

Devon County Council Carbon Reduction Plan

Report of the Head of Planning, Transportation and Environment as the Chair of the Environmental Performance Board (referred to as 'the Board' in the remainder of this report)

1. Summary

This report forms part of the Board's ongoing reporting to Scrutiny on the Devon County Council (DCC) Environment Policy and the Council's Environmental Performance Programme. Specifically, it updates Scrutiny on DCC's carbon reduction targets, its Carbon Reduction Plan to meet those targets and recent progress towards meeting those targets.

2. Introduction

In February 2019 DCC declared a climate emergency and in May of the same year brought together partners from across the county to form the Devon Climate Emergency project. The 27 partners prepared the Devon Climate Declaration, which requires its signatories to review their plans (within 6 months) to reduce their own organisation's carbon emissions. DCC signed the Declaration on the 12th June 2019. The clock started ticking for DCC to review its plans.

3. Carbon Reduction Target

On the 9th December 2019, DCC set a target for its activities to be carbon neutral by 2030, including its supply chain.

Carbon neutral, or net-zero carbon, means that the sum of carbon emissions from DCC's activity and the removals of carbon dioxide from the atmosphere will equal zero. I.e. if one of the authority's vehicles emits 1 tonne of carbon dioxide in 2030, the authority will have put in a place an initiative to remove 1 tonne of carbon dioxide from the atmosphere, such as woodland planting.

'Carbon' and 'carbon dioxide' in this context are shorthand used to refer to a basket of greenhouse gas emissions that cause climate change, including methane and nitrous oxide.

This target is based on a realistic review of opportunities for decarbonisation.

4. The Carbon Reduction Plan

DCC's Carbon Reduction Plan <https://www.devon.gov.uk/environment/our-environmental-performance/environmental-performance-action-plans/carbon-reduction-plan> provides a roadmap for achieving carbon neutrality. This has followed a robust process of forecasting the authority's energy requirements over the next

decade by considering projections of technological development (e.g. the speed at which alternative fuels will be available for large vehicles) and the effect of the national carbon reduction programme (such as the continued deployment of renewable energy onto the national electricity grid).

The Carbon Reduction Plan replaces the 2014 Energy Policy and Strategy.

Figure 1 shows the strategic approach between 2020 and 2030 and summarises that the council will:

- Reduce the 2012/13 corporate carbon footprint by 70% by 2030/31, as a minimum
- Retain the existing target to source 30% of its total corporate energy requirement from renewable sources by 2030/31
- Incrementally increase the percentage of the remaining carbon footprint that is offset, from 5% in 2019/20 to 100% by 2030/31
- Engage with contract providers to reduce carbon emissions from their operations and offset the remainder by 2030/31. As a first step, the council will engage the ten highest-value contract providers
- Offset residual emissions from the supply chain from the year 2030 onwards.

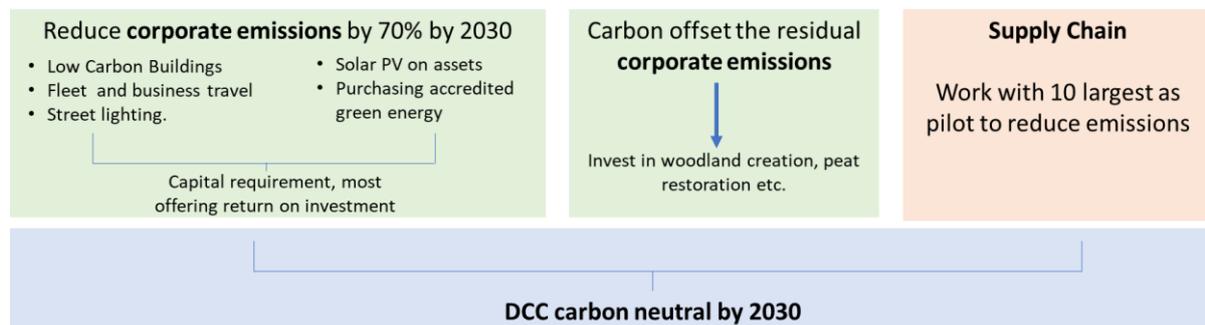


Figure 1 - Strategic Approach to DCC's Carbon Reduction

The necessary revenue funding for 2021/22 and capital funding for 2021/22 and 2022/23 has been allocated to begin implementing this Plan.

The carbon emissions from schools are monitored but are not part of the corporate carbon footprint target as financial control and management decisions for many elements of building maintenance lie with the individual governing bodies.

The school building maintenance activity that is the responsibility of the council will continue to look to install the best available technology for the budget available and make use of grant funding. As an example, the heating maintenance projects at Kenn and Denbury primary schools replaced old storage heaters with smart storage heaters, roof-top solar PV and battery storage to better align the renewable energy availability with the electricity demand in the schools.

The South West Energy Partnership, a collaboration between Bristol City Council, Plymouth City Council, and Devon County Council is looking to support schools with

interest-free loans for energy projects to all schools in each area. These will be useful to the schools to install energy measures that are the responsibility of local governing bodies.

5. Recent Carbon Reduction Performance

The latest year for which carbon emissions have been calculated is 2019/20. These are described in detail in Appendix 2 to this report – the 2020 Carbon Footprint. DCC’s gross corporate emissions are 48% below the baseline year of 2012/13. This means the authority is ahead of target to achieve a 70% reduction by 2030. This is not a reason to adjust the target as the modelling of future emissions shows it will get progressively more difficult to make emissions cuts.

DCC has started building its experience in carbon offsetting by attempting to purchase Woodland Carbon Units to equal 5% of the gross emissions in 2019/20. An initial open-market procurement exercise in February 2021 failed due to sellers wanting to keep hold of the Woodland Carbon Units due to speculation about forthcoming rapid price rises. Further attempts will be made to test the market and inform the authority’s offsetting strategy.

Figure 2 shows greenhouse gas emissions each year since 2012/13 and the 70% target line in orange.

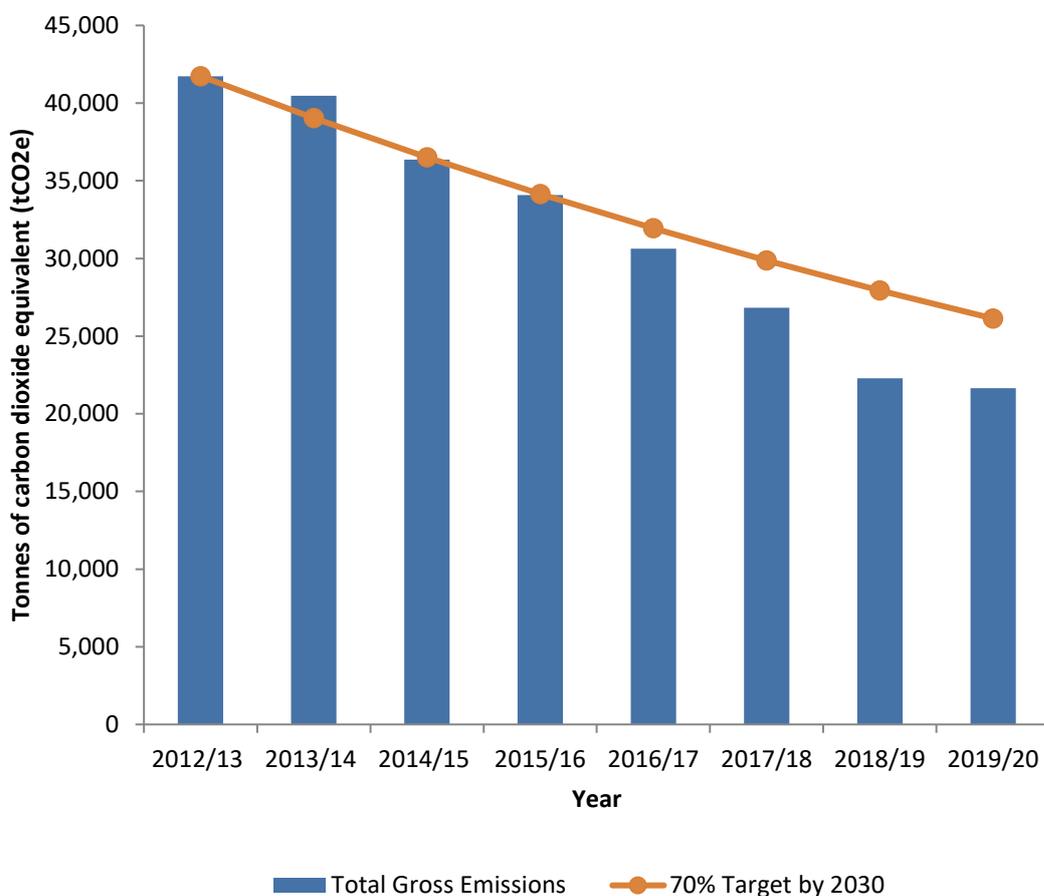


Figure 2 – Gross Corporate Greenhouse Gas Emissions

Reasons for the 48% reduction in gross emissions are:

- Improvement in the carbon intensity of grid electricity
- Replacement of older boilers with condensing models through the maintenance programme
- Installation of LED lighting in corporate property through the maintenance programme
- Installation of part-night and LED street lighting
- Installation of heat pumps in corporate buildings
- Installation of solar arrays on corporate buildings
- Gradual improvement in the carbon intensity of staff vehicles
- Technology enabling less travel, such as Windows 10 and Microsoft Teams.

Indicative carbon emissions from our supply chain for 2019/20, estimated using carbon intensity factors for different types of public sector activity, are 346ktCO_{2e}. This remains unchanged from previous years due to the calculation methodology that relies on carbon intensity factors from 2009. This figure demonstrates that our impact on climate change is far more significant than just the calculated emissions our corporate carbon footprint.

6. Financial Considerations

The costs of meeting the corporate emissions target are estimates due to uncertainties about the speed at which technologies will be brought to market and their cost competitiveness; but there will be costs, some of which will offer a return on investment and others won't.

Capital requirements over the next decade are in the order of £13.5m whilst revenue requirements are estimated to be £6.7m. A full breakdown of these costs is provided at Appendix 1 to this report.

Capital budget approved for 2021/22 is £1m (subject to the approval of £500k carry forward from 2020/21 to 2021/22) and £1m 2022/23. This is sufficient for the first two years of the Plan. Revenue of £150k has been made available for 2021/22, sufficient for the first year of the Plan.

Decarbonising the supply chain by 2030 will come at a cost. Some measures will save money – more efficient technology and embracing digital service provision for example – but carbon offsetting, which will be necessary to achieve carbon neutrality, could cost about £3m in the year 2030, which is about 0.5% of DCC's supply chain expenditure.

7. Legal Considerations

The Climate Change Act 2008 (2050 Target Amendment) Order 2019 requires the UK to become carbon neutral by 2050. DCC has a moral obligation to demonstrate local leadership towards achieving or exceeding this requirement.

8. Environmental Impact Considerations (Including Climate Change)

The environmental impacts of the Carbon Reduction Plan are positive. The proposals will reduce carbon emissions and their associated influence on global warming. Additionally, the opportunity for carbon offsetting in Devon can provide air quality, flood risk, biodiversity and landscape enhancements that in turn can improve community resilience.

9. Equality Considerations

An Impact Assessment is available on the Council's website at <https://www.devon.gov.uk/impact/corporate-energy-and-carbon-strategy>.

Climate change will affect everybody in the county, and it will affect people less able to adapt the most. These include less affluent people, those living with physical and mental health conditions, those living in coastal communities or other areas prone to flooding and young people who will live with the effects becoming worse over their lifetimes. Implementing the recommendation will help grow efforts to reduce international carbon emissions and minimise these impacts on everyone.

Furthermore, implementing the recommendation will require fundamental changes to the way the Authority's services are provided, which will need to consider the energy used in buildings, transport and the supply of goods and services. This has the potential to impact negatively and positively on service users depending on the specifics of the proposals. Tactical-level changes to services over the next decade will need their own impact assessment to consider their effect on equality characteristics.

10. Risk Management Considerations

The potential risks to Devon's communities from climate change beyond 1.5 degrees are profound – e.g. extreme sea level rise, health effects (heat stress, anxiety, vector-borne diseases etc.), increased flood risk, economic shocks and a breakdown of environmental services that provide food, fuel and pharmaceuticals to name just a few.

The effort to minimise these impacts must occur at all scales from the individual to the global. Whilst DCC is unlikely to influence emissions elsewhere in the world, it is vital that the Authority demonstrates local leadership.

11. Public Health Impact

The switch to electric vehicles and renewable energy will improve local air quality. By enhancing habitats for carbon offsetting purposes, there is an opportunity to improve public access to the countryside to enable recreation and exercise for mental and physical wellbeing.

12. Conclusions

DCC has met its obligations to review its carbon emissions having signed the Devon Climate Declaration. It has set an ambitious target and has a credible and evidence-led plan in place to meet it. Performance is currently ahead of target.

Dave Black
Head of Planning, Transportation and Environment as the Chair of the
Environmental Performance Board

Electoral Divisions: All

Councillor Roger Croad: Cabinet Member for Community, Public Health,
Transportation and Environmental Services

Local Government Act 1972: List of Background Papers

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Background Paper	Date	File Reference
Impact Assessment	18 September 2019	n/a
https://www.devon.gov.uk/impact/corporate-energy-and-carbon-strategy/		

Devon County Council Carbon Reduction Plan - Final

Reduced Revenue

Financial Year	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
50% of DCC's fleet converted to electric by 2030		4,603	27,919	43,399	65,922	90,036	123,670	160,849	221,776	282,286
Lucombe House Refurbishment	14,544	14,439	14,335	14,230	14,544	14,753	14,753	14,335	13,707	13,498
Building refurbishment - 60% energy reduction per building		5,189	10,435	15,737	21,464	27,574	33,089	37,955	42,677	47,595
2MW of Solar PV on DCC assets		17,142	34,411	52,082	71,134	89,139	105,800	123,350	141,149	159,614
Total Reduced Revenue	14,544	41,374	87,099	125,448	173,065	221,502	277,312	336,489	419,309	502,992

Appendix 2 to PTE/21/17

2020 Carbon Footprint

Purpose

This report describes the greenhouse gas emissions produced by our (Devon County Council's) activity (our 'carbon footprint') in the financial year from April 2019 to March 2020 (referred to as 2019/20). These emissions are compared to previous years' data and our baseline year of April 2012 to March 2013 (referred to as 2012/13).

The Carbon Reduction Plan explains the activities we are implementing over the next 10 years to achieve a net-zero operation.

<https://www.devon.gov.uk/environment/our-environmental-performance/environmental-performance-action-plans/carbon-reduction-plan>

Summary

Our gross emissions are 48% below our baseline year of 2012/13 and we are ahead of target to achieve a 70% reduction by 2030.

Part A – Summary Table and Graphics

The Greenhouse Gas (GHG) Protocol sets the global standard for how to measure, manage and report a carbon footprint. Within the standard, emissions are split into three scopes:

- Scope 1 GHG emissions are 'emissions from sources that are owned or controlled by the organisation'. In our case this is the burning of fossil fuel (e.g. gas and diesel) in buildings and our vehicle fleet.
- Scope 2 GHG emissions are defined as 'emissions from the consumption of purchased energy'. In our case this is electricity.
- Scope 3 GHG emissions are defined as 'emissions that are a consequence of the operations of an organisation but are not directly owned or controlled by the organisation'. Scope 3 is an optional reporting category which can include several different sources of GHG emissions. In this report we have included GHG emissions associated with providing 'home to school' transport, travelling for our work purposes and the GHGs emitted during the process of extracting, refining and delivering fossil fuels and electricity to our business locations - these are termed 'Well to Tank' emissions.

Table 1 shows our gross 2019/20 emissions in comparison to previous years and the baseline year of 2012/13. The data is displayed in tonnes of carbon dioxide equivalent. This is a measure of the effect of a basket of greenhouse gas emissions on the atmosphere (such as methane and nitrous oxide), not just carbon dioxide. All of the years are directly comparable as we have recalculated the data to remove the effect of significant changes to the organisation, such as a year where we may have closed a significant number of buildings. The 2019/20 gross emissions are 48% below 2012/13 levels.

	2012/13 Base Year	2014/15	2016/17	2019/20	% Change Base Year
Scope 1	4,667	3,598	3,456	2,598	-44%
Scope 2	18,701	18,518	14,173	6,252	-67%
Scope 3	18,367	14,242	12,994	12,791	-30%
Gross Emissions	41,735	36,358	30,623	21,641	-48%
Gross Expenditure (£m)	1,319	1,229	1,198	1,240	-6%
Gross Emissions per £m of Gross Expenditure	32	30	26	17	-45%

Table 1: Devon County Council's gross greenhouse gas emissions data for 1st April 2012 to 31st March 2020 displayed in tonnes of carbon dioxide equivalent (tCO₂e).

Figure 1 shows the gross corporate greenhouse gas emissions for each year on a bar chart. Included in Figure 1 is an orange line showing the level below which our emissions need to be to reach our target of reducing gross corporate emissions by 70% by 2030 from 2012/13 levels. The remaining 30% will be offset through certified carbon offsetting mechanisms in the United Kingdom to achieve 'net-zero emissions'.

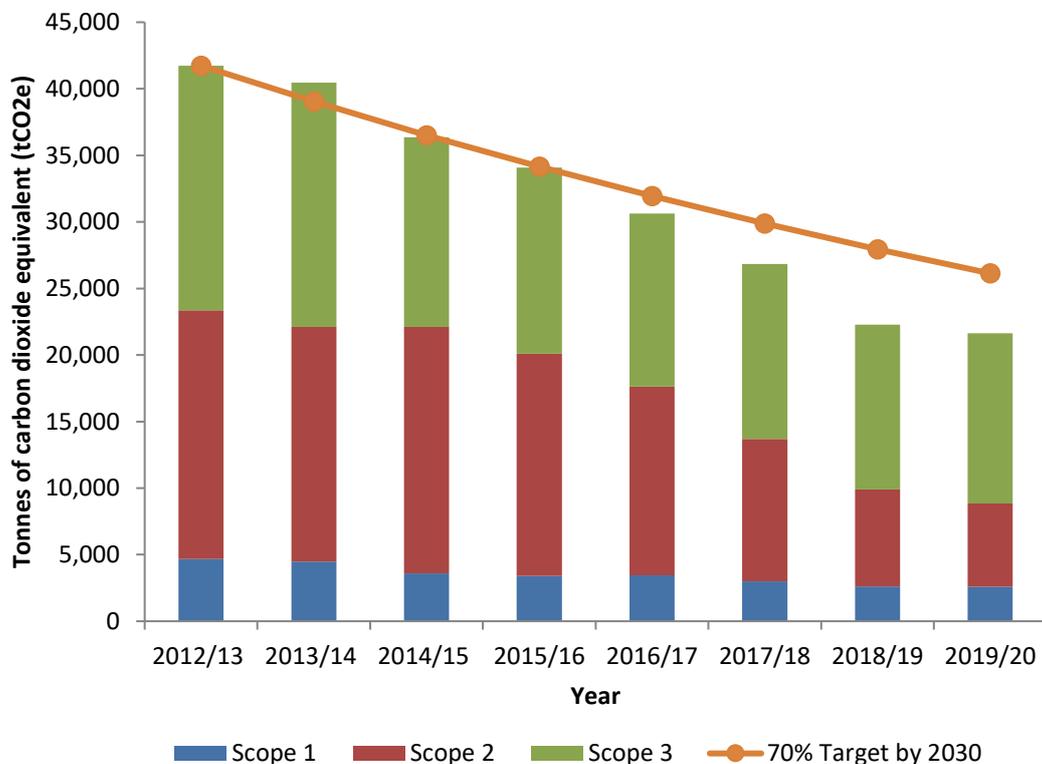


Figure 1: Devon County Council's gross corporate greenhouse gas emissions

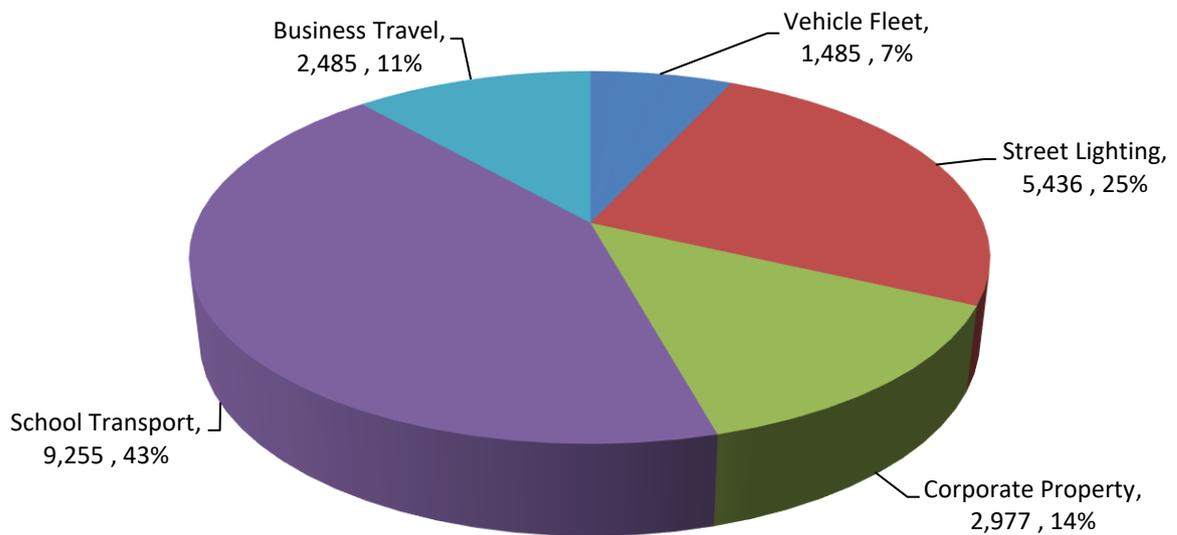


Figure 2: 2019/20 Gross Greenhouse Gas Emissions by Source

DCC has started building its experience in carbon offsetting by attempting to purchase Woodland Carbon Units to equal 5% of the gross emissions in 2019/20. An initial open-market procurement exercise in February 2021 failed due to sellers wanting to keep hold of the Woodland Carbon Units due to speculation about forthcoming rapid price rises. Further attempts will be made to test the market and inform the authority's offsetting strategy.

Part B – Supporting Explanations

Company Information

Devon County Council is the upper tier local authority in Devon, excluding the unitary areas of Torbay and Plymouth.

Quantification and Reporting Methodology

We have followed the Defra Guidance on '*Environmental Reporting Guidelines: including mandatory greenhouse gas emissions reporting*' dated October 2013. The scope of the carbon footprint is based on our activities that can either be measured from consumption data or reasonably estimated from finance data. We have used the 2019 emissions factors from the Department for Business, Energy and Industrial Strategy for this assessment. The estimation of upstream supply chain emissions covered under 'Scope 3 Exclusions' below have used the latest emissions factors available from the Department for Environment, Food and Rural Affairs dated 2009. No assessment is made for downstream end-of-life disposal emissions.

Organisational Boundary

DCC has used the financial control approach to identify operations from which to collect data. Therefore, schools and leased properties are excluded.

Operational Scopes

DCC has measured its scope 1, 2 and available scope 3 emissions. These are shown in Table 3 along with the change in the previous 12 months.

	2018/19 GHG (tCO ₂ e)	2019/20 GHG (tCO ₂ e)	% Change in last year	% of relevant scope in 2019/20
Scope 1				
Gas	1,248	1,368	+10%	53%
Biomass	0	0	-	0%
Oil	26	24	-8%	1%
LPG	8	9	+17%	0%
Fleet	1,320	1,198	-9%	46%
Fugitive	Emissions from refrigerants not assessed but thought to			
Total Scope 1	2,601	2,598	0%	
Scope 2				
Purchased electricity – street lighting	5,809	5,010	-14%	80%
Purchased electricity – corporate	1,502	1,239	-17%	20%
Total Scope 2	7,311	6,250	-15%	
Available Scope 3				
School transport	7,039	7,471	+6%	58%
Business travel	2,001	1,991	0%	16%
Water	41	41	0%	0%
Well to Tank	3,277	3,288	0%	26%
Total Scope 3	12,358	12,791	+4%	

Table 3: Devon County Council's scope 1, 2 and 3 gross greenhouse gas emissions in tonnes of carbon dioxide equivalent (tCO₂e).

Scope 3 Exclusions

In addition to the emissions from the fossil fuel and electricity used to operate school buildings, which are not formally reported as we do not have financial control over these assets, Scope 3 emissions from waste generated by DCC, employee commuting and leased assets are excluded due to difficulties in collecting relevant and timely data.

Supply Chain Carbon Footprint

Indicative carbon emissions from our supply chain for 2019/20, estimated using carbon intensity factors for different types of public sector activity, are 346ktCO₂e. This remains unchanged from previous years due to the calculation methodology that relies on carbon intensity factors from 2009. This figure demonstrates that our impact on climate change is far more significant than just the calculated emissions our corporate carbon footprint.

Reasons for Changes in Emissions

Our gross GHG emissions are 48% below the 2012/13 base year. Reasons for this are:

- Improvement in the carbon intensity of grid electricity
- Replacement of older boilers with condensing models through the maintenance programme
- Installation of LED lighting in corporate property through the maintenance programme
- Installation of part-night and LED street lighting
- Installation of heat pumps in corporate buildings
- Installation of solar arrays on corporate buildings
- Gradual improvement in the carbon intensity of vehicles used for grey fleet journeys
- Technology enabling less travel, such as Windows 10 and Microsoft Teams

Base Year

We will recalculate the base year emissions whenever:

- Property disposals and terminated services represent 5% or more of base year emissions
- New properties, services or previously excluded emissions make the base year incomparable
- There is a significant change in reporting accuracy that makes the base year incomparable.

We recalculated Base Year emissions and subsequent years' emissions in 2017/18 to reflect the significant outsourcing of services and staff reductions that had occurred. The components that were recalculated were emissions from corporate property and business travel. Disposed buildings were removed from previous years' data. Business travel emissions were recalculated by multiplying the 'business travel emissions per employee' arising in each previous year by the number of employees in the organisation in 2017/18.

2012/13 has been retained as the base year, which remains relevant in the context of our new Carbon Reduction Plan.

Target

Our Carbon Reduction Plan has set targets to reduce the corporate carbon emissions by 70% over the 2012/13 baseline by 2030 and offset the remaining 30% to achieve 'net-zero emissions'.

The declared gross carbon footprint in this report is 48% below the base year. This performance is ahead of schedule. The net carbon footprint is 51% below the base year.

Intensity Measurement

We have chosen to use Gross Operating Expenditure as the intensity measurement. This provides an indication of the extent of activity we deliver and is applicable to all components of the carbon footprint. Our gross emissions per million-pound spend has reduced by 45% since 2012/13.

External Assurance Statement

Our GHG emissions data is not covered by an External Assurance Statement.

Green Energy Tariffs

We have not purchased a green energy tariff or carbon offsets.

Woodland Carbon Units

We have not retired any Woodland Carbon Units.

Renewable Electricity Generation

Our solar PV arrays on non-school properties have generated 229MWh of renewable electricity in 2019/20 saving 63.5 tCO₂e.

Renewable Heat Generation

We have not generated renewable heat in our non-school properties.