

# Greenhouse Gas Emissions Report – 2018/19

Stockton-on-Tees Borough Council – A Climate Local signatory

(Covering the period 1 April 2018 – 31 March 2019)



Proud partners of the  
**Emissions Reduction Pledge 2020**



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## Organisation report

The Council's vision is of an economically prosperous Borough that is dynamic, exciting and inviting, and to make the Borough a better place to live and a more attractive place to do business. The responsibility to the environment is taken seriously, and the Council continues to deliver significant greenhouse gas emission reductions from its own assets and operations, make excellent progress in reducing the levels of fuel poverty across the Borough as well as delivering on the wider environment and sustainability agenda. The Council does not do this in isolation however, and focuses its efforts on dovetailing environmental improvement with strong economic growth and ensuring the financial sustainability of our citizens.

The Council's Leading Group's Manifesto (2019 – 2023) is explicit in its support for tackling climate change, clean growth and fuel poverty, pledging to:

- Continue our work against fuel poverty by insulating more people's homes to make them warmer and reduce their energy bills using schemes like warm homes healthy people
- Help reduce domestic and industrial carbon emissions by the Council and across the Borough by embracing new technologies

In creating a 'better and safer place and environment' the Council pledges to:

- continue to explore all opportunities to minimise journeys from the Council's own vehicles, specifically those which generate the greatest level of emissions, to reduce carbon effects on our environment
- Explore opportunities for the introduction of electric and 'environmentally friendly' vehicles in the Council's own fleet, whilst also encouraging our key partners to do the same
- Develop a potential large-scale industrial heating network unique in the UK, to cut energy costs in large buildings and factories and using waste heat and energy from our energy-intensive industries.

The Council has been a 'Climate Local' signatory since March 2015, and since 2016 delivering against the most comprehensive Climate Change Strategy and Action Plan to date, in order to drive improvement on both mitigation and adaptation, endorsed by the Council's Cabinet. At a sub-regional level the Council work alongside the neighbouring four Tees Valley Local Authorities in attempting to identify opportunities to tackle emissions and adapt to climate change through the Tees Valley Combined Authority, the Local Enterprise Partnership (LEP) for the region. This is evidenced by the production of the Tees Valley Energy Strategy in 2019, supported by the Department for Business Energy and Industrial Strategy (BEIS) and the Yorkshire and Humber Energy Hub, to identify future low carbon opportunities.

Stockton-on-Tees Borough Council has long prioritised energy, carbon saving and wider climate change focusing on its own activity but also at a Borough wide level evidenced by being one of the earliest signatories of the Nottingham Declaration on Climate Change in 2002 and jointly forming the Tees Valley Climate Change Partnership in 2005 with the neighbouring 4 local authorities and partners. The Council has been recognised by the Association of Public Service Excellence (APSE) for its work to reduce energy consumption and emissions in the domestic sector, being finalists for 'Council of the Year' in energy in 3 of the last 4 years. The Council was also a finalist in the Energy Efficiency Awards 2019 for Council of the Year.

Low carbon is at the heart of Council business and continuous improvement in carbon reduction while tackling broader environmental and social priorities will continue through our Climate Change Strategy and Action Plan (2016 – 2021) and the Affordable Warmth Strategy and Action Plan (2018 - 2021).

The Council has set three key targets in reducing greenhouse gas emissions:

1. Reduce greenhouse gas emissions from Stockton-on-Tees Borough Council activity **by 21% on 2014/15 levels by March 2020**
2. Reduce total greenhouse gas emissions from the Borough of Stockton-on-Tees **by 18% on 2013 levels by March 2020**
3. Reduce per capita greenhouse gas emissions from the Borough of Stockton-on-Tees **by 21% on 2013 levels by March 2020**

Excellent progress has been made once again in reducing emissions from Council activity in the last 12 months, exceeding set targets for the fifth year in a row. Service leads across all directorates deserve credit for continuing to deliver improvements in energy and fuel saving. The Council rationalised all climate change, energy efficiency and renewables strategies makes targeting and performance managing emissions reductions much easier.

There are significant challenges in meeting emissions targets including the importance of making financial savings and a reducing amount of resources to invest. However there are opportunities including being more efficient with energy, being innovative in ways of working, investing to save, and raising awareness across the organisation about the importance of emissions reduction and climate change.

In July 2018, BEIS published the guidance for public and higher education sector organisations to report against the new 30% voluntary emissions reduction target, under the 'Emissions Reduction Pledge 2020' scheme, which the Council signed up to in August 2018. Following the consultation by BEIS, 'Leading by example: cutting energy bills and carbon emissions in the public and higher education sectors', the Council awaits any outcomes with a view to moving to a more ambitious target, or potentially a mandatory target, such as a 50% reduction by 2030, so that the Council can continue contribute to the pursuit of clean growth. However on 12 June 2019, the government announced that the UK will cut emissions to 'Net Zero' by 2050 and as such the Council will review its future targets in line with these announcements.

#### Published on the web

This report, as well as additional information on the Council's carbon reduction activities, can be accessed via the Council's website at the following link:

<https://www.stockton.gov.uk/environment-and-housing/climate-carbon-and-energy/>



Figure 1: Stockton-on-Tees Borough Council's Greenhouse Gas Emissions in 2018/19 in tonnes of CO<sub>2</sub>e

	Tonnes of CO <sub>2</sub> e										
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	Change in 2018/19
<b>Scope 1</b>											
Gas consumption		9,081	7,992	10,300	8,409	5,342	5,064	4,498	4,119	4,187	1.6%
Owned fleet transport		2,423	2,530	2,521	2,665	2,843	2,761	2,589	2,407	2,186	-9.2%
Process emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fugitive emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total scope 1</b>	11,594	11,504	10,522	12,821	11,074	8,185	7,825	7,087	6,526	6,373	-2.4%
<b>Scope 2</b>											
Electricity buildings		9,658	9,088	8,644	8,443	8,564	7,965	7,086	5,867	4,848	-17.4%
Electricity street lighting		6,097	6,813	6,671	5,894	5,848	4,922	3,531	2,169	1,635	-24.6%
<b>Total scope 2</b>	16,821	15,755	15,901	15,315	14,337	14,412	12,888	10,617	8,036	6,483	-19.3%
<b>Significant scope 3</b>											
Business mileage		625	630	567	568	457	412	406	383	355	-7.4%
Tees Active Ltd electricity		868	2,021	1,919	1,996	1,765	1,688	1,445	1,409	940	-33.3%
Tees Active Ltd gas		871	1,444	1,714	1,623	1,639	1,579	1,572	1,525	1,674	9.7%
<b>Total scope 3</b>	3,276	2,364	4,095	4,200	4,187	3,861	3,679	3,423	3,317	2,968	-10.5%
<b>Total gross emissions</b>	31,691	29,623	30,518	32,336	29,598	26,459	24,391	21,127	17,879	15,824	-11.49%
Carbon offsets	-	-	-	-	-	-	-	-	-	-	
Green tariff	-	-	-	-	-	-	-	-	-	-	
<b>Total annual net emissions</b>	31,691	29,623	30,518	32,336	29,598	26,459	24,391	21,127	17,879	15,824	-11.5%
<b>Intensity measurement - Total number of Borough households</b>	79,557	79,992	79,135	79,595	80,144	80,144	81,925	81,492	89,950	92,162	
<b>Tonnes of CO<sub>2</sub>e per household</b>	0.40	0.37	0.39	0.41	0.37	0.33	0.30	0.26	0.20	0.17	-13.6%



## 1. Organisation Information

Stockton-on-Tees Borough Council is a single tier (unitary) local authority responsible for all local government functions within the administrative boundary of Stockton-on-Tees. The Council's registered address is:

Stockton-on-Tees Borough Council  
Municipal Buildings  
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Stockton-on-Tees  
TS18 1LD

Telephone: 01642 – 393939

Email: [customer.comments@stockton.gov.uk](mailto:customer.comments@stockton.gov.uk)

Web: [www.stockton.gov.uk](http://www.stockton.gov.uk)

## 2. Reporting period

The reporting period for this Greenhouse Gas Emissions (GHG) report is 1 April 2018 – 31 March 2019 (2018/19 financial year).

## 3. Total emissions and change over time

In 2018/19 the Council's total gross emissions were calculated at **15,824 tonnes** of CO<sub>2</sub>e, and net emissions were **15,824 tonnes** CO<sub>2</sub>e. It's CO<sub>2</sub>e per household served was **0.17 tonnes**. The breakdown by area of operation is shown in figure 2 below:

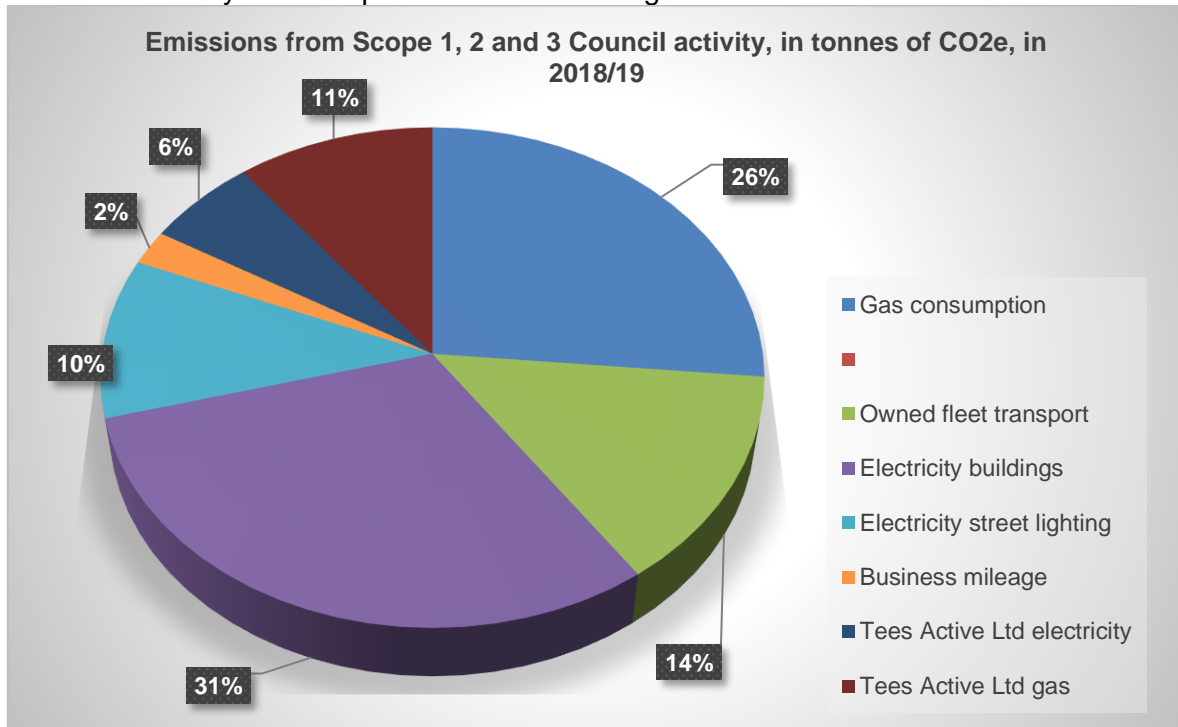


Figure 2: CO<sub>2</sub>e emissions (in tonnes) by area of operation in 2018/19

Reported emissions from all Council activity under scopes 1, 2 and 3 have reduced this year, by 11.5% in 2018/19 (or 2,055 tonnes) for the sixth year in a row. There are a number of significant aspects to note from the results in 2018/19:

- Five of the seven areas of Council emissions activity have shown a decrease on the previous year
- The area of operations showing the largest reduction in emissions was electricity use in leisure centres, with a 33.3% reduction in CO<sub>2</sub>e on the previous year
- Significant reductions in emissions from scope 2 electricity consumption, down by a further 19.3% on 2017/18 levels
- The significant progress in reducing emissions from street lighting energy consumption continues with a further 24.6% reduction in CO<sub>2</sub>e in the last 12 months.
- Progress in reducing the Council's emissions from fleet services with CO<sub>2</sub>e emissions reduced by a further 9.2% in 2017/18

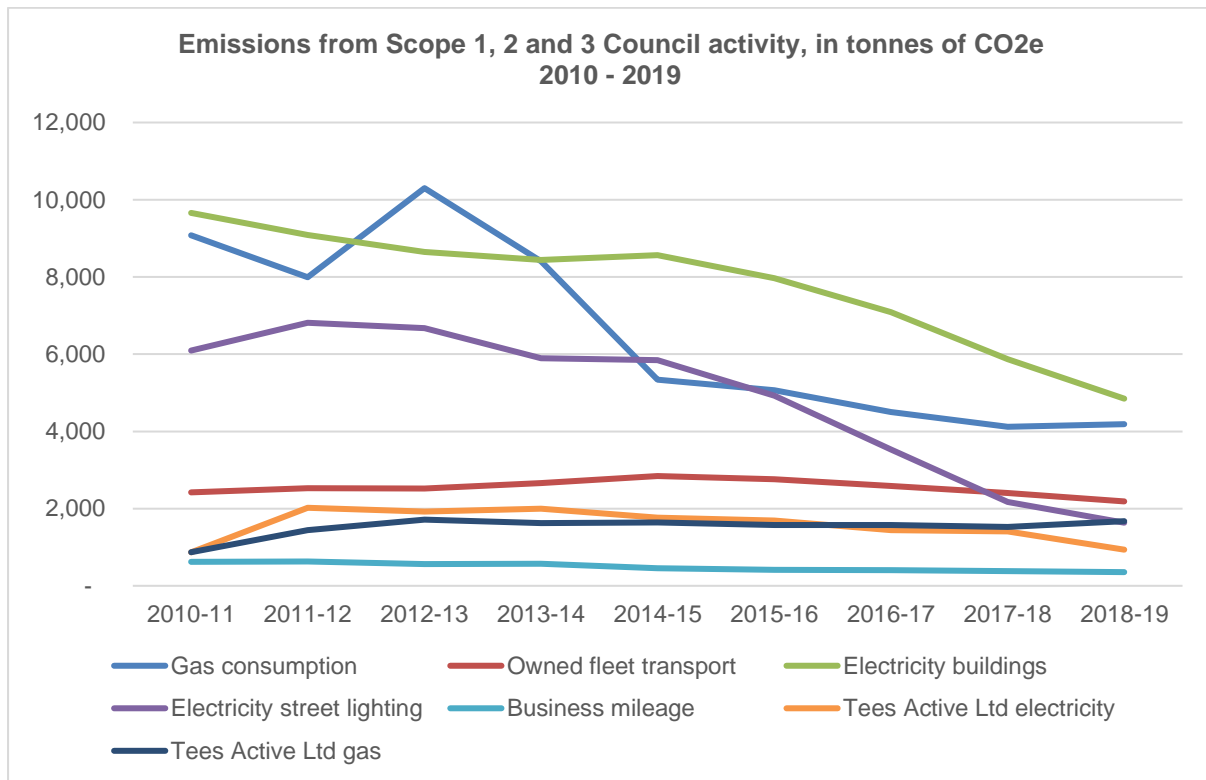


Figure 3: Annual CO<sub>2</sub>e emissions (in tonnes) by activity

There are a few issues to note on the results 2018/19:

- 2018/19 was a slightly extended heating season compared to 2017/18, and as such primary gas consumption has increased slightly
- The carbon emission factors under the governments 'conversion factors for company reporting' have again been amended by Defra in the last 12 months reflecting cleaner energy and subsequently this has contributed to lower emissions for SBC
- Continued progress by Tees Active in increasing energy efficiency across all leisure facilities, principally through improved monitoring techniques and the installation of voltage optimisation equipment
- This was the fourth complete financial year of the implementation of the street lighting LED replacement programme, and the CO<sub>2</sub>e savings observed clearly demonstrate its effectiveness. CO<sub>2</sub>e emissions from the 28,000 lighting assets has reduced by a further 24.6% in the last 12 months, and have fallen by 76% since 2012
- Emissions from gas consumption have reduced by 59% since 2012/13, while overall scope 1 emissions have fallen by 49% in that time
- Emissions from business mileage have now seen a reduction of 43.6% since 2011/12 as measures to bring those costs down continue to be effective.

Figure 4 below shows the change in emissions since 2010 and the direction of travel required to meet our future targets.

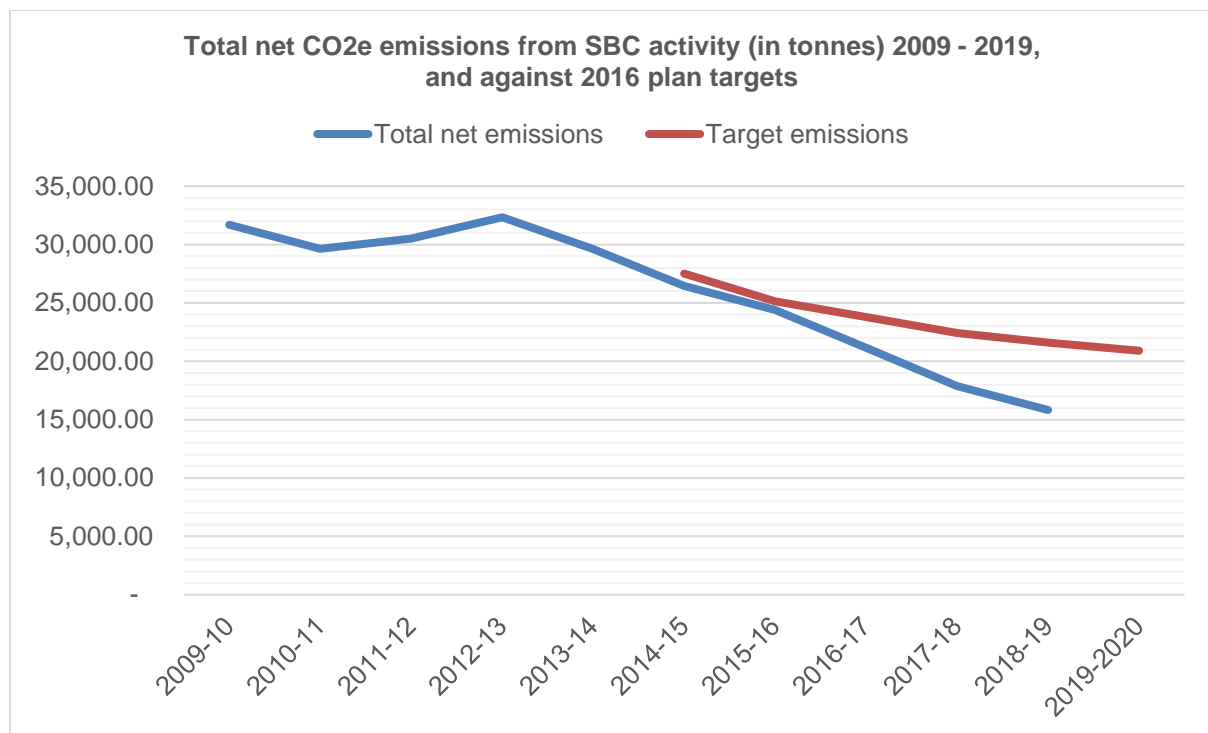


Figure 4: Annual CO<sub>2</sub>e emissions (in tonnes) since 2010

Despite an overall 11.5% reduction in emissions in 18/19, the Council will continue to seek to improve performance on:

- Emissions from electricity consumption, as this area represents the source of one third of total council emissions.



- Emissions from fleet services; with great progress already made in recent years, there are wider benefits to tackling fuel consumption, such as improvement in air quality and the cost benefits of operating electric vehicles.
- **Overall, progress is significant and the Council has observed a 50.1% reduction on our 2009/10 baseline net greenhouse gas emissions, and a 57.5% reduction in tonnes of CO<sub>2</sub>e per household.**

#### 4. Commitments and approach

Stockton-on-Tees Borough Council has a strong tradition of leading the way in responding to the challenges of mitigating and adapting to climate change. It remains committed to reducing its impact on climate change and acknowledges the threats posed by it and the response that needs to be taken by the Council, its partners and citizens of the borough. The Council's vision on page 3 recognises the importance of mitigation through reducing its emissions and creating a low carbon economy, but equally of the need to adapt to the changes that will take place.

The Council's commitment thus far is demonstrated through this annual reporting process with a 51.1% reduction in CO<sub>2</sub>e since 2012/13 alone, a reduction of 16,512 tonnes per annum. And there are plans in place to go further.

In line with the targets set under the 'Emissions Reduction Pledge 2020', so far the Council has reduced greenhouse gas emissions by 50.1% against the 2009/10 baseline, against the target of 30%.

##### 'Climate Local'

In March 2015, the Council became an official signatory of the 'Climate Local' initiative, acknowledging the increasing impact that climate change has on our community and committing to tackling the causes and effects of a changing climate on our Borough. It fully supports the 'Climate Local' initiative, incorporating the Climate Local Commitment and the Council Framework on Climate Change, and its first commitment was met in 2016 with the publication of the Council's Climate Change Strategy and Action Plan.

##### 'Emissions Reduction Pledge 2020'

In August 2018, the Council signed up to the 'Emissions Reduction Pledge 2020', agreeing to sign up to a common set of principles, including adopting a target to reduce greenhouse gas emissions by a minimum of 30% on a 2009/10 baseline by March 2021. This requires us to:

- develop and implement the business case for measuring and reducing energy use, costs and carbon emissions in the organisation
- implement the pledge using regular measurement to inform management action
- report annual energy use to BEIS through existing reporting mechanisms where possible
- share best practice in the local area and within the sectors.

## Climate Change Strategy and Action Plan for Stockton-on-Tees 2016 - 2020

The Council adopted a new Climate Change Strategy and Action Plan in 2016 focusing on four priorities for cutting carbon, and three key priorities to prepare and adapt to climate change. The strategy sets out three key targets in reducing greenhouse gas emissions, as set out in section 9 of this report.

### District Heat and Power

The Council, through funding from BEIS and working with the Heat Network Delivery Unit (HNDU) has been investigating the feasibility of developing large scale heat and power networks with individual networks in Seal Sands, Billingham and Stockton utilising process heat from industry. With Masterplan and Techno Economic Feasibility stages undertaken, the project would have the potential to secure CO<sub>2</sub> reductions across the Borough in excess of 150,000 tonnes per annum, and potential benefit the Council in reducing its own energy consumption and as such, greenhouse gas emissions.

### Approach

The Council continues to use the 'Environmental Reporting Guidelines: Including mandatory greenhouse gas emissions reporting guidance' as its methodology in preparing this report. The Council was registered under the Carbon Reduction Commitment Energy Efficiency Scheme, although has not participated since 2014/15, and that scheme has now closed following the 2018 to 2019 compliance year. The conventions in reporting CRC have always been adopted in the preparation of this report, although the Council has chosen to include some of its operations – such as leisure provision - which were not captured under CRC.

## **5. Organisational boundary**

The Council has calculated its GHG emissions by applying documented emission factors from the Defra guidelines (see 'approach' in section 4) to its known activity data from across the organisation, within the boundary of Stockton-on-Tees. It has a robust process for collecting data for all scope 1 and 2 activities having collected it since the introduction of the former National Indicator Set in 2008 under NI 185 (Emissions from local authority operations). The sources of information for all emissions are shown in section 6.

## **6. Operational scopes**

We have collected and measured all scope 1 and 2 emissions. The Council continues to include some scope 3 emissions such as business mileage and energy from leisure provision, but not all activities such as waste management, principally due to the lack of accurate and reliable information on all aspects. The following activities have been included:

### **Scope 1**

- Gas consumption
- Owned fleet transport
- Process emissions
- Fugitive emissions

**Scope 2**

Purchased electricity  
Street lighting

**Scope 3**

Business mileage  
Tees Active Ltd electricity  
Tees Active Ltd gas

Carbon offset and green tariffs are also included (see sections 12 and 13) but did not contribute in 2018/19.

**Sources of information**

<b>Emission-releasing activity</b>	<b>Source of information</b>
Operational property: Gas consumption	Total kilowatt hours (kWh) used, from 208 metered units, taken from utility bills and collated by Energy Management
Fuel used in owned fleet transport	Total of fuel purchased (in litres) from invoices and receipts (all fuels) for i) Diesel fuel depot, ii) diesel fuel via fuel cards, iii) petrol on fuel cards and iv) gas oil purchased.
Process emissions	N/A
Fugitive emissions	N/A
Operational property: Electricity use	Total kilowatt hours (kWh) used, from 279 metered units, from utility bills and collated by Energy Management
Street lighting	Total kilowatt hours (kWh) used
Business mileage	Total mileage recorded from staff mileage allowance claims using Agresso software, and departmental split
Tees Active electricity (leisure)	Total kilowatt hours (kWh) used, from 7 metered properties, taken from utility bills
Tees Active gas (leisure)	Total kilowatt hours (kWh) used, from 7 metered properties, taken from utility bills

The number of households in the Borough for each year is the figure for the calendar year i.e. the 2019 figure is represented by 2018/19 statistic. This information is provided by our GIS Service.

### Calculation approach used

All of the data used for calculating the results in this 18/19 report are actual consumption figures for each supply, and the associated conversion factors set out by Defra have been used to calculate emissions.

### Conversion tools / emission factors used

The Council has used the standard Defra / BEIS GHG conversion factors (revised for 2019) for all of its emissions. These are as follows:

Fuel Type	Measurement Unit	Emissions Factor kg CO <sub>2</sub> e / per measurement unit
Natural Gas	kWh	0.18396
Electricity	kWh	0.28307
Diesel	Litres	2.24768
Petrol	Litres	2.23377
Gas Oil	Litres	2.27652
Average car	Miles	0.28572

<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2019>

## 7. Geographic break down

All emissions are from within the boundary of the Borough of Stockton-on-Tees, within the UK. There is no further geographical break down for any emissions.

## 8. Base Year

Although the Council has been calculating emissions from its operations since 2007, and under the former NI 185 since 2008/09 (with a 2007 base year), it chose the base year for GHG reporting as 2009/10, as a result of possessing verifiable emissions data under the requirements of the Carbon Reduction Commitment for that year. The Council now has eight years of verifiable emissions data against that base year.

## 9. Targets

In 2015/16 the Council completely reviewed and revised all targets and actions on greenhouse gas emissions, energy efficiency, renewables, SAP, fuel poverty and affordable warmth as part of the development and adoption of a new Affordable Warmth Strategy and a new Climate Change Strategy.

The Council has three key targets in reducing greenhouse gas emissions:

1. Reduce greenhouse gas emissions from Stockton-on-Tees Borough Council activity by 21% on 2014/15 levels by March 2020
2. Reduce total greenhouse gas emissions from the Borough of Stockton-on-Tees by 18% on 2013 levels by March 2020
3. Reduce per capita greenhouse gas emissions from the Borough of Stockton-on-Tees by 21% on 2013 levels by March 2010

The first target on reducing emissions from Council activity is further broken down each year to March 2020.

2014/15 (Baseline year) [26,459 tonnes]	2015/16	2016/17	2017/18	2018/19	2019/20
Percentage (%) reduction needed on 2014/15 baseline	5%	10.1%	15.3%	18.4%	21%
<i>Achieved</i>	8%	20.1%	32.4%	40.2%	
Target net emissions figure (in tonnes)	25,136	23,787	22,411	21,591	20,903
<i>Achieved</i>	24,391	21,150	17,879	15,824	
Emissions savings in year (in tonnes)	1,323	1,349	1,376	820	688
<i>Achieved</i>	2,068	3,241	3,271	2,055	

Figure 5: Table of CO<sub>2</sub>e progress against Climate Change Strategy targets

## 10. Intensity measurement

As a public sector body, the Council's core function is to deliver services to the citizens of our Borough. Therefore, it has used an intensity measurement of total number of households within the Borough of Stockton-on-Tees. This figure has grown slightly due to a net increase in the number of properties, the net increase being the number of additional dwellings minus the number of properties that have been demolished.

## 11. Carbon offsets

During the reporting period the Council has not purchased any carbon credits.

## 12. Green tariffs

During the reporting period the Council has not purchased any energy through green tariffs.

### 13. Current usage and own generation

In 2018/19, the Council consumed 22,757,902 kWh of gas, 17,126,492 kWh of electricity in buildings and 5,775,828.6 kWh of electricity in street lighting. As part of the programme to continually reduce these areas, the Council has also invested significantly, and will continue to invest, in renewable energy technologies. The highlights include:

- 23 individual renewable energy schemes with a combined generating capacity of over 300kW
- SBC generated its 1 millionth kwh of energy generated since installation programme began
- 6 ground source heat pumps at Billingham Library, Bewley Infants School, Fairfield Primary School, Northshore Academy, Conyers Academy and Rosebrook Primary School, with a combined generating capacity of 298kW

Year	Renewable energy generated (in kWh)
2011/12	8,133.43
2012/13	16,707.55
2013/14	72,091.33
2014/15	154,169.30
2015/16	236,806.40
2016/17	221,997.73
2017/18	177,673.63
2018/19	147,659.30
<b>TOTAL</b>	<b>1,035,238.67</b>

Figure 6: Energy generated by Stockton-on-Tees Borough Council renewable energy installations

### 14. Useful links

This report can be found at the following link:

<https://www.stockton.gov.uk/environment-and-housing/climate-carbon-and-energy/energy-and-emissions-reporting/>

For information on Stockton's work around climate change, energy efficiency and carbon reduction, click here:

<https://www.stockton.gov.uk/environment-and-housing/climate-carbon-and-energy/>

For information on Stockton's work to signpost for energy saving advice and other services, click here:

<https://www.stockton.gov.uk/environment-and-housing/climate-carbon-and-energy/energy-saving-advice/>



## 15. Monitoring and review

Measuring the impact and performance of carbon reduction actions is the only way that the Council can improve our performance to reduce our impact upon climate change, and measure its effectiveness. Monitoring includes the following:

- Regular performance reports on carbon reduction are presented to the Council's Cabinet Member via monthly briefings
- A review of the Climate Change Action Plan will be presented to Cabinet in 2020
- The annual report and performance data are presented to Cabinet in October each year
- All reports are published on the Council's website

The full review of this Greenhouse Gas Emissions Report will begin in May 2020 with the 2019/20 report to be published in October 2019. This is in line with current 'Emissions Reduction Pledge 2020' reporting arrangements.

## 16. Contacts

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