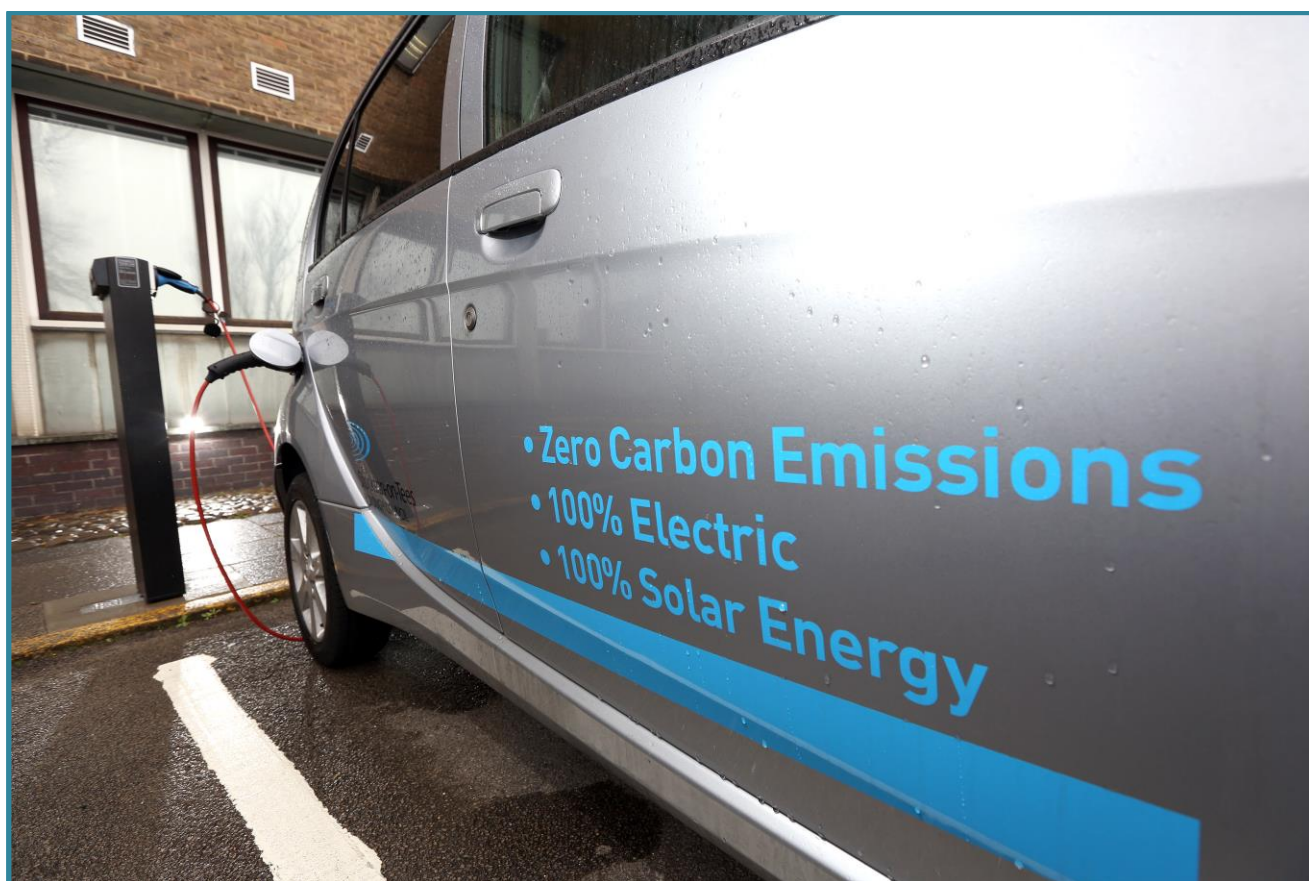


# Greenhouse Gas Emissions Report

2015/16

Stockton-on-Tees Borough Council



(Covering the period 1 April 2015 – 31 March 2016)

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

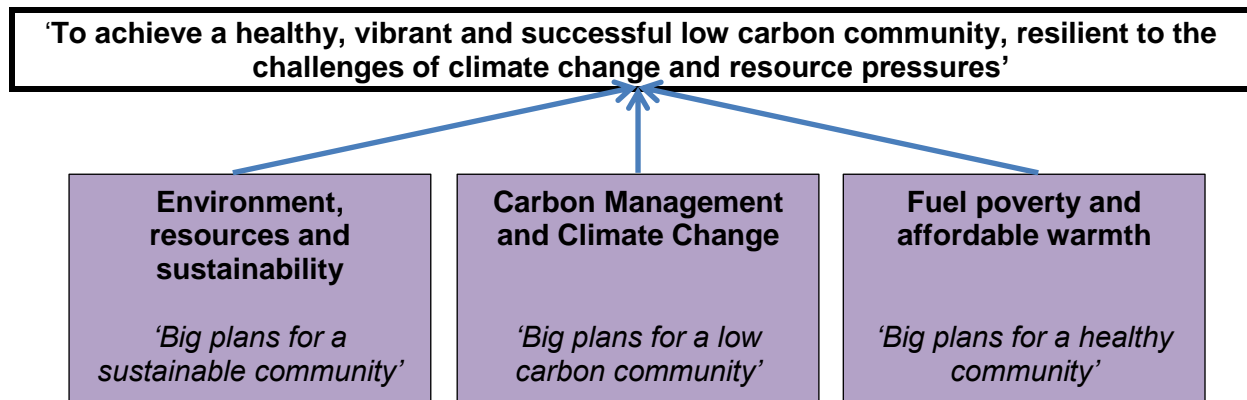
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## Organisation report

The Council's vision is of a borough that is more confident, more vibrant and more successful than ever before, and takes its responsibility to the environment seriously. The Council continues to deliver significant improvements in carbon savings, make inroads into the levels of fuel poverty as well as delivering on the wider environmental 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 last year developed its most comprehensive Climate Change Strategy and Action Plan to date in order to drive improvement on both mitigation and adaptation, which was endorsed by the Council's Cabinet in January 2016. At a sub-regional level the Council has worked alongside the neighbouring four Tees Valley Local Authorities since 2004 on tackling emissions and adapting to climate change, and adopted the Tees Valley Climate Change Strategy in 2006 and a revised strategy in 2010.

Stockton-on-Tees Borough Council has prioritised energy, carbon saving and wider climate change for a considerably long time, not just focusing on its own activity but also at a Borough wide level. The Council signed the Nottingham Declaration on Climate Change back in 2002 and jointly formed the Tees Valley Climate Change Partnership in 2005 with the neighbouring 4 local authorities and partners. Carbon reduction is at the heart of the Council Plan and it now has 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 (2015 - 2020)
- Environment Strategy (2016 - ) in development

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 Stockton-on-Tees Borough by 18% on 2013 levels by March 2020
3. Reduce per capita greenhouse gas emissions from Stockton-on-Tees Borough 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. To go further the Council rationalised all climate change, energy efficiency and renewables strategies and plans into one coherent, up to date and long term strategy as set out above, and this will make 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 huge 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/>

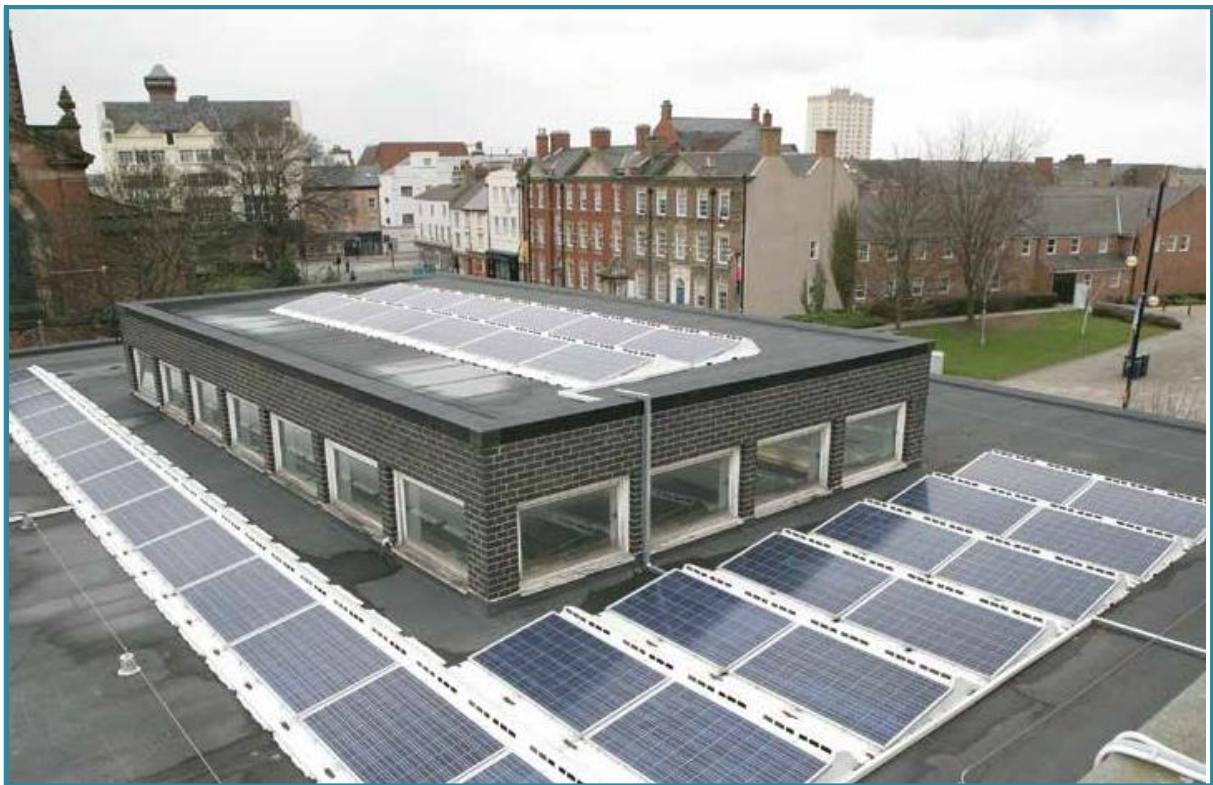


Table of Stockton-on-Tees Borough Council's Greenhouse Gas Emissions in 2015/16 in tonnes of CO<sub>2</sub>e

	Tonnes of CO <sub>2</sub> e							
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Change in 2015/16
<b>Scope 1</b>								
Gas consumption		9,081	7,992	10,300	8,409	5,342	5,064	-5.2%
Owned fleet transport		2,423	2,530	2,521	2,665	2,843	2,761	-2.9%
Process emissions	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
<b>Total scope 1</b>	<b>11,594</b>	<b>11,504</b>	<b>10,522</b>	<b>12,821</b>	<b>11,074</b>	<b>8,185</b>	<b>7,825</b>	<b>-4.4%</b>
<b>Scope 2</b>								
Electricity buildings		9,658	9,088	8,644	8,443	8,564	7,965	-7.0%
Electricity street lighting		6,097	6,813	6,671	5,894	5,848	4,922	-15.8%
<b>Total scope 2</b>	<b>16,821</b>	<b>15,755</b>	<b>15,901</b>	<b>15,315</b>	<b>14,337</b>	<b>14,412</b>	<b>12,888</b>	<b>-10.6%</b>
<b>Significant scope 3</b>								
Business mileage		625	630	567	568	457	412	-9.9%
Tees Active Ltd electricity		868	2,021	1,919	1,996	1,765	1,688	-4.4%
Tees Active Ltd gas		871	1,444	1,714	1,623	1,639	1,579	-3.7%
<b>Total scope 3</b>	<b>3,276</b>	<b>2,364</b>	<b>4,095</b>	<b>4,200</b>	<b>4,187</b>	<b>3,861</b>	<b>3,679</b>	<b>-4.7%</b>
<b>Total gross emissions</b>	<b>31,691</b>	<b>29,623</b>	<b>30,518</b>	<b>32,336</b>	<b>29,598</b>	<b>26,459</b>	<b>24,391</b>	<b>-7.8%</b>
Carbon offsets	0	0	0	0	0	0	0	
Green tariff	0	0	0	0	0	0	0	
<b>Total annual net emissions</b>	<b>31,691</b>	<b>29,623</b>	<b>30,518</b>	<b>32,336</b>	<b>29,598</b>	<b>26,459</b>	<b>24,391</b>	<b>-7.8%</b>
<b>Intensity measurement - Total number of Borough households</b>	79,557	79,992	79,135	79,595	80,144	80,144	81,925	1,781
<b>Tonnes of CO<sub>2</sub>e per household</b>	<b>0.398</b>	<b>0.370</b>	<b>0.386</b>	<b>0.406</b>	<b>0.369</b>	<b>0.330</b>	<b>0.298</b>	<b>-9.8%</b>

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

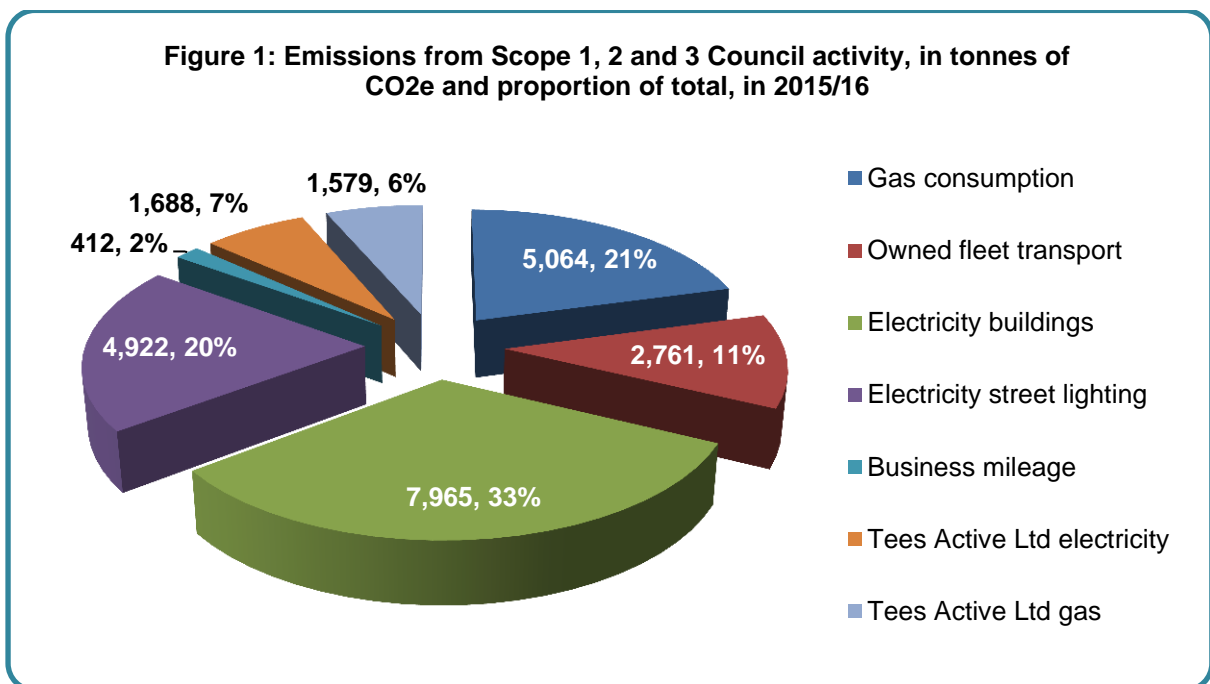
Web: [www.stockton.gov.uk](http://www.stockton.gov.uk)

## 2. Reporting period

The reporting period for this Greenhouse Gas Emissions (GHG) report is 1 April 2015 – 31 March 2016 (2015/16 financial year).

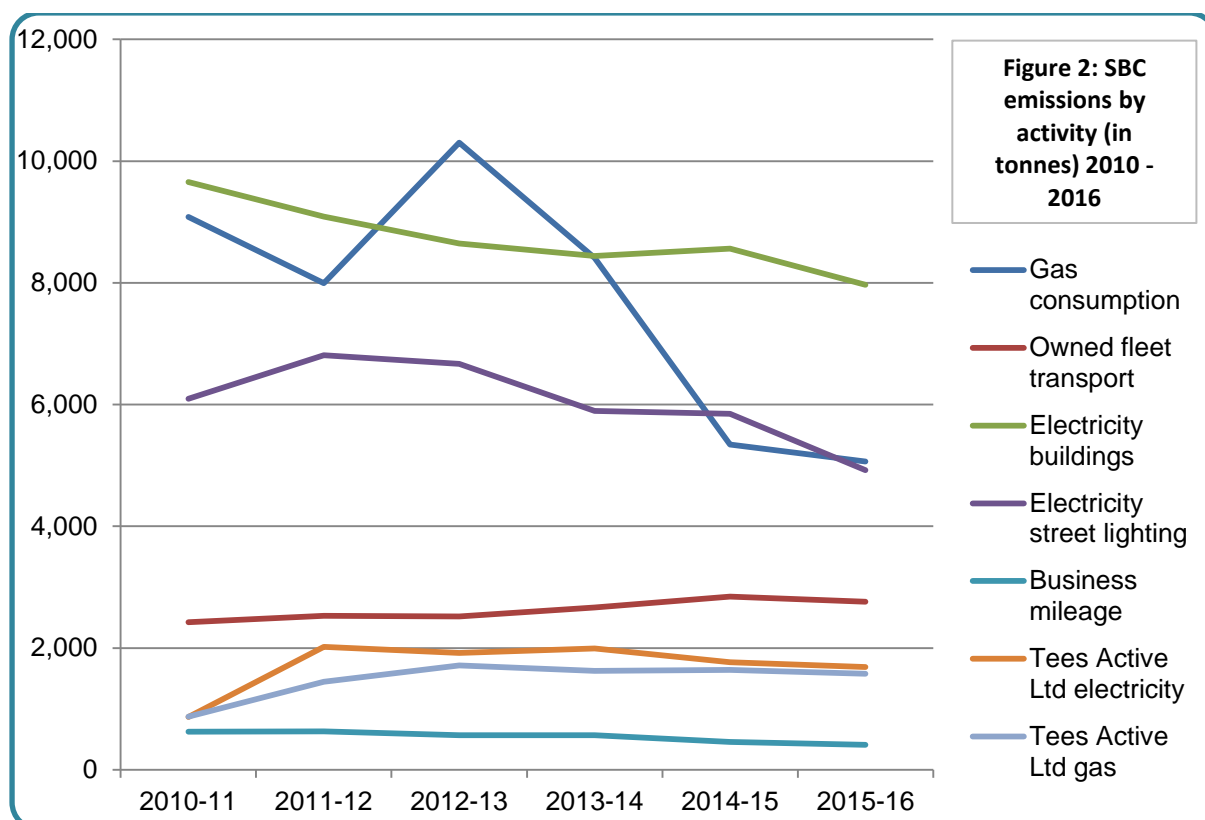
## 3. Total emissions and change over time

In 2015/16 the Council's total gross emissions were calculated at **24,391 tonnes** of CO<sub>2</sub>e, and net emissions were **24,391 tonnes** CO<sub>2</sub>e. It's CO<sub>2</sub>e per household served was **0.298 tonnes**. The breakdown by area of operation is shown in the diagram below:



Reported emissions from all Council activity under scopes 1, 2 and 3 have once again significantly decreased this year, by 7.8% in 2015/16 (or 2068 tonnes). There are a number of positive aspects to note from the results in 2015/16:

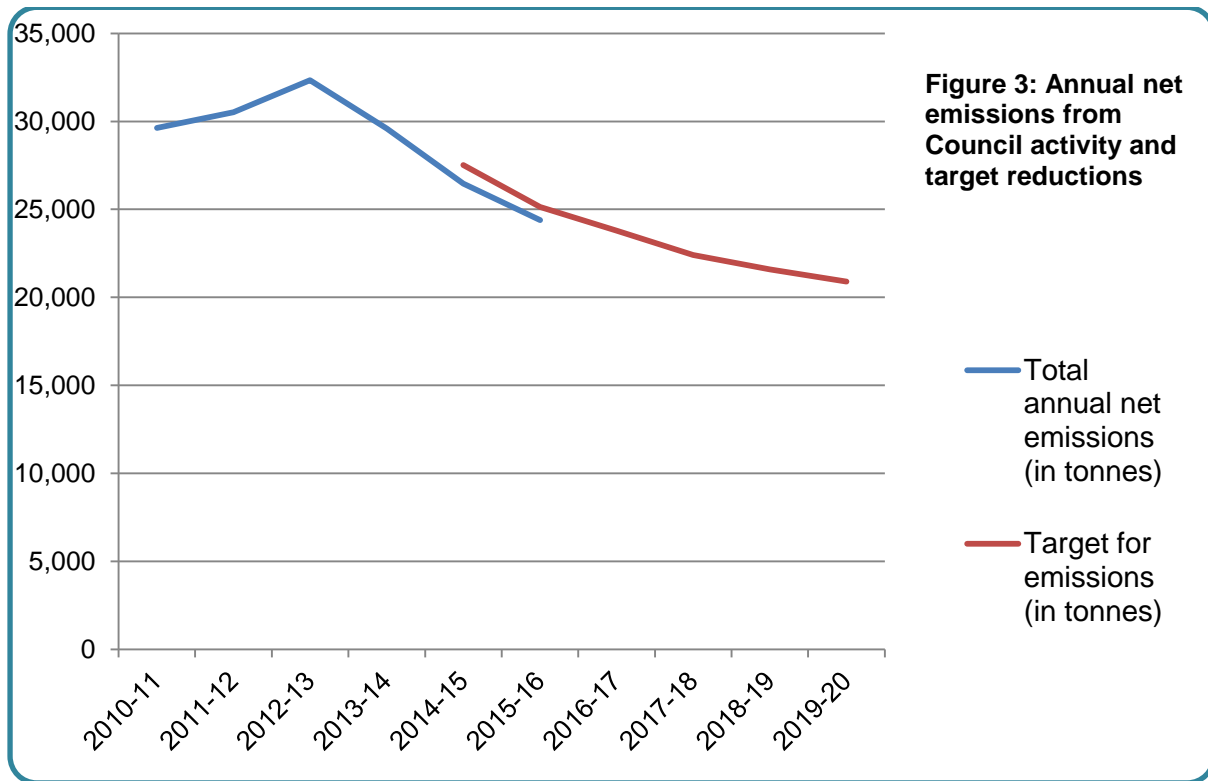
- This is the first year since the Council began emissions reporting with this methodology in 2009 that all seven areas of emissions activity have shown a decrease on the previous year
- The area showing the largest reduction was street lighting, with a 15.8% reduction in CO<sub>2</sub>e on the previous year
- Significant reductions in primary energy consumption, including emissions from gas consumption down by 5.2% on 2014/15
- Significant progress in continually reducing the Council's business mileage with CO<sub>2</sub>e emissions reduced by a further 9.9%



There are a few issues to note on the good progress in 2015/16:

- For the second winter in succession, 2015/16 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
- This was the first complete financial year of the implementation of the street lighting LED replacement programme, and the CO<sub>2</sub>e savings observed are an early sign of its effectiveness. As of 31 March 2016, the Council has now installed/replaced 10,569 LED columns of the 28,000 assets that are to be included in the programme, so further CO<sub>2</sub>e savings will be observed in the 16/17 report.
- Emissions from gas consumption have reduced by 50.8% since 2012/13, while overall scope 1 emissions have fallen by 39.0% in that time
- Emissions from business mileage have now seen a reduction of 34.6% since 2011/12 as measures to bring those costs down continue to be effective.

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



- Despite a 7% reduction in emissions in 15/16, the Council will seek to improve performance on emissions from electricity consumption, as this area now represents the source of one third of total council emissions.
- **Overall, progress is significant and the Council has observed a 23% reduction on our 2009/10 baseline net greenhouse gas emissions, and a 25.1% 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 24.6% reduction in CO<sub>2</sub>e since 2012/13 alone, a reduction of almost 8,000 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 January 2016 with the publication of the 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 January 2016, superseding all previous plans and strategies on carbon reduction, adaptation and renewables. It focuses 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.

#### Tees Valley Climate Change Strategy 2010 - 2020

The Council adopted, with its neighbouring four Tees Valley Local Authorities, the Tees Valley Climate Change Strategy in 2010 with the aim of working collaboratively with Darlington, Hartlepool, Middlesbrough and Redcar and Cleveland Borough Council's towards the reduction of greenhouse gas emissions by 20% by 2020, through actions such as reducing commercial and domestic emissions and minimising road transport.

#### Delivered on Covenant of Mayors

In 2009, Stockton-on-Tees Borough Council became a signatory of the EU Covenant of Mayors Initiative, a commitment to reduce CO<sub>2</sub> emissions within its local authority boundary by at least 20% by 2020, through the implementation of a Sustainable Energy Action Plan (SEAP). Its SEAP was submitted to the EU in February 2010 and included a baseline emission inventory and a detailed action plan. The Council has since achieved a 27% reduction in CO<sub>2</sub> and formally withdrew from the covenant in July 2015.

#### Approach

The Council has adopted 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 is not participating in 2015/16. 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 (above) 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 has chosen 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 2015/16.

**Sources of information**

<b>Emission-releasing activity</b>	<b>Source of information</b>
Operational property: Gas consumption	Total kilowatt hours (kWh) used, 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 utility bills and collated by Energy Management
Street lighting	Total kilowatt hours (kWh) used
Business mileage	Total mileage recorded from staff mileage allowance claims
Tees Active electricity (leisure)	Total kilowatt hours (kWh) used from utility bills
Tees Active gas (leisure)	Total kilowatt hours (kWh) used from utility bills

The number of households in the Borough for each year is the figure for the calendar year i.e. the 2015 figure is represented by 2015/16 statistic. This information is provided by our taxation service.

Calculation approach used

All of the data used for calculating the results in this 15/16 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 factors<sup>1</sup> (revised for 2015) 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	0.18445
Electricity	kWh	0.46219
Diesel	Litres	2.5839
Petrol	Litres	2.1944
Gas Oil	Litres	2.90884
Average car	Miles	0.293416

<http://www.ukconversionfactorscarbonsmart.co.uk/>

## **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 our 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 six 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 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 Stockton-on-Tees Borough by 18% on 2013 levels by March 2020
3. Reduce per capita greenhouse gas emissions from Stockton-on-Tees Borough 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	2015/16	2016/17	2017/18	2018/19	2019/20
Percentage (%) reduction needed on 2014/15 baseline	5% (met – 7.8%)	10.1%	15.3%	18.4%	21%
Target net emissions figure (in tonnes)	25,136 (met – 24,391)	23,787	22,411	21,591	20,903
Emissions savings in year (in tonnes)	1,323 (met – 2,068)	1,349	1,376	820	688

## 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

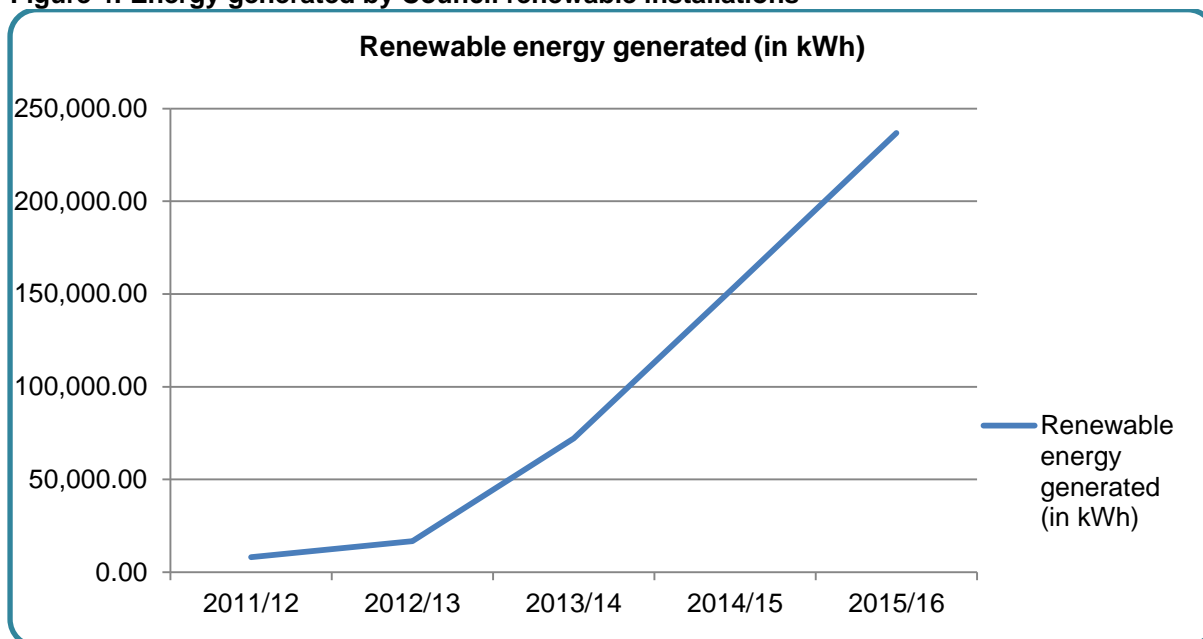
In 2015/16, the Council consumed 27,455,950 kWh of gas, 17,233,597 kWh of electricity in buildings and 10,650,000 kWh of electricity in street lighting. As part of the programme to continually reduce these areas, the Council has invested significantly in renewable energy technologies in recent years 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 a quarter 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

**Figure 4: Energy generated by Council renewable 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 CO<sub>2</sub> emissions from the local authority's operations
- A review of the Climate Change Action Plan will be presented to Cabinet in January 2017
- All reports will be published on the Council's website

The full review of this Greenhouse Gas Emissions Report will begin in April 2017 with the 2016/17 report to be published in July 2017.

## 16. Contacts

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Stockton on Tees Borough Council,  
Kingsway House,  
Billingham,  
TS23 2YL

Direct Line: 01642 526596

Email: [paul.taylor@stockton.gov.uk](mailto:paul.taylor@stockton.gov.uk)

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

[www.rediscoverstockton.co.uk](http://www.rediscoverstockton.co.uk)

## References

1. Defra (2015), 'Government conversion factors for company reporting', ([www.ukconversionfactorscarbonsmart.co.uk](http://www.ukconversionfactorscarbonsmart.co.uk))

