

Greenhouse Gas Emissions Report

2016/17

Stockton-on-Tees Borough Council



(Covering the period 1 April 2016 – 31 March 2017)

‘Stockton-on-Tees is a Climate Local signatory’

Contents

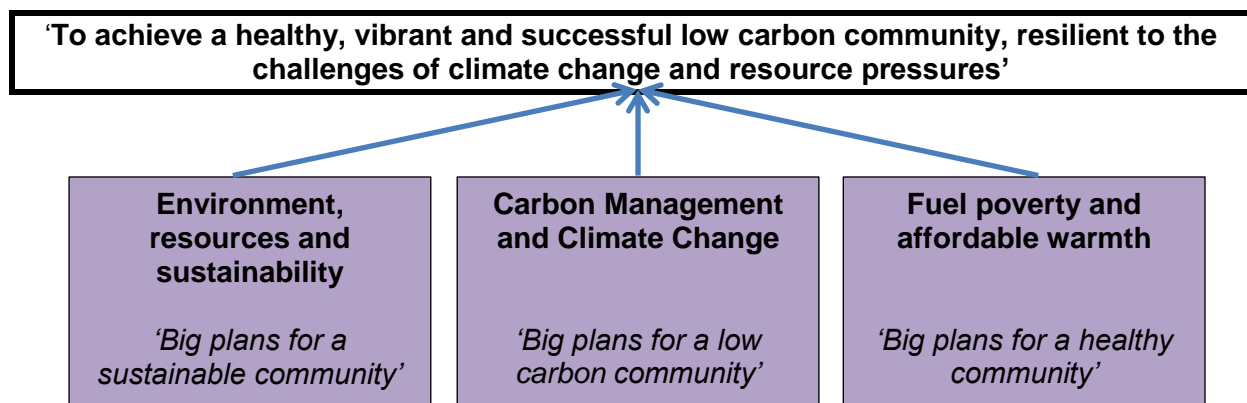
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Organisation report

The Council's vision is of a borough that is a better and more attractive place to live, economically prosperous, and takes its responsibility to the environment seriously. The Council continues to deliver significant carbon 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 will do what it can to protect the environment for future generations in line with its 'Green Vision' which is underpinned by three clear strategies:



The Council became a Climate Local signatory in March 2015, and in 2016 developed its 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, and have historically adopted a Tees Valley Climate Change Strategy.

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, jointly forming the Tees Valley Climate Change Partnership in 2005 with the neighbouring 4 local authorities and partners, and supporting Climate Local in 2015. Our commitment was reinforced when the independent Local Authority Energy Index of the performance of local authorities against a range of energy and fuel poverty criteria showed us to be fifth best performers in the country.

Low carbon is at the heart of the Council Plan and there are three key approaches that will lead to continuous improvement in carbon reduction while tackling broader environmental and social priorities:

- Climate Change Strategy and Action Plan (2016 – 2021)
- Affordable Warmth Strategy and Action Plan (2017 - 2021)
- Environment Strategy (to be developed)

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

Significant progress has been made in reducing emissions from Council activity, exceeding set targets, as described in this report, for the third year in a row. The Council rationalised all climate change, energy efficiency and renewables strategies makes targeting and performance managing emissions reductions much easier.

There are significant risks in meeting emissions targets including the current challenge to make 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, and raising awareness across the organisation about the importance of emissions reduction and climate change.

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 2016/17 in tonnes of CO₂e

	Tonnes of CO ₂ e								Change in 2016/17
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	
Scope 1									
Gas consumption		9,081	7,992	10,300	8,409	5,342	5,064	4,498	-11.2%
Owned fleet transport		2,423	2,530	2,521	2,665	2,843	2,761	2,589	-6.2%
Process emissions	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
Total scope 1	11,594	11,504	10,522	12,821	11,074	8,185	7,825	7,088	-9.4%
Scope 2									
Electricity buildings		9,658	9,088	8,644	8,443	8,564	7,965	7,086	-11.0%
Electricity street lighting		6,097	6,813	6,671	5,894	5,848	4,922	3,531	-28.3%
Total scope 2	16,821	15,755	15,901	15,315	14,337	14,412	12,888	10,617	-17.6%
Significant scope 3									
Business mileage		625	630	567	568	457	412	406	-1.5%
Tees Active Ltd electricity		868	2,021	1,919	1,996	1,765	1,688	1,445	-14.4%
Tees Active Ltd gas		871	1,444	1,714	1,623	1,639	1,579	1,572	-0.4%
Total scope 3	3,276	2,364	4,095	4,200	4,187	3,861	3,679	3,423	-7.0%
Total gross emissions	31,691	29,623	30,518	32,336	29,598	26,459	24,391	21,127	-13.4%
Carbon offsets	-	-	-	-	-	-	-	-	
Green tariff	-	-	-	-	-	-	-	-	
Total annual net emissions	31,691	29,623	30,518	32,336	29,598	26,459	24,391	21,127	-13.4%
Intensity measurement - Total number of Borough households	79,557	79,992	79,135	79,595	80,144	80,144	81,925	81,492	-433
Tonnes of CO₂e per household	0.398	0.370	0.386	0.406	0.369	0.330	0.298	0.259	12.9%

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
Church Road
Stockton-on-Tees
TS18 1LD

Telephone: 01642 – 393939

Email: customer.comments@stockton.gov.uk

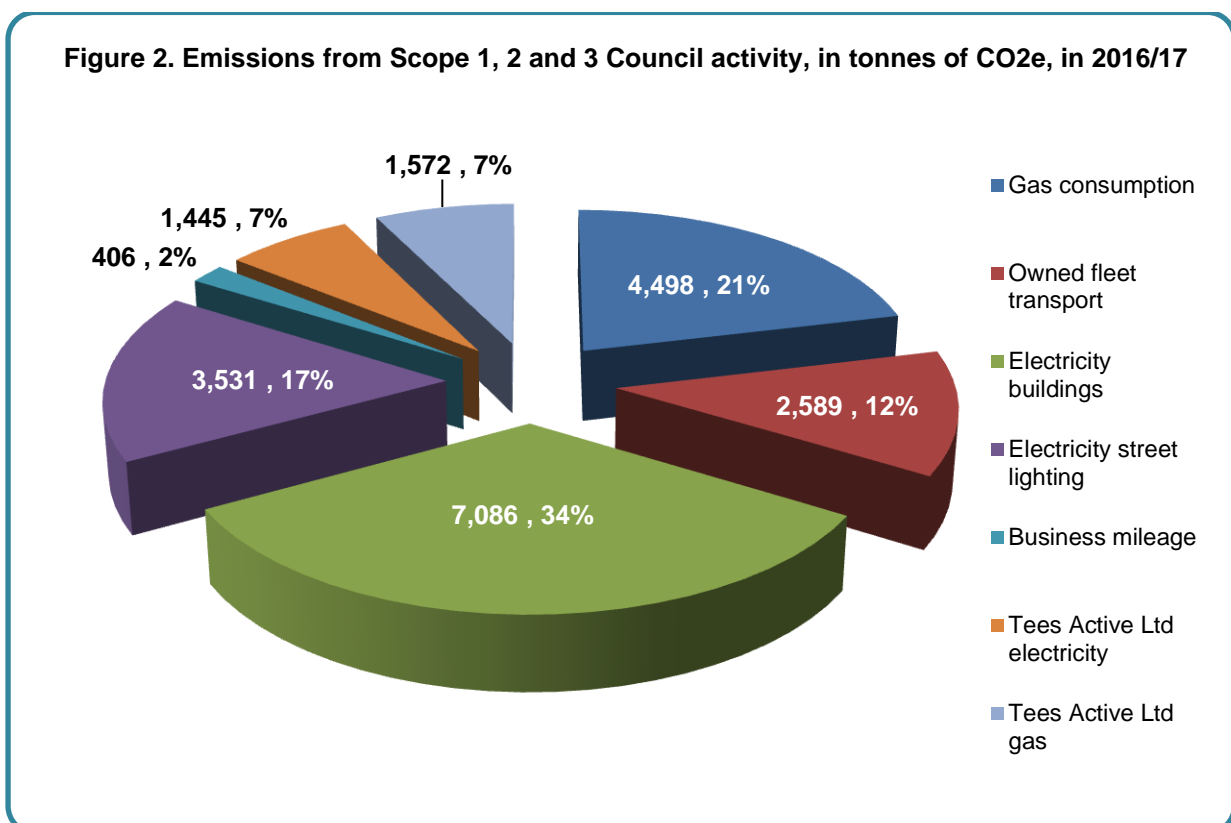
Web: www.stockton.gov.uk

2. Reporting period

The reporting period for this Greenhouse Gas Emissions (GHG) report is 1 April 2016 – 31 March 2017 (2016/17 financial year).

3. Total emissions and change over time

In 2016/17 the Council's total gross emissions were calculated at **21,127 tonnes** of CO₂e, and net emissions were **21,127 tonnes** CO₂e. It's CO₂e per household served was **0.259 tonnes**. The breakdown by area of operation is shown in figure 2 below:



Reported emissions from all Council activity under scopes 1, 2 and 3 have once again significantly decreased this year, by 13.4% in 2016/17 (or 3,264 tonnes). There are a number of positive aspects to note from the results in 2016/17:

- This is the second year in succession that all seven areas of Council emissions activity have shown a decrease on the previous year
- The area showing the largest reduction was street lighting, with a 28.3% reduction in CO₂e on the previous year
- Significant reductions in primary energy consumption, including emissions from gas consumption down by 11.2% on 2015/16 levels
- Progress in reducing the Council's emissions from fleet services with CO₂e emissions reduced by 6.2%

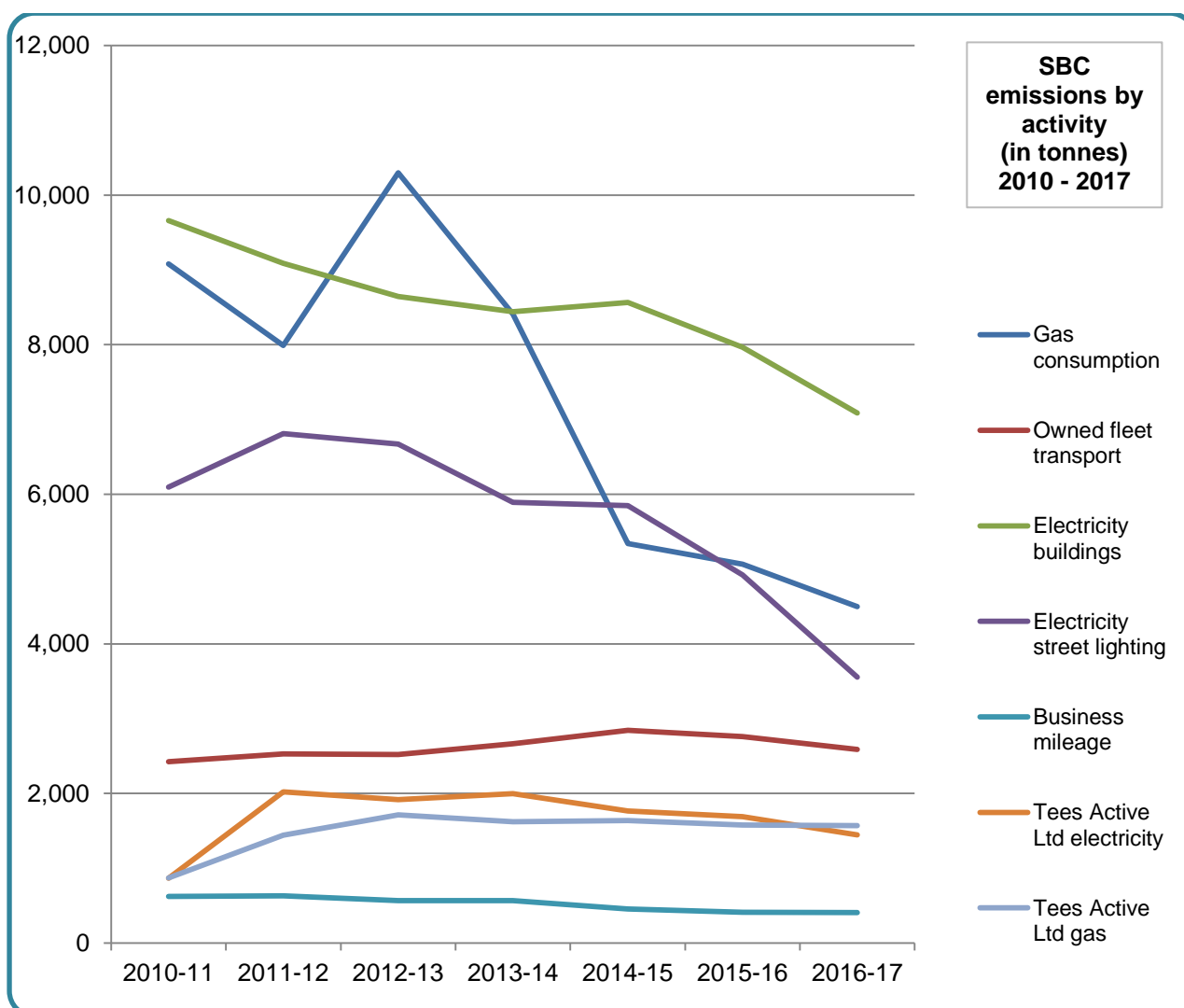


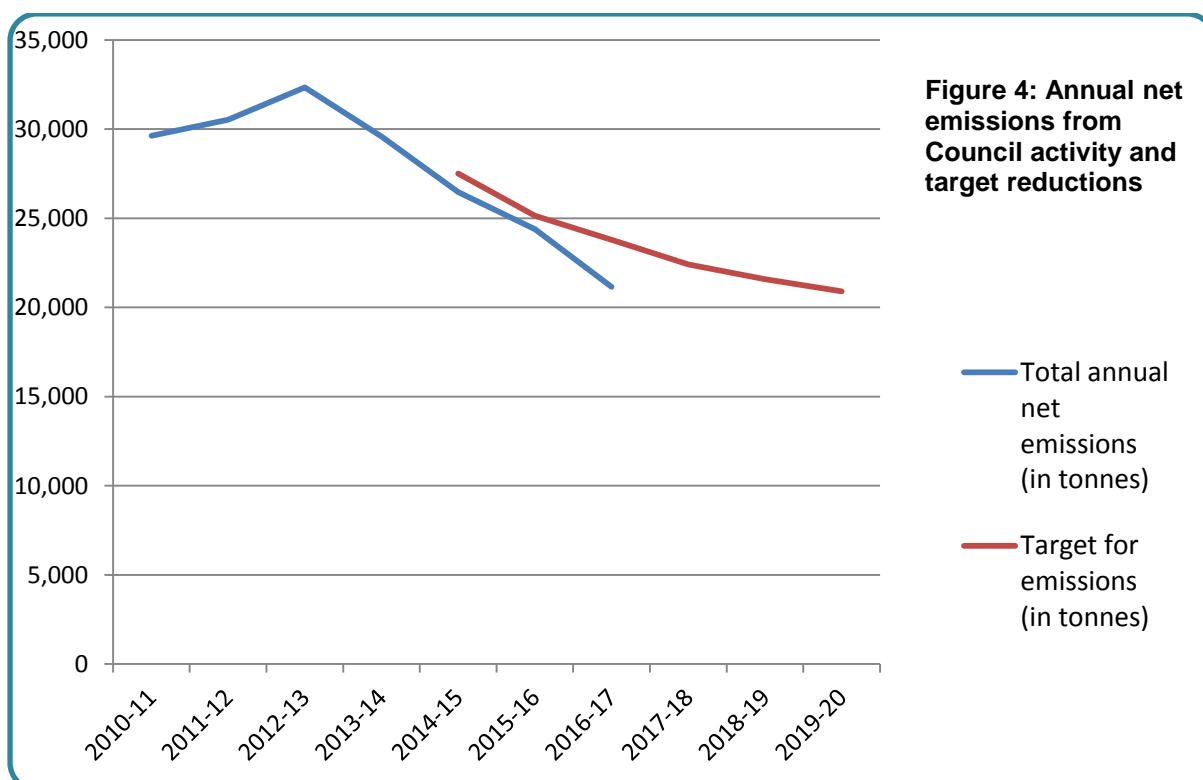
Figure 3: CO₂e emissions (in tonnes) by activity

There are a few issues to note on the good progress in 2016/17:

- For the third winter in succession, 2016/17 was a much shorter heating season due to the mild winter while a particularly extended heating season was experienced in 2013/14 which led to higher than normal gas consumption that year

- 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 second complete financial year of the implementation of the street lighting LED replacement programme, and the CO₂e savings observed clearly demonstrate its effectiveness. CO₂e emissions from the 28,000 lighting assets has reduced by 39.6% in just 24 months since the programme began
- Emissions from gas consumption have reduced by 57% since 2012/13, while overall scope 1 emissions have fallen by 45% in that time
- Emissions from business mileage have now seen a reduction of 35% 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.



Despite an overall 13.4% reduction in emissions in 16/17, 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 as this area is becoming an increasingly larger proportion of the total each year
- **Overall, progress is significant and the Council has observed a 33% reduction on our 2009/10 baseline net greenhouse gas emissions, and a 35% reduction in tonnes of CO₂e 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 34.7% reduction in CO₂e since 2012/13 alone, a reduction of almost 11,209 tonnes per annum. And there are plans in place to go further.

'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.

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 secured funding from BEIS (DECC as was) in 2014 under the governments Heat Network Delivery Unit (HNDU) to investigate the feasibility of developing large scale heat and power networks in Stockton-on-Tees. The scheme is based on three individual networks in Seal Sands, Billingham and Stockton utilising process heat from industry. Currently moving to techno economic feasibility stage, the project has the potential to secure CO₂ 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 – February 2014' as its methodology in preparing this report. The Council is registered under the Carbon Reduction Commitment Energy Efficiency Scheme, although has not participated since 2014/15. The conventions in reporting CRC have been adopted in the preparation of this report, although the Council has chosen to include some of its operations – such as leisure provision - which are 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 borough 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), as well as for the CRC process. 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 2016/17.

Sources of information

Emission-releasing activity	Source of information
Operational property: Gas consumption	Total kilowatt hours (kWh) used, from 219 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 293

	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 2017 figure is represented by 2016/17 statistic. This information is provided by our Taxation Service.

Calculation approach used

All of the data used for calculating the results in this 16/17 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 / DECC GHG conversion factors¹ (revised for 2016) for all of its emissions. These are as follows:

Fuel Type	Measurement Unit	Emissions Factor kg CO ₂ e / per measurement unit
Natural Gas	kWh	0.18400
Electricity	kWh	0.41025
Diesel	Litres	2.61163
Petrol	Litres	2.19697
Gas Oil	Litres	2.96572
Average car	Miles	0.30088

<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2016>

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 seven 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 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 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%	-	-	-
Target net emissions figure (in tonnes)	25,136	23,787	22,411	21,591	20,903
<i>Achieved</i>	24,391	21,127	-	-	-
Target emissions savings in year (in tonnes)	1,323	1,349	1,376	820	688
<i>Achieved</i>	2,068	3,264	-	-	-

Figure 5: Table of CO2e 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 2016/17, the Council consumed 24,447,070 kWh of gas, 17,196,851 kWh of electricity in buildings and 8,570,326 kWh of electricity in street lighting. As part of the programme to continually reduce these areas, the Council has invested significantly in renewable energy technologies in recent years with 31 individual installations now generating. The highlights include:

- 25 individual solar PV schemes on 23 sites with a combined generating capacity of 310.71kW
- Almost three quarters of a million 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
TOTAL	709,905.74



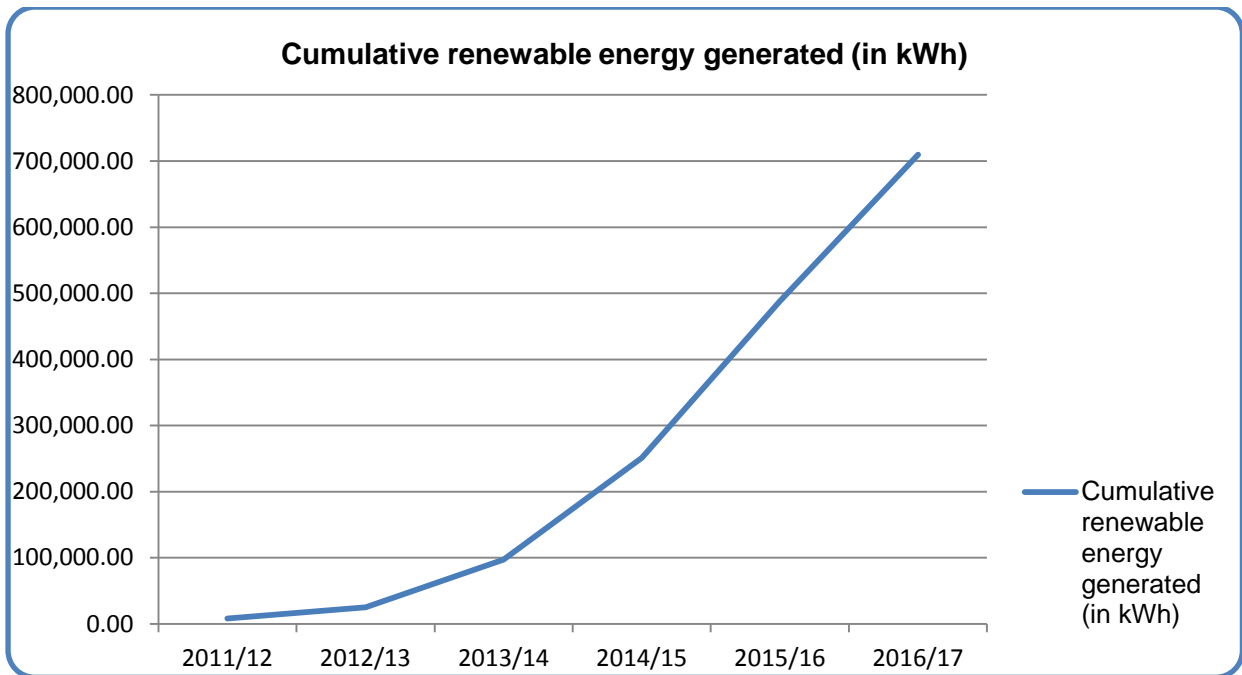


Figure 6: Energy generated by Stockton-on-Tees Borough Council renewable energy installations

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 will include the following:

- Quarterly performance reports on carbon reduction are presented to the Council’s Executive Management Team via reporting of Indicator EH100 CO₂ emissions from the local authority’s operations
- A review of the Climate Change Action Plan will be presented to Cabinet in due course
- All reports are published on the Council’s website

The full review of this Greenhouse Gas Emissions Report will begin in April 2018 with the 2017/18 report to be published in July 2018.

16. Contacts

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www.stockton.gov.uk

www.rediscoverstockton.co.uk

References

1. Defra (2016), 'Government conversion factors for company reporting', (www.ukconversionfactorscarbonsmart.co.uk)



