

SUMMARY OF CVP QUANTIFICATION

Ref	BP chapter	CVP item	Type of quantification	Quantified for CVP?	Magnitude estimate?	Methodology for quantification	Benefit to consumers (£)	Benefit to consumers (£m)
ET1	Stakeholders	Stakeholder engagement strategy	Estimation not feasible					
	Enable the ongoing transition	Optimisation with ESO						
ET2		A. Optimisation of harmonic filtering	Quantification for CVP	✓		Net present value of estimated savings from a coordinated approach with ESO on harmonic filtering	18,820,000	18.8
ET3		B. Optimisation with ESO to reduce system costs	Quantification for CVP	✓		Net present value of estimated constraint cost savings from better system access and network enhancement	#REF!	#REF!
ET4	Enable the ongoing transition	Optimisation with DNOs to identify whole system opport.	Quantification for CVP	✓		Net present value of expected cost savings	16,615,393	16.6
ET5	Connect and use	Driving efficiency through collaboration, competition and	Quantification for CVP	✓		Net present value of expected cost savings	9,481,610	9.5
ET6	Safe and reliable	Tougher Energy not Supplied (ENS) targets	Quantification for CVP	✓		Present value of rewards foregone due to tougher target	#REF!	#REF!
ET7	External threats	Adding environmental value to flood protection sites	Rough estimate of magnitude*		✓	Applying a 10% increase in natural capital baseline to an estimate of the size of flood protection sites	463,849	0.5
ET8	Environment and communities	Supporting local communities (LJIP)	Quantification for CVP	Quantified by NGET		Estimate based on an assumed benefit cost ratio	22,575,262	22.6
ET9	Environment and communities	Supporting the wider community	Estimation not feasible					
ET10	Environment and communities	Corporate social responsibility in the supply chain	Estimation not feasible					
ET11	Environment and communities	Carbon emissions reductions	Rough estimate of magnitude*		✓	Net present value of carbon avoided through moving to 100% renewables for own use electricity	320,138	0.3
ET12	Environment and communities	Caring for the natural environment	Quantification for CVP	✓		Benefit delivered by a 10% increase in current natural capital value	32,446,203	32.4
ET13	Innovation	Innovating to support vulnerable consumers	Estimation not feasible					
ET14	Innovation	Innovation in decarbonising materials and methods	Quantification for CVP	✓		Net present value of expected carbon savings from research into SF6 and carbon free construction materi	13,096,055	13.1
ET15	Innovation	Deeside Centre for Innovation	Quantification for CVP	Quantified by NGET		Estimated based on an assumed benefits multiplier	#REF!	#REF!
ET16	Innovation	Lead decarbonisation implementing the Clean Growth St.	Estimation not feasible					
ET17	Innovation	Digitisation of all maintenance, monitoring and testing of	Estimation not feasible					
ET18	Innovation	Digitisation to speed up connections	Estimation not feasible					
ET19	Transparency	Transparency in reporting and sharing expertise	Estimation not feasible					
Total for CVP							#REF!	#REF!
Total for rough estimates							£783,586	£0.8

***Where these estimates of magnitude are presented externally, we recommend using the following caveat:** "These figures are highly indicative because many of the input assumptions are very uncertain. They should only be interpreted as a rough indication of the possible order of magnitude of these benefits, given the assumptions made."

Categories
 Quantification for CVP
 Rough estimate of magnitude*
 Estimation not feasible
 TBC

Optimisation of harmonic filtering

Relates to NGET CVP1 - Optimisation of harmonic filtering
 Source: RIIO-2 SO-TO interface optimisation-v3, NGET business plan

Developer/OFTO cost (£m) in NPV terms	66.85	Source: Atkins report for NGET
NGET cost (£m) in NPV terms	48.03	Source: Atkins report for NGET
NPV of NGET generated saving through whole systems approach (£m)	18.82	

	Year	0	1	2	3	4	5
		2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
	NPV to 2019/20	2021	2022	2023	2024	2025	2026
Discount factor		1.00	0.97	0.93	0.90	0.87	0.84

Net Benefits (£m)	
Whole systems approach	18.82
Net present value (£m)	£18.82

ETS Tougher Energy Not Supplied (ENS) targets

Relates to NGET CVP4 - Tougher energy not supplied (ENS) target

ENS incentive rate in T1 (£)	16,000
NGET sharing factor in T1	47%
ENS target in T1 (MWh per year)	254
Discounted target for T1	175

	Year					
	2021	2022	2023	2024	2025	2026
NPV to 201920	1.00	0.97	0.93	0.90	0.87	0.84
Targets						
Counterfactual target level (MWh per year)		254	254	254	254	254
Proposed T1 target		175	175	175	175	175
Difference in target		79	79	79	79	79
Reward calibration						
Incentive rate	16,000	16,000	16,000	16,000	16,000	16,000
Sharing factor	47%	47%	47%	47%	47%	47%
Rewards						
Confidence in rewards		592,816	592,816	592,816	592,816	592,816
Discounted reward		592,816	592,816	592,816	592,816	592,816

Source: Ofgem T1 initial proposals, outputs and incentives: <https://www.ofgem.gov.uk/ofgem-publications/63713/foi-t1-initial-proposals-ngg-and-ngel-overview-2707212.pdf>, page 15

Source: Ofgem T1 Final proposals, outputs and incentives: <https://www.ofgem.gov.uk/ofgem-publications/53613/foi-t1-final-proposals-ngg-and-ngel-overview-2707212.pdf>, page 118

Ofgem states that its method for calculating rewards is "£16,000/MWh multiplied by the efficiency incentive rate". Source: https://www.ofgem.gov.uk/system/uploads/attachmentata/2019/03/16_ofgem_2019_annual_report_final_version_published.pdf, page 17

ET6 Adding environmental value to flood protection sites

Number of flood protection sites	40	
Baseline value per hectare	£115,962	Based on NG work on enhancing environment of non-operational land
Estimated average ET site size (hectares)	1	Based on input from NG
Estimated total size of flood protection sites (hectares)	40	
Total baseline value	£4,638,485	
Assuming a 10% increase	£5,102,334	
Consumer benefit	£463,849	

ET8 Supporting local communities - NGET calculation

Relates to NGET CUP8 - Supporting local urban communities

Social benefit calculation

Cost of LIP	£50,000,000						
Assumed benefit cost ratio	-1.4						

NGET assumption

	2021	2022	2023	2024	2025	2026
Discount factor	1.00	0.97	0.93	0.90	0.87	0.84
Annual cost	£10,000,000	£10,000,000	£10,000,000	£10,000,000	£10,000,000	£10,000,000
Annual assumed benefit	£15,000,000	£15,000,000	£15,000,000	£15,000,000	£15,000,000	£15,000,000
Annual assumed net benefit	£5,000,000	£5,000,000	£5,000,000	£5,000,000	£5,000,000	£5,000,000
Total net benefit	£22,575,261.88					

Supporting evidence of social benefit

Based on social return on investment study		
Benefit to cost ratio	3.06	Source: https://www.aurigaservices.co.uk/social-return-on-investment-study/
Consumer benefit (2019/20 prices)	£69,088,301.34	

Based on willingness to pay evidence		
WTP supporting local communities (domestic consumers)	£8.26	Source: NERA WTP report
WTP supporting local communities (non-domestic consumers)	£19.23	Note: Number of households in England and Wales in 2017. Source: ONS, https://www.ons.gov.uk/peoplepopulationandcommunity/birthdeathsandmarriages/families/adhocs/00374totalnumberofhouseholdbyregionandcountryoftheuk1996to2015
Number of households	24,021,700	Note: Number of private sector businesses in England and Wales in 2019. Source: BEIS, https://www.gov.uk/government/statistics/business-population-estimates-2019 , Table 26
Number of non-domestic consumers	5,409,700	
Willingness to pay across all domestic consumers	£198,419,242	
Willingness to pay across all non-domestic consumers	£104,028,531	
Total willingness to pay (annual)	£302,447,773	
Total willingness to pay	£1,512,238,569	

Raw data on community spend

Month	Community grant spending (2018)	
January	£REF1	Source: "Raw data on ET community grants" tab
February	£REF1	
March	£REF1	
April	£REF1	
May	£REF1	
June	£REF1	
July	£REF1	
August	£REF1	
September	£0.00	
October	£REF1	
November	£0.00	
Total	£REF1	
Annual estimate	£REF1	
5 year estimate (2018 forecast)	£REF1	

ET12 Natural environment improvements

Release to NGET CVPS - Cairns for the natural environment

ET Sustainability Sites	28
Total Hectares	377
Baseline Value*	141,737,253
Baseline Value** per hectare	£115,952
ET Land Portfolio (Hectares)	2,798
Total Baseline Value	£324,462,026
20% Increase	£389,334,432
Consumer Benefit	£64,872,406

* Inclusive Natural Capital value over 30 Years

Calculation of social discount rate factor 0.036

198 Treasury open book social time preference rate of 3.5%

Year 1	0.97	0.93	0.90	0.87	0.84	0.81	0.79	0.76	0.73	0.71	0.68	0.66	0.64	0.62	0.60	0.58	0.56	0.54	0.52	0.50	0.49	0.47	0.46	0.44	0.42	0.41	0.40	0.38	0.37	
Year 2																														
Year 3																														
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Consumer Benefit over 30 years £14,071,851

Developing alternatives to SF6

Relates to NGET CVP7 - Developing alternatives to SF6

Potential annual CO2 savings through development of SF6 alternatives (tonnes)

Conservative estimate of proportion of annual CO2 savings that can be achieved in T2

Conservative estimate of proportion of annual CO2 savings that can be achieved in T3

Cost of SF6 and alternative gases projects (£m)

Discount factor

Costs (£m)

T2 investment for SF6 reduction

Present value of costs

Benefits

Total CO2 saved through SF6 alternatives (tonnes)

Non-traded carbon price (2018 £)

Benefit from carbon reduction (£m)

Present value of benefits

Net present value (£m)



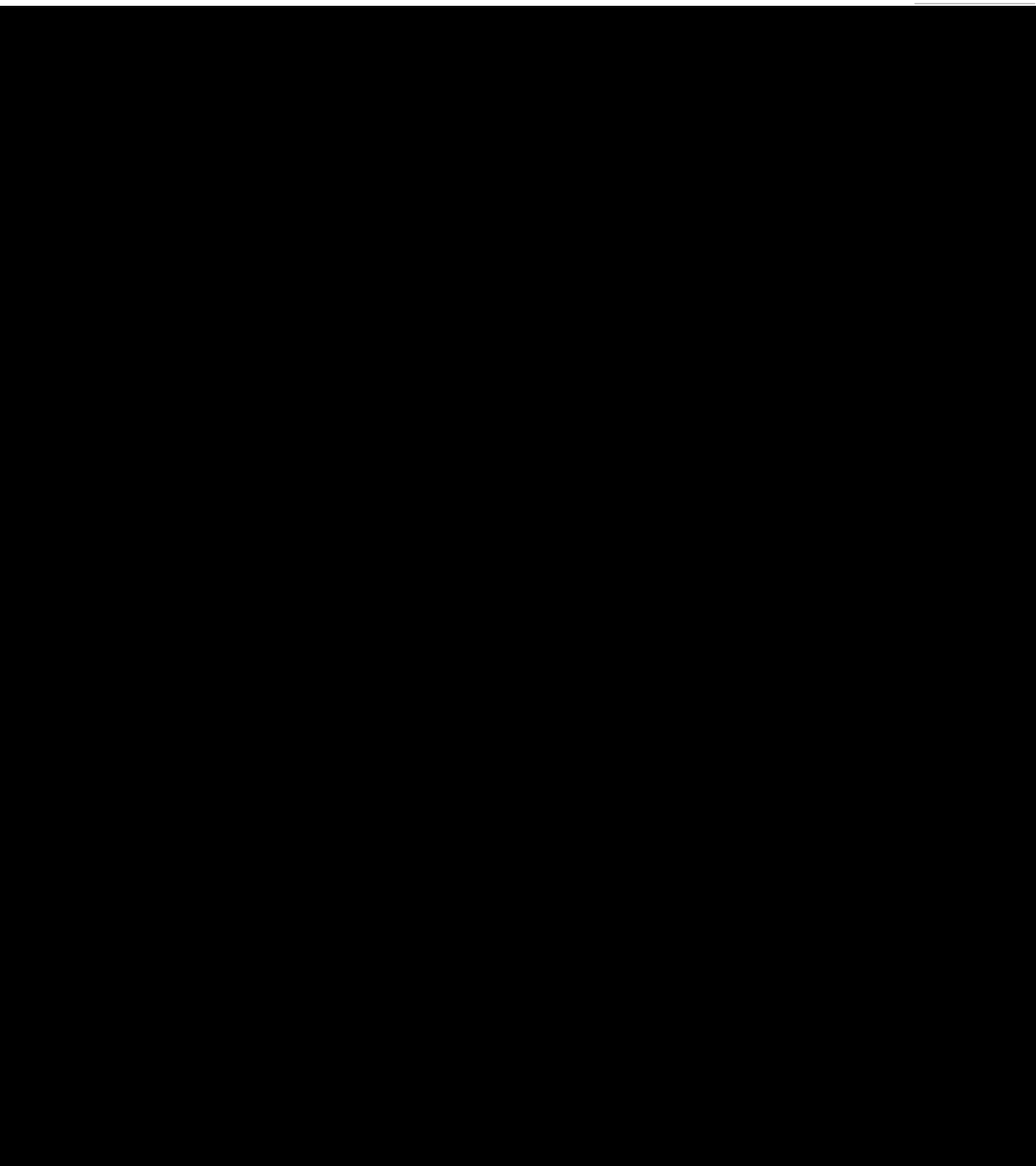
250,000	
0%	Assumption based on conversations with NG
20%	Assumption based on conversations with NG
2.50	

Year	0 2020/21	1 2021/22	2 2022/23	3 2023/24	4 2024/25	5 2025/26	6 2026/27
		T2					
NPV to 2019/20	2021	2022	2023	2024	2025	2026	2027
	1.00	0.97	0.93	0.90	0.87	0.84	0.81
		0.50	0.50	0.50	0.50	0.50	0.00
2.26							
		0.00	0.00	0.00	0.00	0.00	50,000.00
		71.59	72.74	73.90	75.05	76.21	77.36
		0.00	0.00	0.00	0.00	0.00	3.87
15.35							
£13.10							



7	8	9	10
2027/28	2028/29	2029/30	2030/31
T3			
2028	2029	2030	2031
0.79	0.76	0.73	0.71
0.00	0.00	0.00	0.00
50,000.00	50,000.00	50,000.00	50,000.00
78.52	79.67	80.83	88.33
3.93	3.98	4.04	4.42

Redacted to remove personal data and project-specific information. This data was used for an earlier



version of tab ET8, but was not used for the final version

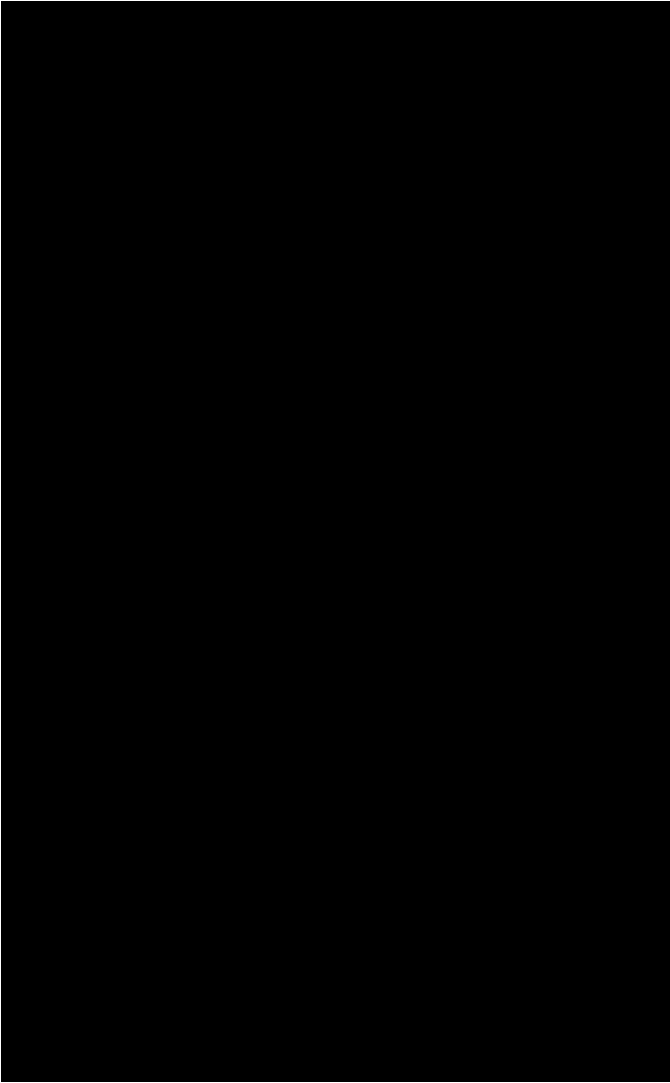


TABLE 26

UK Regional Time Series 2010-2019¹

Number of businesses in the private sector, by number of employees, regions, start 2010-2019

Numbers	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector										
United Kingdom	4,483,000	4,588,500	4,817,900	4,914,400	5,247,000	5,401,200	5,498,000	5,694,500	5,667,500	5,867,800
North East	123,700	120,000	132,300	134,500	150,600	135,000	146,400	142,500	162,800	151,500
North West	436,400	462,100	437,500	485,400	506,800	531,200	521,700	529,800	544,800	578,700
Yorkshire and the Humber	332,000	332,900	343,000	349,900	353,200	380,900	391,300	419,200	400,700	428,700
East Midlands	302,800	310,200	324,900	315,700	330,900	356,400	370,300	370,800	367,700	356,400
West Midlands	357,500	339,400	373,500	386,200	412,600	399,700	412,600	449,800	448,200	479,500
East of England	469,100	474,500	507,400	499,000	549,000	529,100	554,900	572,400	564,800	598,800
London	718,600	752,800	820,900	857,900	939,300	987,400	1,016,600	1,062,300	1,096,100	1,091,900
South East	733,200	754,600	771,600	792,400	837,300	879,200	899,000	928,900	873,600	940,300
South West	414,400	430,600	478,200	467,600	513,000	531,900	514,900	532,000	546,300	561,600
England	3,887,900	3,977,200	4,189,200	4,288,700	4,592,600	4,730,700	4,827,600	5,007,700	5,004,800	5,187,500
Wales	190,800	195,900	195,000	189,500	213,200	212,800	221,500	209,000	198,600	222,200
Scotland	285,000	292,600	319,100	326,100	322,700	341,000	324,800	346,200	331,400	333,900
Northern Ireland	119,400	122,700	114,500	110,200	118,500	116,700	124,000	131,700	132,700	124,200

North East

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	123,700	120,000	132,300	134,500	150,600	135,000	146,400	142,500	162,800	151,500
All SME (0-249)	123,500	119,800	132,100	134,300	150,400	134,800	146,200	142,300	162,500	151,300
All small (0-49)	122,600	118,800	131,100	133,300	149,300	133,700	145,100	141,200	161,500	150,200
All employing businesses	37,100	36,200	36,500	35,600	37,900	38,900	39,100	39,800	40,000	40,800
With no employees	86,700	83,800	95,800	98,900	112,700	96,200	107,300	102,700	122,700	110,700
1-9	30,400	29,600	30,000	28,800	30,700	31,400	31,700	32,300	32,500	33,100
10-49	5,500	5,300	5,400	5,600	5,900	6,200	6,100	6,200	6,200	6,400
50-249	1,000	1,000	1,000	1,000	1,000	1,100	1,100	1,100	1,100	1,100
250 or more	200	200	200	200	200	200	200	200	200	200

North West

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	436,400	462,100	437,500	485,400	506,800	531,200	521,700	529,800	544,800	578,700
All SME (0-249)	435,800	461,400	436,900	484,800	506,200	530,500	521,000	529,100	544,000	577,900
All small (0-49)	432,700	458,200	433,800	481,500	502,800	527,000	517,400	525,400	540,300	574,100
All employing businesses	127,400	124,600	126,000	123,000	129,500	132,100	132,700	136,400	141,800	142,200
With no employees	309,000	337,400	311,500	362,500	377,300	399,100	389,000	393,400	402,900	436,600
1-9	105,200	102,400	103,300	99,300	104,800	106,300	106,900	110,100	115,200	115,300
10-49	18,400	18,300	18,900	19,800	20,700	21,500	21,500	22,000	22,200	22,300
50-249	3,100	3,200	3,200	3,300	3,400	3,500	3,600	3,600	3,700	3,800
250 or more	600	600	600	600	600	700	700	700	700	800

Yorkshire and the Humber

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	332,000	332,900	343,000	349,900	353,200	380,900	391,300	419,200	400,700	428,700
All SME (0-249)	331,600	332,500	342,500	349,400	352,800	380,400	390,800	418,700	400,100	428,200
All small (0-49)	329,100	330,000	340,000	346,900	350,200	377,700	388,100	415,900	397,300	425,300
All employing businesses	92,900	91,600	93,200	90,900	95,700	98,000	98,400	101,000	101,600	103,200
With no employees	239,100	241,400	249,800	259,000	257,600	282,900	292,900	318,200	299,000	325,500
1-9	76,100	74,900	76,300	73,400	77,300	78,900	79,300	81,600	82,200	83,600
10-49	13,900	13,800	14,000	14,500	15,300	16,000	15,900	16,100	16,100	16,200
50-249	2,400	2,500	2,400	2,500	2,600	2,700	2,700	2,800	2,800	2,900
250 or more	500	500	500	500	500	500	500	500	600	600

East Midlands

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	302,800	310,200	324,900	315,700	330,900	356,400	370,300	370,800	367,700	356,400
All SME (0-249)	302,400	309,800	324,500	315,300	330,400	356,000	369,800	370,300	367,200	355,900
All small (0-49)	300,200	307,600	322,300	313,100	328,200	353,600	367,400	367,900	364,700	353,400
All employing businesses	87,100	85,200	86,200	84,100	88,400	90,400	93,000	94,000	95,300	95,900
With no employees	215,700	225,100	238,700	231,700	242,500	266,100	277,200	276,800	272,400	260,600
1-9	71,900	70,100	70,800	68,100	71,900	73,100	75,500	76,400	77,600	78,100
10-49	12,600	12,500	12,800	13,300	13,900	14,500	14,600	14,600	14,800	14,700
50-249	2,200	2,200	2,200	2,200	2,200	2,300	2,400	2,400	2,500	2,600
250 or more	400	400	400	400	400	500	500	500	500	500

West Midlands

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	357,500	339,400	373,500	386,200	412,600	399,700	412,600	449,800	448,200	479,500
All SME (0-249)	357,000	338,900	373,000	385,700	412,000	399,100	412,000	449,200	447,500	478,900
All small (0-49)	354,600	336,400	370,600	383,100	409,400	396,400	409,300	446,500	444,700	476,000
All employing businesses	103,400	100,700	101,700	99,300	104,100	106,400	107,800	114,700	118,000	117,500
With no employees	254,200	238,800	271,900	287,000	308,500	293,300	304,800	335,100	330,200	362,000
1-9	85,700	83,100	83,800	80,500	84,600	86,100	87,500	93,800	96,900	96,500
10-49	14,800	14,600	14,900	15,600	16,300	17,000	17,000	17,600	17,700	17,500
50-249	2,400	2,500	2,500	2,600	2,600	2,700	2,700	2,700	2,800	2,800
250 or more	500	500	500	600	600	600	600	600	600	700

East of England

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	469,100	474,500	507,400	499,000	549,000	529,100	554,900	572,400	564,800	598,800
All SME (0-249)	468,500	473,900	506,800	498,400	548,300	528,400	554,200	571,700	564,100	598,100
All small (0-49)	465,700	471,000	504,000	495,500	545,400	525,400	551,100	568,600	560,800	594,800
All employing businesses	123,500	121,600	123,500	120,600	127,000	130,100	131,300	139,600	138,600	143,200
With no employees	345,600	352,900	383,900	378,400	422,000	399,000	423,600	432,900	426,200	455,600
1-9	103,600	101,400	102,900	99,200	104,600	106,800	108,000	115,600	114,500	119,000
10-49	16,600	16,700	17,200	18,000	18,800	19,600	19,500	20,200	20,000	20,200
50-249	2,800	2,900	2,800	2,800	2,900	3,000	3,100	3,200	3,300	3,300
250 or more	600	600	600	700	600	700	700	700	700	700

London

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	718,600	752,800	820,900	857,900	939,300	987,400	1,016,600	1,062,300	1,096,100	#####
All SME (0-249)	717,300	751,500	819,500	856,500	937,900	985,900	1,015,100	1,060,700	1,094,500	#####
All small (0-49)	712,700	746,300	814,600	851,400	932,600	980,300	1,009,400	1,054,900	1,088,400	#####
All employing businesses	174,600	179,600	190,400	189,800	203,900	214,800	220,600	231,100	237,500	243,400
With no employees	543,900	573,200	630,400	668,100	735,400	772,600	796,100	831,200	858,600	848,400
1-9	144,400	146,900	157,000	154,200	167,000	175,800	180,800	190,100	195,400	200,300
10-49	24,400	26,200	27,200	29,100	30,200	32,000	32,500	33,500	34,400	35,200
50-249	4,600	5,200	4,900	5,100	5,300	5,600	5,700	5,900	6,100	6,300
250 or more	1,300	1,300	1,300	1,400	1,400	1,500	1,500	1,600	1,600	1,700

South East

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	733,200	754,600	771,600	792,400	837,300	879,200	899,000	928,900	873,600	940,300
All SME (0-249)	732,200	753,600	770,500	791,300	836,200	878,100	897,900	927,700	872,400	939,100
All small (0-49)	728,000	749,300	766,300	787,000	831,600	873,400	893,100	922,900	867,500	934,100
All employing businesses	185,800	183,600	187,500	183,300	193,100	198,100	199,400	203,400	206,700	210,400
With no employees	547,400	571,000	584,100	609,100	644,200	681,200	699,600	725,500	666,900	729,900
1-9	155,000	152,600	156,100	150,400	159,100	162,500	163,900	167,500	170,500	173,900
10-49	25,600	25,700	26,100	27,400	28,400	29,800	29,600	29,900	30,100	30,300
50-249	4,200	4,400	4,300	4,400	4,500	4,700	4,800	4,900	5,000	5,000
250 or more	1,000	1,000	1,000	1,000	1,100	1,100	1,100	1,100	1,200	1,200

South West

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	414,400	430,600	478,200	467,600	513,000	531,900	514,900	532,000	546,300	561,600

All SME (0-249)	414,000	430,200	477,800	467,200	512,600	531,400	514,400	531,500	545,700	561,100
All small (0-49)	411,700	427,800	475,500	464,700	510,100	528,800	511,700	528,700	542,900	558,200
All employing businesses	116,100	115,000	115,700	112,900	117,900	119,900	120,400	122,100	123,500	124,500
With no employees	298,400	315,700	362,500	354,700	395,100	411,900	394,500	409,800	422,800	437,100
1-9	97,500	96,300	96,600	93,000	97,200	98,300	98,700	100,100	101,200	102,000
10-49	15,900	15,900	16,400	17,100	17,800	18,600	18,500	18,800	18,900	19,000
50-249	2,300	2,400	2,300	2,400	2,500	2,600	2,700	2,700	2,800	2,900
250 or more	400	400	400	400	400	500	500	500	500	500

England

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	3,887,900	#####	#####	4,288,700	4,592,600	4,730,700	4,827,600	5,007,700	5,004,800	#####
All SME (0-249)	3,882,300	#####	#####	4,282,900	4,586,700	4,724,500	4,821,300	5,001,200	4,998,200	#####
All small (0-49)	3,857,300	#####	#####	4,256,500	4,559,600	4,696,500	4,792,500	4,972,000	4,968,000	#####
All employing businesses	1,047,900	#####	#####	1,039,400	1,097,500	1,128,500	1,142,600	1,182,100	1,203,200	#####
With no employees	2,840,000	#####	#####	3,249,300	3,495,100	3,602,200	3,685,100	3,825,600	3,801,600	#####
1-9	869,700	857,200	876,800	846,900	897,100	919,200	932,300	967,500	986,000	#####
10-49	147,600	148,900	152,700	160,300	167,400	175,100	175,200	178,900	180,400	181,900
50-249	25,000	26,200	25,500	26,400	27,100	28,100	28,700	29,300	30,100	30,700
250 or more	5,600	5,600	5,700	5,800	5,900	6,100	6,400	6,400	6,600	6,800

Wales

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	190,800	195,900	195,000	189,500	213,200	212,800	221,500	209,000	198,600	222,200
All SME (0-249)	190,600	195,700	194,800	189,300	213,000	212,600	221,300	208,800	198,400	221,900
All small (0-49)	189,500	194,600	193,700	188,100	211,900	211,400	220,100	207,500	197,100	220,600
All employing businesses	53,300	52,100	52,400	51,200	53,400	54,500	54,200	54,300	54,600	56,700
With no employees	137,400	143,800	142,600	138,300	159,800	158,300	167,300	154,600	144,100	165,500
1-9	44,900	43,700	44,000	42,400	44,200	44,900	44,700	44,700	44,700	46,700
10-49	7,100	7,100	7,000	7,400	7,800	8,200	8,100	8,200	8,300	8,500
50-249	1,100	1,100	1,100	1,200	1,200	1,200	1,200	1,200	1,300	1,300
250 or more	200	200	200	200	200	200	200	200	200	200

Scotland

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	285,000	292,600	319,100	326,100	322,700	341,000	324,800	346,200	331,400	333,900
All SME (0-249)	284,600	292,100	318,600	325,600	322,200	340,500	324,300	345,700	330,900	333,400
All small (0-49)	282,300	289,800	316,400	323,400	319,800	338,100	321,900	343,300	328,400	330,900
All employing businesses	87,600	87,400	90,600	89,100	93,700	95,400	95,000	95,100	95,900	96,900
With no employees	197,500	205,200	228,500	237,000	229,000	245,600	229,800	251,000	235,500	237,100
1-9	71,900	71,600	74,700	72,400	76,300	77,400	77,100	77,200	77,700	78,600
10-49	12,900	13,000	13,200	14,000	14,500	15,100	15,000	15,100	15,300	15,300
50-249	2,300	2,400	2,200	2,300	2,400	2,400	2,400	2,400	2,500	2,500
250 or more	500	500	500	500	500	500	500	500	500	500

Northern Ireland

Size of business	Start of									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All private sector businesses	119,400	122,700	114,500	110,200	118,500	116,700	124,000	131,700	132,700	124,200
All SME (0-249)	119,200	122,600	114,400	110,000	118,300	116,500	123,800	131,600	132,600	124,000
All small (0-49)	118,400	121,800	113,600	109,200	117,500	115,600	123,000	130,600	131,600	123,000
All employing businesses	35,700	33,600	33,200	31,300	32,800	33,500	33,700	35,300	35,700	35,300
With no employees	83,600	89,100	81,300	78,800	85,700	83,200	90,300	96,400	97,100	88,900
1-9	28,800	27,400	27,200	25,300	26,800	27,300	27,400	28,500	28,900	28,400
10-49	5,900	5,300	5,000	5,000	5,000	5,200	5,300	5,700	5,700	5,700
50-249	900	900	800	800	900	900	900	900	1,000	1,000
250 or more	100	100	100	100	100	100	100	200	200	200

1. To enable a robust comparison over time, this time series has been produced on a consistent basis. Where there were discontinuities or gaps in the data, a modelling approach was taken to estimate the business counts. These estimates supersede those published in previous BPE (2010-2015) series.

A . symbol indicates where data is not available.

Numbers of businesses are rounded to the nearest 100. Consequently, totals and sub totals may not exactly match the sum of their parts.

Households in the UK by region, 1996 to 2017

Region	1996	1997	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
North East	1,068,100	1,071,600	1,085,700	1,066,400	1,075,400	1,079,600	1,096,000	1,099,600	1,109,400	1,104,900	1,116,600	1,111,200	1,138,900	1,139,400	1,147,000	1,137,900	1,152,600	1,122,100	1,132,600	1,154,400	1,190,800	1,141,400
North West	2,794,400	2,775,700	2,789,800	2,784,900	2,801,000	2,798,900	2,831,900	2,805,400	2,842,100	2,863,400	2,901,700	2,940,400	2,941,000	2,956,200	2,989,700	3,033,100	2,964,500	2,988,700	2,985,500	3,057,900	3,018,100	3,078,400
Yorkshire and The Humber	2,034,600	2,035,000	2,050,900	2,078,300	2,092,000	2,110,500	2,135,700	2,139,000	2,176,800	2,174,500	2,184,000	2,209,500	2,243,700	2,242,000	2,275,700	2,271,900	2,318,100	2,292,800	2,268,800	2,280,700	2,330,400	2,311,600
East Midlands	1,655,800	1,688,000	1,700,700	1,701,600	1,738,200	1,729,900	1,742,700	1,765,000	1,791,100	1,779,200	1,836,700	1,867,000	1,872,500	1,895,500	1,915,000	1,894,800	1,910,300	1,911,500	1,882,700	1,945,900	1,955,200	1,995,400
West Midlands	2,106,700	2,120,700	2,163,800	2,144,300	2,146,900	2,130,900	2,178,700	2,195,600	2,163,400	2,187,200	2,185,500	2,237,800	2,259,800	2,276,800	2,283,000	2,287,000	2,312,000	2,304,500	2,323,700	2,383,900	2,356,500	2,317,800
East	2,127,400	2,165,000	2,168,000	2,205,000	2,237,100	2,247,800	2,262,900	2,258,300	2,275,500	2,316,500	2,350,600	2,334,900	2,412,200	2,400,600	2,434,700	2,470,400	2,458,000	2,623,100	2,496,900	2,538,700	2,530,900	2,573,600
London	2,887,000	2,885,900	2,872,600	2,901,200	2,923,900	2,963,800	2,971,400	2,979,400	2,963,300	2,999,900	3,000,800	3,004,200	3,062,600	3,085,300	3,060,300	3,180,600	3,188,600	3,210,300	3,225,000	3,253,000	3,278,400	3,285,400
South East	3,170,000	3,202,800	3,222,400	3,256,400	3,272,500	3,265,500	3,347,500	3,416,300	3,370,800	3,454,400	3,463,800	3,451,900	3,483,300	3,492,800	3,512,300	3,538,100	3,602,000	3,582,200	3,613,100	3,613,900	3,650,900	3,630,100
South West	1,966,800	1,990,600	2,003,300	2,054,300	2,044,000	2,084,300	2,128,500	2,132,200	2,127,800	2,156,800	2,181,700	2,191,900	2,204,500	2,228,000	2,209,100	2,255,500	2,285,400	2,294,200	2,284,000	2,385,200	2,314,100	2,362,900
England (Total)	19,810,800	19,905,300	20,096,900	20,191,500	20,331,400	20,416,200	20,685,300	20,780,900	20,820,500	21,036,500	21,211,600	21,348,800	21,589,000	21,716,400	21,887,000	22,088,700	22,171,600	22,209,300	22,292,200	22,583,600	22,823,400	22,894,800
Wales	1,177,500	1,200,600	1,187,700	1,197,200	1,220,800	1,237,600	1,215,800	1,244,300	1,244,600	1,234,300	1,246,200	1,278,900	1,274,000	1,280,900	1,309,700	1,279,900	1,332,300	1,307,300	1,297,600	1,325,100	1,336,200	1,327,100
Scotland	2,173,800	2,184,500	2,190,000	2,210,200	2,224,200	2,238,300	2,247,500	2,295,600	2,276,000	2,271,100	2,288,900	2,294,800	2,312,200	2,339,600	2,363,000	2,341,200	2,383,500	2,414,700	2,414,500	2,376,200	2,370,400	2,416,000
Northern Ireland	576,500	574,700	601,100	610,200	619,700	642,800	643,100	636,100	653,200	675,500	662,400	685,900	700,200	704,800	710,500	719,800	726,600	729,300	727,500	757,700	758,700	790,100
UK (Total)	23,738,500	23,865,100	24,005,700	24,208,100	24,396,200	24,534,900	24,791,600	24,817,100	24,993,300	25,217,400	25,378,900	25,608,500	25,875,400	26,041,800	26,240,200	26,408,600	26,614,000	26,680,600	26,731,900	27,041,500	27,088,700	27,227,700

Source: Labour Force Survey (LFS), Office for National Statistics
Produced by Demographic Analysis Unit, Office for National Statistics
pop.info@ons.gov.uk

The latest release for data on Families and Households can be found here: <http://www.ons.gov.uk/ons/tel/family-demography/families-and-households/index.html>

1. Estimates are all rounded to the nearest hundred.
2. Totals may not sum due to rounding.
3. The Labour Force Survey is a household survey of people in the UK. It covers people in private households, NHS accommodation and students in halls of residence whose parents live in the UK. However people in other communal establishments such as prisons are excluded.
4. As the estimates are based on a survey, they are subject to sampling variability. This is because the sample selected is only one of a large number of possible samples that could have been drawn from the population.

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Green Book Supplementary Guidance
Standard Discount Factors

Year	Discount Rate	Discount Factor
0		1
1	3.500%	0.9662
2	3.500%	0.9335
3	3.500%	0.9019
4	3.500%	0.8714
5	3.500%	0.8420
6	3.500%	0.8135
7	3.500%	0.7860
8	3.500%	0.7594
9	3.500%	0.7337
10	3.500%	0.7089
11	3.500%	0.6849
12	3.500%	0.6618
13	3.500%	0.6394
14	3.500%	0.6178
15	3.500%	0.5969
16	3.500%	0.5767
17	3.500%	0.5572
18	3.500%	0.5384
19	3.500%	0.5202
20	3.500%	0.5026
21	3.500%	0.4856
22	3.500%	0.4692
23	3.500%	0.4533
24	3.500%	0.4380
25	3.500%	0.4231
26	3.500%	0.4088
27	3.500%	0.3950
28	3.500%	0.3817
29	3.500%	0.3687
30	3.500%	0.3563
31	3.000%	0.3459
32	3.000%	0.3358
33	3.000%	0.3260
34	3.000%	0.3165
35	3.000%	0.3073
36	3.000%	0.2984
37	3.000%	0.2897
38	3.000%	0.2812
39	3.000%	0.2731
40	3.000%	0.2651
41	3.000%	0.2574
42	3.000%	0.2499
43	3.000%	0.2426
44	3.000%	0.2355
45	3.000%	0.2287
46	3.000%	0.2220
47	3.000%	0.2156
48	3.000%	0.2093
49	3.000%	0.2032
50	3.000%	0.1973
51	3.000%	0.1915
52	3.000%	0.1859
53	3.000%	0.1805
54	3.000%	0.1753
55	3.000%	0.1702
56	3.000%	0.1652
57	3.000%	0.1604
58	3.000%	0.1557
59	3.000%	0.1512
60	3.000%	0.1468
61	3.000%	0.1425
62	3.000%	0.1384
63	3.000%	0.1343
64	3.000%	0.1304
65	3.000%	0.1266
66	3.000%	0.1229
67	3.000%	0.1193
68	3.000%	0.1159
69	3.000%	0.1125
70	3.000%	0.1092
71	3.000%	0.1060
72	3.000%	0.1029
73	3.000%	0.1000
74	3.000%	0.0970
75	3.000%	0.0942
76	2.500%	0.0919
77	2.500%	0.0897
78	2.500%	0.0875
79	2.500%	0.0854
80	2.500%	0.0833
81	2.500%	0.0812
82	2.500%	0.0793
83	2.500%	0.0773
84	2.500%	0.0754
85	2.500%	0.0736
86	2.500%	0.0718



87	2.500%	0.0701
88	2.500%	0.0683
89	2.500%	0.0667
90	2.500%	0.0651
91	2.500%	0.0635
92	2.500%	0.0619
93	2.500%	0.0604
94	2.500%	0.0589
95	2.500%	0.0575
96	2.500%	0.0561
97	2.500%	0.0547
98	2.500%	0.0534
99	2.500%	0.0521
100	2.500%	0.0508
101	2.500%	0.0496
102	2.500%	0.0484
103	2.500%	0.0472
104	2.500%	0.0460
105	2.500%	0.0449
106	2.500%	0.0438
107	2.500%	0.0428
108	2.500%	0.0417
109	2.500%	0.0407
110	2.500%	0.0397
111	2.500%	0.0387
112	2.500%	0.0378
113	2.500%	0.0369
114	2.500%	0.0360
115	2.500%	0.0351
116	2.500%	0.0342
117	2.500%	0.0334
118	2.500%	0.0326
119	2.500%	0.0318
120	2.500%	0.0310
121	2.500%	0.0303
122	2.500%	0.0295
123	2.500%	0.0288
124	2.500%	0.0281
125	2.500%	0.0274

RPI conversion table

	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Index	188.15	193.11	200.32	208.59	214.78	215.77	226.48	237.34	244.65	251.73	258.67	259.43	264.99	274.91	283.31	289.87
2004/05	1.0000	0.9743	0.9393	0.9020	0.8760	0.8720	0.8308	0.7927	0.7690	0.7474	0.7331	0.7252	0.7100	0.6844	0.6641	0.6491
2005/06	1.0264	1.0000	0.9640	0.9258	0.8991	0.8950	0.8527	0.8136	0.7892	0.7671	0.7524	0.7443	0.7287	0.7024	0.6816	0.6662
2006/07	1.0547	1.0373	1.0000	0.9603	0.9326	0.9284	0.8845	0.8440	0.8187	0.7957	0.7805	0.7721	0.7559	0.7287	0.7071	0.6911
2007/08	1.1086	1.0802	1.0413	1.0000	0.9712	0.9657	0.9210	0.8789	0.8525	0.8296	0.8127	0.8040	0.7872	0.7588	0.7363	0.7196
2008/09	1.1416	1.1122	1.0722	1.0297	1.0000	0.9954	0.9484	0.9050	0.8778	0.8532	0.8368	0.8279	0.8105	0.7813	0.7581	0.7410
2009/10	1.1488	1.1173	1.0771	1.0344	1.0046	1.0000	0.9527	0.9091	0.8819	0.8571	0.8406	0.8317	0.8142	0.7849	0.7616	0.7444
2010/11	1.2037	1.1729	1.1306	1.0857	1.0544	1.0496	1.0000	0.9542	0.9266	0.8997	0.8824	0.8730	0.8546	0.8238	0.7994	0.7813
2011/12	1.2614	1.2291	1.1848	1.1378	1.1050	1.1000	1.0480	1.0000	0.9700	0.9428	0.9247	0.9148	0.8957	0.8633	0.8378	0.8188
2012/13	1.3004	1.2670	1.2214	1.1730	1.1392	1.1340	1.0804	1.0309	1.0000	0.9720	0.9533	0.9431	0.9233	0.8900	0.8636	0.8441
2013/14	1.3379	1.3038	1.2567	1.2068	1.1720	1.1667	1.1115	1.0608	1.0288	1.0000	0.9808	0.9703	0.9500	0.9157	0.8885	0.8694
2014/15	1.3642	1.3291	1.2813	1.2305	1.1950	1.1896	1.1333	1.0814	1.0490	1.0196	1.0000	0.9893	0.9686	0.9336	0.9060	0.8855
2015/16	1.3789	1.3435	1.2951	1.2437	1.2079	1.2024	1.1455	1.0931	1.0603	1.0306	1.0108	1.0000	0.9790	0.9437	0.9157	0.8950
2016/17	1.4084	1.3723	1.3229	1.2704	1.2338	1.2281	1.1701	1.1165	1.0830	1.0527	1.0324	1.0214	1.0000	0.9639	0.9353	0.9142
2017/18	1.4611	1.4256	1.3724	1.3179	1.2799	1.2741	1.2139	1.1583	1.1236	1.0921	1.0711	1.0596	1.0374	1.0000	0.9704	0.9484
2018/19	1.5058	1.4671	1.4143	1.3582	1.3190	1.3130	1.2509	1.1937	1.1579	1.1254	1.1038	1.0920	1.0691	1.0306	1.0000	0.9774
2019/20	1.5406	1.5011	1.4470	1.3896	1.3496	1.3434	1.2799	1.2213	1.1847	1.1515	1.1294	1.1173	1.0939	1.0544	1.0231	1.0000

Convert to

RPI Index

Source: <https://www.ons.gov.uk/economy/inflationandpriceindices/timeseries/chaw/mm23>

Period	Index
1987	101.9
1988	106.9
1989	115.2
1990	126.1
1991	133.5
1992	138.5
1993	140.7
1994	144.1
1995	149.1
1996	152.7
1997	157.5
1998	162.9
1999	165.4
2000	170.3
2001	173.3
2002	176.2
2003	181.3
2004	186.7
2005	192.0
2006	198.1
2007	206.6
2008	214.8
2009	213.7
2010	223.6
2011	235.2
2012	242.7
2013	250.1
2014	256.0
2015	258.5
2016	263.1
2017	272.5
2018	281.6
1987 Q1	100.3
1987 Q2	101.9
1987 Q3	102.1
1987 Q4	103.2
1988 Q1	103.7
1988 Q2	106.2
1988 Q3	107.7
1988 Q4	109.9
1989 Q1	111.7
1989 Q2	114.9
1989 Q3	116.0
1989 Q4	118.3
1990 Q1	120.4
1990 Q2	126.0
1990 Q3	128.1
1990 Q4	130.1
1991 Q1	130.8
1991 Q2	133.6
1991 Q3	134.2
1991 Q4	135.5
1992 Q1	136.2
1992 Q2	139.1

1992 Q3	139.0
1992 Q4	139.6
1993 Q1	138.7
1993 Q2	140.9
1993 Q3	141.3
1993 Q4	141.8
1994 Q1	142.0
1994 Q2	144.5
1994 Q3	144.6
1994 Q4	145.5
1995 Q1	146.8
1995 Q2	149.5
1995 Q3	149.9
1995 Q4	150.1
1996 Q1	150.9
1996 Q2	152.8
1996 Q3	153.1
1996 Q4	154.0
1997 Q1	154.9
1997 Q2	156.9
1997 Q3	158.4
1997 Q4	159.7
1998 Q1	160.2
1998 Q2	163.2
1998 Q3	163.7
1998 Q4	164.4
1999 Q1	163.7
1999 Q2	165.5
1999 Q3	165.6
1999 Q4	166.8
2000 Q1	167.5
2000 Q2	170.6
2000 Q3	170.9
2000 Q4	172.0
2001 Q1	171.8
2001 Q2	173.9
2001 Q3	174.0
2001 Q4	173.8
2002 Q1	173.9
2002 Q2	176.0
2002 Q3	176.6
2002 Q4	178.2
2003 Q1	179.2
2003 Q2	181.3
2003 Q3	181.8
2003 Q4	182.9
2004 Q1	183.8
2004 Q2	186.3
2004 Q3	187.4
2004 Q4	189.2
2005 Q1	189.7
2005 Q2	191.9
2005 Q3	192.6
2005 Q4	193.7
2006 Q1	194.2
2006 Q2	197.6
2006 Q3	199.3
2006 Q4	201.4
2007 Q1	203.0

2007 Q2	206.3
2007 Q3	207.1
2007 Q4	209.8
2008 Q1	211.1
2008 Q2	215.3
2008 Q3	217.4
2008 Q4	215.5
2009 Q1	210.9
2009 Q2	212.6
2009 Q3	214.4
2009 Q4	216.9
2010 Q1	219.3
2010 Q2	223.5
2010 Q3	224.5
2010 Q4	227.0
2011 Q1	230.9
2011 Q2	234.9
2011 Q3	236.2
2011 Q4	238.6
2012 Q1	239.6
2012 Q2	242.2
2012 Q3	243.1
2012 Q4	246.0
2013 Q1	247.4
2013 Q2	249.7
2013 Q3	250.9
2013 Q4	252.5
2014 Q1	253.9
2014 Q2	256.0
2014 Q3	256.9
2014 Q4	257.4
2015 Q1	256.4
2015 Q2	258.5
2015 Q3	259.3
2015 Q4	260.0
2016 Q1	260.0
2016 Q2	262.2
2016 Q3	264.2
2016 Q4	265.8
2017 Q1	267.7
2017 Q2	271.5
2017 Q3	274.2
2017 Q4	276.4
2018 Q1	277.5
2018 Q2	280.6
2018 Q3	283.3
2018 Q4	284.9
2019 Q1	284.4
2019 Q2	289.0
2019 Q3	290.7
1987 JAN	100.0
1987 FEB	100.4
1987 MAR	100.6
1987 APR	101.8
1987 MAY	101.9
1987 JUN	101.9
1987 JUL	101.8
1987 AUG	102.1
1987 SEP	102.4

1987 OCT	102.9
1987 NOV	103.4
1987 DEC	103.3
1988 JAN	103.3
1988 FEB	103.7
1988 MAR	104.1
1988 APR	105.8
1988 MAY	106.2
1988 JUN	106.6
1988 JUL	106.7
1988 AUG	107.9
1988 SEP	108.4
1988 OCT	109.5
1988 NOV	110.0
1988 DEC	110.3
1989 JAN	111.0
1989 FEB	111.8
1989 MAR	112.3
1989 APR	114.3
1989 MAY	115.0
1989 JUN	115.4
1989 JUL	115.5
1989 AUG	115.8
1989 SEP	116.6
1989 OCT	117.5
1989 NOV	118.5
1989 DEC	118.8
1990 JAN	119.5
1990 FEB	120.2
1990 MAR	121.4
1990 APR	125.1
1990 MAY	126.2
1990 JUN	126.7
1990 JUL	126.8
1990 AUG	128.1
1990 SEP	129.3
1990 OCT	130.3
1990 NOV	130.0
1990 DEC	129.9
1991 JAN	130.2
1991 FEB	130.9
1991 MAR	131.4
1991 APR	133.1
1991 MAY	133.5
1991 JUN	134.1
1991 JUL	133.8
1991 AUG	134.1
1991 SEP	134.6
1991 OCT	135.1
1991 NOV	135.6
1991 DEC	135.7
1992 JAN	135.6
1992 FEB	136.3
1992 MAR	136.7
1992 APR	138.8
1992 MAY	139.3
1992 JUN	139.3
1992 JUL	138.8
1992 AUG	138.9

1992 SEP	139.4
1992 OCT	139.9
1992 NOV	139.7
1992 DEC	139.2
1993 JAN	137.9
1993 FEB	138.8
1993 MAR	139.3
1993 APR	140.6
1993 MAY	141.1
1993 JUN	141.0
1993 JUL	140.7
1993 AUG	141.3
1993 SEP	141.9
1993 OCT	141.8
1993 NOV	141.6
1993 DEC	141.9
1994 JAN	141.3
1994 FEB	142.1
1994 MAR	142.5
1994 APR	144.2
1994 MAY	144.7
1994 JUN	144.7
1994 JUL	144.0
1994 AUG	144.7
1994 SEP	145.0
1994 OCT	145.2
1994 NOV	145.3
1994 DEC	146.0
1995 JAN	146.0
1995 FEB	146.9
1995 MAR	147.5
1995 APR	149.0
1995 MAY	149.6
1995 JUN	149.8
1995 JUL	149.1
1995 AUG	149.9
1995 SEP	150.6
1995 OCT	149.8
1995 NOV	149.8
1995 DEC	150.7
1996 JAN	150.2
1996 FEB	150.9
1996 MAR	151.5
1996 APR	152.6
1996 MAY	152.9
1996 JUN	153.0
1996 JUL	152.4
1996 AUG	153.1
1996 SEP	153.8
1996 OCT	153.8
1996 NOV	153.9
1996 DEC	154.4
1997 JAN	154.4
1997 FEB	155.0
1997 MAR	155.4
1997 APR	156.3
1997 MAY	156.9
1997 JUN	157.5
1997 JUL	157.5

1997 AUG	158.5
1997 SEP	159.3
1997 OCT	159.5
1997 NOV	159.6
1997 DEC	160.0
1998 JAN	159.5
1998 FEB	160.3
1998 MAR	160.8
1998 APR	162.6
1998 MAY	163.5
1998 JUN	163.4
1998 JUL	163.0
1998 AUG	163.7
1998 SEP	164.4
1998 OCT	164.5
1998 NOV	164.4
1998 DEC	164.4
1999 JAN	163.4
1999 FEB	163.7
1999 MAR	164.1
1999 APR	165.2
1999 MAY	165.6
1999 JUN	165.6
1999 JUL	165.1
1999 AUG	165.5
1999 SEP	166.2
1999 OCT	166.5
1999 NOV	166.7
1999 DEC	167.3
2000 JAN	166.6
2000 FEB	167.5
2000 MAR	168.4
2000 APR	170.1
2000 MAY	170.7
2000 JUN	171.1
2000 JUL	170.5
2000 AUG	170.5
2000 SEP	171.7
2000 OCT	171.6
2000 NOV	172.1
2000 DEC	172.2
2001 JAN	171.1
2001 FEB	172.0
2001 MAR	172.2
2001 APR	173.1
2001 MAY	174.2
2001 JUN	174.4
2001 JUL	173.3
2001 AUG	174.0
2001 SEP	174.6
2001 OCT	174.3
2001 NOV	173.6
2001 DEC	173.4
2002 JAN	173.3
2002 FEB	173.8
2002 MAR	174.5
2002 APR	175.7
2002 MAY	176.2
2002 JUN	176.2

2002 JUL	175.9
2002 AUG	176.4
2002 SEP	177.6
2002 OCT	177.9
2002 NOV	178.2
2002 DEC	178.5
2003 JAN	178.4
2003 FEB	179.3
2003 MAR	179.9
2003 APR	181.2
2003 MAY	181.5
2003 JUN	181.3
2003 JUL	181.3
2003 AUG	181.6
2003 SEP	182.5
2003 OCT	182.6
2003 NOV	182.7
2003 DEC	183.5
2004 JAN	183.1
2004 FEB	183.8
2004 MAR	184.6
2004 APR	185.7
2004 MAY	186.5
2004 JUN	186.8
2004 JUL	186.8
2004 AUG	187.4
2004 SEP	188.1
2004 OCT	188.6
2004 NOV	189.0
2004 DEC	189.9
2005 JAN	188.9
2005 FEB	189.6
2005 MAR	190.5
2005 APR	191.6
2005 MAY	192.0
2005 JUN	192.2
2005 JUL	192.2
2005 AUG	192.6
2005 SEP	193.1
2005 OCT	193.3
2005 NOV	193.6
2005 DEC	194.1
2006 JAN	193.4
2006 FEB	194.2
2006 MAR	195.0
2006 APR	196.5
2006 MAY	197.7
2006 JUN	198.5
2006 JUL	198.5
2006 AUG	199.2
2006 SEP	200.1
2006 OCT	200.4
2006 NOV	201.1
2006 DEC	202.7
2007 JAN	201.6
2007 FEB	203.1
2007 MAR	204.4
2007 APR	205.4
2007 MAY	206.2

2007 JUN	207.3
2007 JUL	206.1
2007 AUG	207.3
2007 SEP	208.0
2007 OCT	208.9
2007 NOV	209.7
2007 DEC	210.9
2008 JAN	209.8
2008 FEB	211.4
2008 MAR	212.1
2008 APR	214.0
2008 MAY	215.1
2008 JUN	216.8
2008 JUL	216.5
2008 AUG	217.2
2008 SEP	218.4
2008 OCT	217.7
2008 NOV	216.0
2008 DEC	212.9
2009 JAN	210.1
2009 FEB	211.4
2009 MAR	211.3
2009 APR	211.5
2009 MAY	212.8
2009 JUN	213.4
2009 JUL	213.4
2009 AUG	214.4
2009 SEP	215.3
2009 OCT	216.0
2009 NOV	216.6
2009 DEC	218.0
2010 JAN	217.9
2010 FEB	219.2
2010 MAR	220.7
2010 APR	222.8
2010 MAY	223.6
2010 JUN	224.1
2010 JUL	223.6
2010 AUG	224.5
2010 SEP	225.3
2010 OCT	225.8
2010 NOV	226.8
2010 DEC	228.4
2011 JAN	229.0
2011 FEB	231.3
2011 MAR	232.5
2011 APR	234.4
2011 MAY	235.2
2011 JUN	235.2
2011 JUL	234.7
2011 AUG	236.1
2011 SEP	237.9
2011 OCT	238.0
2011 NOV	238.5
2011 DEC	239.4
2012 JAN	238.0
2012 FEB	239.9
2012 MAR	240.8
2012 APR	242.5

2012 MAY	242.4
2012 JUN	241.8
2012 JUL	242.1
2012 AUG	243.0
2012 SEP	244.2
2012 OCT	245.6
2012 NOV	245.6
2012 DEC	246.8
2013 JAN	245.8
2013 FEB	247.6
2013 MAR	248.7
2013 APR	249.5
2013 MAY	250.0
2013 JUN	249.7
2013 JUL	249.7
2013 AUG	251.0
2013 SEP	251.9
2013 OCT	251.9
2013 NOV	252.1
2013 DEC	253.4
2014 JAN	252.6
2014 FEB	254.2
2014 MAR	254.8
2014 APR	255.7
2014 MAY	255.9
2014 JUN	256.3
2014 JUL	256.0
2014 AUG	257.0
2014 SEP	257.6
2014 OCT	257.7
2014 NOV	257.1
2014 DEC	257.5
2015 JAN	255.4
2015 FEB	256.7
2015 MAR	257.1
2015 APR	258.0
2015 MAY	258.5
2015 JUN	258.9
2015 JUL	258.6
2015 AUG	259.8
2015 SEP	259.6
2015 OCT	259.5
2015 NOV	259.8
2015 DEC	260.6
2016 JAN	258.8
2016 FEB	260.0
2016 MAR	261.1
2016 APR	261.4
2016 MAY	262.1
2016 JUN	263.1
2016 JUL	263.4
2016 AUG	264.4
2016 SEP	264.9
2016 OCT	264.8
2016 NOV	265.5
2016 DEC	267.1
2017 JAN	265.5
2017 FEB	268.4
2017 MAR	269.3

2017 APR	270.6
2017 MAY	271.7
2017 JUN	272.3
2017 JUL	272.9
2017 AUG	274.7
2017 SEP	275.1
2017 OCT	275.3
2017 NOV	275.8
2017 DEC	278.1
2018 JAN	276.0
2018 FEB	278.1
2018 MAR	278.3
2018 APR	279.7
2018 MAY	280.7
2018 JUN	281.5
2018 JUL	281.7
2018 AUG	284.2
2018 SEP	284.1
2018 OCT	284.5
2018 NOV	284.6
2018 DEC	285.6
2019 JAN	283.0
2019 FEB	285.0
2019 MAR	285.1
2019 APR	288.2
2019 MAY	289.2
2019 JUN	289.6
2019 JUL	289.5
2019 AUG	291.7
2019 SEP	291.0

source: <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/a>

Table 3: Carbon prices and sensitivities 2010-2100 for appraisal, 2018 £/tCO₂e

	Traded			Non-traded		
	Low	Central	High	Low	Central	High
2010	14	14.02	14	30	60	90
2011	13	12.63	13	30	61	91
2012	7	6.57	7	31	61	92
2013	4	4.09	4	31	62	94
2014	5	5.09	5	32	63	95
2015	6	5.88	6	32	64	96
2016	5	4.52	5	33	65	98
2017	5	5.19	5	33	66	99
2018	2	12.76	26	34	67	101
2019	0	13.15	26	34	68	102
2020	0	13.84	28	35	69	104
2021	4	20.54	37	35	70	106
2022	8	27.24	46	36	72	107
2023	12	33.94	56	36	73	109
2024	16	40.64	65	37	74	111
2025	20	47.33	74	38	75	113
2026	24	54.03	84	38	76	114
2027	28	60.73	93	39	77	116
2028	32	67.43	103	39	79	118
2029	36	74.13	112	40	80	120
2030	40	80.83	121	40	81	121
2031	44	88.33	132	44	88	132
2032	48	95.84	144	48	96	144
2033	52	103.34	155	52	103	155
2034	55	110.85	166	55	111	166
2035	59	118.35	178	59	118	178
2036	63	125.86	189	63	126	189
2037	67	133.36	200	67	133	200
2038	70	140.87	211	70	141	211
2039	74	148.37	223	74	148	223
2040	78	155.88	234	78	156	234
2041	82	163.38	245	82	163	245
2042	85	170.89	256	85	171	256
2043	89	178.39	268	89	178	268
2044	93	185.90	279	93	186	279
2045	97	193.40	290	97	193	290
2046	100	200.91	301	100	201	301
2047	104	208.41	313	104	208	313
2048	108	215.92	324	108	216	324
2049	112	223.42	335	112	223	335
2050	115	230.93	346	115	231	346
2051	118	239.10	360	118	239	360
2052	121	247.01	373	121	247	373
2053	124	254.96	386	124	255	386
2054	126	262.91	400	126	263	400
2055	129	270.61	413	129	271	413
2056	131	278.35	426	131	278	426
2057	133	285.82	439	133	286	439
2058	135	293.10	451	135	293	451
2059	137	300.26	464	137	300	464
2060	138	307.25	476	138	307	476

2061	139	312.79	486	139	313	486
2062	140	318.30	497	140	318	497
2063	141	323.25	506	141	323	506
2064	141	327.94	515	141	328	515
2065	141	332.06	523	141	332	523
2066	141	336.12	531	141	336	531
2067	141	339.51	538	141	340	538
2068	140	342.62	545	140	343	545
2069	140	345.25	551	140	345	551
2070	139	347.52	556	139	348	556
2071	138	349.77	561	138	350	561
2072	137	351.64	566	137	352	566
2073	136	353.23	570	136	353	570
2074	135	354.18	574	135	354	574
2075	133	355.18	577	133	355	577
2076	131	355.26	579	131	355	579
2077	130	355.39	581	130	355	581
2078	128	354.95	582	128	355	582
2079	126	354.29	583	126	354	583
2080	124	353.00	582	124	353	582
2081	122	352.82	584	122	353	584
2082	120	352.02	584	120	352	584
2083	118	350.96	584	118	351	584
2084	115	349.67	584	115	350	584
2085	113	348.54	584	113	349	584
2086	111	346.73	582	111	347	582
2087	109	344.64	581	109	345	581
2088	106	342.50	579	106	343	579
2089	104	340.04	576	104	340	576
2090	101	337.55	574	101	338	574
2091	99	335.44	572	99	335	572
2092	97	333.28	570	97	333	570
2093	94	330.58	567	94	331	567
2094	92	327.81	564	92	328	564
2095	89	324.93	561	89	325	561
2096	87	321.97	557	87	322	557
2097	85	319.14	554	85	319	554
2098	82	315.80	549	82	316	549
2099	80	312.76	546	80	313	546
2100	77	309.41	541	77	309	541

Source: BEIS *modelling*

Further guidance on the use of carbon values is available from the appraisal guidance (Chapter 3) which can be downloaded from the Green Book supplementary guidance section of GOV.UK webpage:

For further details on carbon valuation, see:

<https://www.gov.uk/government/collections/carbon-valuation--2>

Table 3: Recommended Domestic Electricity Willingness to Pay Value (£/consumer/year)

Attributes	WTF
Risk of powercuts	
2 hours decrease in the hours of powercuts at a 1.5% probability	
4 hours decrease in the hours of powercuts at a 1.5% probability	
Every fewer day to recover from a blackout	
Undergrounding Overhead Transmission Lines	
20 miles additional underground in National Parks etc.	
20 miles additional underground in other areas	
Improving visual amenity of Overhead Transmission Lines	
Additional visual impact work in National Parks etc.	
Additional visual impact work in National Parks and other areas	
Additional transmission site environment improved	
25 additional sites	
45 additional sites	1
Investing in innovation projects	
Medium Scale Projects compared to Small Scale Projects	
Large Scale Projects compared to Small Scale Projects	
Supporting local communities	
Current level of community activities	
Current level of community activities and additional funding to charities	
Investing in EV Charging Infrastructure	
Invest before definite need	
Investing in infrastructure to connect to renewable generation	
Invest before definite need	1

Source: NERA Analysis.

Table 6: Recommended Non-domestic Electricity Willingness to Pay values in Percentage (% bill/consumer/year) and Monetary Terms (£/consumer/year)

Attributes	WTP (%)	WT
Risk of powercuts		
2 hours decrease in the hours of powercuts at a 1.5% probability	1.20%	43
4 hours decrease in the hours of powercuts at a 1.5% probability	1.86%	66
Days to recover from a blackout		
2 fewer days to recover form a blackout	0.67%	24
Undergrounding Overhead Transmission Lines		
20 miles additional underground in National Parks etc.	1.25%	43
20 miles additional underground in other areas	1.27%	43
Improving visual amenity of Overhead Transmission Lines		
Additional visual impact work in National Parks etc.	0.76%	27
Additional visual impact work in National Parks and other areas	0.94%	33
Every additional transmission site environment improved	0.05%	1
Investing in innovation projects		
Medium Scale Projects	0.29%	10
Large Scale Projects	0.29%	10
Supporting local communities		

Supporting local communities		
Current level of community activities	0.53%	1%
Current level of community activities and additional funding to charities	0.53%	1%
<hr/>		
Investing in EV Charging Infrastructure		
Invest before definite need	0.90%	3%
<hr/>		
Investing in infrastructure to connect to renewable generation		
Invest before definite need	1.08%	3%
<hr/>		

Source: NERA Analysis.

es

Table 4: Recommended Domestic Gas Willingness to Pay values (£/consum

	Attributes	WTP (£)
	For a 1/10,000 reduction in the probability of a supply interruption.	6.71
<u>9 (£)</u>	Improving environment around transmission sites	
	Additional 3 large sites and 10 small sites	3.61
7.70	Additional 11 large sites and 30 small sites	5.37
<u>9.70</u>	Supporting local communities	
3.58	Current level of community schemes compared to no support	4.79
	Current level of community schemes and additional funding to charities and other organizations compared to no support	6.85
6.87	Investing in innovation projects	
6.46	Small scale projects compared to no innovation projects	6.05
	Large scale projects compared to no innovation projects	9.40
4.14	Supporting consumers in fuel poverty	
4.81	Provide information to lower their energy bills compared to no information	1.41
8.92	Provide information to lower their energy bills and funding/financing compared to no support	5.06

Source: NERA Analysis

10.78

2.38

3.11

8.26

8.46

9.55

11.78

n

Table 7: Recommended Non-domestic Gas Willingness to Pay values in P and Monetary Terms

	Attributes	WTP (%)
	For a 1/10,000 reduction in the probability of a supply interruption.	1.53%
3.30	Improving environment around transmission sites	
6.95	Additional 3 large sites and 10 small sites	0.31%
	Additional 11 large sites and 30 small sites	1.13%
4.15	Supporting local communities	
	Current level of community schemes compared to no support	1.45%
5.02	Current level of community schemes and additional funding to charities and other organizations compared to no support	1.70%
5.90	Investing in innovation projects	
	Small scale projects compared to no innovation projects	1.36%
7.36	Large scale projects compared to no innovation projects	2.25%
3.68	Supporting consumers in fuel poverty	
.68	Provide information to lower their energy bills compared to no information	0
0.56	Provide information to lower their energy bills and funding/financing compared to no support	0

Source: NERA Analysis.

0.56

9.23

9.23

2.38

8.89

er/year)

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-

ercentage

WTP (£)
49.08

9.91
36.35

46.65

54.73

43.74
72.27

0

0