	0.017*
TG7-FP	211	TG5-FP	232	-106.7	-109.8	0.813
TG8-FP	214	TG5-FP	232	-86.1	-109.8	0.695
TG9-FP	438	TG5-FP	232	-220.5	-109.8	0.015*
TG9-NFP	432	TG5-NFP	422	-196.0	-173.3	0.453
TG7-HU _{DF}	459	TG5-HU _{DF}	453	-390.8	-347.0	0.197
TG8-HU _{DF}	458	TG5-HU _{DF}	453	-399.1	-347.0	0.848
TG9-HU _{DF}	483	TG5-HU _{DF}	453	-382.2	-347.0	0.731
TG9-E7	279	TG5-E7	289	-302.1	-158.8	0.005**
TG8-FP _{EO}	284	TG7-FP _{EO}	243	-217.7	-137.0	0.259
TG8-FP	214	TG7-FP	211	-86.1	-106.7	0.522
TG9-FP	438	TG7-FP	211	-220.5	-106.7	0.055~
TG8-HU _{DF}	458	TG7-HU _{DF}	459	-399.1	-390.8	0.306
TG9-HU _{DF}	483	TG7-HU _{DF}	459	-382.2	-390.8	0.365
TG9-FP	438	TG8-FP	214	-220.5	-86.1	0.005**
TG9-HU _{DF}	483	TG8-HU _{DF}	458	-382.2	-399.1	0.914

**p<0.01; *p<0.05; ~p<0.1

Capabilities on project:
Building Engineering

Table E2.15 Gas consumption for pretrial year

Trial/Control	Households with valid data	Median Consumption (kWh)	Interquartile range
TG5-FP	216	15876	11595 to 20449
TG5-NFP	416	16188	11914 to 20847
TG5-HU _{DF}	409	20814	14304 to 27583
TG7-FP	196	16164	12562 to 20443
TG7-HU _{DF}	435	19319	13670 to 26425
TG8-FP	204	16878	12753 to 21012
TG8-HU _{DF}	415	19595	13920 to 26089
TG9-FP	441	17036	12266 to 21276
TG9-NFP	418	16953	13029 to 21664
TG9-HU _{DF}	424	19402	13913 to 25171
C2+C4	1572	16321	11950 to 21331
C7	888	16200	11826 to 21760
C8	1285	17331	12407 to 24212

Table E2.16 Gas consumption for in-trial year 1

Trial/Control	Households with valid data	Median Consumption (kWh)	Interquartile range
TG5-FP	189	14995	10984 to 19221
TG5-NFP	377	15389	11892 to 20547
TG5-HU _{DF}	383	19939	13773 to 26941
TG7-FP	181	15196	11157 to 19860
TG7-HU _{DF}	394	19017	12995 to 26212
TG8-FP	183	15528	11130 to 20317
TG8-HU _{DF}	373	18374	13158 to 24375
TG9-FP	418	15849	12260 to 20283
TG9-NFP	395	15573	11922 to 20296
TG9-HU _{DF}	376	18479	13879 to 24061
C2+C4	1419	16357	11736 to 21119
C7	809	15961	11731 to 21196
C8	929	17238	12013 to 24182

Capabilities on project:
Building Engineering

Table E2.17 Gas consumption for in-trial year 1 plus 1 quarter

Trial/Control	Households with valid data	Median Consumption (kWh)	Interquartile range
TG5-FP	201	14363	10737 to 18433
TG5-NFP	397	14935	11458 to 19423
TG5-HU _{DF}	400	18775	13132 to 25830
TG7-FP	192	14524	10511 to 19125
TG7-HU _{DF}	416	18083	12082 to 24991
TG8-FP	197	14970	10918 to 19518
TG8-HU _{DF}	395	18093	12837 to 23492
TG9-FP	428	15358	11794 to 19614
TG9-NFP	404	15048	11321 to 19823
TG9-HU _{DF}	404	17536	12960 to 22847
C2+C4	1363	15790	11586 to 20543
C7	772	15321	11226 to 20741
C8	884	17312	12064 to 24027

Table E2.18 Gas consumption for in-trial year 1 plus 2 quarters

Trial/Control	Households with valid data	Median Consumption (kWh)	Interquartile range
TG5-FP	205	15028	11122 to 19132
TG5-NFP	402	15245	12038 to 20270
TG5-HU _{DF}	403	19171	14012 to 26499
TG7-FP	193	15233	11181 to 19618
TG7-HU _{DF}	421	18538	12596 to 25696
TG8-FP	199	15594	11327 to 20517
TG8-HU _{DF}	398	18705	13411 to 24782
TG9-FP	432	16141	12484 to 20299
TG9-NFP	404	15753	12065 to 20633
TG9-HU _{DF}	414	18450	13620 to 23931
C2+C4	1053	15672	11516 to 20978
C7	630	15321	11393 to 20529
C8	695	17156	12001 to 24228

Capabilities on project:
Building Engineering

Table E2.19 Gas consumption for in-trial year 1 plus 3 quarters

Trial/Control	Households with valid data	Median Consumption (kWh)	Interquartile range
TG5-FP	206	15195	10851 to 19134
TG5-NFP	398	15267	11934 to 20287
TG5-HU _{DF}	399	19305	14049 to 26352
TG7-FP	192	15559	11354 to 19725
TG7-HU _{DF}	422	18608	12634 to 25952
TG8-FP	199	15596	11495 to 20321
TG8-HU _{DF}	401	18801	13470 to 24695
TG9-FP	431	16008	12610 to 20329
TG9-NFP	408	15897	12049 to 20882
TG9-HU _{DF}	415	18531	13733 to 23870
C2+C4	430	14858	11420 to 21076
C7	249	15236	10962 to 21031
C8	257	17577	11984 to 24519

Table E2.20 Change in gas consumption from pretrial to in-trial year 1

Trial	Households with valid data	Median change in consumption (kWh)	Interquartile range	Median % change in consumption	Interquartile range
TG5-FP	189	-748	-2732 to 518	-5.1	-16.0 to 4.3
TG5-NFP	377	-765	-2168 to 470	-4.9	-12.7 to 3.2
TG5-HU _{DF}	382	-553	-2737 to 947	-3.5	-12.5 to 5.5
TG7-FP	177	-1097	-2476 to 324	-7.4	-14.5 to 2.1
TG7-HU _{DF}	394	-701	-2936 to 620	-3.7	-14.9 to 4.0
TG8-FP	183	-1150	-2779 to -89	-7.9	-18.0 to -0.8
TG8-HU _{DF}	373	-577	-2571 to 759	-3.6	-13.0 to 5.1
TG9-FP	417	-825	-2361 to 465	-5.3	-12.9 to 3.2
TG9-NFP	393	-966	-2756 to 289	-6.2	-14.7 to 1.9
TG9-HU _{DF}	374	-554	-2458 to 577	-3.4	-12.2 to 3.2
C2+C4	1414	-79	-1799 to 1329	-0.7	-11.1 to 9.0
C7	807	-192	-1765 to 1263	-1.3	-11.1 to 8.6
C8	921	-177	-2294 to 1578	-1.2	-13.0 to 10.1

Capabilities on project:
Building Engineering

Table E2.21 Change in gas consumption from pretrial to in-trial year 1 plus 1 quarter

Trial/ Control	Households with valid data	Median change in consumption (kWh)	Interquartile range	Median % change in consumption	Interquartile range
TG5-FP	201	-1311	-3274 to 203	-9.2	-19.3 to 1.8
TG5-NFP	397	-1291	-2869 to 203	-8.1	-17.0 to 1.6
TG5-HU _{DF}	399	-1425	-3264 to 274	-7.4	-16.5 to 1.5
TG7-FP	188	-1486	-3583 to -41	-9.8	-19.9 to -0.3
TG7-HU _{DF}	416	-1466	-4026 to 167	-7.5	-18.3 to 0.9
TG8-FP	197	-1679	-3589 to -542	-10.4	-19.7 to -3.7
TG8-HU _{DF}	395	-1181	-3614 to 122	-7.0	-17.3 to 1.0
TG9-FP	427	-1358	-3113 to 118	-8.1	-17.4 to 1.1
TG9-NFP	402	-1653	-3655 to -233	-9.7	-19.5 to -1.5
TG9-HU _{DF}	402	-1360	-3545 to 117	-7.4	-16.5 to 1.0
C2+C4	1358	-462	-2141 to 866	-3.3	-12.8 to 6.1
C7	770	-626	-2253 to 791	-3.7	-13.6 to 5.2
C8	875	-532	-2726 to 1288	-3.5	-14.5 to 7.7

Table E2.22 Change in gas consumption from pretrial to in-trial year 1 plus 2 quarters

Trial/ Control	Households with valid data	Median change in consumption (kWh)	Interquartile range	Median % change in consumption	Interquartile range
TG5-FP	205	-668	-2678 to 792	-4.3	-17.1 to 7.8
TG5-NFP	402	-622	-2359 to 877	-4.0	-13.2 to 6.0
TG5-HU _{DF}	402	-464	-2702 to 1063	-2.4	-12.9 to 5.1
TG7-FP	189	-771	-2773 to 717	-5.7	-16.0 to 5.0
TG7-HU _{DF}	421	-619	-3301 to 925	-3.2	-15.3 to 5.6
TG8-FP	199	-1098	-2766 to 307	-7.3	-16.4 to 2.2
TG8-HU _{DF}	398	-492	-3022 to 1016	-3.1	-14.1 to 6.1
TG9-FP	431	-709	-2591 to 885	-4.1	-14.1 to 6.1
TG9-NFP	402	-942	-2944 to 607	-6.0	-16.6 to 3.6
TG9-HU _{DF}	412	-593	-2849 to 899	-3.9	-15.5 to 4.9
C2+C4	1048	-404	-2211 to 1188	-2.8	-13.2 to 8.4
C7	629	-429	-2262 to 1106	-2.8	-14.8 to 7.1
C8	690	-471	-2919 to 1561	-3.3	-15.5 to 9.9

Capabilities on project:
Building Engineering

Table E2.23 Change in gas consumption from pretrial to in-trial year 1 plus 3 quarters

Trial/ Control	Households with valid data	Median change in consumption (kWh)	Interquartile range	Median % change in consumption	Interquartile range
TG5-FP	206	-606	-2577 to 1172	-3.9	-15.8 to 9.7
TG5-NFP	398	-600	-2301 to 1031	-3.7	-13.0 to 7.3
TG5-HU _{DF}	398	-476	-2725 to 1182	-2.6	-13.2 to 6.8
TG7-FP	188	-727	-2923 to 894	-4.9	-17.8 to 5.7
TG7-HU _{DF}	422	-513	-3151 to 1173	-3.0	-14.7 to 7.2
TG8-FP	199	-1158	-2814 to 317	-7.4	-17.3 to 2.4
TG8-HU _{DF}	401	-473	-2841 to 1111	-3.0	-13.7 to 6.9
TG9-FP	430	-669	-2658 to 982	-4.1	-14.8 to 6.4
TG9-NFP	406	-917	-2808 to 660	-5.7	-15.4 to 4.7
TG9-HU _{DF}	413	-654	-2844 to 1207	-4.1	-15.1 to 7.0
C2+C4	428	-815	-2519 to 968	-4.8	-14.8 to 8.4
C7	249	-781	-2750 to 850	-4.4	-17.2 to 6.5
C8	256	-677	-2858 to 1447	-4.6	-15.0 to 8.3

Capabilities on project:
Building Engineering

Table E2.24 Comparisons of gas consumption in pretrial year

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
TG5-FP	216	C2+C4	1572	15876.1	16321.1	0.427
TG5-NFP	416	C7	888	16188.4	16199.9	0.933
TG5-HU _{DF}	409	C8	1285	20814.3	17330.9	0.000**
TG7-FP	196	C2+C4	1572	16164.2	16321.1	0.751
TG7-HU _{DF}	435	C8	1285	19318.8	17330.9	0.000**
TG8-FP	204	C2+C4	1572	16877.7	16321.1	0.402
TG8-HU _{DF}	415	C8	1285	19594.7	17330.9	0.000**
TG9-FP	441	C2+C4	1572	17036.0	16321.1	0.205
TG9-NFP	418	C7	888	16952.8	16199.9	0.046*
TG9-HU _{DF}	424	C8	1285	19401.9	17330.9	0.000**
TG7-FP	196	TG5-FP	216	16164.2	15876.1	0.687
TG8-FP	204	TG5-FP	216	16877.7	15876.1	0.200
TG9-FP	441	TG5-FP	216	17036.0	15876.1	0.143
TG9-NFP	418	TG5-NFP	416	16952.8	16188.4	0.065~
TG7-HU _{DF}	435	TG5-HU _{DF}	409	19318.8	20814.3	0.309
TG8-HU _{DF}	415	TG5-HU _{DF}	409	19594.7	20814.3	0.335
TG9-HU _{DF}	424	TG5-HU _{DF}	409	19401.9	20814.3	0.180
TG8-FP	204	TG7-FP	196	16877.7	16164.2	0.400
TG9-FP	441	TG7-FP	196	17036.0	16164.2	0.276
TG8-HU _{DF}	415	TG7-HU _{DF}	435	19594.7	19318.8	0.888
TG9-HU _{DF}	424	TG7-HU _{DF}	435	19401.9	19318.8	0.782
TG9-FP	441	TG8-FP	204	17036.0	16877.7	0.903
TG9-HU _{DF}	424	TG8-HU _{DF}	415	19401.9	19594.7	0.702

**p<0.01; *p<0.05; ~p<0.1

Capabilities on project:
Building Engineering

Table E2.25 Comparisons of changes in consumption from pretrial to in-trial year 1

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
TG5-FP	189	C2+C4	1419	-748.2	-78.7	0.000**
TG5-NFP	377	C7	809	-764.6	-192.4	0.000**
TG5-HU _{DF}	383	C8	929	-552.8	-176.9	0.027*
TG7-FP	181	C2+C4	1419	-1097.1	-78.7	0.000**
TG7-HU _{DF}	394	C8	929	-701.0	-176.9	0.000**
TG8-FP	183	C2+C4	1419	-1149.6	-78.7	0.000**
TG8-HU _{DF}	373	C8	929	-576.6	-176.9	0.001**
TG9-FP	418	C2+C4	1419	-825.5	-78.7	0.000**
TG9-NFP	395	C7	809	-965.9	-192.4	0.000**
TG9-HU _{DF}	376	C8	929	-554.4	-176.9	0.000**
TG7-FP	181	TG5-FP	189	-1097.1	-748.2	0.751
TG8-FP	183	TG5-FP	189	-1149.6	-748.2	0.052~
TG9-FP	418	TG5-FP	189	-825.5	-748.2	0.719
TG9-NFP	395	TG5-NFP	377	-965.9	-764.6	0.046*
TG7-HU _{DF}	394	TG5-HU _{DF}	383	-701.0	-552.8	0.078~
TG8-HU _{DF}	373	TG5-HU _{DF}	383	-576.6	-552.8	0.385
TG9-HU _{DF}	376	TG5-HU _{DF}	383	-554.4	-552.8	0.313
TG8-FP	183	TG7-FP	181	-1149.6	-1097.1	0.110
TG9-FP	418	TG7-FP	181	-825.5	-1097.1	0.478
TG8-HU _{DF}	373	TG7-HU _{DF}	394	-576.6	-701.0	0.368
TG9-HU _{DF}	376	TG7-HU _{DF}	394	-554.4	-701.0	0.434
TG9-FP	418	TG8-FP	183	-825.5	-1149.6	0.008**
TG9-HU _{DF}	376	TG8-HU _{DF}	373	-554.4	-576.6	0.846

**p<0.01; *p<0.05; ~p<0.1

Capabilities on project:
Building Engineering

Table E2.26 Comparisons of changes in consumption from pretrial to in-trial year 1 plus 1 quarter

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
TG5-FP	201	C2+C4	1363	-792.4	-65.9	0.000**
TG5-NFP	397	C7	772	-774.2	-192.7	0.000**
TG5-HU _{DF}	400	C8	884	-549.7	-195.1	0.000**
TG7-FP	192	C2+C4	1363	-977.7	-65.9	0.000**
TG7-HU _{DF}	416	C8	884	-811.7	-195.1	0.000**
TG8-FP	197	C2+C4	1363	-1150.6	-65.9	0.000**
TG8-HU _{DF}	395	C8	884	-596.6	-195.1	0.000**
TG9-FP	428	C2+C4	1363	-826.2	-65.9	0.000**
TG9-NFP	404	C7	772	-1027.7	-192.7	0.000**
TG9-HU _{DF}	404	C8	884	-558.6	-195.1	0.000**
TG7-FP	192	TG5-FP	201	-977.7	-792.4	0.660
TG8-FP	197	TG5-FP	201	-1150.6	-792.4	0.047*
TG9-FP	428	TG5-FP	201	-826.2	-792.4	0.954
TG9-NFP	404	TG5-NFP	397	-1027.7	-774.2	0.012*
TG7-HU _{DF}	416	TG5-HU _{DF}	400	-811.7	-549.7	0.182
TG8-HU _{DF}	395	TG5-HU _{DF}	400	-596.6	-549.7	0.789
TG9-HU _{DF}	404	TG5-HU _{DF}	400	-558.6	-549.7	0.482
TG8-FP	197	TG7-FP	192	-1150.6	-977.7	0.185
TG9-FP	428	TG7-FP	192	-826.2	-977.7	0.591
TG8-HU _{DF}	395	TG7-HU _{DF}	416	-596.6	-811.7	0.366
TG9-HU _{DF}	404	TG7-HU _{DF}	416	-558.6	-811.7	0.576
TG9-FP	428	TG8-FP	197	-826.2	-1150.6	0.026*
TG9-HU _{DF}	404	TG8-HU _{DF}	395	-558.6	-596.6	0.645

**p<0.01; *p<0.05; ~p<0.1

Capabilities on project:
Building Engineering

Table E2.27 Comparisons of changes in consumption from pretrial to in-trial year 1 plus 2 quarters

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
TG5-FP	205	C2+C4	1053	-667.6	-403.9	0.110
TG5-NFP	402	C7	630	-621.6	-429.3	0.292
TG5-HU _{DF}	403	C8	695	-464.1	-470.7	0.464
TG7-FP	193	C2+C4	1053	-770.9	-403.9	0.032*
TG7-HU _{DF}	421	C8	695	-619.1	-470.7	0.047*
TG8-FP	199	C2+C4	1053	-1098.1	-403.9	0.000**
TG8-HU _{DF}	398	C8	695	-492.1	-470.7	0.215
TG9-FP	432	C2+C4	1053	-709.3	-403.9	0.035*
TG9-NFP	404	C7	630	-941.7	-429.3	0.003**
TG9-HU _{DF}	414	C8	695	-592.9	-470.7	0.117
TG7-FP	193	TG5-FP	205	-770.9	-667.6	0.641
TG8-FP	199	TG5-FP	205	-1098.1	-667.6	0.112
TG9-FP	432	TG5-FP	205	-709.3	-667.6	0.983
TG9-NFP	404	TG5-NFP	402	-941.7	-621.6	0.061~
TG7-HU _{DF}	421	TG5-HU _{DF}	403	-619.1	-464.1	0.260
TG8-HU _{DF}	398	TG5-HU _{DF}	403	-492.1	-464.1	0.660
TG9-HU _{DF}	414	TG5-HU _{DF}	403	-592.9	-464.1	0.477
TG8-FP	199	TG7-FP	193	-1098.1	-770.9	0.278
TG9-FP	432	TG7-FP	193	-709.3	-770.9	0.583
TG8-HU _{DF}	398	TG7-HU _{DF}	421	-492.1	-619.1	0.493
TG9-HU _{DF}	414	TG7-HU _{DF}	421	-592.9	-619.1	0.684
TG9-FP	432	TG8-FP	199	-709.3	-1098.1	0.056~
TG9-HU _{DF}	414	TG8-HU _{DF}	398	-592.9	-492.1	0.767

**p<0.01; *p<0.05; ~p<0.1

Capabilities on project:
Building Engineering

Table E2.28 Comparisons of changes in consumption from pretrial to in-trial year 1 plus 3 quarters

Group (i)	Households with valid data	Group (ii)	Households with valid data	Median for Group (i)	Median for Group (ii)	p-value from Mann-Whitney
TG5-FP	206	C2+C4	430	-606.4	-815.4	0.814
TG5-NFP	398	C7	249	-600.0	-781.2	0.303
TG5-HU _{DF}	399	C8	257	-476.0	-676.6	0.823
TG7-FP	192	C2+C4	430	-726.9	-815.4	0.655
TG7-HU _{DF}	422	C8	257	-513.4	-676.6	0.631
TG8-FP	199	C2+C4	430	-1158.0	-815.4	0.059~
TG8-HU _{DF}	401	C8	257	-472.6	-676.6	0.859
TG9-FP	431	C2+C4	430	-668.7	-815.4	0.838
TG9-NFP	408	C7	249	-916.9	-781.2	0.614
TG9-HU _{DF}	415	C8	257	-653.8	-676.6	0.739
TG7-FP	192	TG5-FP	206	-726.9	-606.4	0.546
TG8-FP	199	TG5-FP	206	-1158.0	-606.4	0.068~
TG9-FP	431	TG5-FP	206	-668.7	-606.4	0.923
TG9-NFP	408	TG5-NFP	398	-916.9	-600.0	0.074~
TG7-HU _{DF}	422	TG5-HU _{DF}	399	-513.4	-476.0	0.455
TG8-HU _{DF}	401	TG5-HU _{DF}	399	-472.6	-476.0	0.653
TG9-HU _{DF}	415	TG5-HU _{DF}	399	-653.8	-476.0	0.591
TG8-FP	199	TG7-FP	192	-1158.0	-726.9	0.251
TG9-FP	431	TG7-FP	192	-668.7	-726.9	0.520
TG8-HU _{DF}	401	TG7-HU _{DF}	422	-472.6	-513.4	0.756
TG9-HU _{DF}	415	TG7-HU _{DF}	422	-653.8	-513.4	0.887
TG9-FP	431	TG8-FP	199	-668.7	-1158.0	0.042*
TG9-HU _{DF}	415	TG8-HU _{DF}	401	-653.8	-472.6	0.872

**p<0.01; *p<0.05; ~p<0.1