

Estimating Value of Lost Load (VoLL)

Final report to Ofgem: Annex A and B

Prepared by



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Annex A VoLL for domestic consumers by personal characteristics

This annex presents detailed regression results and calculations of WTP and WTA of domestic consumers with different personal characteristics.

AA.1 WTA sub-analyses

This section presents the WTA sub-analyses for consumers with different personal characteristics. We note that the estimates are not discounted and are provided for the entire duration of the outage i.e. estimates are not normalised to WTA per day.

AA.1.1 Face-to-face sample

The face-to-face estimates are based on the face-to-face sample only. We note that the WTA estimates for the face-to-face sample generally are less statistically significant than the corresponding results for the on-line sample. This result is most likely attributable to the smaller sample size of just 50 respondents.

We also note that the WTA estimates based on the face-to-face sample are generally smaller than the WTA estimates based on the on-line sample. The reasons for this are discussed in the main body of the text.

Figure 1: Regression results WTA (face-to-face sample)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.29481	0.052345	-5.63	0	-0.39741	-0.19222
Duration ²	0.00744	0.001907	3.9	0	0.003703	0.011177
Duration * Summer	0.171238	0.052693	3.25	0.001	0.067962	0.274513
Duration ² * Summer	-0.00382	0.001794	-2.13	0.033	-0.00734	-0.0003
Duration * 1 in 20	0.043797	0.061136	0.72	0.474	-0.07603	0.163621
Duration ² * 1 in 20	-0.00157	0.002255	-0.7	0.485	-0.00599	0.002846
Duration * 1 in 50	0.19853	0.059358	3.34	0.001	0.08219	0.314869
Duration ² * 1 in 50	-0.00643	0.002207	-2.91	0.004	-0.01076	-0.00211
Compensation	0.011308	0.003706	3.05	0.002	0.004045	0.018571
DK option	-2.15412	0.243639	-8.84	0	-2.63164	-1.6766

Source: London Economics

Figure 2: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (face-to-face sample)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	25.41	8.691606	2.92	0.003	8.377931	42.4484
Winter, 1 in 20	21.68	8.534884	2.54	0.011	4.951042	38.40717
Winter, 1 in 50	8.43	5.811831	1.45	0.147	-2.96543	19.81652
Summer, 1 in 5	10.61	6.148652	1.73	0.084	-1.44337	22.6589
Summer, 1 in 20	6.87	6.797364	1.01	0.312	-6.44888	20.19629
Summer, 1 in 50	-6.38	5.231864	-1.22	0.223	-16.6341	3.874407
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	150.26	51.02846	2.94	0.003	50.24523	250.2731
Winter, 1 in 20	129.96	50.08679	2.59	0.009	31.79317	228.1298
Winter, 1 in 50	55.24	34.10829	1.62	0.105	-11.6067	122.0954
Summer, 1 in 5	60.81	35.00701	1.74	0.082	-7.80614	129.4188
Summer, 1 in 20	40.51	38.2894	1.06	0.29	-34.5372	115.5545
Summer, 1 in 50	-34.21	29.47545	-1.16	0.246	-91.9793	23.56239
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	190.00	84.01574	2.26	0.024	25.32933	354.665
Winter, 1 in 20	198.96	67.81782	2.93	0.003	66.04133	331.8823
Winter, 1 in 50	175.41	60.91033	2.88	0.004	56.0282	294.7923
Summer, 1 in 5	39.67	50.67503	0.78	0.434	-59.654	138.9885
Summer, 1 in 20	48.63	31.36732	1.55	0.121	-12.8469	110.1107
Summer, 1 in 50	25.08	27.71	0.91	0.365	-29.2303	79.39093

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.2 Vulnerable consumers

The estimates for vulnerable consumers are based on all respondents defined as vulnerable in the on-line sample and in the face-to-face sample.

Vulnerable consumers are defined as consumers satisfying one or more of the following criteria:

- Pensioners (for practical purposes defined as women aged 60 or above and men aged 65 or above).
- Disabled or chronically ill or another household member is disabled or chronically ill.
- Fuel poor (for practical purposes defined as people with a gross household income of less than £15,000 per year).

We note that given this, definition, all face-to-face interviews are with vulnerable consumers and that only a sub-sample of the on-line sample include vulnerable consumers.

All WTA estimates for vulnerable consumers are smaller than corresponding estimates based on the on-line sample.

Figure 3: Regression results WTA (vulnerable consumers)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.28628	0.022343	-12.81	0	-0.33007	-0.24249
Duration^2	0.00729	0.000805	9.06	0	0.005713	0.008867
Duration * Summer	0.231422	0.022085	10.48	0	0.188136	0.274709
Duration^2 * Summer	-0.00621	0.000756	-8.22	0	-0.00769	-0.00473
Duration * 1 in 20	0.04026	0.026579	1.51	0.13	-0.01183	0.092354
Duration^2 * 1 in 20	-0.00154	0.00096	-1.6	0.109	-0.00342	0.000342
Duration * 1 in 50	0.072687	0.023241	3.13	0.002	0.027135	0.118239
Duration^2 * 1 in 50	-0.00261	0.000864	-3.03	0.002	-0.00431	-0.00092
Compensation	0.007422	0.001596	4.65	0	0.004294	0.010549
DK option	-3.03269	0.127217	-23.84	0	-3.28203	-2.78335

Source: London Economics

Figure 4: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (vulnerable consumers)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	37.59	8.171002	4.6	0.000	21.5761	53.60584
Winter, 1 in 20	32.37	7.714097	4.2	0.000	17.25438	47.49308
Winter, 1 in 50	28.15	6.942292	4.05	0.000	14.54266	41.75594
Summer, 1 in 5	7.25	3.4832	2.08	0.038	0.418558	14.07245
Summer, 1 in 20	2.03	4.025539	0.5	0.614	-5.86164	9.918181
Summer, 1 in 50	-2.20	3.18617	-0.69	0.491	-8.44094	4.048616
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	221.88	48.17878	4.61	0.000	127.4535	316.3108
Winter, 1 in 20	194.08	45.6434	4.25	0.000	104.6158	283.5346
Winter, 1 in 50	170.58	41.37056	4.12	0.000	89.49913	251.6687
Summer, 1 in 5	44.60	20.1739	2.21	0.027	5.058216	84.13845
Summer, 1 in 20	16.79	22.87487	0.73	0.463	-28.0425	61.62533
Summer, 1 in 50	-6.70	18.21095	-0.37	0.713	-42.3927	28.99293
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	273.17	69.5144	3.93	0.000	136.9231	409.4146
Winter, 1 in 20	297.15	64.55871	4.6	0.000	170.6172	423.6827
Winter, 1 in 50	296.35	64.94036	4.56	0.000	169.074	423.6356
Summer, 1 in 5	90.59	36.43163	2.49	0.013	19.18495	161.9943
Summer, 1 in 20	114.57	29.75518	3.85	0.000	56.25167	172.8898
Summer, 1 in 50	113.78	30.419	3.74	0.000	54.15542	173.3957

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.3 High impact

This analysis seeks to assess the relationship between compensation requirements and the impact consumers think a gas outage would have on them.

Based on the question “taking into account any alternatives you could use, what kind of impact would an unexpected lose the supply of gas for two months during the winter have on your household”, respondents are grouped as follows:

- *Low impact* if reported “No impact” or “A small impact”
- *High impact* if reported “A large impact” or “A very large impact”

We note that all WTA estimates for consumers classified as high impact consumers are larger than the corresponding figures in the baseline case presented in the main text.

Figure 5: Regression results WTA (high impact consumers)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.37569	0.019507	-19.26	0	-0.41392	-0.33746
Duration ²	0.009741	0.000697	13.98	0	0.008375	0.011107
Duration * Summer	0.265437	0.018233	14.56	0	0.2297	0.301173
Duration ² * Summer	-0.00723	0.000624	-11.59	0	-0.00845	-0.00601
Duration * 1 in 20	0.062215	0.022546	2.76	0.006	0.018026	0.106404
Duration ² * 1 in 20	-0.00233	0.00081	-2.87	0.004	-0.00391	-0.00074
Duration * 1 in 50	0.124544	0.018777	6.63	0	0.087741	0.161346
Duration ² * 1 in 50	-0.00416	0.0007	-5.95	0	-0.00553	-0.00279
Compensation	0.005241	0.001318	3.98	0	0.002658	0.007825
DK option	-3.47113	0.109062	-31.83	0	-3.68488	-3.25737

Source: London Economics

Figure 6: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (high impact consumers)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	69.82	17.31588	4.03	0.000	35.88161	103.7586
Winter, 1 in 20	58.39	15.25057	3.83	0.000	28.5033	88.28443
Winter, 1 in 50	46.85	12.42418	3.77	0.000	22.50106	71.20295
Summer, 1 in 5	20.56	6.418747	3.2	0.001	7.975819	33.13684
Summer, 1 in 20	9.13	5.560899	1.64	0.101	-1.76909	20.02924
Summer, 1 in 50	-2.41	3.570604	-0.68	0.499	-9.41004	4.586476
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	410.68	102.0033	4.03	0.000	210.7619	610.6075
Winter, 1 in 20	349.35	90.71311	3.85	0.000	171.5513	527.1402
Winter, 1 in 50	283.25	74.54579	3.8	0.000	137.1443	429.3584
Summer, 1 in 5	123.78	38.11695	3.25	0.001	49.07701	198.4927
Summer, 1 in 20	62.45	32.8227	1.9	0.057	-1.8854	126.7772
Summer, 1 in 50	-3.65	20.6419	-0.18	0.860	-44.1058	36.80893
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	477.73	129.3235	3.69	0.000	224.2566	731.1954
Winter, 1 in 20	521.15	129.7647	4.02	0.000	266.819	775.4874
Winter, 1 in 50	479.37	120.0952	3.99	0.000	243.9871	714.7518
Summer, 1 in 5	200.14	64.6	3.1	0.002	73.52279	326.7501
Summer, 1 in 20	243.56	63.66221	3.83	0.000	118.788	368.3393
Summer, 1 in 50	201.78	54.63171	3.69	0.000	94.7037	308.8561

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.4 Low impact

This analysis complements the analysis for consumers reporting a high impact of gas outages by considering the sample of consumers who report a low impact.

We note that all WTA estimates for consumers classified as low impact consumers are smaller than the corresponding figures in the baseline case presented in the main text.

Figure 7: Regression results WTA (low impact consumers)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.21227	0.037794	-5.62	0	-0.28634	-0.1382
Duration^2	0.004962	0.001387	3.58	0	0.002244	0.007679
Duration * Summer	0.194081	0.033306	5.83	0	0.128802	0.25936
Duration^2 * Summer	-0.00502	0.001173	-4.28	0	-0.00731	-0.00272
Duration * 1 in 20	0.077901	0.045172	1.72	0.085	-0.01063	0.166436
Duration^2 * 1 in 20	-0.00227	0.001611	-1.41	0.16	-0.00542	0.000892
Duration * 1 in 50	0.073796	0.037417	1.97	0.049	0.000459	0.147132
Duration^2 * 1 in 50	-0.00253	0.001395	-1.81	0.07	-0.00526	0.000207
Compensation	0.00959	0.002699	3.55	0	0.004301	0.01488
DK option	-2.40977	0.197927	-12.18	0	-2.7977	-2.02184

Source: London Economics

Figure 8: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (low impact consumers)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	21.62	6.746804	3.2	0.001	8.393163	34.84015
Winter, 1 in 20	13.73	5.513791	2.49	0.013	2.923073	24.53674
Winter, 1 in 50	14.19	5.530578	2.56	0.010	3.345545	25.02501
Summer, 1 in 5	1.90	3.828356	0.5	0.619	-5.60125	9.405631
Summer, 1 in 20	-5.98	4.858419	-1.23	0.218	-15.5069	3.537767
Summer, 1 in 50	-5.53	3.749855	-1.47	0.140	-12.8788	1.820396
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	129.59	39.95742	3.24	0.001	51.2722	207.9024
Winter, 1 in 20	84.30	32.28487	2.61	0.009	21.02438	147.5787
Winter, 1 in 50	88.63	33.05048	2.68	0.007	23.8569	153.4124
Summer, 1 in 5	13.55	21.72941	0.62	0.533	-29.0383	56.13938
Summer, 1 in 20	-31.74	27.15846	-1.17	0.243	-84.9648	21.49439
Summer, 1 in 50	-27.40	21.14017	-1.3	0.195	-68.8361	14.03185
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	198.39	76.30914	2.6	0.009	48.82978	347.9561
Winter, 1 in 20	167.31	52.64904	3.18	0.001	64.11749	270.4979
Winter, 1 in 50	204.70	63.484	3.22	0.001	80.26989	329.1226
Summer, 1 in 5	61.94	43.63798	1.42	0.156	-23.5915	147.4662
Summer, 1 in 20	30.85	21.1213	1.46	0.144	-10.5449	72.24914
Summer, 1 in 50	68.24	29.29634	2.33	0.020	10.8209	125.6605

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.5 Low bill

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys with an annual gas and electricity bill of less than £1,000. WTA estimates are always smaller than in the baseline case.

Figure 9: Regression results WTA (low bill sub-sample)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.34745	0.02347	-14.8	0	-0.39346	-0.30145
Duration^2	0.009114	0.00084	10.86	0	0.007469	0.010759
Duration * Summer	0.266362	0.022413	11.88	0	0.222435	0.31029
Duration^2 * Summer	-0.00731	0.000765	-9.56	0	-0.0088	-0.00581
Duration * 1 in 20	0.067422	0.027574	2.45	0.014	0.013379	0.121465
Duration^2 * 1 in 20	-0.0024	0.000993	-2.42	0.016	-0.00435	-0.00046
Duration * 1 in 50	0.12135	0.023277	5.21	0	0.075728	0.166972
Duration^2 * 1 in 50	-0.00421	0.000867	-4.86	0	-0.00591	-0.00251
Compensation	0.007236	0.001612	4.49	0	0.004076	0.010395
DK option	-3.56099	0.145119	-24.54	0	-3.84542	-3.27656

Source: London Economics

Figure 10: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (low bill sub-sample)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	46.76	10.33339	4.53	0.000	26.50616	67.0123
Winter, 1 in 20	37.77	9.138857	4.13	0.000	19.86187	55.68553
Winter, 1 in 50	30.57	7.634919	4	0.000	15.60602	45.53435
Summer, 1 in 5	10.96	4.01759	2.73	0.006	3.08296	18.83162
Summer, 1 in 20	1.97	4.213984	0.47	0.640	-6.28749	10.23102
Summer, 1 in 50	-5.23	3.229419	-1.62	0.105	-11.5613	1.097797
<u>1 Week</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	274.41	60.70109	4.52	0.000	155.4419	393.3858
Winter, 1 in 20	225.47	53.9835	4.18	0.000	119.6652	331.2767
Winter, 1 in 50	185.52	45.65402	4.06	0.000	96.04122	275.0017
Summer, 1 in 5	66.21	23.47426	2.82	0.005	20.19973	112.2171
Summer, 1 in 20	17.27	24.00568	0.72	0.472	-29.7847	64.31583
Summer, 1 in 50	-22.68	18.24453	-1.24	0.214	-58.4426	13.07468
<u>1 Month</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	306.98	78.94364	3.89	0.000	152.2487	461.7021
Winter, 1 in 20	326.49	72.98932	4.47	0.000	183.4373	469.5502
Winter, 1 in 50	327.37	73.73214	4.44	0.000	182.8605	471.8852
Summer, 1 in 5	111.37	40.9367	2.72	0.007	31.13758	191.6065
Summer, 1 in 20	130.89	33.35294	3.92	0.000	65.51983	196.2609
Summer, 1 in 50	131.77	34.54137	3.81	0.000	64.06966	199.4693

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.6 High bill

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys with an annual gas and electricity bill of £1,000 or more. WTA estimates are always larger than in the baseline case.

Figure 11: Regression results WTA (high bill sub-sample)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.3516	0.029247	-12.02	0	-0.40893	-0.29428
Duration^2	0.008712	0.001055	8.26	0	0.006644	0.010779
Duration * Summer	0.231654	0.0257	9.01	0	0.181283	0.282025
Duration^2 * Summer	-0.00607	0.000889	-6.83	0	-0.00781	-0.00433
Duration * 1 in 20	0.05267	0.033219	1.59	0.113	-0.01244	0.117777
Duration^2 * 1 in 20	-0.00178	0.001197	-1.49	0.137	-0.00412	0.000568
Duration * 1 in 50	0.100711	0.027814	3.62	0	0.046196	0.155226
Duration^2 * 1 in 50	-0.00324	0.001045	-3.1	0.002	-0.00529	-0.00119
Compensation	0.005357	0.001973	2.72	0.007	0.00149	0.009223
DK option	-3.41204	0.161704	-21.1	0	-3.72897	-3.09511

Source: London Economics

Figure 12: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (high bill sub-sample)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	64.01	23.24444	2.75	0.01	18.45284	109.5694
Winter, 1 in 20	54.51	20.77693	2.62	0.01	13.78862	95.23267
Winter, 1 in 50	45.81	17.72388	2.58	0.01	11.07652	80.55284
Summer, 1 in 5	21.90	9.682161	2.26	0.02	2.922215	40.87559
Summer, 1 in 20	12.40	8.524219	1.45	0.15	-4.30872	29.10561
Summer, 1 in 50	3.70	5.614947	0.66	0.51	-7.30261	14.70758
<u>1 Week</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	379.77	138.0826	2.75	0.01	109.1364	650.4101
Winter, 1 in 20	327.21	123.9159	2.64	0.01	84.34256	570.0838
Winter, 1 in 50	277.78	106.6706	2.6	0.01	68.71234	486.8534
Summer, 1 in 5	132.58	57.78991	2.29	0.02	19.3104	245.8427
Summer, 1 in 20	80.02	50.29003	1.59	0.11	-18.5502	178.5831
Summer, 1 in 50	30.59	33.5565	0.91	0.36	-35.1834	96.35568
<u>1 Month</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	505.46	200.2338	2.52	0.01	113.0043	897.9063
Winter, 1 in 20	509.26	184.7306	2.76	0.01	147.1981	871.3288
Winter, 1 in 50	485.39	178.4039	2.72	0.01	135.7198	835.0501
Summer, 1 in 5	227.85	104.871	2.17	0.03	22.31157	433.3982
Summer, 1 in 20	231.66	86.93761	2.66	0.01	61.26839	402.0576
Summer, 1 in 50	207.78	81.38751	2.55	0.01	48.26791	367.3011

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.7 Can keep home heated to comfortable level

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who feel they can keep their home heated to a comfortable level. WTA estimates are always larger than in the baseline case.

Figure 13: Regression results WTA (consumers who can keep home heated)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.34613	0.018599	-18.61	0	-0.38258	-0.30967
Duration^2	0.008752	0.00067	13.07	0	0.00744	0.010064
Duration * Summer	0.239165	0.017177	13.92	0	0.205498	0.272832
Duration^2 * Summer	-0.00636	0.000591	-10.76	0	-0.00752	-0.0052
Duration * 1 in 20	0.062099	0.021644	2.87	0.004	0.019678	0.10452
Duration^2 * 1 in 20	-0.00216	0.000778	-2.77	0.006	-0.00368	-0.00063
Duration * 1 in 50	0.12196	0.018133	6.73	0	0.08642	0.157499
Duration^2 * 1 in 50	-0.00403	0.000677	-5.96	0	-0.00536	-0.00271
Compensation	0.005116	0.001274	4.01	0	0.002618	0.007613
DK option	-3.217	0.100193	-32.11	0	-3.41338	-3.02063

Source: London Economics

Figure 14: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (consumers who can keep home heated)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	65.95	16.23297	4.06	0	34.13335	97.76542
Winter, 1 in 20	54.23	14.05665	3.86	0	26.68115	81.78219
Winter, 1 in 50	42.90	11.35284	3.78	0	20.64613	65.14845
Summer, 1 in 5	20.44	6.316022	3.24	0.001	8.062142	32.82049
Summer, 1 in 20	8.72	5.352286	1.63	0.103	-1.76669	19.21389
Summer, 1 in 50	-2.61	3.494748	-0.75	0.455	-9.46036	4.238805
<u>1 Week</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	389.79	96.07984	4.06	0	201.4765	578.1025
Winter, 1 in 20	325.46	83.81703	3.88	0	161.1828	489.7395
Winter, 1 in 50	261.54	68.59414	3.81	0	127.0997	395.9837
Summer, 1 in 5	123.47	37.57221	3.29	0.001	49.82631	197.1067
Summer, 1 in 20	59.14	31.42418	1.88	0.06	-2.45215	120.7284
Summer, 1 in 50	-4.78	20.14682	-0.24	0.812	-44.2684	34.70572
<u>1 Month</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	490.03	131.6284	3.72	0	232.0453	748.0191
Winter, 1 in 20	505.05	124.6212	4.05	0	260.7998	749.3058
Winter, 1 in 50	484.46	120.6146	4.02	0	248.0606	720.8612
Summer, 1 in 5	206.77	65.84734	3.14	0.002	77.71042	335.8273
Summer, 1 in 20	221.79	57.38484	3.86	0	109.3172	334.2616
Summer, 1 in 50	201.20	53.85815	3.74	0	95.6375	306.7576

Note: Standard errors are calculated using the delta method

Source: London Economics



AA.1.8 Cannot keep home heated to comfortable level

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who feel they cannot keep their home heated to a comfortable level. WTA estimates are always smaller than in the baseline case.

Figure 15: Regression results WTA (consumers who cannot keep home heated)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.3237	0.045327	-7.14	0	-0.41254	-0.23486
Duration^2	0.00878	0.00162	5.42	0	0.005605	0.011954
Duration * Summer	0.30055	0.04177	7.2	0	0.218683	0.382417
Duration^2 * Summer	-0.00858	0.00144	-5.95	0	-0.0114	-0.00575
Duration * 1 in 20	0.074698	0.053578	1.39	0.163	-0.03031	0.179709
Duration^2 * 1 in 20	-0.00254	0.001898	-1.34	0.181	-0.00626	0.001182
Duration * 1 in 50	0.078972	0.042888	1.84	0.066	-0.00509	0.16303
Duration^2 * 1 in 50	-0.00266	0.00159	-1.67	0.094	-0.00578	0.000454
Compensation	0.011839	0.003066	3.86	0	0.00583	0.017848
DK option	-3.26425	0.277033	-11.78	0	-3.80723	-2.72128

Source: London Economics

Figure 16: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (consumers who cannot keep home heated)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	26.60	7.297096	3.65	0.000	12.29788	40.90197
Winter, 1 in 20	20.50	6.595286	3.11	0.002	7.57838	33.43143
Winter, 1 in 50	20.15	6.413913	3.14	0.002	7.583231	32.72531
Summer, 1 in 5	1.94	3.499943	0.55	0.580	-4.92184	8.797682
Summer, 1 in 20	-4.16	4.602861	-0.9	0.366	-13.1785	4.864339
Summer, 1 in 50	-4.51	3.50028	-1.29	0.198	-11.3682	2.352688
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	155.05	42.38927	3.66	0.000	71.9718	238.1347
Winter, 1 in 20	121.39	38.21778	3.18	0.001	46.4892	196.3002
Winter, 1 in 50	119.38	37.36529	3.19	0.001	46.14172	192.611
Summer, 1 in 5	12.84	19.86949	0.65	0.518	-26.1038	51.78322
Summer, 1 in 20	-20.82	25.73183	-0.81	0.418	-71.2523	29.61463
Summer, 1 in 50	-22.84	19.81911	-1.15	0.249	-61.6819	16.00759
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	152.83	57.32011	2.67	0.008	40.48031	265.171
Winter, 1 in 20	156.54	45.08207	3.47	0.001	68.18089	244.8994
Winter, 1 in 50	155.05	45.39994	3.42	0.001	66.07256	244.0371
Summer, 1 in 5	43.11	33.89531	1.27	0.203	-23.3285	109.5387
Summer, 1 in 20	46.82	21.73847	2.15	0.031	4.212906	89.42614
Summer, 1 in 50	45.33	24.31293	1.86	0.062	-2.31826	92.98668

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.9 Low income

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who have a gross annual household income of less than £30,000. WTA estimates are always smaller than in the baseline case.

Figure 17: Regression results WTA (consumers with low income)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.31035	0.02461	-12.61	0	-0.35858	-0.26211
Duration^2	0.008095	0.000881	9.19	0	0.006369	0.009821
Duration * Summer	0.248263	0.024002	10.34	0	0.201221	0.295305
Duration^2 * Summer	-0.00674	0.000818	-8.24	0	-0.00834	-0.00514
Duration * 1 in 20	0.066055	0.028676	2.3	0.021	0.009851	0.122258
Duration^2 * 1 in 20	-0.00237	0.001038	-2.28	0.022	-0.0044	-0.00034
Duration * 1 in 50	0.09014	0.025126	3.59	0	0.040893	0.139387
Duration^2 * 1 in 50	-0.00322	0.000934	-3.45	0.001	-0.00505	-0.00139
Compensation	0.008669	0.00172	5.04	0	0.005298	0.01204
DK option	-3.57356	0.163243	-21.89	0	-3.89351	-3.25361

Source: London Economics

Figure 18: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (consumers with low income)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	34.87	6.99026	4.99	0.000	21.16554	48.56686
Winter, 1 in 20	27.52	6.234124	4.41	0.000	15.30114	39.73846
Winter, 1 in 50	24.84	5.810073	4.28	0.000	13.45176	36.22683
Summer, 1 in 5	7.01	3.179788	2.2	0.028	0.773175	13.23771
Summer, 1 in 20	-0.34	3.561876	-0.1	0.924	-7.32211	6.640193
Summer, 1 in 50	-3.02	2.902722	-1.04	0.298	-8.71069	2.667768
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	204.85	41.02426	4.99	0.000	124.4391	285.2512
Winter, 1 in 20	164.90	36.76072	4.49	0.000	92.85092	236.9503
Winter, 1 in 50	150.25	34.47898	4.36	0.000	82.6701	217.8252
Summer, 1 in 5	42.48	18.32531	2.32	0.020	6.562879	78.39677
Summer, 1 in 20	2.54	20.09198	0.13	0.900	-36.8443	41.91487
Summer, 1 in 50	-12.12	16.52951	-0.73	0.464	-44.5149	20.27957
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	233.61	57.03264	4.1	0.000	121.8259	345.3898
Winter, 1 in 20	251.02	50.7557	4.95	0.000	151.5425	350.5012
Winter, 1 in 50	255.75	52.1603	4.9	0.000	153.5217	357.9863
Summer, 1 in 5	74.31	31.28931	2.38	0.018	12.98712	135.639
Summer, 1 in 20	91.73	23.70636	3.87	0.000	45.26341	138.1907
Summer, 1 in 50	96.46	25.34859	3.81	0.000	46.77687	146.1415

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.10 High income

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who have a gross annual household income of £30,000 or more. WTA estimates are always larger than in the baseline case but statistically insignificant. We note that the regression results show a strong duration effect and a weak compensation effect. This means that duration is a very important factor impacting the choice of alternative scenario while the level of compensation is relatively unimportant for the choice for consumers with a high income.

Figure 19: Regression results WTA (consumers with high income)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.39505	0.03073	-12.86	0	-0.45528	-0.33482
Duration^2	0.010118	0.001102	9.18	0	0.007958	0.012279
Duration * Summer	0.276464	0.026971	10.25	0	0.223602	0.329327
Duration^2 * Summer	-0.00761	0.000927	-8.21	0	-0.00942	-0.00579
Duration * 1 in 20	0.056674	0.034545	1.64	0.101	-0.01103	0.12438
Duration^2 * 1 in 20	-0.00184	0.001247	-1.48	0.14	-0.00428	0.000603
Duration * 1 in 50	0.129446	0.02851	4.54	0	0.073568	0.185324
Duration^2 * 1 in 50	-0.00427	0.001072	-3.98	0	-0.00637	-0.00216
Compensation	0.002787	0.002009	1.39	0.165	-0.00115	0.006724
DK option	-3.87402	0.181614	-21.33	0	-4.22998	-3.51807

Source: London Economics

Figure 20: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (consumers with high income)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	138.11	98.11901	1.41	0.159	-54.1983	330.4211
Winter, 1 in 20	118.44	86.1402	1.37	0.169	-50.3945	287.2689
Winter, 1 in 50	93.20	68.09817	1.37	0.171	-40.2727	226.6672
Summer, 1 in 5	41.65	31.92738	1.3	0.192	-20.9304	104.2226
Summer, 1 in 20	21.97	22.22995	0.99	0.323	-21.598	65.54182
Summer, 1 in 50	-3.27	9.74463	-0.34	0.737	-22.3672	15.83105
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	814.30	579.4109	1.41	0.160	-321.32	1949.929
Winter, 1 in 20	704.32	511.2608	1.38	0.168	-297.736	1706.37
Winter, 1 in 50	564.20	411.2173	1.37	0.170	-241.775	1370.167
Summer, 1 in 5	253.68	193.7546	1.31	0.190	-126.074	633.4306
Summer, 1 in 20	143.69	136.6801	1.05	0.293	-124.198	411.5788
Summer, 1 in 50	3.57	57.76005	0.06	0.951	-109.638	116.7773
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	984.93	731.0661	1.35	0.178	-447.933	2417.793
Winter, 1 in 20	969.14	690.8326	1.4	0.161	-384.864	2323.15
Winter, 1 in 50	969.23	693.6533	1.4	0.162	-390.301	2328.77
Summer, 1 in 5	465.47	366.999	1.27	0.205	-253.837	1184.772
Summer, 1 in 20	449.68	323.9096	1.39	0.165	-185.171	1084.531
Summer, 1 in 50	449.77	327.1151	1.37	0.169	-191.362	1090.905

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.11 Stay at home

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who stay at home during workdays i.e. those who are:

- unemployed;
- retired; or
- looking after home/family.

WTA estimates for this sub-sample are always smaller than in the baseline.

Figure 21: Regression results WTA (consumers who stay at home)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.30367	0.032942	-9.22	0	-0.36823	-0.2391
Duration ²	0.007612	0.001196	6.36	0	0.005268	0.009956
Duration * Summer	0.247848	0.029627	8.37	0	0.189781	0.305915
Duration ² * Summer	-0.00674	0.001031	-6.54	0	-0.00876	-0.00472
Duration * 1 in 20	0.049303	0.038903	1.27	0.205	-0.02694	0.12555
Duration ² * 1 in 20	-0.00187	0.001386	-1.35	0.178	-0.00458	0.000851
Duration * 1 in 50	0.113554	0.031509	3.6	0	0.051798	0.175309
Duration ² * 1 in 50	-0.00379	0.001177	-3.22	0.001	-0.0061	-0.00149
Compensation	0.010742	0.002277	4.72	0	0.00628	0.015203
DK option	-2.82428	0.172077	-16.41	0	-3.16154	-2.48702

Source: London Economics

Figure 22: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (consumers who stay at home)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	27.56	6.13405	4.49	0.00	15.53933	39.58436
Winter, 1 in 20	23.15	5.793978	3.99	0.00	11.78957	34.50154
Winter, 1 in 50	17.34	4.740589	3.66	0.00	8.05209	26.63486
Summer, 1 in 5	5.12	3.060226	1.67	0.10	-0.88219	11.11368
Summer, 1 in 20	0.70	3.789244	0.18	0.85	-6.72733	8.126235
Summer, 1 in 50	-5.10	2.870032	-1.78	0.08	-10.7278	0.522532
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	163.17	36.0935	4.52	0.00	92.42818	233.9121
Winter, 1 in 20	139.55	34.11129	4.09	0.00	72.69139	206.4052
Winter, 1 in 50	106.47	28.16884	3.78	0.00	51.26203	161.6819
Summer, 1 in 5	32.41	17.6439	1.84	0.07	-2.16919	66.99363
Summer, 1 in 20	8.79	21.42646	0.41	0.68	-33.2047	50.78547
Summer, 1 in 50	-24.29	16.2105	-1.5	0.13	-56.058	7.48603
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	210.34	57.79446	3.64	0.00	97.06544	323.6156
Winter, 1 in 20	228.90	49.87684	4.59	0.00	131.1477	326.6613
Winter, 1 in 50	210.99	47.59586	4.43	0.00	117.7046	304.277
Summer, 1 in 5	83.09	34.79955	2.39	0.02	14.87953	151.2912
Summer, 1 in 20	101.65	25.17865	4.04	0.00	52.30017	150.9987
Summer, 1 in 50	83.74	24.52263	3.41	0.00	35.67221	131.7992

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.12 Urban

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who live in urban areas. WTA estimates for this sub-sample are, generally, very close to the baseline estimates.

Figure 23: Regression results WTA (urban sub-sample)

	Coef.	Std. Err.	z	P> z 	Lower	Upper
Duration	-0.33432	0.02021	-16.54	0	-0.37393	-0.29471
Duration^2	0.008446	0.000727	11.62	0	0.007021	0.00987
Duration * Summer	0.260723	0.018625	14	0	0.22422	0.297227
Duration^2 * Summer	-0.00703	0.000643	-10.94	0	-0.00829	-0.00577
Duration * 1 in 20	0.059997	0.02358	2.54	0.011	0.01378	0.106213
Duration^2 * 1 in 20	-0.00209	0.000844	-2.47	0.013	-0.00374	-0.00043
Duration * 1 in 50	0.104417	0.019451	5.37	0	0.066294	0.14254
Duration^2 * 1 in 50	-0.00351	0.000725	-4.84	0	-0.00493	-0.00209
Compensation	0.005435	0.001382	3.93	0	0.002727	0.008144
DK option	-3.27214	0.112406	-29.11	0	-3.49245	-3.05183

Source: London Economics

Figure 24: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (urban sub-sample)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	59.95	15.1048	3.97	0.000	30.35009	89.55982
Winter, 1 in 20	49.30	13.12711	3.76	0.000	23.5722	75.02953
Winter, 1 in 50	41.39	11.21098	3.69	0.000	19.4164	63.36262
Summer, 1 in 5	13.28	4.98684	2.66	0.008	3.50684	23.05489
Summer, 1 in 20	2.63	4.740355	0.55	0.579	-6.66415	11.9177
Summer, 1 in 50	-5.28	3.524208	-1.5	0.134	-12.1919	1.622743
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	354.42	89.41103	3.96	0.000	179.1809	529.6657
Winter, 1 in 20	295.98	78.22269	3.78	0.000	142.6646	449.2919
Winter, 1 in 50	251.56	67.53145	3.73	0.000	119.2052	383.9236
Summer, 1 in 5	82.05	29.65522	2.77	0.006	23.9295	140.1758
Summer, 1 in 20	23.61	27.30321	0.86	0.387	-29.9057	77.12097
Summer, 1 in 50	-20.81	19.86145	-1.05	0.295	-59.7339	18.1215
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	446.81	124.092	3.6	0.000	203.5892	690.0209
Winter, 1 in 20	461.38	116.3997	3.96	0.000	233.24	689.5186
Winter, 1 in 50	451.18	115.1741	3.92	0.000	225.4461	676.9202
Summer, 1 in 5	172.36	59.24286	2.91	0.004	56.2485	288.4762
Summer, 1 in 20	186.94	49.85118	3.75	0.000	89.23016	284.6432
Summer, 1 in 50	176.74	49.26117	3.59	0.000	80.19039	273.2906

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.13 Rural

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who live in rural areas, towns and fringes. WTA estimates for this sub-sample are, usually, close to the baseline estimates but statistically insignificant due to the small sample size.

Figure 25: Regression results WTA (rural sub-sample)

	Coef.	Std. Err.	z	P> z 	Lower	Upper
Duration	-0.42851	0.050566	-8.47	0	-0.52762	-0.3294
Duration^2	0.011406	0.001785	6.39	0	0.007907	0.014905
Duration * Summer	0.237488	0.044779	5.3	0	0.149722	0.325254
Duration^2 * Summer	-0.00636	0.001543	-4.12	0	-0.00939	-0.00334
Duration * 1 in 20	0.103471	0.057591	1.8	0.072	-0.00941	0.216348
Duration^2 * 1 in 20	-0.0038	0.002038	-1.87	0.062	-0.0078	0.000191
Duration * 1 in 50	0.143535	0.045603	3.15	0.002	0.054154	0.232916
Duration^2 * 1 in 50	-0.00502	0.001691	-2.97	0.003	-0.00833	-0.0017
Compensation	0.00597	0.003293	1.81	0.07	-0.00049	0.012425
DK option	-3.838	0.291306	-13.18	0	-4.40895	-3.26705

Source: London Economics

Figure 26: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (rural sub-sample)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	69.87	38.06782	1.84	0.066	-4.74124	144.4819
Winter, 1 in 20	53.17	30.52031	1.74	0.081	-6.64399	112.9934
Winter, 1 in 50	46.67	27.03348	1.73	0.084	-6.31807	99.65121
Summer, 1 in 5	31.15	19.35519	1.61	0.107	-6.78153	69.08941
Summer, 1 in 20	14.46	14.04362	1.03	0.303	-13.0667	41.98334
Summer, 1 in 50	7.95	9.965056	0.8	0.425	-11.581	27.48135
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	408.85	223.0746	1.83	0.067	-28.3732	846.0632
Winter, 1 in 20	318.74	181.7171	1.75	0.079	-37.4212	674.8966
Winter, 1 in 50	281.71	162.0607	1.74	0.082	-35.9253	599.341
Summer, 1 in 5	182.60	113.2254	1.61	0.107	-39.3215	404.514
Summer, 1 in 20	92.49	83.09977	1.11	0.266	-70.3836	255.3616
Summer, 1 in 50	55.46	60.26918	0.92	0.357	-62.6663	173.5846
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	433.85	259.7454	1.67	0.095	-75.2454	942.938
Winter, 1 in 20	487.33	266.2556	1.83	0.067	-34.5196	1009.183
Winter, 1 in 50	468.72	258.594	1.81	0.070	-38.1134	975.5565
Summer, 1 in 5	199.65	137.9708	1.45	0.148	-70.7691	470.0665
Summer, 1 in 20	253.13	143.1592	1.77	0.077	-27.4528	533.7212
Summer, 1 in 50	234.52	136.4408	1.72	0.086	-32.8952	501.9431

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.14 Have children

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who have children.

WTA estimates for this sub-sample are, generally, larger than the baseline estimates. This is especially true for long duration outages. However, the estimates are statistically insignificant. We note that the regression results show a strong duration effect and a weak compensation effect. This means that duration is a very important factor impacting the choice of alternative scenario while the level of compensation is relatively unimportant for the choice for consumers with children.

Figure 27: Regression results WTA (consumers with children)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.36053	0.033312	-10.82	0	-0.42582	-0.29524
Duration^2	0.009807	0.001188	8.26	0	0.007478	0.012135
Duration * Summer	0.277987	0.032311	8.6	0	0.214658	0.341316
Duration^2 * Summer	-0.00774	0.001108	-6.99	0	-0.00991	-0.00557
Duration * 1 in 20	0.037809	0.039923	0.95	0.344	-0.04044	0.116057
Duration^2 * 1 in 20	-0.00178	0.001422	-1.25	0.21	-0.00457	0.001004
Duration * 1 in 50	0.080765	0.032884	2.46	0.014	0.016314	0.145215
Duration^2 * 1 in 50	-0.00311	0.001217	-2.56	0.011	-0.0055	-0.00073
Compensation	0.001723	0.002294	0.75	0.453	-0.00277	0.00622
DK option	-2.90631	0.162825	-17.85	0	-3.22544	-2.58718

Source: London Economics

Figure 28: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (consumers with children)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	203.53	269.0114	0.76	0.449	-323.72	730.785
Winter, 1 in 20	182.63	244.5674	0.75	0.455	-296.718	661.9687
Winter, 1 in 50	158.47	212.5145	0.75	0.456	-258.053	574.9891
Summer, 1 in 5	46.70	66.6379	0.7	0.483	-83.9062	177.3096
Summer, 1 in 20	25.79	46.50408	0.55	0.579	-65.3514	116.9412
Summer, 1 in 50	1.64	20.53066	0.08	0.936	-38.6017	41.87704
<u>1 Week</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	1185.71	1568.666	0.76	0.450	-1888.82	4260.233
Winter, 1 in 20	1082.82	1448.691	0.75	0.455	-1756.56	3922.199
Winter, 1 in 50	946.10	1267.352	0.75	0.455	-1537.87	3430.062
Summer, 1 in 5	276.57	394.1393	0.7	0.483	-495.932	1049.065
Summer, 1 in 20	173.68	293.7654	0.59	0.554	-402.09	749.4489
Summer, 1 in 50	36.96	133.6496	0.28	0.782	-224.99	298.907
<u>1 Month</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	1154.81	1572.124	0.73	0.463	-1926.49	4236.119
Winter, 1 in 20	1427.86	1891.638	0.75	0.450	-2279.69	5135.397
Winter, 1 in 50	1373.87	1821.122	0.75	0.451	-2195.46	4943.201
Summer, 1 in 5	358.18	533.7064	0.67	0.502	-687.862	1404.229
Summer, 1 in 20	631.23	845.3703	0.75	0.455	-1025.67	2288.122
Summer, 1 in 50	577.24	775.444	0.74	0.457	-942.604	2097.081

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.15 Male

This section contains results for the sub-sample of male consumers in the on-line and face-to-face surveys. The WTA estimates are always smaller than the WTA estimates in the baseline.

Figure 29: Regression results WTA (male consumers)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.29515	0.023139	-12.76	0	-0.34051	-0.2498
Duration^2	0.007453	0.00084	8.88	0	0.005808	0.009099
Duration * Summer	0.201311	0.021757	9.25	0	0.158668	0.243954
Duration^2 * Summer	-0.00533	0.000749	-7.11	0	-0.00679	-0.00386
Duration * 1 in 20	0.059457	0.027749	2.14	0.032	0.00507	0.113844
Duration^2 * 1 in 20	-0.00207	0.000999	-2.07	0.038	-0.00403	-0.00011
Duration * 1 in 50	0.12659	0.023603	5.36	0	0.080329	0.17285
Duration^2 * 1 in 50	-0.0041	0.00088	-4.66	0	-0.00583	-0.00238
Compensation	0.005852	0.001651	3.54	0	0.002616	0.009089
DK option	-3.48906	0.149579	-23.33	0	-3.78222	-3.19589

Source: London Economics

Figure 30: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (male consumers)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	49.16	13.85668	3.55	0	22.00297	76.32014
Winter, 1 in 20	39.36	11.9827	3.28	0.001	15.87011	62.84141
Winter, 1 in 50	28.23	9.10876	3.1	0.002	10.37831	46.084
Summer, 1 in 5	15.67	6.055841	2.59	0.01	3.802922	27.54138
Summer, 1 in 20	5.87	5.641632	1.04	0.298	-5.19104	16.92375
Summer, 1 in 50	-5.26	4.036588	-1.3	0.193	-13.1698	2.65332
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	290.64	81.97323	3.55	0	129.9751	451.3043
Winter, 1 in 20	236.87	71.3577	3.32	0.001	97.00951	376.7266
Winter, 1 in 50	173.56	54.96772	3.16	0.002	65.82899	281.2985
Summer, 1 in 5	94.44	35.72895	2.64	0.008	24.40853	164.4635
Summer, 1 in 20	40.66	32.62242	1.25	0.213	-23.2745	104.6031
Summer, 1 in 50	-22.64	22.79211	-0.99	0.321	-67.3117	22.03173
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	366.82	116.3471	3.15	0.002	138.7795	594.8517
Winter, 1 in 20	380.64	107.3422	3.55	0	170.2532	591.0268
Winter, 1 in 50	348.67	99.65935	3.5	0	153.3376	543.9951
Summer, 1 in 5	153.88	62.17904	2.47	0.013	32.00795	275.7453
Summer, 1 in 20	167.70	51.08542	3.28	0.001	67.57547	267.8266
Summer, 1 in 50	135.73	44.82685	3.03	0.002	47.86839	223.5864

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.16 Female

This section contains results for the sub-sample of female consumers in the on-line and face-to-face surveys. The WTA estimates are, in general, close to the baseline WTA estimates.

Figure 31: Regression results WTA (female consumers)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.38858	0.02506	-15.51	0	-0.4377	-0.33946
Duration^2	0.009931	0.000894	11.11	0	0.008179	0.011683
Duration * Summer	0.296995	0.022883	12.98	0	0.252146	0.341845
Duration^2 * Summer	-0.00801	0.000787	-10.19	0	-0.00956	-0.00647
Duration * 1 in 20	0.065036	0.028471	2.28	0.022	0.009235	0.120838
Duration^2 * 1 in 20	-0.00223	0.001019	-2.19	0.028	-0.00423	-0.00024
Duration * 1 in 50	0.108611	0.023339	4.65	0	0.062868	0.154354
Duration^2 * 1 in 50	-0.00369	0.000871	-4.24	0	-0.0054	-0.00198
Compensation	0.006592	0.001645	4.01	0	0.003368	0.009816
DK option	-2.9673	0.11938	-24.86	0	-3.20128	-2.73332

Source: London Economics

Figure 32: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (female consumers)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	57.44	14.12113	4.07	0.000	29.76583	85.11963
Winter, 1 in 20	47.92	12.48578	3.84	0.000	23.44362	72.38696
Winter, 1 in 50	41.53	10.93801	3.8	0.000	20.08801	62.96421
Summer, 1 in 5	13.60	4.964017	2.74	0.006	3.873938	23.33253
Summer, 1 in 20	4.08	4.818864	0.85	0.398	-5.36901	13.52059
Summer, 1 in 50	-2.31	3.434416	-0.67	0.501	-9.04472	4.417945
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	338.82	83.40368	4.06	0.000	175.3557	502.2921
Winter, 1 in 20	286.36	74.06293	3.87	0.000	141.2028	431.5241
Winter, 1 in 50	250.93	65.55283	3.83	0.000	122.4499	379.4122
Summer, 1 in 5	83.01	29.32086	2.83	0.005	25.54577	140.4814
Summer, 1 in 20	30.55	27.70823	1.1	0.270	-23.754	84.86028
Summer, 1 in 50	-4.88	19.7313	-0.25	0.805	-43.5519	33.79338
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	412.58	113.3227	3.64	0.000	190.4733	634.6899
Winter, 1 in 20	421.56	104.1151	4.05	0.000	217.4943	625.6179
Winter, 1 in 50	422.35	105.5641	4	0.000	215.453	629.2568
Summer, 1 in 5	155.20	54.2013	2.86	0.004	48.96314	261.4283
Summer, 1 in 20	164.17	43.60669	3.76	0.000	78.70268	249.6378
Summer, 1 in 50	164.97	45.26885	3.64	0.000	76.24373	253.6944

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.17 Homeowner

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who are homeowners (and not tenants). The WTA estimates are, generally, slightly larger than the WTA estimates for the baseline sample.

Figure 33: Regression results WTA (homeowners)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.34569	0.021787	-15.87	0	-0.38839	-0.30299
Duration ²	0.008751	0.000782	11.18	0	0.007217	0.010284
Duration * Summer	0.252112	0.019586	12.87	0	0.213723	0.2905
Duration ² * Summer	-0.00673	0.000676	-9.96	0	-0.00806	-0.00541
Duration * 1 in 20	0.069546	0.024904	2.79	0.005	0.020735	0.118358
Duration ² * 1 in 20	-0.0024	0.000894	-2.68	0.007	-0.00415	-0.00065
Duration * 1 in 50	0.108134	0.020798	5.2	0	0.067371	0.148896
Duration ² * 1 in 50	-0.00361	0.000776	-4.65	0	-0.00513	-0.00209
Compensation	0.005021	0.001471	3.41	0.001	0.002137	0.007905
DK option	-3.41736	0.123339	-27.71	0	-3.6591	-3.17562

Source: London Economics

Figure 34: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (homeowners)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	67.11	19.41461	3.46	0.001	29.05846	105.1623
Winter, 1 in 20	53.74	16.33965	3.29	0.001	21.71111	85.76135
Winter, 1 in 50	46.29	14.26271	3.25	0.001	18.33683	74.24561
Summer, 1 in 5	18.24	6.858112	2.66	0.008	4.794953	31.67826
Summer, 1 in 20	4.86	5.608131	0.87	0.386	-6.12929	15.85418
Summer, 1 in 50	-2.58	3.987139	-0.65	0.517	-10.3972	5.232089
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	396.57	114.9069	3.45	0.001	171.3581	621.7849
Winter, 1 in 20	323.02	97.58306	3.31	0.001	131.7619	514.2805
Winter, 1 in 50	281.02	85.95151	3.27	0.001	112.5538	449.4776
Summer, 1 in 5	110.77	40.82024	2.71	0.007	30.76597	190.7784
Summer, 1 in 20	37.22	32.68326	1.14	0.255	-26.8362	101.2798
Summer, 1 in 50	-4.78	22.99118	-0.21	0.835	-49.8455	40.27824
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	497.00	157.1371	3.16	0.002	189.0186	804.9848
Winter, 1 in 20	511.49	148.1726	3.45	0.001	221.0736	801.8993
Winter, 1 in 50	497.55	145.8567	3.41	0.001	211.6755	783.4231
Summer, 1 in 5	197.36	74.90635	2.63	0.008	50.54299	344.1705
Summer, 1 in 20	211.84	63.9081	3.31	0.001	86.58386	337.099
Summer, 1 in 50	197.90	62.24644	3.18	0.001	75.90353	319.9051

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.1.18 Tenant

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who are tenants. The WTA estimates are smaller than the WTA estimates for the baseline sample.

Figure 35: Regression results WTA (tenants)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.34569	0.032538	-10.62	0	-0.40947	-0.28192
Duration^2	0.008993	0.00117	7.69	0	0.006701	0.011286
Duration * Summer	0.26487	0.031483	8.41	0	0.203165	0.326575
Duration^2 * Summer	-0.00741	0.00108	-6.86	0	-0.00953	-0.0053
Duration * 1 in 20	0.04453	0.040108	1.11	0.267	-0.03408	0.123139
Duration^2 * 1 in 20	-0.00162	0.001428	-1.13	0.257	-0.00442	0.001179
Duration * 1 in 50	0.114409	0.031801	3.6	0	0.052081	0.176737
Duration^2 * 1 in 50	-0.00388	0.001183	-3.28	0.001	-0.0062	-0.00157
Compensation	0.006984	0.002255	3.1	0.002	0.002565	0.011403
DK option	-3.02015	0.1699	-17.78	0	-3.35315	-2.68715

Source: London Economics

Figure 36: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (tenants)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	48.21	15.54771	3.1	0.002	17.73669	78.68258
Winter, 1 in 20	42.07	14.60674	2.88	0.004	13.43685	70.6942
Winter, 1 in 50	32.38	11.59424	2.79	0.005	9.660143	55.10874
Summer, 1 in 5	11.35	5.901406	1.92	0.055	-0.22043	22.91265
Summer, 1 in 20	5.20	6.746483	0.77	0.441	-8.02086	18.42486
Summer, 1 in 50	-4.48	4.671606	-0.96	0.338	-13.6353	4.677098
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	283.39	91.44982	3.1	0.002	104.1472	462.6239
Winter, 1 in 20	250.11	86.06674	2.91	0.004	81.42555	418.801
Winter, 1 in 50	195.97	69.23623	2.83	0.005	60.26973	331.6707
Summer, 1 in 5	69.92	34.89769	2	0.045	1.52242	138.3188
Summer, 1 in 20	36.65	38.78971	0.94	0.345	-39.3781	112.6748
Summer, 1 in 50	-17.49	26.50732	-0.66	0.509	-69.4481	34.45873
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	326.02	120.0679	2.72	0.007	90.69179	561.3494
Winter, 1 in 20	343.38	111.8593	3.07	0.002	124.1422	562.6228
Winter, 1 in 50	335.17	109.722	3.05	0.002	120.1213	550.2237
Summer, 1 in 5	143.55	66.54622	2.16	0.031	13.12488	273.9813
Summer, 1 in 20	160.92	57.20927	2.81	0.005	48.78685	273.0431
Summer, 1 in 50	152.71	55.97489	2.73	0.006	42.9962	262.4137

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2 WTP sub-analyses

This section includes the WTP sub-analyses for consumers with different personal characteristics. We note that these estimates are not discounted and are provided as the WTP per year, i.e.,

estimates are not normalised to a WTP per day of outage. We also note that all estimates in this section should be multiplied by -1 to get WTP estimates. This is due to the technical specification because the values represent amounts consumers will pay rather than amounts they will receive. When discussing the size of estimates relative to the baseline we consider absolute values throughout this section (i.e. after estimates have been multiplied by -1).

AA.2.1 Face-to-face sample

The face-to-face estimates are based on the face-to-face sample only. We note that the WTP estimates for the face-to-face sample, generally, are less statistically significant than the corresponding results for the on-line sample. This result is most likely attributable to the smaller sample size of just 50 respondents.

We also note that the WTP estimates based on the face-to-face sample are generally smaller than the WTA estimates based on the on-line sample. The reasons for this are discussed in the main body of the text.

Figure 37: Regression results WTP (face-to-face sample)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.10468	0.046177	-2.27	0.023	-0.19519	-0.01417
duration2	0.001919	0.001536	1.25	0.211	-0.00109	0.004929
duration_s~r	0.091922	0.048625	1.89	0.059	-0.00338	0.187225
dur~2_summer	-0.00233	0.001621	-1.44	0.15	-0.00551	0.000842
duration_20	0.047888	0.062471	0.77	0.443	-0.07455	0.170329
duration2_20	-0.00107	0.002202	-0.48	0.628	-0.00538	0.003249
duration_50	0.022884	0.05461	0.42	0.675	-0.08415	0.129918
duration2_50	-1.6E-05	0.001862	-0.01	0.993	-0.00367	0.003634
price	-0.01793	0.002538	-7.07	0	-0.0229	-0.01296
noseason	-4.57515	0.4088	-11.19	0	-5.37638	-3.77391

Source: London Economics

Figure 38: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (face-to-face sample)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-5.73	2.338419	-2.45	0.014	-10.3148	-1.14838
Winter, 1 in 20	-3.12	3.261102	-0.96	0.339	-9.51174	3.271546
Winter, 1 in 50	-4.46	2.897557	-1.54	0.124	-10.1352	1.223004
Summer, 1 in 5	-0.73	2.745715	-0.27	0.789	-6.11629	4.646716
Summer, 1 in 20	1.88	3.946568	0.48	0.634	-5.85842	9.611842
Summer, 1 in 50	0.54	3.549144	0.15	0.879	-6.41549	7.496898
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-35.63	13.09358	-2.72	0.007	-61.2884	-9.96252
Winter, 1 in 20	-19.84	18.4257	-1.08	0.282	-55.9569	16.27055
Winter, 1 in 50	-26.73	16.46189	-1.62	0.104	-58.9996	5.52987
Summer, 1 in 5	-6.12	15.47577	-0.4	0.693	-36.4488	24.21507
Summer, 1 in 20	9.67	22.06697	0.44	0.661	-33.585	52.9159
Summer, 1 in 50	2.77	20.14017	0.14	0.89	-36.7003	42.24774
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-78.82	23.46998	-3.36	0.001	-124.823	-32.8225
Winter, 1 in 20	-52.23	18.90363	-2.76	0.006	-89.2761	-15.1752
Winter, 1 in 50	-41.34	16.52536	-2.5	0.012	-73.7305	-8.95224
Summer, 1 in 5	-42.21	19.13311	-2.21	0.027	-79.7067	-4.70623
Summer, 1 in 20	-15.61	15.10813	-1.03	0.302	-45.2206	14.00214
Summer, 1 in 50	-4.72	17.02488	-0.28	0.781	-38.0931	28.64317

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.2 Vulnerable consumers

The estimates for vulnerable consumers are based on all respondents defined as vulnerable in the on-line sample and in the face-to-face sample. Vulnerable consumers are defined as consumers satisfying one or more of the following criteria:

- Pensioners (for practical purposes defined as women aged 60 or above and men aged 65 or above).
- Disabled or chronically ill or another household member is disabled or chronically ill.
- Fuel poor (for practical purposes defined as people with a gross household income of less than £15,000 per year).

We note that the all WTP estimates for vulnerable consumers are smaller than corresponding estimates for representative on-line sample.

Figure 39: Regression results WTP (vulnerable consumers)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.21484	0.02114	-10.16	0	-0.25627	-0.1734
duration2	0.004477	0.000697	6.42	0	0.003111	0.005842
duration_s~r	0.113134	0.020593	5.49	0	0.072774	0.153495
dur~2_summer	-0.00264	0.000695	-3.8	0	-0.004	-0.00128
duration_20	0.101804	0.025746	3.95	0	0.051343	0.152265
duration2_20	-0.0027	0.000894	-3.02	0.003	-0.00445	-0.00095
duration_50	0.084952	0.022969	3.7	0	0.039934	0.129971
duration2_50	-0.00196	0.000784	-2.51	0.012	-0.0035	-0.00043
price	-0.02164	0.001058	-20.47	0	-0.02372	-0.01957
noseason	-3.90282	0.134335	-29.05	0	-4.16611	-3.63953

Source: London Economics

Figure 40: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (vulnerable consumers)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-9.72	0.882767	-11.01	0.000	-11.4499	-7.98947
Winter, 1 in 20	-5.14	1.074945	-4.78	0.000	-7.24754	-3.03384
Winter, 1 in 50	-5.89	0.973519	-6.05	0.000	-7.79324	-3.97711
Summer, 1 in 5	-4.61	1.011315	-4.56	0.000	-6.59651	-2.63222
Summer, 1 in 20	-0.04	1.292888	-0.03	0.978	-2.56941	2.498615
Summer, 1 in 50	-0.78	1.167065	-0.67	0.504	-3.06729	1.507523
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-59.35	4.957151	-11.97	0.000	-69.0664	-49.6347
Winter, 1 in 20	-32.54	6.086857	-5.35	0.000	-44.4714	-20.6114
Winter, 1 in 50	-36.32	5.541616	-6.55	0.000	-47.1806	-25.4579
Summer, 1 in 5	-28.74	5.692118	-5.05	0.000	-39.895	-17.5823
Summer, 1 in 20	-1.93	7.24288	-0.27	0.790	-16.1253	12.26629
Summer, 1 in 50	-5.71	6.61453	-0.86	0.388	-18.6716	7.256922
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-111.64	8.228384	-13.57	0.000	-127.771	-95.5158
Winter, 1 in 20	-82.89	7.085385	-11.7	0.000	-96.7796	-69.0054
Winter, 1 in 50	-75.53	6.287045	-12.01	0.000	-87.8543	-63.2095
Summer, 1 in 5	-64.65	6.350746	-10.18	0.000	-77.0951	-52.2007
Summer, 1 in 20	-35.90	5.806578	-6.18	0.000	-47.278	-24.5166
Summer, 1 in 50	-28.54	6.087536	-4.69	0.000	-40.468	-16.6053

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.3 High impact

This analysis seeks to assess the relationship between compensation requirements and the impact consumers think a gas outage would have on them.

Based on the question “taking into account any alternatives you could use, what kind of impact would an unexpected lose the supply of gas for two months during the winter have on your household”, respondents defined as:

- *Low impact* if reported “No impact” or “A small impact”
- *High impact* if reported “A large impact” or “A very large impact”

We note that all WTP estimates for consumers classified as high impact consumers are larger than the corresponding figures in the baseline case presented in the main text.

Figure 41: Regression results WTP (high impact consumers)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.30403	0.018395	-16.53	0	-0.34008	-0.26798
duration2	0.006546	0.000604	10.83	0	0.005361	0.007731
duration_s~r	0.147816	0.017272	8.56	0	0.113964	0.181667
dur~2_summer	-0.00362	0.000584	-6.19	0	-0.00476	-0.00247
duration_20	0.168496	0.021873	7.7	0	0.125625	0.211367
duration2_20	-0.00445	0.000758	-5.87	0	-0.00593	-0.00296
duration_50	0.141609	0.019436	7.29	0	0.103514	0.179703
duration2_50	-0.00364	0.000663	-5.5	0	-0.00494	-0.00234
price	-0.02252	0.000901	-24.99	0	-0.02429	-0.02075
noseason	-4.40341	0.12094	-36.41	0	-4.64045	-4.16637

Source: London Economics

Figure 42: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (high impact consumers)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-13.21	0.749987	-17.61	0.000	-14.6804	-11.7405
Winter, 1 in 20	-5.93	0.887709	-6.68	0.000	-7.66534	-4.18558
Winter, 1 in 50	-7.08	0.79516	-8.91	0.000	-8.64228	-5.52531
Summer, 1 in 5	-6.81	0.831403	-8.19	0.000	-8.43645	-5.17741
Summer, 1 in 20	0.48	1.039751	0.46	0.646	-1.55978	2.51597
Summer, 1 in 50	-0.68	0.94339	-0.72	0.471	-2.52925	1.168772
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-80.26	4.240837	-18.93	0.000	-88.5762	-71.9525
Winter, 1 in 20	-37.56	5.032025	-7.46	0.000	-47.4241	-27.6989
Winter, 1 in 50	-44.17	4.545471	-9.72	0.000	-53.0811	-35.2631
Summer, 1 in 5	-42.18	4.688694	-9	0.000	-51.3714	-32.9921
Summer, 1 in 20	0.52	5.828085	0.09	0.929	-10.9017	11.94396
Summer, 1 in 50	-6.09	5.352716	-1.14	0.255	-16.5806	4.401625
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-143.41	7.381549	-19.43	0.000	-157.88	-128.945
Winter, 1 in 20	-96.63	5.977373	-16.17	0.000	-108.346	-84.9153
Winter, 1 in 50	-100.36	5.766117	-17.4	0.000	-111.658	-89.0554
Summer, 1 in 5	-90.97	5.476947	-16.61	0.000	-101.703	-80.2335
Summer, 1 in 20	-44.19	4.740058	-9.32	0.000	-53.4766	-34.8959
Summer, 1 in 50	-47.91	5.17725	-9.25	0.000	-58.0596	-37.7651

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.4 Low impact

This analysis complements the analysis for consumers reporting a high impact of gas outages by considering the sample of consumers who report a low impact.

We note that all WTP estimates for consumers classified as low impact consumers are smaller than the corresponding figures in the baseline case presented in the main text.

Figure 43: Regression results WTP (low impact consumers)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.12319	0.028623	-4.3	0	-0.17929	-0.06709
duration2	0.002082	0.000949	2.2	0.028	0.000223	0.003942
duration_s~r	0.074837	0.031007	2.41	0.016	0.014064	0.135609
dur~2_summer	-0.00132	0.001044	-1.27	0.205	-0.00337	0.000724
duration_20	0.020482	0.03467	0.59	0.555	-0.04747	0.088434
duration2_20	-0.00024	0.001222	-0.19	0.846	-0.00263	0.002159
duration_50	0.000223	0.034029	0.01	0.995	-0.06647	0.066919
duration2_50	0.000601	0.001161	0.52	0.605	-0.00167	0.002877
price	-0.02254	0.001458	-15.46	0	-0.0254	-0.01968
noseason	-3.45347	0.176994	-19.51	0	-3.80037	-3.10657

Source: London Economics

Figure 44: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (low impact consumers)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-5.37	1.164734	-4.61	0.000	-7.6557	-3.09003
Winter, 1 in 20	-4.47	1.35909	-3.29	0.001	-7.13847	-1.81093
Winter, 1 in 50	-5.34	1.398777	-3.81	0.000	-8.07787	-2.59477
Summer, 1 in 5	-2.11	1.467692	-1.44	0.150	-4.98814	0.765105
Summer, 1 in 20	-1.21	1.815594	-0.67	0.504	-4.77185	2.345149
Summer, 1 in 50	-2.07	1.723783	-1.2	0.229	-5.45352	1.303581
<u>1 Week</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-33.73	6.522401	-5.17	0.000	-46.5138	-20.9465
Winter, 1 in 20	-27.88	7.682832	-3.63	0.000	-42.9421	-12.826
Winter, 1 in 50	-32.35	7.922342	-4.08	0.000	-47.8818	-16.8268
Summer, 1 in 5	-13.37	8.251537	-1.62	0.105	-29.5384	2.807022
Summer, 1 in 20	-7.52	10.15571	-0.74	0.459	-27.4244	12.38527
Summer, 1 in 50	-11.99	9.73923	-1.23	0.218	-31.0783	7.098743
<u>1 Month</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-80.82	10.59291	-7.63	0.000	-101.578	-60.0547
Winter, 1 in 20	-63.01	8.305749	-7.59	0.000	-79.2864	-46.7285
Winter, 1 in 50	-56.52	7.517245	-7.52	0.000	-71.2523	-41.7852
Summer, 1 in 5	-34.04	8.549796	-3.98	0.000	-50.7934	-17.2788
Summer, 1 in 20	-16.23	8.005967	-2.03	0.043	-31.9185	-0.53564
Summer, 1 in 50	-9.74	8.150972	-1.19	0.232	-25.714	6.23726

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.5 Low bill

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys with an annual gas and electricity bill of less than £1,000. WTP estimates are always slightly smaller than in the baseline case.

Figure 45: Regression results WTP (low bill sub-sample)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.24007	0.019643	-12.22	0	-0.27857	-0.20157
duration2	0.004937	0.000647	7.63	0	0.00367	0.006205
duration_s~r	0.139224	0.019575	7.11	0	0.100857	0.177591
dur~2_summer	-0.00333	0.00066	-5.04	0	-0.00462	-0.00203
duration_20	0.121609	0.023834	5.1	0	0.074896	0.168323
duration2_20	-0.0032	0.000831	-3.86	0	-0.00483	-0.00158
duration_50	0.099436	0.021912	4.54	0	0.05649	0.142382
duration2_50	-0.00231	0.000746	-3.1	0.002	-0.00377	-0.00085
price	-0.02326	0.000999	-23.28	0	-0.02522	-0.0213
noseason	-4.17838	0.129907	-32.16	0	-4.433	-3.92377

Source: London Economics

Figure 46: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (low bill sub-sample)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-10.11	0.760543	-13.29	0.000	-11.5985	-8.61725
Winter, 1 in 20	-5.02	0.924442	-5.43	0.000	-6.8298	-3.20606
Winter, 1 in 50	-5.93	0.868374	-6.83	0.000	-7.63474	-4.23077
Summer, 1 in 5	-4.27	0.896361	-4.76	0.000	-6.02285	-2.50919
Summer, 1 in 20	0.82	1.134808	0.73	0.468	-1.40024	3.048122
Summer, 1 in 50	-0.09	1.043367	-0.09	0.931	-2.13584	1.95408
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-61.84	4.274622	-14.47	0.000	-70.2191	-53.4629
Winter, 1 in 20	-31.99	5.23153	-6.12	0.000	-42.2485	-21.7413
Winter, 1 in 50	-36.79	4.940743	-7.45	0.000	-46.4718	-27.1044
Summer, 1 in 5	-26.95	5.04609	-5.34	0.000	-36.8444	-17.0641
Summer, 1 in 20	2.89	6.354784	0.46	0.649	-9.5633	15.347
Summer, 1 in 50	-1.90	5.912434	-0.32	0.748	-13.4895	9.686813
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-118.59	7.299345	-16.25	0.000	-132.892	-104.279
Winter, 1 in 20	-85.69	5.985178	-14.32	0.000	-97.4205	-73.959
Winter, 1 in 50	-79.77	5.507196	-14.49	0.000	-90.5668	-68.979
Summer, 1 in 5	-67.75	5.522263	-12.27	0.000	-78.5698	-56.9229
Summer, 1 in 20	-34.85	5.114683	-6.81	0.000	-44.875	-24.8259
Summer, 1 in 50	-28.93	5.399006	-5.36	0.000	-39.5155	-18.3517

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.6 High bill

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys with an annual gas and electricity bill of £1,000 or more. WTP estimates are in most cases slightly larger than in the baseline scenario.

Figure 47: Regression results WTP (high bill sub-sample)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.25457	0.026336	-9.67	0	-0.30619	-0.20295
duration2	0.005251	0.00087	6.04	0	0.003546	0.006955
duration_s~r	0.092495	0.024861	3.72	0	0.043768	0.141222
dur~2_summer	-0.00201	0.000843	-2.39	0.017	-0.00366	-0.00036
duration_20	0.140235	0.031057	4.52	0	0.079364	0.201105
duration2_20	-0.00333	0.001078	-3.08	0.002	-0.00544	-0.00121
duration_50	0.119682	0.027625	4.33	0	0.065537	0.173826
duration2_50	-0.00293	0.000947	-3.1	0.002	-0.00479	-0.00107
price	-0.01976	0.001261	-15.67	0	-0.02223	-0.01729
noseason	-3.89117	0.163992	-23.73	0	-4.21259	-3.56975

Source: London Economics

Figure 48: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (high bill sub-sample)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-12.62	1.233472	-10.23	0.00	-15.0344	-10.1993
Winter, 1 in 20	-5.69	1.422785	-4	0.00	-8.47711	-2.89989
Winter, 1 in 50	-6.71	1.281958	-5.23	0.00	-9.22119	-4.19601
Summer, 1 in 5	-8.04	1.394377	-5.76	0.00	-10.7708	-5.30494
Summer, 1 in 20	-1.11	1.690403	-0.66	0.51	-4.42266	2.203597
Summer, 1 in 50	-2.13	1.529107	-1.39	0.16	-5.12663	0.867364
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-77.16	6.973196	-11.06	0.00	-90.8255	-63.491
Winter, 1 in 20	-35.73	8.062626	-4.43	0.00	-51.5307	-19.9258
Winter, 1 in 50	-42.03	7.320701	-5.74	0.00	-56.3775	-27.6809
Summer, 1 in 5	-49.38	7.86878	-6.28	0.00	-64.8027	-33.9576
Summer, 1 in 20	-7.95	9.477793	-0.84	0.40	-26.5263	10.62602
Summer, 1 in 50	-14.25	8.672372	-1.64	0.10	-31.2487	2.746394
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-147.34	12.19435	-12.08	0.00	-171.243	-123.442
Winter, 1 in 20	-85.91	9.421531	-9.12	0.00	-104.373	-67.4409
Winter, 1 in 50	-99.12	9.150488	-10.83	0.00	-117.051	-81.1821
Summer, 1 in 5	-98.52	9.322298	-10.57	0.00	-116.792	-80.2487
Summer, 1 in 20	-37.08	7.690785	-4.82	0.00	-52.1585	-22.0112
Summer, 1 in 50	-50.29	8.433652	-5.96	0.00	-66.8244	-33.7651

Note: Standard errors are calculated using the delta method

Source: London Economics



AA.2.7 Can keep home heated to comfortable level

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who feel they can keep their home heated to a comfortable level. WTP estimates are very close to the baseline estimates.

Figure 49: Regression results WTP (consumers who can keep home heated)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.23698	0.016105	-14.71	0	-0.26855	-0.20542
duration2	0.004937	0.00053	9.31	0	0.003897	0.005976
duration_s~r	0.117869	0.015964	7.38	0	0.086581	0.149158
dur~2_summer	-0.00274	0.000539	-5.09	0	-0.0038	-0.00169
duration_20	0.119915	0.019225	6.24	0	0.082234	0.157595
duration2_20	-0.00311	0.000672	-4.64	0	-0.00443	-0.0018
duration_50	0.103806	0.017641	5.88	0	0.06923	0.138381
duration2_50	-0.0026	0.000602	-4.32	0	-0.00378	-0.00142
price	-0.02081	0.0008	-26.03	0	-0.02238	-0.01925
noseason	-3.90201	0.103843	-37.58	0	-4.10554	-3.69848

Source: London Economics

Figure 50: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (consumers who can keep home heated)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-11.15	0.710699	-15.69	0	-12.5412	-9.75527
Winter, 1 in 20	-5.54	0.838755	-6.6	0	-7.18067	-3.89282
Winter, 1 in 50	-6.29	0.78136	-8.05	0	-7.81756	-4.75469
Summer, 1 in 5	-5.62	0.834477	-6.73	0	-7.25281	-3.98172
Summer, 1 in 20	-0.01	1.026656	-0.01	0.995	-2.01801	2.006414
Summer, 1 in 50	-0.76	0.944653	-0.8	0.424	-2.60666	1.096311
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-68.08	4.010237	-16.98	0	-75.9362	-60.2163
Winter, 1 in 20	-35.08	4.752302	-7.38	0	-44.394	-25.7653
Winter, 1 in 50	-39.29	4.454704	-8.82	0	-48.0258	-30.5637
Summer, 1 in 5	-34.90	4.699982	-7.43	0	-44.1102	-25.6866
Summer, 1 in 20	-1.90	5.750796	-0.33	0.741	-13.1732	9.369529
Summer, 1 in 50	-6.12	5.352345	-1.14	0.253	-16.6073	4.373524
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-128.11	6.910803	-18.54	0	-141.651	-114.561
Winter, 1 in 20	-89.92	5.510997	-16.32	0	-100.726	-79.1233
Winter, 1 in 50	-91.06	5.275356	-17.26	0	-101.397	-80.7184
Summer, 1 in 5	-76.91	5.264716	-14.61	0	-87.2283	-66.591
Summer, 1 in 20	-38.73	4.630167	-8.36	0	-47.8034	-29.6535
Summer, 1 in 50	-39.86	4.946295	-8.06	0	-49.5563	-30.1671

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.8 Cannot keep home heated to comfortable level

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who feel they cannot keep their home heated to a comfortable level. WTP estimates are always smaller than in the baseline case.

Figure 51: Regression results WTP (consumers who cannot keep home heated)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.30137	0.043209	-6.97	0	-0.38606	-0.21668
duration2	0.006243	0.00143	4.37	0	0.003441	0.009045
duration_s~r	0.139525	0.038789	3.6	0	0.063499	0.21555
dur~2_summer	-0.00325	0.001323	-2.46	0.014	-0.00585	-0.00066
duration_20	0.205308	0.053341	3.85	0	0.100761	0.309855
duration2_20	-0.00512	0.00181	-2.83	0.005	-0.00867	-0.00157
duration_50	0.152818	0.045153	3.38	0.001	0.06432	0.241316
duration2_50	-0.00335	0.001535	-2.18	0.029	-0.00636	-0.00034
price	-0.02799	0.002138	-13.09	0	-0.03218	-0.02379
noseason	-4.67718	0.268909	-17.39	0	-5.20424	-4.15013

Source: London Economics

Figure 52: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (consumers who cannot keep home heated)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-10.55	1.338871	-7.88	0.000	-13.1696	-7.92131
Winter, 1 in 20	-3.39	1.676066	-2.02	0.043	-6.67734	-0.10728
Winter, 1 in 50	-5.20	1.450663	-3.59	0.000	-8.04793	-2.36144
Summer, 1 in 5	-5.68	1.439535	-3.94	0.000	-8.49761	-2.85473
Summer, 1 in 20	1.48	1.921803	0.77	0.442	-2.2897	5.243629
Summer, 1 in 50	-0.34	1.663623	-0.2	0.840	-3.59605	2.925231
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-64.45	7.460741	-8.64	0.000	-79.0718	-49.8263
Winter, 1 in 20	-22.06	9.454571	-2.33	0.020	-40.5931	-3.5319
Winter, 1 in 50	-32.09	8.218853	-3.9	0.000	-48.2026	-15.9853
Summer, 1 in 5	-35.25	8.104354	-4.35	0.000	-51.131	-19.3625
Summer, 1 in 20	7.14	10.78038	0.66	0.508	-13.9893	28.26898
Summer, 1 in 50	-2.89	9.43443	-0.31	0.759	-21.3827	15.59957
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-122.29	12.20417	-10.02	0.000	-146.21	-98.3701
Winter, 1 in 20	-66.89	10.99951	-6.08	0.000	-88.4522	-45.335
Winter, 1 in 50	-66.26	8.740247	-7.58	0.000	-83.3944	-49.1333
Summer, 1 in 5	-77.35	8.834797	-8.76	0.000	-94.6666	-60.0349
Summer, 1 in 20	-21.95	9.047461	-2.43	0.015	-39.6872	-4.22176
Summer, 1 in 50	-21.32	9.324027	-2.29	0.022	-39.5995	-3.04994

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.9 Low income

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who have a gross annual household income of less than £30,000. WTP estimates are always smaller than in the baseline case.

Figure 53: Regression results WTP (consumers with low income)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.22056	0.021327	-10.34	0	-0.26236	-0.17876
duration2	0.004367	0.000704	6.2	0	0.002988	0.005747
duration_s~r	0.115092	0.020758	5.54	0	0.074408	0.155777
dur~2_summer	-0.00255	0.000701	-3.64	0	-0.00392	-0.00118
duration_20	0.11488	0.025811	4.45	0	0.064292	0.165468
duration2_20	-0.00288	0.000896	-3.22	0.001	-0.00464	-0.00113
duration_50	0.10015	0.023186	4.32	0	0.054705	0.145594
duration2_50	-0.00217	0.00079	-2.75	0.006	-0.00372	-0.00063
price	-0.02168	0.001062	-20.41	0	-0.02376	-0.0196
noseason	-3.9538	0.135617	-29.15	0	-4.21961	-3.688

Source: London Economics

Figure 54: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (consumers with low income)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-9.97	0.88535	-11.26	0.000	-11.7083	-8.23775
Winter, 1 in 20	-4.81	1.070319	-4.49	0.000	-6.90432	-2.70875
Winter, 1 in 50	-5.45	0.981435	-5.56	0.000	-7.37693	-3.52978
Summer, 1 in 5	-4.78	1.017441	-4.7	0.000	-6.77545	-2.78716
Summer, 1 in 20	0.39	1.295145	0.3	0.766	-2.15327	2.923603
Summer, 1 in 50	-0.26	1.169216	-0.22	0.823	-2.55328	2.029967
<u>1 Week</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-61.35	4.970871	-12.34	0.000	-71.0925	-51.607
Winter, 1 in 20	-30.77	6.05667	-5.08	0.000	-42.641	-18.8993
Winter, 1 in 50	-33.92	5.58092	-6.08	0.000	-44.8633	-22.9865
Summer, 1 in 5	-29.95	5.727536	-5.23	0.000	-41.1715	-18.72
Summer, 1 in 20	0.63	7.255265	0.09	0.930	-13.5862	14.85388
Summer, 1 in 50	-2.52	6.626258	-0.38	0.704	-15.5081	10.46633
<u>1 Month</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-123.92	8.45331	-14.66	0.000	-140.489	-107.352
Winter, 1 in 20	-84.63	7.051098	-12	0.000	-98.4502	-70.8104
Winter, 1 in 50	-75.59	6.202733	-12.19	0.000	-87.7509	-63.4366
Summer, 1 in 5	-70.46	6.368162	-11.06	0.000	-82.9365	-57.9738
Summer, 1 in 20	-31.16	5.850956	-5.33	0.000	-42.6326	-19.6973
Summer, 1 in 50	-22.13	6.134081	-3.61	0.000	-34.1509	-10.1058

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.10 High income

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who have a gross annual household income of £30,000 or more. WTP estimates are always larger than in the baseline.

Figure 55: Regression results WTP (consumers with high income)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.31828	0.026551	-11.99	0	-0.37032	-0.26624
duration2	0.006767	0.000866	7.82	0	0.00507	0.008464
duration_s~r	0.171169	0.025864	6.62	0	0.120478	0.221861
dur~2_summer	-0.0041	0.000873	-4.69	0	-0.00581	-0.00239
duration_20	0.16134	0.03166	5.1	0	0.099288	0.223391
duration2_20	-0.00424	0.001102	-3.85	0	-0.0064	-0.00208
duration_50	0.150338	0.029011	5.18	0	0.093477	0.207199
duration2_50	-0.00404	0.000984	-4.11	0	-0.00597	-0.00212
price	-0.02342	0.001335	-17.54	0	-0.02604	-0.02081
noseason	-4.82036	0.19008	-25.36	0	-5.19291	-4.44781

Source: London Economics

Figure 56: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (consumers with high income)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-13.30	1.03836	-12.81	0	-15.3342	-11.2639
Winter, 1 in 20	-6.59	1.249117	-5.28	0	-9.04059	-4.14414
Winter, 1 in 50	-7.05	1.158445	-6.09	0	-9.32408	-4.78306
Summer, 1 in 5	-6.17	1.19365	-5.17	0	-8.50594	-3.82692
Summer, 1 in 20	0.54	1.489339	0.36	0.717	-2.37877	3.459334
Summer, 1 in 50	0.08	1.372658	0.06	0.954	-2.61128	2.769436
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-80.96	5.884346	-13.76	0	-92.4936	-69.4274
Winter, 1 in 20	-41.62	7.082261	-5.88	0	-55.5039	-27.742
Winter, 1 in 50	-44.49	6.621976	-6.72	0	-57.4735	-31.5159
Summer, 1 in 5	-38.38	6.728571	-5.7	0	-51.5646	-25.1891
Summer, 1 in 20	0.96	8.344632	0.12	0.908	-15.3945	17.31583
Summer, 1 in 50	-1.91	7.787752	-0.25	0.806	-17.1748	13.35262
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-147.65	10.42475	-14.16	0	-168.077	-127.213
Winter, 1 in 20	-104.07	8.228907	-12.65	0	-120.196	-87.9396
Winter, 1 in 50	-110.52	8.365522	-13.21	0	-126.911	-94.1191
Summer, 1 in 5	-85.81	7.486774	-11.46	0	-100.484	-71.1367
Summer, 1 in 20	-42.23	6.758994	-6.25	0	-55.4808	-28.9861
Summer, 1 in 50	-48.68	7.474306	-6.51	0	-63.3301	-34.0313

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.11 Stay at home

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who stay at home during workdays i.e. those who are:

- unemployed;
- retired; or
- looking after home/family.

Some WTP estimates for this sub-sample are smaller than in the baseline while others are slightly larger.

Figure 57: Regression results WTP (consumers who stay at home)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.22841	0.028217	-8.09	0	-0.28372	-0.17311
duration2	0.004765	0.000938	5.08	0	0.002927	0.006603
duration_s~r	0.086941	0.028555	3.04	0.002	0.030973	0.142908
dur~2_summer	-0.00181	0.00097	-1.87	0.062	-0.00371	8.87E-05
duration_20	0.113005	0.03465	3.26	0.001	0.045093	0.180918
duration2_20	-0.00324	0.001214	-2.67	0.008	-0.00562	-0.00087
duration_50	0.09756	0.03155	3.09	0.002	0.035724	0.159397
duration2_50	-0.0025	0.001082	-2.31	0.021	-0.00462	-0.00038
price	-0.02107	0.001389	-15.17	0	-0.0238	-0.01835
noseason	-3.67322	0.17318	-21.21	0	-4.01264	-3.33379

Source: London Economics

Figure 58: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (consumers who stay at home)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-10.61	1.222137	-8.68	0.00	-13.0084	-8.21768
Winter, 1 in 20	-5.40	1.482051	-3.65	0.00	-8.30922	-2.49969
Winter, 1 in 50	-6.10	1.402851	-4.35	0.00	-8.85173	-3.35266
Summer, 1 in 5	-6.57	1.447967	-4.54	0.00	-9.41129	-3.73536
Summer, 1 in 20	-1.36	1.85002	-0.74	0.46	-4.99073	2.261215
Summer, 1 in 50	-2.06	1.667439	-1.24	0.22	-5.33062	1.205621
1 Week						
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-64.79	6.873267	-9.43	0.00	-78.266	-51.3232
Winter, 1 in 20	-34.80	8.384949	-4.15	0.00	-51.236	-18.3676
Winter, 1 in 50	-38.21	7.975107	-4.79	0.00	-53.8397	-22.5779
Summer, 1 in 5	-40.13	8.156466	-4.92	0.00	-56.1151	-24.1423
Summer, 1 in 20	-10.14	10.34834	-0.98	0.33	-30.4183	10.14646
Summer, 1 in 50	-13.54	9.43856	-1.43	0.15	-32.0421	4.956369
1 Month						
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-121.68	11.99859	-10.14	0.00	-145.193	-98.1596
Winter, 1 in 20	-99.38	10.09352	-9.85	0.00	-119.166	-79.6
Winter, 1 in 50	-89.72	9.097934	-9.86	0.00	-107.547	-71.8838
Summer, 1 in 5	-75.30	8.922317	-8.44	0.00	-92.7918	-57.817
Summer, 1 in 20	-53.01	8.717478	-6.08	0.00	-70.0969	-35.925
Summer, 1 in 50	-43.34	8.751677	-4.95	0.00	-60.4965	-26.1905

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.12 Urban

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who live in urban areas. WTP estimates for this sub-sample are, generally, slightly smaller than the baseline estimates.

Figure 59: Regression results WTP (urban sub-sample)

	Coef.	Std. Err.	z	P> z 	Lower	Upper
duration	-0.24919	0.017814	-13.99	0	-0.2841	-0.21427
duration2	0.005247	0.000587	8.94	0	0.004096	0.006397
duration_s~r	0.116793	0.017189	6.79	0	0.083104	0.150483
dur~2_summer	-0.00267	0.000582	-4.58	0	-0.00381	-0.00153
duration_20	0.133546	0.021192	6.3	0	0.092012	0.175081
duration2_20	-0.00352	0.000735	-4.78	0	-0.00496	-0.00208
duration_50	0.129033	0.019197	6.72	0	0.091407	0.166658
duration2_50	-0.00335	0.000655	-5.12	0	-0.00464	-0.00207
price	-0.02287	0.000872	-26.23	0	-0.02458	-0.02116
noseason	-3.95254	0.110224	-35.86	0	-4.16857	-3.73651

Source: London Economics



Figure 60: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (urban sub-sample)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-10.67	0.701758	-15.2	0.000	-12.0414	-9.29058
Winter, 1 in 20	-4.98	0.827237	-6.02	0.000	-6.60197	-3.35926
Winter, 1 in 50	-5.17	0.762127	-6.78	0.000	-6.66453	-3.67704
Summer, 1 in 5	-5.68	0.81063	-7	0.000	-7.26471	-4.0871
Summer, 1 in 20	0.01	1.006706	0.01	0.992	-1.96364	1.982578
Summer, 1 in 50	-0.18	0.911497	-0.2	0.843	-1.9672	1.605806
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-65.03	3.943898	-16.49	0.000	-72.7568	-57.297
Winter, 1 in 20	-31.69	4.683776	-6.77	0.000	-40.8689	-22.5088
Winter, 1 in 50	-32.72	4.335656	-7.55	0.000	-41.2153	-24.2199
Summer, 1 in 5	-34.99	4.5636	-7.67	0.000	-43.9369	-26.0479
Summer, 1 in 20	-1.65	5.640883	-0.29	0.769	-12.7102	9.401617
Summer, 1 in 50	-2.68	5.163512	-0.52	0.603	-12.8034	7.437198
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-120.40	6.584346	-18.29	0.000	-133.301	-107.49
Winter, 1 in 20	-83.64	5.468633	-15.29	0.000	-94.3585	-72.9219
Winter, 1 in 50	-83.08	5.040833	-16.48	0.000	-92.9615	-73.2018
Summer, 1 in 5	-72.11	4.981988	-14.47	0.000	-81.8768	-62.3478
Summer, 1 in 20	-35.36	4.642137	-7.62	0.000	-44.4555	-26.2586
Summer, 1 in 50	-34.80	4.881063	-7.13	0.000	-44.3652	-25.2318

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.13 Rural

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who live in rural areas, towns and fringes. WTP estimates for this sub-sample are always larger than the baseline estimates and sometimes much larger.

Figure 61: Regression results WTP (rural sub-sample)

	Coef.	Std. Err.	z	P> z 	Lower	Upper
duration	-0.29726	0.042971	-6.92	0	-0.38148	-0.21304
duration2	0.005827	0.001435	4.06	0	0.003015	0.008639
duration_s~r	0.11353	0.043445	2.61	0.009	0.028379	0.19868
dur~2_summer	-0.0023	0.001473	-1.56	0.119	-0.00518	0.000591
duration_20	0.169903	0.051989	3.27	0.001	0.068006	0.271799
duration2_20	-0.00395	0.001831	-2.16	0.031	-0.00754	-0.00036
duration_50	0.076499	0.047879	1.6	0.11	-0.01734	0.170341
duration2_50	-0.00127	0.001653	-0.77	0.441	-0.00451	0.001967
price	-0.01766	0.002079	-8.5	0	-0.02174	-0.01359
noseason	-3.93522	0.278765	-14.12	0	-4.48159	-3.38885

Source: London Economics

Figure 62: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (rural sub-sample)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-16.50	2.450492	-6.73	0	-21.3036	-11.6979
Winter, 1 in 20	-7.10	2.718432	-2.61	0.009	-12.4329	-1.77688
Winter, 1 in 50	-12.24	2.721954	-4.5	0	-17.5765	-6.90658
Summer, 1 in 5	-10.20	2.760939	-3.7	0	-15.6142	-4.79148
Summer, 1 in 20	-0.81	3.364259	-0.24	0.81	-7.4008	5.786854
Summer, 1 in 50	-5.94	3.152598	-1.89	0.059	-12.1226	0.235406
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-101.65	14.09291	-7.21	0	-129.27	-74.0271
Winter, 1 in 20	-45.28	15.40532	-2.94	0.003	-75.4753	-15.0875
Winter, 1 in 50	-74.86	15.6464	-4.78	0	-105.528	-44.195
Summer, 1 in 5	-63.02	15.66394	-4.02	0	-93.7245	-32.3229
Summer, 1 in 20	-6.66	18.82553	-0.35	0.724	-43.5537	30.24097
Summer, 1 in 50	-36.24	17.88779	-2.03	0.043	-71.2958	-1.17692
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-207.99	28.28939	-7.35	0.000	-263.44	-152.548
Winter, 1 in 20	-120.91	18.6604	-6.48	0.000	-157.481	-84.3335
Winter, 1 in 50	-142.93	20.36032	-7.02	0.000	-182.831	-103.02
Summer, 1 in 5	-132.17	20.26294	-6.52	0.000	-171.882	-92.4523
Summer, 1 in 20	-45.08	14.82777	-3.04	0.002	-74.1424	-16.0186
Summer, 1 in 50	-67.10	16.53314	-4.06	0.000	-99.5036	-34.6949

Note: Standard errors are calculated using the delta method
 Source: London Economics

AA.2.14 Have children

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who have children. WTP estimates for this sub-sample are, usually, larger than the baseline estimates. This is especially true for short duration outages.

Figure 63: Regression results WTP (consumers with children)

	Coef.	Std. Err.	z	P> z 	Lower	Upper
duration	-0.35052	0.032093	-10.92	0	-0.41342	-0.28762
duration2	0.007913	0.001043	7.59	0	0.005868	0.009957
duration_s~r	0.175621	0.029727	5.91	0	0.117358	0.233884
dur~2_summer	-0.0045	0.000998	-4.51	0	-0.00646	-0.00254
duration_20	0.197727	0.036737	5.38	0	0.125723	0.26973
duration2_20	-0.00524	0.001273	-4.12	0	-0.00774	-0.00275
duration_50	0.129553	0.033891	3.82	0	0.063128	0.195977
duration2_50	-0.0031	0.001151	-2.7	0.007	-0.00536	-0.00085
price	-0.02581	0.001603	-16.1	0	-0.02895	-0.02267
noseason	-4.89276	0.221022	-22.14	0	-5.32596	-4.45957

Source: London Economics

Figure 64: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (consumers with children)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-13.27	1.125585	-11.79	0	-15.4808	-11.0686
Winter, 1 in 20	-5.82	1.276422	-4.56	0	-8.31842	-3.31494
Winter, 1 in 50	-8.38	1.190137	-7.04	0	-10.7079	-6.04264
Summer, 1 in 5	-6.64	1.280255	-5.19	0	-9.15365	-4.13514
Summer, 1 in 20	0.81	1.522039	0.53	0.593	-2.16956	3.796725
Summer, 1 in 50	-1.75	1.446114	-1.21	0.228	-4.57934	1.089323
<u>1 Week</u>						
Winter, 1 in 5	-80.05	6.358839	-12.59	0.000	-92.5092	-67.583
Winter, 1 in 20	-36.37	7.239266	-5.02	0	-50.5632	-22.1858
Winter, 1 in 50	-50.80	6.806865	-7.46	0	-64.1442	-37.4617
Summer, 1 in 5	-40.96	7.215104	-5.68	0	-55.1001	-26.8174
Summer, 1 in 20	2.71	8.540041	0.32	0.751	-14.0253	19.451
Summer, 1 in 50	-11.72	8.208134	-1.43	0.153	-27.8033	4.37201
<u>1 Month</u>						
Winter, 1 in 5	-131.51	10.50132	-12.52	0	-152.094	-110.93
Winter, 1 in 20	-84.55	8.270083	-10.22	0.000	-100.763	-68.3445
Winter, 1 in 50	-89.19	8.088677	-11.03	0	-105.044	-73.3374
Summer, 1 in 5	-84.33	8.068241	-10.45	0	-100.14	-68.5129
Summer, 1 in 20	-37.37	6.899794	-5.42	0	-50.8912	-23.8445
Summer, 1 in 50	-42.01	7.613025	-5.52	0	-56.9265	-27.0839

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.15 Male

This section contains results for the sub-sample of male consumers in the on-line and face-to-face surveys. The WTP estimates are always smaller than the WTP estimates in the baseline case.

Figure 65: Regression results WTP (male consumers)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.22605	0.020683	-10.93	0	-0.26659	-0.18551
duration2	0.004797	0.000685	7	0	0.003454	0.00614
duration_s~r	0.109187	0.020326	5.37	0	0.069348	0.149025
dur~2_summer	-0.00242	0.000688	-3.52	0	-0.00377	-0.00107
duration_20	0.140243	0.024753	5.67	0	0.091729	0.188758
duration2_20	-0.00386	0.000861	-4.48	0	-0.00554	-0.00217
duration_50	0.11148	0.022537	4.95	0	0.06731	0.155651
duration2_50	-0.00284	0.000771	-3.69	0	-0.00435	-0.00133
price	-0.02053	0.001001	-20.51	0	-0.02249	-0.01857
noseason	-3.47619	0.121569	-28.59	0	-3.71446	-3.23792

Source: London Economics

Figure 66:WTP estimates per year, not discounted or normalised to WTP per day of outage basis (male consumers)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-10.78	0.916983	-11.75	0	-12.5759	-8.98135
Winter, 1 in 20	-4.13	1.073024	-3.85	0	-6.23739	-2.03122
Winter, 1 in 50	-5.49	1.004672	-5.46	0	-7.45524	-3.517
Summer, 1 in 5	-5.58	1.062589	-5.25	0	-7.66007	-3.4948
Summer, 1 in 20	1.07	1.328586	0.8	0.422	-1.53711	3.670849
Summer, 1 in 50	-0.28	1.201192	-0.24	0.812	-2.63924	2.06935
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-65.64	5.15434	-12.73	0	-75.7383	-55.5337
Winter, 1 in 20	-27.01	6.067836	-4.45	0	-38.9064	-15.121
Winter, 1 in 50	-34.40	5.712049	-6.02	0	-45.5961	-23.2053
Summer, 1 in 5	-34.18	5.9812	-5.72	0	-45.9061	-22.4602
Summer, 1 in 20	4.44	7.438544	0.6	0.551	-10.1401	19.01845
Summer, 1 in 50	-2.95	6.798679	-0.43	0.665	-16.273	10.37731
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-120.06	8.685204	-13.82	0	-137.086	-103.04
Winter, 1 in 20	-84.12	7.107721	-11.84	0	-98.0551	-70.1933
Winter, 1 in 50	-81.68	6.479902	-12.61	0	-94.3834	-68.9826
Summer, 1 in 5	-66.67	6.538441	-10.2	0	-79.4893	-53.8591
Summer, 1 in 20	-30.74	6.063066	-5.07	0	-42.6191	-18.8523
Summer, 1 in 50	-28.29	6.273031	-4.51	0	-40.5894	-15.9995

Note: Standard errors are calculated using the delta method
 Source: London Economics

AA.2.16 Female

This section contains results for the sub-sample of female consumers in the on-line and face-to-face surveys. The WTP estimates are, usually, smaller than the baseline WTP estimates.

Figure 67:Regression results WTP (female consumers)

	Coef.	Std. Err.	z	P> z 	Lower	Upper
duration	-0.26188	0.021747	-12.04	0	-0.3045	-0.21925
duration2	0.005317	0.000712	7.47	0	0.003922	0.006713
duration_s~r	0.133834	0.021036	6.36	0	0.092604	0.175063
dur~2_summer	-0.00321	0.00071	-4.52	0	-0.0046	-0.00182
duration_20	0.114931	0.026157	4.39	0	0.063665	0.166197
duration2_20	-0.00273	0.000909	-3	0.003	-0.00451	-0.00095
duration_50	0.102197	0.023572	4.34	0	0.055997	0.148396
duration2_50	-0.00236	0.000802	-2.94	0.003	-0.00393	-0.00079
price	-0.02279	0.001101	-20.7	0	-0.02494	-0.02063
noseason	-4.59971	0.153523	-29.96	0	-4.90061	-4.29881

Source: London Economics

Figure 68: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (female consumers)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-11.26	0.865149	-13.01	0.000	-12.9546	-9.56332
Winter, 1 in 20	-6.34	1.055334	-6	0.000	-8.40346	-4.26663
Winter, 1 in 50	-6.88	0.959313	-7.17	0.000	-8.75789	-4.99745
Summer, 1 in 5	-5.53	0.997103	-5.54	0.000	-7.48089	-3.57231
Summer, 1 in 20	-0.60	1.248241	-0.48	0.629	-3.04917	1.843845
Summer, 1 in 50	-1.15	1.143735	-1	0.317	-3.38697	1.096394
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-69.01	4.881168	-14.14	0.000	-78.5792	-59.4454
Winter, 1 in 20	-39.57	5.983015	-6.61	0.000	-51.3013	-27.8483
Winter, 1 in 50	-42.69	5.47639	-7.8	0.000	-53.4257	-31.9586
Summer, 1 in 5	-34.80	5.617569	-6.2	0.000	-45.8119	-23.7915
Summer, 1 in 20	-5.36	6.996854	-0.77	0.443	-19.0778	8.349352
Summer, 1 in 50	-8.48	6.490406	-1.31	0.191	-21.2025	4.23938
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-134.76	8.477917	-15.9	0.000	-151.374	-118.141
Winter, 1 in 20	-91.23	6.887913	-13.25	0.000	-104.734	-77.7338
Winter, 1 in 50	-93.41	6.579104	-14.2	0.000	-106.301	-80.5111
Summer, 1 in 5	-85.33	6.396066	-13.34	0.000	-97.8694	-72.7973
Summer, 1 in 20	-41.81	5.635002	-7.42	0.000	-52.8544	-30.7656
Summer, 1 in 50	-43.98	6.159828	-7.14	0.000	-56.0551	-31.9091

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.17 Homeowner

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who are homeowners (and not tenants). The WTP estimates are slightly larger than the WTP estimates for the baseline sample for frequent interruptions (once in every 5 years) and slightly smaller than the corresponding baseline estimates for infrequent interruptions (once every 20 or 50 years).

Figure 69: Regression results WTP (homeowners)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.24872	0.018542	-13.41	0	-0.28506	-0.21237
duration2	0.005202	0.000612	8.5	0	0.004003	0.006402
duration_s~r	0.108288	0.017722	6.11	0	0.073553	0.143022
dur~2_summer	-0.00241	0.000601	-4.02	0	-0.00359	-0.00124
duration_20	0.145282	0.021929	6.63	0	0.102302	0.188262
duration2_20	-0.00378	0.000761	-4.96	0	-0.00527	-0.00229
duration_50	0.123471	0.019714	6.26	0	0.084833	0.162109
duration2_50	-0.00313	0.000674	-4.64	0	-0.00445	-0.00181
price	-0.02075	0.000891	-23.27	0	-0.02249	-0.019
noseason	-3.78939	0.112967	-33.54	0	-4.0108	-3.56798

Source: London Economics

Figure 70: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (homeowners)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-11.74	0.815818	-14.39	0	-13.3365	-10.1385
Winter, 1 in 20	-4.92	0.947475	-5.19	0	-6.7739	-3.05987
Winter, 1 in 50	-5.94	0.867897	-6.84	0	-7.63791	-4.23582
Summer, 1 in 5	-6.63	0.930306	-7.13	0	-8.45774	-4.811
Summer, 1 in 20	0.19	1.143076	0.16	0.871	-2.05413	2.426646
Summer, 1 in 50	-0.83	1.032405	-0.81	0.419	-2.8572	1.189758
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-71.63	4.597071	-15.58	0	-80.6417	-62.6215
Winter, 1 in 20	-31.53	5.36452	-5.88	0	-42.0481	-21.0195
Winter, 1 in 50	-37.36	4.9448	-7.55	0	-47.049	-27.6658
Summer, 1 in 5	-40.80	5.240625	-7.78	0	-51.0697	-30.5268
Summer, 1 in 20	-0.70	6.405323	-0.11	0.913	-13.2547	11.85373
Summer, 1 in 50	-6.52	5.849321	-1.12	0.265	-17.9885	4.940383
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-133.98	7.828513	-17.11	0	-149.326	-118.639
Winter, 1 in 20	-87.76	6.32478	-13.88	0	-100.155	-75.3618
Winter, 1 in 50	-91.09	5.923529	-15.38	0	-102.702	-79.4826
Summer, 1 in 5	-82.15	5.873698	-13.99	0	-93.6663	-70.6418
Summer, 1 in 20	-35.93	5.285043	-6.8	0	-46.288	-25.571
Summer, 1 in 50	-39.26	5.596506	-7.02	0	-50.2328	-28.2949

Note: Standard errors are calculated using the delta method

Source: London Economics

AA.2.18 Tenant

This section contains results for the sub-sample of consumers in the on-line and face-to-face surveys who are tenants. The WTP estimates are smaller for frequent interruptions (once in 5

years) than the corresponding WTP estimates for the baseline sample but larger than the baseline WTP estimates for infrequent interruptions (once in 20 or once in 50 years).

Figure 71: Regression results WTP (tenants)

	Coef.	Std. Err.	z	P> z	Lower	Upper
duration	-0.28393	0.030928	-9.18	0	-0.34455	-0.22332
duration2	0.006112	0.001015	6.02	0	0.004123	0.008101
duration_s~r	0.161666	0.031069	5.2	0	0.100772	0.222559
dur~2_summer	-0.0039	0.001047	-3.73	0	-0.00595	-0.00185
duration_20	0.119598	0.037311	3.21	0.001	0.04647	0.192725
duration2_20	-0.00334	0.001304	-2.56	0.01	-0.00589	-0.00078
duration_50	0.106738	0.034921	3.06	0.002	0.038295	0.175181
duration2_50	-0.00269	0.001188	-2.27	0.023	-0.00502	-0.00037
price	-0.02521	0.001581	-15.95	0	-0.02831	-0.02211
noseason	-4.41945	0.207527	-21.3	0	-4.82619	-4.0127

Source: London Economics

Figure 72: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (tenants)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-11.02	1.105343	-9.97	0	-13.1865	-8.85366
Winter, 1 in 20	-6.41	1.343072	-4.77	0	-9.04085	-3.7761
Winter, 1 in 50	-6.89	1.286417	-5.36	0	-9.41444	-4.37177
Summer, 1 in 5	-4.76	1.316553	-3.62	0	-7.34261	-2.18181
Summer, 1 in 20	-0.15	1.659087	-0.09	0.928	-3.40234	3.101159
Summer, 1 in 50	-0.64	1.542935	-0.41	0.681	-3.65932	2.388874
<u>1 Week</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-66.96	6.224665	-10.76	0	-79.159	-54.7588
Winter, 1 in 20	-40.24	7.612551	-5.29	0	-55.1564	-25.3157
Winter, 1 in 50	-42.56	7.327346	-5.81	0	-56.92	-28.1973
Summer, 1 in 5	-29.65	7.413223	-4	0	-44.1827	-15.1234
Summer, 1 in 20	-2.93	9.28964	-0.32	0.752	-21.1376	15.27716
Summer, 1 in 50	-5.25	8.742822	-0.6	0.548	-22.3884	11.88284
<u>1 Month</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-119.69	10.68346	-11.2	0	-140.634	-98.7556
Winter, 1 in 20	-96.49	8.890021	-10.85	0	-113.911	-79.0625
Winter, 1 in 50	-88.86	8.391842	-10.59	0	-105.312	-72.4167
Summer, 1 in 5	-66.59	7.937363	-8.39	0	-82.1442	-51.0303
Summer, 1 in 20	-43.38	7.598536	-5.71	0	-58.2719	-28.4862
Summer, 1 in 50	-35.76	7.960312	-4.49	0	-51.3587	-20.1549

Note: Standard errors are calculated using the delta method

Source: London Economics

Annex B VoLL for SMEs by firm and interview characteristics

This annex presents detailed estimation results for regressions and calculations of WTP and WTA of SME gas users for different firm characteristics and interview characteristics.

AB.1 WTA sub-analyses

This section includes the WTA sub-analyses for SMEs with different firm and interview characteristics. We note that the estimates are not discounted and are provided for the entire duration of the outage i.e. estimates are not normalised to WTA per day.

AB.1.1 Low impact

Based on the question “taking into account any alternatives you could use, what kind of impact would an unexpected lose the supply of gas for two months during the winter have on your household”, respondents defined as:

- *Low impact* if reported “No impact” or “A small impact”
- *High impact* if reported “A large impact” or “A very large impact”

We note that the WTA estimates for the low impact sample usually are smaller than the WTA estimates based on the full sample (the baseline). In addition, fewer of the estimates are statistically different from zero. This is most likely because of the reduced sample size

Figure 73: Regression results WTA (low impact sample)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.16197	0.042259	-3.83	0	-0.24479	-0.07914
Duration^2	0.004018	0.001338	3	0.003	0.001396	0.006641
Duration * Summer	0.25102	0.037937	6.62	0	0.176665	0.325376
Duration^2 * Summer	-0.00752	0.001293	-5.82	0	-0.01006	-0.00499
Duration * 1 in 20	-0.00185	0.051541	-0.04	0.971	-0.10287	0.099166
Duration^2 * 1 in 20	0.00017	0.001806	0.09	0.925	-0.00337	0.003709
Duration * 1 in 50	-0.01063	0.046691	-0.23	0.82	-0.10214	0.080888
Duration^2 * 1 in 50	0.000908	0.001551	0.59	0.558	-0.00213	0.003948
Compensation	0.005563	0.002389	2.33	0.02	0.00088	0.010245
DK option	-4.9518	0.599409	-8.26	0	-6.12662	-3.77698

Source: London Economics

Figure 74: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (low impact sample)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	28.39	11.98111	2.37	0.018	4.912404	51.87748
Winter, 1 in 20	28.70	15.6629	1.83	0.067	-2.00146	59.39598
Winter, 1 in 50	30.14	14.92118	2.02	0.043	0.896891	59.38683
Summer, 1 in 5	-15.38	10.65615	-1.44	0.149	-36.265	5.506303
Summer, 1 in 20	-15.08	8.521312	-1.77	0.077	-31.7785	1.624422
Summer, 1 in 50	-13.63	9.766525	-1.4	0.163	-32.7745	5.509592
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	168.43	69.99442	2.41	0.016	31.23983	305.6129
Winter, 1 in 20	169.26	89.82002	1.88	0.060	-6.78292	345.3051
Winter, 1 in 50	173.80	85.83689	2.02	0.043	5.560327	342.0348
Summer, 1 in 5	-81.18	58.38809	-1.39	0.164	-195.623	33.2541
Summer, 1 in 20	-80.35	47.26681	-1.7	0.089	-172.991	12.2915
Summer, 1 in 50	-75.81	54.50001	-1.39	0.164	-182.631	31.00477
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	223.41	88.84951	2.51	0.012	49.27185	397.5555
Winter, 1 in 20	205.94	81.17485	2.54	0.011	46.83712	365.0367
Winter, 1 in 50	133.78	72.64909	1.84	0.066	-8.61189	276.1673
Summer, 1 in 5	86.95	48.34414	1.8	0.072	-7.80363	181.7019
Summer, 1 in 20	69.47	42.61141	1.63	0.103	-14.0445	152.9892
Summer, 1 in 50	-2.69	35.71967	-0.08	0.940	-72.6961	67.32241

Note: Standard errors are calculated using the delta method

Source: London Economics

AB.1.2 High impact

We note that the WTA estimates for the high impact sample always are larger than the WTA estimates based on the full sample (the baseline).

Figure 75: Regression results WTA (high impact sample)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.26926	0.03167	-8.5	0	-0.33134	-0.20719
Duration^2	0.006936	0.001007	6.89	0	0.004962	0.008909
Duration * Summer	0.18962	0.026255	7.22	0	0.138161	0.241078
Duration^2 * Summer	-0.00557	0.000894	-6.23	0	-0.00733	-0.00382
Duration * 1 in 20	0.035854	0.034704	1.03	0.302	-0.03217	0.103873
Duration^2 * 1 in 20	-0.00083	0.001203	-0.69	0.489	-0.00319	0.001525
Duration * 1 in 50	0.085988	0.030952	2.78	0.005	0.025324	0.146652
Duration^2 * 1 in 50	-0.00235	0.00103	-2.28	0.023	-0.00437	-0.00033
Compensation	0.005928	0.001556	3.81	0	0.002878	0.008978
DK option	-4.0148	0.224741	-17.86	0	-4.45528	-3.57431

Source: London Economics

Figure 76: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (high impact sample)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	44.25	11.69479	3.78	0	21.3315	67.17424
Winter, 1 in 20	38.34	12.24692	3.13	0.002	14.34144	62.34848
Winter, 1 in 50	30.14	9.236255	3.26	0.001	12.04056	48.24601
Summer, 1 in 5	13.21	5.985467	2.21	0.027	1.474102	24.9367
Summer, 1 in 20	7.30	6.088008	1.2	0.231	-4.63479	19.22977
Summer, 1 in 50	-0.90	5.848988	-0.15	0.877	-12.368	10.55962
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	260.63	68.20615	3.82	0	126.949	394.3122
Winter, 1 in 20	225.17	70.45109	3.2	0.001	87.08808	363.2513
Winter, 1 in 50	178.49	54.21905	3.29	0.001	72.22341	284.7582
Summer, 1 in 5	82.78	34.87109	2.37	0.018	14.43021	151.1224
Summer, 1 in 20	47.32	35.03845	1.35	0.177	-21.3587	115.9895
Summer, 1 in 50	0.64	33.30316	0.02	0.985	-64.6365	65.90952
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	309.70	75.58942	4.1	0	161.5438	457.8488
Winter, 1 in 20	254.56	62.16383	4.09	0	132.7201	376.3978
Winter, 1 in 50	230.83	66.81223	3.45	0.001	99.88246	361.7816
Summer, 1 in 5	196.03	52.87521	3.71	0	92.39701	299.664
Summer, 1 in 20	140.89	40.46777	3.48	0	61.5778	220.2085
Summer, 1 in 50	117.17	44.80673	2.61	0.009	29.34666	204.9858

Note: Standard errors are calculated using the delta method

Source: London Economics

AB.1.3 Services

We note that the WTA estimates for businesses in the service sector always are smaller than the WTA estimates based on the full sample (the baseline).

Figure 77: Regression results WTA (service sectors)

	Coef.	Std. Err.	z	P> z 	Lower	Upper
Duration	-0.22325	0.02752	-8.11	0	-0.27719	-0.16931
Duration^2	0.005754	0.000875	6.57	0	0.004039	0.00747
Duration * Summer	0.208219	0.023534	8.85	0	0.162093	0.254344
Duration^2 * Summer	-0.00618	0.000801	-7.71	0	-0.00775	-0.00461
Duration * 1 in 20	0.027955	0.031634	0.88	0.377	-0.03405	0.089956
Duration^2 * 1 in 20	-0.00066	0.001099	-0.6	0.545	-0.00282	0.001489
Duration * 1 in 50	0.064325	0.028386	2.27	0.023	0.00869	0.119961
Duration^2 * 1 in 50	-0.00164	0.000941	-1.74	0.082	-0.00348	0.000206
Compensation	0.006087	0.001418	4.29	0	0.003307	0.008867
DK option	-3.80859	0.207539	-18.35	0	-4.21536	-3.40182

Source: London Economics

Figure 78: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (service sectors)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	35.73	8.429003	4.24	0	19.2103	52.25138
Winter, 1 in 20	31.25	9.349141	3.34	0.001	12.92347	49.57143
Winter, 1 in 50	25.43	7.334827	3.47	0.001	11.0565	39.8085
Summer, 1 in 5	2.54	4.447339	0.57	0.568	-6.17789	11.25535
Summer, 1 in 20	-1.94	4.434184	-0.44	0.661	-10.6355	6.746185
Summer, 1 in 50	-7.76	5.1491	-1.51	0.132	-17.8517	2.332439
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	210.41	49.04001	4.29	0	114.2945	306.5278
Winter, 1 in 20	183.61	53.58076	3.43	0.001	78.59509	288.6278
Winter, 1 in 50	149.63	42.74539	3.5	0	65.85487	233.4137
Summer, 1 in 5	20.70	25.14795	0.82	0.41	-28.5914	69.98675
Summer, 1 in 20	-6.10	25.15491	-0.24	0.808	-55.4048	43.20065
Summer, 1 in 50	-40.08	28.87601	-1.39	0.165	-96.6752	16.51672
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	249.47	54.34922	4.59	0	142.9485	355.9935
Winter, 1 in 20	209.92	45.9833	4.57	0	119.7972	300.0484
Winter, 1 in 50	174.83	47.77585	3.66	0	81.19139	268.4693
Summer, 1 in 5	136.78	35.34384	3.87	0	67.51084	206.0562
Summer, 1 in 20	97.24	28.23251	3.44	0.001	41.90056	152.57
Summer, 1 in 50	62.14	29.4858	2.11	0.035	4.351678	119.9339

Note: Standard errors are calculated using the delta method

Source: London Economics

AB.1.4 Non-services

Non-service sectors include the construction sector and primary and production sectors. We note that the WTA estimates for businesses in non-service sectors always are larger than the baseline WTA estimates. However, the results are statistically insignificant, most likely because of the small sample size.

Figure 79: Regression results WTA (non-service sectors)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.26947	0.061983	-4.35	0	-0.39096	-0.14799
Duration^2	0.006706	0.001955	3.43	0.001	0.002874	0.010538
Duration * Summer	0.208652	0.051156	4.08	0	0.108388	0.308915
Duration^2 * Summer	-0.00618	0.001745	-3.54	0	-0.0096	-0.00276
Duration * 1 in 20	0.008697	0.065863	0.13	0.895	-0.12039	0.137786
Duration^2 * 1 in 20	6.61E-05	0.002299	0.03	0.977	-0.00444	0.004572
Duration * 1 in 50	0.044316	0.057923	0.77	0.444	-0.06921	0.157843
Duration^2 * 1 in 50	-0.0008	0.001948	-0.41	0.681	-0.00462	0.003016
Compensation	0.004902	0.003145	1.56	0.119	-0.00126	0.011067
DK option	-19.2669	714.0939	-0.03	0.978	-1418.87	1380.331

Source: London Economics

Figure 80: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (non-service sectors)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	53.60	33.284	1.61	0.107	-11.6359	118.835
Winter, 1 in 20	51.81	36.62609	1.41	0.157	-19.9739	123.5978
Winter, 1 in 50	44.72	29.78806	1.5	0.133	-13.6602	103.1069
Summer, 1 in 5	12.30	13.35873	0.92	0.357	-13.8847	38.48059
Summer, 1 in 20	10.51	15.13654	0.69	0.487	-19.1567	40.17745
Summer, 1 in 50	3.42	13.61327	0.25	0.802	-23.2598	30.1033
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	317.75	195.9639	1.62	0.105	-66.3362	701.8284
Winter, 1 in 20	304.67	212.2631	1.44	0.151	-111.361	720.6947
Winter, 1 in 50	262.48	174.5178	1.5	0.133	-79.5671	604.5301
Summer, 1 in 5	81.54	79.42644	1.03	0.305	-74.1345	237.2114
Summer, 1 in 20	68.46	88.56591	0.77	0.44	-105.127	242.045
Summer, 1 in 50	26.27	78.45359	0.33	0.738	-127.492	180.04
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	417.94	247.2283	1.69	0.091	-66.6226	902.4945
Winter, 1 in 20	352.58	207.2847	1.7	0.089	-53.6952	758.846
Winter, 1 in 50	293.93	200.7684	1.46	0.143	-99.5682	687.4295
Summer, 1 in 5	274.75	171.9371	1.6	0.11	-62.2453	611.7358
Summer, 1 in 20	209.38	133.6099	1.57	0.117	-52.4857	471.2553
Summer, 1 in 50	150.74	127.5352	1.18	0.237	-99.2244	400.7043

Note: Standard errors are calculated using the delta method

Source: London Economics

AB.1.5 Small SMEs

Small SMEs are defined as SMEs with fewer than 10 employees. We note that small SMEs always require less compensation than the baseline estimate.

Figure 81: Regression results WTA (small SMEs)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.23127	0.028752	-8.04	0	-0.28762	-0.17491
Duration^2	0.006048	0.000914	6.62	0	0.004257	0.007839
Duration * Summer	0.210604	0.025045	8.41	0	0.161517	0.259692
Duration^2 * Summer	-0.00624	0.000852	-7.33	0	-0.00792	-0.00457
Duration * 1 in 20	0.031925	0.033135	0.96	0.335	-0.03302	0.096867
Duration^2 * 1 in 20	-0.00089	0.001152	-0.77	0.439	-0.00315	0.001367
Duration * 1 in 50	0.050241	0.029173	1.72	0.085	-0.00694	0.107418
Duration^2 * 1 in 50	-0.00123	0.000971	-1.27	0.204	-0.00314	0.000671
Compensation	0.006854	0.001509	4.54	0	0.003897	0.009811
DK option	-4.19689	0.253178	-16.58	0	-4.69311	-3.70067

Source: London Economics

Figure 82: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (small SMEs)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	32.86	7.366763	4.46	0	18.42085	47.29803
Winter, 1 in 20	28.33	8.222176	3.45	0.001	12.21633	44.44666
Winter, 1 in 50	25.71	6.810327	3.78	0	12.36112	39.05711
Summer, 1 in 5	3.04	4.028807	0.76	0.45	-4.85307	10.93957
Summer, 1 in 20	-1.48	4.260208	-0.35	0.727	-9.83455	6.865163
Summer, 1 in 50	-4.11	4.796808	-0.86	0.392	-13.5086	5.294502
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	192.96	42.67917	4.52	0	109.3059	276.6052
Winter, 1 in 20	166.72	47.03642	3.54	0	74.52569	258.9051
Winter, 1 in 50	150.46	39.56691	3.8	0	72.90775	228.0072
Summer, 1 in 5	22.51	22.83015	0.99	0.324	-22.2385	67.25401
Summer, 1 in 20	-3.73	24.14231	-0.15	0.877	-51.0505	43.58565
Summer, 1 in 50	-19.99	27.05965	-0.74	0.46	-73.0263	33.04561
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	218.10	44.57811	4.89	0	130.7295	305.4725
Winter, 1 in 20	195.27	40.36254	4.84	0	116.159	274.3773
Winter, 1 in 50	160.07	42.00453	3.81	0	77.74289	242.3976
Summer, 1 in 5	116.26	29.01841	4.01	0	59.38301	173.1331
Summer, 1 in 20	93.43	25.49045	3.67	0	43.46487	143.3856
Summer, 1 in 50	58.23	26.96731	2.16	0.031	5.372386	111.0823

Note: Standard errors are calculated using the delta method

Source: London Economics

AB.1.6 Medium SMEs

Medium SMEs are defined as SMEs with 10 employees or more but fewer than 250 employees. We note that medium SMEs always require more compensation than the baseline but that the WTA estimates are insignificant due to the small sample size.

Figure 83: Regression results WTA (medium SMEs)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.23443	0.052495	-4.47	0	-0.33732	-0.13154
Duration^2	0.005571	0.001668	3.34	0.001	0.002301	0.008841
Duration * Summer	0.20069	0.041409	4.85	0	0.119531	0.281849
Duration^2 * Summer	-0.00604	0.001417	-4.26	0	-0.00882	-0.00326
Duration * 1 in 20	-6.5E-05	0.057927	0	0.999	-0.1136	0.11347
Duration^2 * 1 in 20	0.000632	0.002013	0.31	0.754	-0.00331	0.004577
Duration * 1 in 50	0.088835	0.054225	1.64	0.101	-0.01744	0.195114
Duration^2 * 1 in 50	-0.00211	0.001792	-1.18	0.239	-0.00562	0.001403
Compensation	0.002824	0.002529	1.12	0.264	-0.00213	0.007779
DK option	-3.94438	0.347939	-11.34	0	-4.62632	-3.26243

Source: London Economics

Figure 84: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (medium SMEs)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	81.05	70.37197	1.15	0.249	-56.878	218.9751
Winter, 1 in 20	80.85	77.73555	1.04	0.298	-71.5111	233.2067
Winter, 1 in 50	50.34	49.31677	1.02	0.307	-46.3239	146.9944
Summer, 1 in 5	12.11	20.37278	0.59	0.552	-27.8152	52.04463
Summer, 1 in 20	11.91	21.98488	0.54	0.588	-31.1756	55.00353
Summer, 1 in 50	-18.60	22.99864	-0.81	0.419	-63.6751	26.47792
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	484.48	419.5912	1.15	0.248	-337.907	1306.861
Winter, 1 in 20	473.68	451.5531	1.05	0.294	-411.35	1358.706
Winter, 1 in 50	300.87	293.0671	1.03	0.305	-273.53	875.2724
Summer, 1 in 5	91.81	124.3591	0.74	0.46	-151.933	335.5452
Summer, 1 in 20	81.01	132.1067	0.61	0.54	-177.918	339.9313
Summer, 1 in 50	-91.80	122.7026	-0.75	0.454	-332.292	148.6931
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	715.01	616.2343	1.16	0.246	-492.789	1922.805
Winter, 1 in 20	514.40	433.0489	1.19	0.235	-334.36	1363.161
Winter, 1 in 50	443.78	414.0099	1.07	0.284	-367.663	1255.226
Summer, 1 in 5	508.50	455.7893	1.12	0.265	-384.829	1401.832
Summer, 1 in 20	307.89	275.0399	1.12	0.263	-231.175	846.9617
Summer, 1 in 50	237.27	255.1649	0.93	0.352	-262.839	737.3885

Note: Standard errors are calculated using the delta method

Source: London Economics

AB.1.7 Urban

The results in this section show that SMEs in urban areas always require less compensation than the baseline case with WTA estimates always being below the corresponding WTA estimates in the baseline.

Figure 85: Regression results WTA (urban businesses)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.23832	0.027287	-8.73	0	-0.2918	-0.18484
Duration^2	0.006163	0.000867	7.11	0	0.004464	0.007861
Duration * Summer	0.219527	0.023446	9.36	0	0.173574	0.26548
Duration^2 * Summer	-0.00651	0.000798	-8.16	0	-0.00808	-0.00495
Duration * 1 in 20	0.044162	0.031321	1.41	0.159	-0.01723	0.10555
Duration^2 * 1 in 20	-0.00122	0.001089	-1.12	0.264	-0.00335	0.000918
Duration * 1 in 50	0.062826	0.02783	2.26	0.024	0.008281	0.117372
Duration^2 * 1 in 50	-0.00159	0.000925	-1.72	0.086	-0.0034	0.000225
Compensation	0.006862	0.001422	4.82	0	0.004074	0.00965
DK option	-3.9764	0.217651	-18.27	0	-4.40299	-3.54981

Source: London Economics

Figure 86: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (urban businesses)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	33.83	7.102234	4.76	0	19.91293	47.75317
Winter, 1 in 20	27.57	7.614357	3.62	0	12.65052	42.49825
Winter, 1 in 50	24.91	6.319405	3.94	0	12.52272	37.29433
Summer, 1 in 5	2.79	3.84597	0.73	0.468	-4.74891	10.32702
Summer, 1 in 20	-3.47	3.885656	-0.89	0.372	-11.0854	4.146135
Summer, 1 in 50	-6.14	4.500058	-1.36	0.173	-14.9554	2.684482
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	199.11	41.25326	4.83	0	118.256	279.9658
Winter, 1 in 20	162.75	43.6154	3.73	0	77.26263	248.2319
Winter, 1 in 50	146.36	36.79368	3.98	0	74.24801	218.4766
Summer, 1 in 5	21.66	21.77115	0.99	0.32	-21.0115	64.32985
Summer, 1 in 20	-14.70	21.96845	-0.67	0.503	-57.7618	28.35293
Summer, 1 in 50	-31.09	25.29644	-1.23	0.219	-80.6695	18.49073
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	233.64	44.97558	5.19	0	145.4882	321.7892
Winter, 1 in 20	200.14	38.82644	5.15	0	124.04	276.2369
Winter, 1 in 50	167.31	40.87198	4.09	0	87.20193	247.4171
Summer, 1 in 5	127.91	29.5186	4.33	0	70.05824	185.769
Summer, 1 in 20	94.41	24.34608	3.88	0	46.69594	142.1308
Summer, 1 in 50	61.58	25.93141	2.37	0.018	10.75982	112.4091

Note: Standard errors are calculated using the delta method

Source: London Economics

AB.1.8 Rural

This section presents WTA for SMEs in rural areas. We note that there is a tendency for the WTA to be higher for SMEs in rural areas than in the baseline case. However, the estimates are highly insignificant and there are signs of large variations in the responses. This is most likely due to the reduced sample size.

Figure 87: Regression results WTA (rural businesses)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.1993	0.064783	-3.08	0.002	-0.32627	-0.07233
Duration^2	0.004772	0.002061	2.32	0.021	0.000732	0.008813
Duration * Summer	0.156237	0.051923	3.01	0.003	0.054471	0.258004
Duration^2 * Summer	-0.00464	0.001778	-2.61	0.009	-0.00813	-0.00116
Duration * 1 in 20	-0.06894	0.070073	-0.98	0.325	-0.20628	0.068396
Duration^2 * 1 in 20	0.002681	0.002429	1.1	0.27	-0.00208	0.00744
Duration * 1 in 50	0.044379	0.063882	0.69	0.487	-0.08083	0.169585
Duration^2 * 1 in 50	-0.00085	0.002122	-0.4	0.689	-0.00501	0.00331
Compensation	0.000741	0.003105	0.24	0.811	-0.00534	0.006826
DK option	-4.67122	0.554385	-8.43	0	-5.7578	-3.58465

Source: London Economics

Figure 88: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (rural businesses)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	262.48	1085.681	0.24	0.809	-1865.42	2390.371
Winter, 1 in 20	351.89	1491.028	0.24	0.813	-2570.48	3274.246
Winter, 1 in 50	203.74	862.5722	0.24	0.813	-1486.87	1894.353
Summer, 1 in 5	57.93	250.4821	0.23	0.817	-433.002	548.8692
Summer, 1 in 20	147.34	645.8306	0.23	0.82	-1118.46	1413.147
Summer, 1 in 50	-0.80	90.7755	-0.01	0.993	-178.717	177.1167
<u>1 Week</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	1566.88	6478.999	0.24	0.809	-11131.7	14265.48
Winter, 1 in 20	2040.84	8634.83	0.24	0.813	-14883.1	18964.8
Winter, 1 in 50	1203.89	5095.335	0.24	0.813	-8782.79	11190.56
Summer, 1 in 5	398.30	1695.864	0.23	0.814	-2925.53	3722.132
Summer, 1 in 20	872.26	3808.894	0.23	0.819	-6593.03	8337.556
Summer, 1 in 50	35.31	562.6955	0.06	0.95	-1067.55	1138.172
<u>1 Month</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	2272.11	9379.277	0.24	0.809	-16110.9	20655.15
Winter, 1 in 20	1807.79	7418.756	0.24	0.807	-12732.7	16348.29
Winter, 1 in 50	1507.34	6366.62	0.24	0.813	-10971	13985.69
Summer, 1 in 5	1588.18	6618.507	0.24	0.81	-11383.9	14560.21
Summer, 1 in 20	1123.86	4660.334	0.24	0.809	-8010.22	10257.95
Summer, 1 in 50	823.41	3609.949	0.23	0.82	-6251.96	7898.778

Note: Standard errors are calculated using the delta method

Source: London Economics

AB.1.9 Copy of choice card available

This section presents WTA for respondents who were posted, e-mailed or faxed the choice cards and, therefore, had the possibility to have a copy of the choice cards in front of them when the

choice experiment was carried out. We note that there is a tendency that WTA is higher for this group of respondents than suggested by the baseline estimates of WTA.

Figure 89: Regression results WTA (choice cards available)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.24718	0.02913	-8.49	0	-0.30427	-0.19008
Duration^2	0.006328	0.000926	6.83	0	0.004514	0.008143
Duration * Summer	0.209261	0.024516	8.54	0	0.161211	0.257312
Duration^2 * Summer	-0.00616	0.000835	-7.38	0	-0.0078	-0.00453
Duration * 1 in 20	0.017957	0.03294	0.55	0.586	-0.0466	0.082517
Duration^2 * 1 in 20	-0.00027	0.001145	-0.23	0.816	-0.00251	0.001977
Duration * 1 in 50	0.073311	0.0296	2.48	0.013	0.015297	0.131325
Duration^2 * 1 in 50	-0.00187	0.000982	-1.9	0.057	-0.00379	0.000058
Compensation	0.005602	0.001479	3.79	0	0.002704	0.0085
DK option	-4.75925	0.298234	-15.96	0	-5.34378	-4.17473

Source: London Economics

Figure 90: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (choice cards available)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	42.99	11.29511	3.81	0	20.85653	65.13254
Winter, 1 in 20	39.84	12.57685	3.17	0.002	15.18631	64.48665
Winter, 1 in 50	30.24	9.393233	3.22	0.001	11.83034	48.65114
Summer, 1 in 5	6.74	5.270465	1.28	0.201	-3.59073	17.06911
Summer, 1 in 20	3.58	5.498517	0.65	0.515	-7.19575	14.35804
Summer, 1 in 50	-6.01	5.769318	-1.04	0.297	-17.3223	5.293053
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	253.52	65.98633	3.84	0	124.1843	382.846
Winter, 1 in 20	233.40	72.31082	3.23	0.001	91.67576	375.129
Winter, 1 in 50	178.23	54.94023	3.24	0.001	70.54892	285.9107
Summer, 1 in 5	45.94	30.2656	1.52	0.129	-13.3759	105.2631
Summer, 1 in 20	25.83	31.51735	0.82	0.412	-35.9421	87.60364
Summer, 1 in 50	-29.34	32.44824	-0.9	0.366	-92.9392	34.2556
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	307.01	75.6665	4.06	0	158.7108	455.318
Winter, 1 in 20	253.57	62.28813	4.07	0	131.485	375.65
Winter, 1 in 50	214.22	63.58297	3.37	0.001	89.59777	338.8384
Summer, 1 in 5	176.68	49.0702	3.6	0	80.50567	272.8573
Summer, 1 in 20	123.23	37.04851	3.33	0.001	50.62088	195.8484
Summer, 1 in 50	83.89	37.93662	2.21	0.027	9.530815	158.2396

Note: Standard errors are calculated using the delta method

Source: London Economics

AB.1.10 Telephone only

This section presents WTA for respondents who were only interviewed over the phone and hence did not have the opportunity to have a copy of the choice card in front of them for the choice experiment. The WTA estimates for this sub-sample in most cases are smaller than for the baseline, and that the confidence intervals are much larger with more statistically insignificant estimates. This may be partly due to the reduced sample size (only 23% of respondents were interviewed over the phone only) but it may also reflect poorer quality of data from the telephone-only sample. However, the results are still in approximately the same order of magnitude as the WTA estimates for the full sample.

Figure 91: Regression results WTA (telephone only)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.18283	0.050223	-3.64	0	-0.28126	-0.08439
Duration^2	0.004674	0.001592	2.94	0.003	0.001555	0.007794
Duration * Summer	0.199603	0.043599	4.58	0	0.11415	0.285056
Duration^2 * Summer	-0.00605	0.001485	-4.07	0	-0.00896	-0.00314
Duration * 1 in 20	0.046052	0.057158	0.81	0.42	-0.06598	0.15808
Duration^2 * 1 in 20	-0.00147	0.00199	-0.74	0.46	-0.00537	0.002431
Duration * 1 in 50	0.013073	0.050136	0.26	0.794	-0.08519	0.111338
Duration^2 * 1 in 50	-0.00011	0.001681	-0.06	0.95	-0.0034	0.00319
Compensation	0.006271	0.002657	2.36	0.018	0.001063	0.011479
DK option	-2.98744	0.295586	-10.11	0	-3.56678	-2.4081

Source: London Economics

Figure 92: WTA estimates for total duration of outage, not discounted or normalised to WTA per day basis (telephone only)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	28.41	12.35534	2.3	0.021	4.191886	52.62391
Winter, 1 in 20	21.30	13.2694	1.61	0.108	-4.70886	47.30622
Winter, 1 in 50	26.34	12.9362	2.04	0.042	0.985653	51.69462
Summer, 1 in 5	-2.46	7.574898	-0.32	0.746	-17.3028	12.39026
Summer, 1 in 20	-9.57	8.028812	-1.19	0.233	-25.3017	6.170693
Summer, 1 in 50	-4.52	8.868242	-0.51	0.61	-21.9055	12.8574
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	167.55	71.60628	2.34	0.019	27.20371	307.8952
Winter, 1 in 20	127.62	75.99455	1.68	0.093	-21.3269	276.5663
Winter, 1 in 50	153.78	75.04381	2.05	0.04	6.698433	300.8648
Summer, 1 in 5	-8.00	42.2445	-0.19	0.85	-90.7994	74.79599
Summer, 1 in 20	-47.93	44.69218	-1.07	0.284	-135.527	39.6636
Summer, 1 in 50	-21.77	49.89173	-0.44	0.663	-119.556	76.01644
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	203.76	79.32801	2.57	0.01	48.27869	359.2388
Winter, 1 in 20	194.20	76.0664	2.55	0.011	45.1148	343.2896
Winter, 1 in 50	156.36	79.0748	1.98	0.048	1.376543	311.3441
Summer, 1 in 5	116.72	54.95554	2.12	0.034	9.010741	224.4325
Summer, 1 in 20	107.17	52.18544	2.05	0.04	4.883489	209.4467
Summer, 1 in 50	69.32	54.96402	1.26	0.207	-38.4043	177.0507

Note: Standard errors are calculated using the delta method

Source: London Economics

AB.2 WTP sub-analyses

This section includes the WTP sub-analyses for SMEs with different firm and interview characteristics. We note that the estimates are not discounted and are provided as WTP per year, i.e., the estimates are not normalised to WTP per day of outage.

All WTP estimates in this section should be multiplied by -1 to get WTP estimates. This is due to the technical specification because the values represent amounts consumers will pay rather than amounts they will receive. When discussing the size of estimates relative to the baseline we consider absolute values throughout this section (i.e. after estimates have been multiplied by -1).

AB.2.1 Low impact

Based on the question “taking into account any alternatives you could use, what kind of impact would an unexpected lose the supply of gas for two months during the winter have on your household”, respondents defined as:

- *Low impact* if reported “No impact” or “A small impact”
- *High impact* if reported “A large impact” or “A very large impact”

We note that the WTP estimates for the low impact sample are much smaller than the WTP estimates based on the full sample (the baseline). The large difference in size is partly due to a lower WTP as a percentage of the bill and partly due to a low average bill size for this sub-sample.

Figure 93: Regression results WTP (low impact sample)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.08138	0.043153	-1.89	0.059	-0.16596	0.003198
Duration^2	0.001244	0.00129	0.96	0.335	-0.00128	0.003773
Duration * Summer	0.145384	0.039278	3.7	0	0.0684	0.222367
Duration^2 * Summer	-0.00378	0.001329	-2.85	0.004	-0.00639	-0.00118
Duration * 1 in 20	-0.01615	0.048826	-0.33	0.741	-0.11185	0.079546
Duration^2 * 1 in 20	0.000347	0.001695	0.2	0.838	-0.00297	0.003668
Duration * 1 in 50	0.000851	0.007036	0.12	0.904	-0.01294	0.014641
Price	-18.8947	1.695847	-11.14	0	-22.2185	-15.5709
DK option	-5.06104	0.351743	-14.39	0	-5.75045	-4.37164

Source: London Economics

Figure 94: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (low impact sample)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-6.98	3.49	-2	0.045	-13.81	-0.14
Winter, 1 in 20	-8.35	4.07	-2.05	0.04	-16.34	-0.37
Winter, 1 in 50	-6.90	3.50	-1.97	0.049	-13.77	-0.04
Summer, 1 in 5	5.35	4.21	1.27	0.204	-2.90	13.60
Summer, 1 in 20	3.97	3.74	1.06	0.288	-3.36	11.31
Summer, 1 in 50	5.42	4.24	1.28	0.201	-2.88	13.73
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-44.28	19.86	-2.23	0.026	-83.21	-5.35
Winter, 1 in 20	-52.64	22.70	-2.32	0.02	-97.13	-8.15
Winter, 1 in 50	-43.76	19.99	-2.19	0.029	-82.95	-4.57
Summer, 1 in 5	28.18	23.84	1.18	0.237	-18.55	74.91
Summer, 1 in 20	19.82	21.03	0.94	0.346	-21.40	61.03
Summer, 1 in 50	28.70	24.04	1.19	0.233	-18.42	75.82
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-115.03	18.92	-6.08	0	-152.10	-77.95
Winter, 1 in 20	-130.05	24.79	-5.25	0	-178.65	-81.46
Winter, 1 in 50	-112.80	19.97	-5.65	0	-151.94	-73.67
Summer, 1 in 5	-31.60	19.47	-1.62	0.105	-69.76	6.56
Summer, 1 in 20	-46.63	20.12	-2.32	0.02	-86.06	-7.19
Summer, 1 in 50	-29.38	19.57	-1.5	0.133	-67.74	8.98

Note: Standard errors are calculated using the delta method. Converted from percentages using the value of the average bill for the sub-sample of £1,645.

Source: London Economics



AB.2.2 High impact

We note that the WTP estimates for the high impact sample always are larger than the WTP estimates based on the full sample (the baseline).

Figure 95: Regression results WTP (high impact sample)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.127	0.028642	-4.43	0	-0.18313	-0.07086
Duration^2	0.001889	0.000857	2.2	0.027	0.00021	0.003568
Duration * Summer	0.140366	0.025245	5.56	0	0.090888	0.189845
Duration^2 * Summer	-0.00335	0.000861	-3.89	0	-0.00503	-0.00166
Duration * 1 in 20	-0.01798	0.030759	-0.58	0.559	-0.07827	0.042302
Duration^2 * 1 in 20	0.000695	0.001063	0.65	0.513	-0.00139	0.002778
Duration * 1 in 50	0.014233	0.004729	3.01	0.003	0.004964	0.023501
Price	-8.80453	0.951881	-9.25	0	-10.6702	-6.93888
DK option	-4.20029	0.209074	-20.09	0	-4.61007	-3.79051

Source: London Economics

Figure 96: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (high impact sample)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-147.67	30.94	-4.77	0	-208.30	-87.03
Winter, 1 in 20	-168.07	36.69	-4.58	0	-239.98	-96.16
Winter, 1 in 50	-130.87	30.39	-4.31	0	-190.43	-71.30
Summer, 1 in 5	14.06	35.63	0.39	0.693	-55.78	83.90
Summer, 1 in 20	-6.35	32.46	-0.2	0.845	-69.97	57.27
Summer, 1 in 50	30.86	36.26	0.85	0.395	-40.22	101.93
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-940.02	178.45	-5.27	0	-1289.77	-590.27
Winter, 1 in 20	-1048.38	207.77	-5.05	0	-1455.62	-641.15
Winter, 1 in 50	-822.43	173.97	-4.73	0	-1163.40	-481.46
Summer, 1 in 5	26.10	200.75	0.13	0.897	-367.37	419.56
Summer, 1 in 20	-82.27	182.07	-0.45	0.651	-439.11	274.58
Summer, 1 in 50	143.69	204.90	0.7	0.483	-257.90	545.28
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-2490.34	276.73	-9	0	-3032.72	-1947.95
Winter, 1 in 20	-2388.51	315.89	-7.56	0	-3007.64	-1769.37
Winter, 1 in 50	-1986.38	228.66	-8.69	0	-2434.54	-1538.22
Summer, 1 in 5	-1076.04	183.25	-5.87	0	-1435.19	-716.88
Summer, 1 in 20	-974.21	201.04	-4.85	0	-1368.23	-580.18
Summer, 1 in 50	-572.08	163.17	-3.51	0	-891.89	-252.26

Note: Standard errors are calculated using the delta method. Converted from percentages using the value of the average bill for the sub-sample of £10,392.

Source: London Economics

AB.2.3 Services

We note that the WTP estimates for businesses in the service sector are larger than the WTP estimates based on the full sample (the baseline) for outages occurring in the winter and for outages lasting one month. However, WTP for businesses in the service sector is smaller than the corresponding WTP estimates in the baseline for outages in the summer (except those lasting a month). In fact, we find statistically significant negative willingness to pay for outages in summer that occur every infrequently (except for those lasting one month).

Figure 97: Regression results WTP (service sectors)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.10484	0.025579	-4.1	0	-0.15498	-0.05471
Duration^2	0.001417	0.000768	1.84	0.065	-8.9E-05	0.002923
Duration * Summer	0.158514	0.023002	6.89	0	0.113432	0.203596
Duration^2 * Summer	-0.00402	0.000783	-5.14	0	-0.00556	-0.00249
Duration * 1 in 20	-0.04339	0.02779	-1.56	0.118	-0.09786	0.011073
Duration^2 * 1 in 20	0.001428	0.000962	1.48	0.138	-0.00046	0.003314
Duration * 1 in 50	0.012263	0.004254	2.88	0.004	0.003926	0.020599
Price	-10.8162	0.881528	-12.27	0	-12.544	-9.08844
DK option	-4.17833	0.185385	-22.54	0	-4.54167	-3.81498

Source: London Economics

Figure 98: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (service sectors)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-76.49	17.22	-4.44	0	-110.23	-42.74
Winter, 1 in 20	-107.52	20.34	-5.29	0	-147.38	-67.66
Winter, 1 in 50	-67.42	17.14	-3.93	0	-101.01	-33.82
Summer, 1 in 5	37.76	20.62	1.83	0.067	-2.65	78.18
Summer, 1 in 20	6.73	18.23	0.37	0.712	-29.00	42.45
Summer, 1 in 50	46.83	20.96	2.23	0.025	5.75	87.91
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-491.38	98.36	-5	0	-684.16	-298.60
Winter, 1 in 20	-664.27	114.33	-5.81	0	-888.35	-440.19
Winter, 1 in 50	-427.90	97.64	-4.38	0	-619.27	-236.53
Summer, 1 in 5	183.38	116.21	1.58	0.115	-44.39	411.15
Summer, 1 in 20	10.50	102.20	0.1	0.918	-189.80	210.79
Summer, 1 in 50	246.86	118.50	2.08	0.037	14.60	479.12
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-1382.80	126.18	-10.96	0	-1630.11	-1135.49
Winter, 1 in 20	-1395.00	157.16	-8.88	0	-1703.03	-1086.96
Winter, 1 in 50	-1110.75	112.16	-9.9	0	-1330.58	-890.92
Summer, 1 in 5	-544.23	96.66	-5.63	0	-733.67	-354.79
Summer, 1 in 20	-556.42	107.98	-5.15	0	-768.05	-344.79
Summer, 1 in 50	-272.17	93.08	-2.92	0.003	-454.59	-89.75

Note: Standard errors are calculated using the delta method. Converted from percentages using the value of the average bill for the sub-sample of £7,999.

Source: London Economics

AB.2.4 Non-services

Compared to the service sector we find the opposite relationship for non-services. Generally, WTP is lower in winter months and for outages lasting one month than in the baseline case. It seems that the season of interruption is of less importance for non-service sector businesses.

Figure 99: Regression results WTP (non-service sectors)

	Coef.	Std. Err.	z	P> z 	Lower	Upper
Duration	-0.16911	0.065276	-2.59	0.01	-0.29705	-0.04117
Duration^2	0.003702	0.00191	1.94	0.053	-4.2E-05	0.007445
Duration * Summer	0.015215	0.054278	0.28	0.779	-0.09117	0.121597
Duration^2 * Summer	0.000572	0.001843	0.31	0.756	-0.00304	0.004184
Duration * 1 in 20	0.163032	0.073392	2.22	0.026	0.019186	0.306879
Duration^2 * 1 in 20	-0.00549	0.002532	-2.17	0.03	-0.01045	-0.00053
Duration * 1 in 50	-0.0061	0.009577	-0.64	0.524	-0.02487	0.01267
Price	-17.4593	2.395503	-7.29	0	-22.1544	-12.7642
DK option	-6.73678	0.732945	-9.19	0	-8.17332	-5.30023

Source: London Economics

Figure 100: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (non-service sectors)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-42.12	14.53	-2.9	0.004	-70.60	-13.64
Winter, 1 in 20	-2.00	17.68	-0.11	0.91	-36.65	32.64
Winter, 1 in 50	-43.67	14.54	-3	0.003	-72.18	-15.17
Summer, 1 in 5	-38.10	17.82	-2.14	0.033	-73.03	-3.16
Summer, 1 in 20	2.02	16.64	0.12	0.904	-30.60	34.63
Summer, 1 in 50	-39.65	17.98	-2.2	0.027	-74.90	-4.40
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-255.25	83.20	-3.07	0.002	-418.33	-92.17
Winter, 1 in 20	-33.15	98.56	-0.34	0.737	-226.33	160.03
Winter, 1 in 50	-266.12	83.33	-3.19	0.001	-429.44	-102.81
Summer, 1 in 5	-220.99	100.99	-2.19	0.029	-418.92	-23.06
Summer, 1 in 20	1.11	93.65	0.01	0.991	-182.45	184.66
Summer, 1 in 50	-231.87	102.07	-2.27	0.023	-431.92	-31.81
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-443.53	83.66	-5.3	0	-607.50	-279.57
Winter, 1 in 20	-456.31	103.30	-4.42	0	-658.77	-253.85
Winter, 1 in 50	-490.13	87.04	-5.63	0	-660.73	-319.54
Summer, 1 in 5	-196.19	81.40	-2.41	0.016	-355.74	-36.64
Summer, 1 in 20	-208.96	86.03	-2.43	0.015	-377.57	-40.36
Summer, 1 in 50	-242.79	79.47	-3.06	0.002	-398.54	-87.04

Note: Standard errors are calculated using the delta method. Converted from percentages using the value of the average bill for the sub-sample of £4,446.

Source: London Economics

AB.2.5 Small SMEs

Small SMEs are defined as SMEs with fewer than 10 employees. We note that small SMEs always have a lower willingness to pay than in the baseline. This is partly due to a lower WTP as percentage of the bill and partly due to a lower average bill size for very small firms.

Figure 101: Regression results WTP (small SMEs)

	Coef.	Std. Err.	z	P> z 	Lower	Upper
Duration	-0.12386	0.02836	-4.37	0	-0.17945	-0.06828
Duration^2	0.002115	0.000849	2.49	0.013	0.00045	0.00378
Duration * Summer	0.139689	0.025101	5.57	0	0.090492	0.188885
Duration^2 * Summer	-0.00347	0.000852	-4.07	0	-0.00514	-0.0018
Duration * 1 in 20	-0.00411	0.030102	-0.14	0.891	-0.06311	0.054887
Duration^2 * 1 in 20	0.000174	0.001043	0.17	0.867	-0.00187	0.002218
Duration * 1 in 50	0.007995	0.004633	1.73	0.084	-0.00109	0.017076
Price	-11.9207	0.969023	-12.3	0	-13.82	-10.0215
DK option	-4.25647	0.205155	-20.75	0	-4.65857	-3.85437

Source: London Economics

Figure 102: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (small SMEs)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-30.99	6.48	-4.78	0	-43.69	-18.29
Winter, 1 in 20	-31.99	7.43	-4.31	0	-46.55	-17.43
Winter, 1 in 50	-28.95	6.47	-4.48	0	-41.62	-16.28
Summer, 1 in 5	3.68	7.65	0.48	0.63	-11.31	18.68
Summer, 1 in 20	2.68	6.85	0.39	0.695	-10.74	16.10
Summer, 1 in 50	5.72	7.72	0.74	0.459	-9.42	20.85
<u>1 Week</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-194.29	37.00	-5.25	0	-266.81	-121.78
Winter, 1 in 20	-199.45	41.61	-4.79	0	-281.00	-117.90
Winter, 1 in 50	-180.05	36.86	-4.88	0	-252.30	-107.80
Summer, 1 in 5	11.35	43.23	0.26	0.793	-73.38	96.08
Summer, 1 in 20	6.19	38.46	0.16	0.872	-69.18	81.57
Summer, 1 in 50	25.59	43.69	0.59	0.558	-60.04	111.22
<u>1 Month</u>	Coef.	Std. Err.	z	P> z 	Lower	Upper
Winter, 1 in 5	-461.27	43.66	-10.57	0	-546.83	-375.70
Winter, 1 in 20	-452.78	53.86	-8.41	0	-558.35	-347.21
Winter, 1 in 50	-400.22	41.06	-9.75	0	-480.69	-319.75
Summer, 1 in 5	-188.57	37.04	-5.09	0	-261.16	-115.97
Summer, 1 in 20	-180.08	39.12	-4.6	0	-256.76	-103.40
Summer, 1 in 50	-127.52	34.47	-3.7	0	-195.09	-59.96

Note: Standard errors are calculated using the delta method. Converted from percentages using the value of the average bill for the sub-sample of £3,034.

Source: London Economics

AB.2.6 Medium SMEs

Medium SMEs are defined as SMEs with 10 employees or more but fewer than 250 employees. We note that medium SMEs always appear to have a higher willingness to pay than in the baseline but that the WTP estimates are mostly insignificant due to the small sample size.

Figure 103: Regression results WTP (medium SMEs)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.07579	0.042782	-1.77	0.076	-0.15964	0.008063
Duration^2	0.000502	0.00128	0.39	0.695	-0.00201	0.003011
Duration * Summer	0.141352	0.038587	3.66	0	0.065722	0.216981
Duration^2 * Summer	-0.00342	0.001319	-2.6	0.009	-0.00601	-0.00084
Duration * 1 in 20	-0.04723	0.049504	-0.95	0.34	-0.14426	0.049796
Duration^2 * 1 in 20	0.001438	0.001708	0.84	0.4	-0.00191	0.004787
Duration * 1 in 50	0.013225	0.007191	1.84	0.066	-0.00087	0.027319
Price	-10.8724	1.53241	-7.09	0	-13.8758	-7.8689
DK option	-5.09914	0.399119	-12.78	0	-5.8814	-4.31688

Source: London Economics

Figure 104: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (medium SMEs)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-124.78	65.64	-1.9	0.057	-253.45	3.88
Winter, 1 in 20	-200.68	79.92	-2.51	0.012	-357.33	-44.03
Winter, 1 in 50	-102.86	65.54	-1.57	0.117	-231.31	25.59
Summer, 1 in 5	103.82	80.38	1.29	0.196	-53.72	261.36
Summer, 1 in 20	27.92	73.48	0.38	0.704	-116.10	171.95
Summer, 1 in 50	125.74	82.18	1.53	0.126	-35.32	286.81
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-838.54	374.91	-2.24	0.025	-1573.34	-103.74
Winter, 1 in 20	-1269.70	448.32	-2.83	0.005	-2148.39	-391.01
Winter, 1 in 50	-685.10	373.33	-1.84	0.066	-1416.81	46.62
Summer, 1 in 5	523.31	452.60	1.16	0.248	-363.77	1410.40
Summer, 1 in 20	92.15	410.91	0.22	0.823	-713.21	897.51
Summer, 1 in 50	676.75	465.21	1.45	0.146	-235.05	1588.56
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-3019.60	489.13	-6.17	0	-3978.28	-2060.93
Winter, 1 in 20	-3222.48	626.61	-5.14	0	-4450.61	-1994.36
Winter, 1 in 50	-2362.00	428.32	-5.51	0	-3201.51	-1522.50
Summer, 1 in 5	-1099.69	350.37	-3.14	0.002	-1786.40	-412.98
Summer, 1 in 20	-1302.57	428.79	-3.04	0.002	-2142.99	-462.15
Summer, 1 in 50	-442.09	375.25	-1.18	0.239	-1177.57	293.39

Note: Standard errors are calculated using the delta method. Converted from percentages using the value of the average bill for the sub-sample of £18,020.

Source: London Economics

AB.2.7 Urban

The results in this section show that SMEs in urban areas have approximately the same WTP as in the baseline case.

Figure 105: Regression results WTP (urban businesses)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.09712	0.026494	-3.67	0	-0.14904	-0.04519
Duration^2	0.001201	0.000793	1.51	0.13	-0.00035	0.002754
Duration * Summer	0.13399	0.02353	5.69	0	0.087871	0.180109
Duration^2 * Summer	-0.00327	0.0008	-4.09	0	-0.00484	-0.0017
Duration * 1 in 20	-0.01588	0.028914	-0.55	0.583	-0.07255	0.040795
Duration^2 * 1 in 20	0.00053	0.001	0.53	0.596	-0.00143	0.00249
Duration * 1 in 50	0.011643	0.004335	2.69	0.007	0.003147	0.020138
Price	-11.6492	0.921469	-12.64	0	-13.4553	-9.84316
DK option	-4.56737	0.206735	-22.09	0	-4.97257	-4.16218

Source: London Economics

Figure 106: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (urban businesses)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-62.76	15.74	-3.99	0	-93.62	-31.90
Winter, 1 in 20	-72.80	18.23	-3.99	0	-108.52	-37.07
Winter, 1 in 50	-55.14	15.74	-3.5	0	-85.99	-24.29
Summer, 1 in 5	22.77	18.84	1.21	0.227	-14.16	59.70
Summer, 1 in 20	12.73	17.00	0.75	0.454	-20.58	46.04
Summer, 1 in 50	30.39	19.12	1.59	0.112	-7.08	67.85
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-406.32	89.80	-4.52	0	-582.32	-230.31
Winter, 1 in 20	-462.03	101.97	-4.53	0	-661.90	-262.17
Winter, 1 in 50	-352.99	89.65	-3.94	0	-528.71	-177.28
Summer, 1 in 5	102.47	106.32	0.96	0.335	-105.92	310.85
Summer, 1 in 20	46.75	95.26	0.49	0.624	-139.96	233.46
Summer, 1 in 50	155.79	108.16	1.44	0.15	-56.19	367.77
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-1199.34	108.89	-11.01	0	-1412.75	-985.92
Winter, 1 in 20	-1198.80	135.28	-8.86	0	-1463.95	-933.66
Winter, 1 in 50	-970.81	99.18	-9.79	0	-1165.19	-776.42
Summer, 1 in 5	-495.96	88.32	-5.62	0	-669.06	-322.86
Summer, 1 in 20	-495.43	96.93	-5.11	0	-685.41	-305.45
Summer, 1 in 50	-267.43	85.15	-3.14	0.002	-434.32	-100.54

Note: Standard errors are calculated using the delta method. Converted from percentages using the value of the average bill for the sub-sample of £7,622.

Source: London Economics

AB.2.8 Rural

The results for the sub-sample of rural consumers show that the WTP for rural businesses is higher than the baseline for short outages (1-day and 1-week outages) but lower than the baseline for outages lasting one month.

Figure 107: Regression results WTP (rural businesses)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.16173	0.052387	-3.09	0.002	-0.26441	-0.05906
Duration^2	0.003437	0.001575	2.18	0.029	0.000349	0.006524
Duration * Summer	0.165786	0.047126	3.52	0	0.07342	0.258152
Duration^2 * Summer	-0.00425	0.001604	-2.65	0.008	-0.00739	-0.0011
Duration * 1 in 20	-0.02138	0.056492	-0.38	0.705	-0.1321	0.089346
Duration^2 * 1 in 20	0.000701	0.001959	0.36	0.72	-0.00314	0.00454
Duration * 1 in 50	0.000588	0.008695	0.07	0.946	-0.01645	0.017629
Price	-11.6863	1.798258	-6.5	0	-15.2108	-8.16174
DK option	-3.98893	0.358399	-11.13	0	-4.69137	-3.28648

Source: London Economics

Figure 108: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (rural businesses)

1 Day	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-89.03	26.94	-3.3	0.001	-141.84	-36.22
Winter, 1 in 20	-100.66	32.35	-3.11	0.002	-164.05	-37.26
Winter, 1 in 50	-88.70	26.70	-3.32	0.001	-141.04	-36.36
Summer, 1 in 5	1.82	30.91	0.06	0.953	-58.75	62.40
Summer, 1 in 20	-9.80	27.95	-0.35	0.726	-64.58	44.97
Summer, 1 in 50	2.15	31.09	0.07	0.945	-58.78	63.09
1 Week	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-542.02	154.42	-3.51	0	-844.67	-239.37
Winter, 1 in 20	-606.85	181.92	-3.34	0.001	-963.41	-250.29
Winter, 1 in 50	-539.71	152.74	-3.53	0	-839.08	-240.34
Summer, 1 in 5	-6.35	174.65	-0.04	0.971	-348.66	335.95
Summer, 1 in 20	-71.18	157.14	-0.45	0.651	-379.17	236.80
Summer, 1 in 50	-4.04	175.89	-0.02	0.982	-348.79	340.70
1 Month	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-989.35	182.30	-5.43	0	-1346.66	-632.04
Winter, 1 in 20	-995.01	228.65	-4.35	0	-1443.15	-546.87
Winter, 1 in 50	-979.43	178.37	-5.49	0	-1329.04	-629.83
Summer, 1 in 5	-341.34	146.36	-2.33	0.02	-628.20	-54.49
Summer, 1 in 20	-347.00	161.77	-2.15	0.032	-664.07	-29.94
Summer, 1 in 50	-331.43	144.17	-2.3	0.022	-614.01	-48.86

Note: Standard errors are calculated using the delta method. Converted from percentages using the value of the average bill for the sub-sample of £6,573.

Source: London Economics

AB.2.9 Copy of choice card available

This section presents WTP for respondents who were posted, e-mailed or faxed the choice cards and therefore had the possibility to have a copy of the choice cards in front of them when the choice experiment was carried out. We note that the WTP estimates for this sub-sample are approximately at the same level as the baseline.

Figure 109: Regression results WTP (choice cards available)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.10345	0.026792	-3.86	0	-0.15596	-0.05094
Duration^2	0.001238	0.000801	1.55	0.122	-0.00033	0.002807
Duration * Summer	0.134918	0.023975	5.63	0	0.087928	0.181908
Duration^2 * Summer	-0.0031	0.000815	-3.81	0	-0.0047	-0.00151
Duration * 1 in 20	8.05E-05	0.029766	0	0.998	-0.05826	0.058421
Duration^2 * 1 in 20	7.56E-05	0.001029	0.07	0.941	-0.00194	0.002092
Duration * 1 in 50	0.012343	0.004443	2.78	0.005	0.003636	0.021051
Price	-12.887	0.950815	-13.55	0	-14.7505	-11.0234
DK option	-4.57881	0.204402	-22.4	0	-4.97943	-4.17819

Source: London Economics

Figure 110: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (choice cards available)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-64.35	15.42	-4.17	0	-94.57	-34.14
Winter, 1 in 20	-64.26	18.15	-3.54	0	-99.82	-28.69
Winter, 1 in 50	-56.58	15.40	-3.67	0	-86.77	-26.39
Summer, 1 in 5	18.64	18.18	1.03	0.305	-17.00	54.27
Summer, 1 in 20	18.73	16.92	1.11	0.268	-14.42	51.89
Summer, 1 in 50	26.41	18.43	1.43	0.152	-9.72	62.53
<u>1 Week</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-417.75	88.00	-4.75	0	-590.24	-245.27
Winter, 1 in 20	-415.07	101.30	-4.1	0	-613.62	-216.52
Winter, 1 in 50	-363.36	87.80	-4.14	0	-535.44	-191.27
Summer, 1 in 5	81.10	102.69	0.79	0.43	-120.16	282.36
Summer, 1 in 20	83.79	94.79	0.88	0.377	-102.00	269.57
Summer, 1 in 50	135.50	104.41	1.3	0.194	-69.13	340.13
<u>1 Month</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-1252.70	106.96	-11.71	0	-1462.34	-1043.07
Winter, 1 in 20	-1208.34	130.82	-9.24	0	-1464.75	-951.93
Winter, 1 in 50	-1019.56	98.49	-10.35	0	-1212.59	-826.53
Summer, 1 in 5	-463.29	85.39	-5.43	0	-630.65	-295.93
Summer, 1 in 20	-418.93	93.44	-4.48	0	-602.08	-235.79
Summer, 1 in 50	-230.15	85.66	-2.69	0.007	-398.05	-62.26

Note: Standard errors are calculated using the delta method. Converted from percentages using the value of the average bill for the sub-sample of £8,114.

Source: London Economics

AB.2.10 Telephone only

This section presents WTP for respondents who were only interviewed over the phone and hence did not have the opportunity to have a copy of the choice card in front of them for the choice

experiment. We note that the WTP for this group of respondents generally is larger than in the baseline case.

Figure 111: Regression results WTP (telephone only)

	Coef.	Std. Err.	z	P> z	Lower	Upper
Duration	-0.12757	0.050794	-2.51	0.012	-0.22712	-0.02801
Duration^2	0.002883	0.00153	1.88	0.059	-0.00011	0.005881
Duration * Summer	0.16093	0.044568	3.61	0	0.073579	0.248281
Duration^2 * Summer	-0.00472	0.001515	-3.12	0.002	-0.00769	-0.00175
Duration * 1 in 20	-0.07834	0.052904	-1.48	0.139	-0.18203	0.025345
Duration^2 * 1 in 20	0.002383	0.001837	1.3	0.195	-0.00122	0.005983
Duration * 1 in 50	0.001972	0.008179	0.24	0.809	-0.01406	0.018001
Price	-7.67312	1.66539	-4.61	0	-10.9372	-4.40902
DK option	-3.86067	0.365673	-10.56	0	-4.57737	-3.14396

Source: London Economics

Figure 112: WTP estimates per year, not discounted or normalised to WTP per day of outage basis (telephone only)

<u>1 Day</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-118.40	43.27	-2.74	0.006	-203.21	-33.60
Winter, 1 in 20	-190.54	57.18	-3.33	0.001	-302.61	-78.46
Winter, 1 in 50	-116.53	42.77	-2.72	0.006	-200.36	-32.70
Summer, 1 in 5	29.94	53.04	0.56	0.572	-74.02	133.90
Summer, 1 in 20	-42.20	44.14	-0.96	0.339	-128.70	44.31
Summer, 1 in 50	31.81	53.46	0.6	0.552	-72.96	136.58
<u>1 Week</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-713.84	248.07	-2.88	0.004	-1200.05	-227.63
Winter, 1 in 20	-1123.75	324.89	-3.46	0.001	-1760.53	-486.97
Winter, 1 in 50	-700.73	244.47	-2.87	0.004	-1179.90	-221.57
Summer, 1 in 5	136.30	298.32	0.46	0.648	-448.40	720.99
Summer, 1 in 20	-273.62	249.31	-1.1	0.272	-762.25	215.02
Summer, 1 in 50	149.40	300.90	0.5	0.62	-440.35	739.15
<u>1 Month</u>	Coef.	Std. Err.	z	P> z	Lower	Upper
Winter, 1 in 5	-1170.23	293.09	-3.99	0	-1744.68	-595.79
Winter, 1 in 20	-1365.72	389.47	-3.51	0	-2129.07	-602.36
Winter, 1 in 50	-1114.07	275.93	-4.04	0	-1654.88	-573.25
Summer, 1 in 5	-619.47	250.93	-2.47	0.014	-1111.28	-127.67
Summer, 1 in 20	-814.96	287.99	-2.83	0.005	-1379.41	-250.50
Summer, 1 in 50	-563.31	218.28	-2.58	0.01	-991.12	-135.49

Note: Standard errors are calculated using the delta method. Converted from percentages using the value of the average bill for the sub-sample of £7,287.

Source: London Economics



