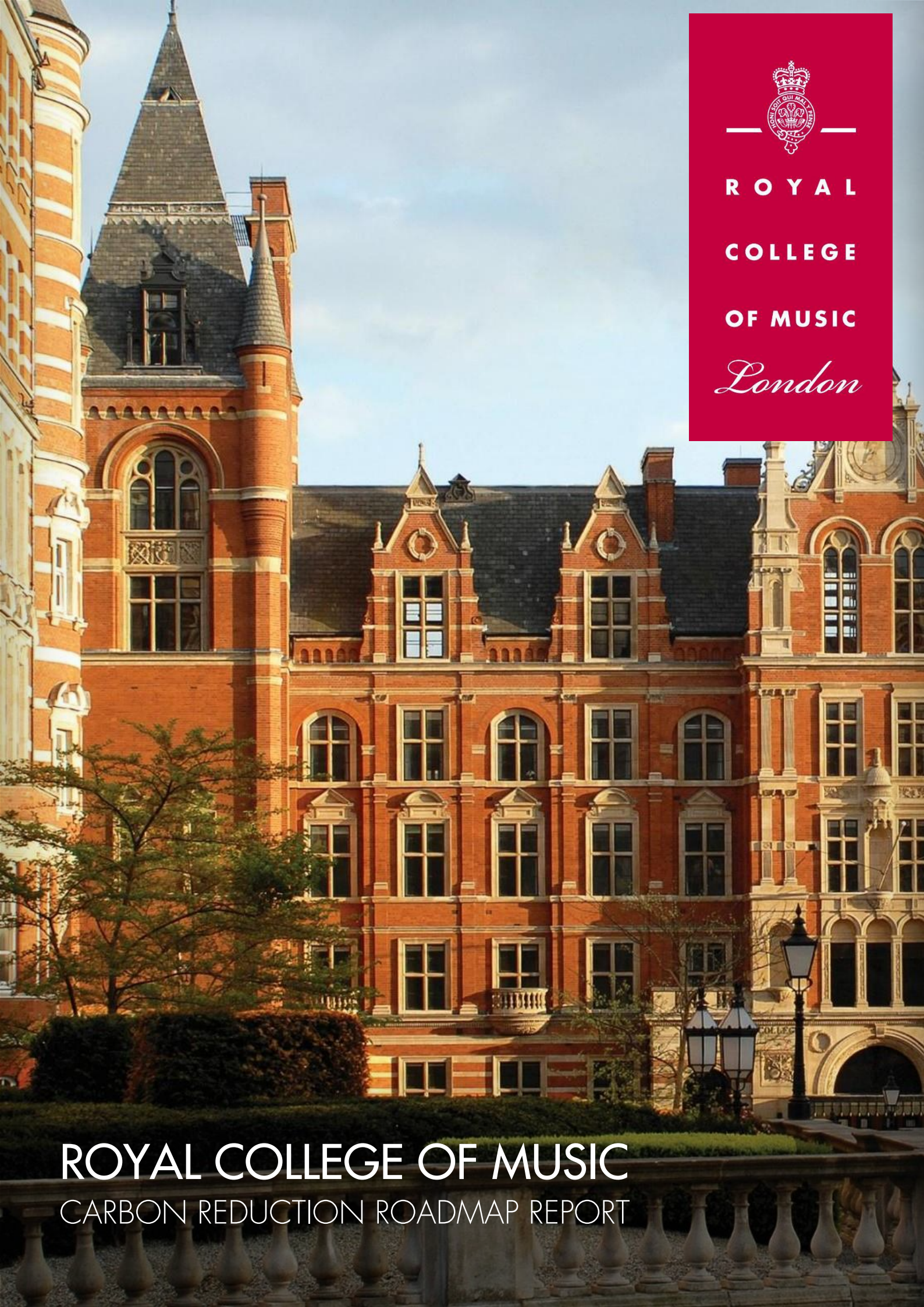


ROYAL COLLEGE OF MUSIC

CARBON REDUCTION ROADMAP REPORT

Executive Summary

This report introduces the second edition of the College's carbon management plan. The updated plan includes:

- Revised scope 3 emissions reporting, retrospectively adjusting the scope and reporting methodology to include current reporting good practice and updated assumptions and data.
- Input from a detailed energy and carbon reduction assessment, completed as part of the compliance process with the Energy Savings Opportunities (ESOS) regulations.
- Proposed updated short- and long-term carbon reductions targets, aligned with a net zero target year of 2039/40.
- An updated roadmap to deliver emissions reductions on campus.

Progress to date

The College has made good progress against its existing carbon reduction targets. From a baseline of 2004/05, the RCM has reduced scope 1 and 2 emissions (market-based) by 76%, exceeding the 2026/7 target of 73%. This has been delivered through a focused programme of energy efficiency initiatives (including lighting upgrades) and moving from gas to electrical-based heating sources (such as point-of-use hot water systems).

The College commenced measuring scope 3 emissions in 2019/20. Since this time, data availability and quality has increased which allowed additional emissions sources to be reported and introduced significant changes in reported emissions for some categories – start/end of term student travelling in particular. We have recalculated historic scope 3 emissions using consistent methods and assumptions and have updated the 2019/20 baseline and net zero targets.

The revised data shows we are currently ahead of target for scope 3 emissions, however emissions have been increasing, placing the College's emissions and target on a converging trend.

Updated emissions targets

We propose adjusting our long-term net zero target year to 2039/40, and adopting the following targets:

	Short-term 2029/30	Long-term 2039/40
Scope 1 and 2	We will reduce scope 1 and 2 emissions by 76% by 2029/30 from a 2019/20 baseline	We will reduce scope 1 and 2 emissions by 90% by 2039/40 from a 2019/20 baseline
Scope 3	We will reduce scope 3 emissions by 46% by 2029/30 from a 2019/20 baseline	We will reduce scope 3 emissions by 90% by 2039/40 from a 2019/20 baseline

The adjustment reflects the following factors:

- Key decarbonisation projects involve swapping from gas to electricity. The heating and hot water systems in the new courtyard buildings are gas. Replacing them before the end of their useful life will incur additional costs and environmental impacts.
- Decarbonisation of the UK electricity grid is likely to occur after 2035, affecting our emissions and those in our supply chain.
- We are collaborating on carbon reductions with our close neighbours through the South Ken ZEN+ initiative. The initiative's target is net zero by 2040. Aligning our targets will support collaboration.

- The extended programme will align more closely with the expected end-of-life of key plant and equipment and key milestones in our estates strategy and capital plan.

Updated carbon reduction programme

We have established an updated suite of carbon reduction projects, which range from lighting upgrades, improved energy controls, and a phased replacement of gas heating with heat pumps. An outline capital investment programme has been proposed, which will reduce our emissions associated with electricity and gas use to zero by 2039/40.

In addition, we have proposed actions to improve the quality of our scope 3 emissions data, especially those related to purchased goods and services. The proposed actions will also seek to engage key suppliers on carbon emissions and encourage improved carbon reporting and management in order to align with our net zero objectives.

Progress to date

The RCM has set a clear commitment to achieve net zero carbon as part of our work to tackle climate change. We published the current version of our Carbon Management Plan in October 2021, which include medium- and long-term targets.

Existing carbon reduction targets

Scope	Baseline year	Medium-term target (by end of 2026/7)	Long-term target
Scope 1 and 2	2004/05	73%	Net zero carbon by 2034/35
Scope 3	2019/20	47%	

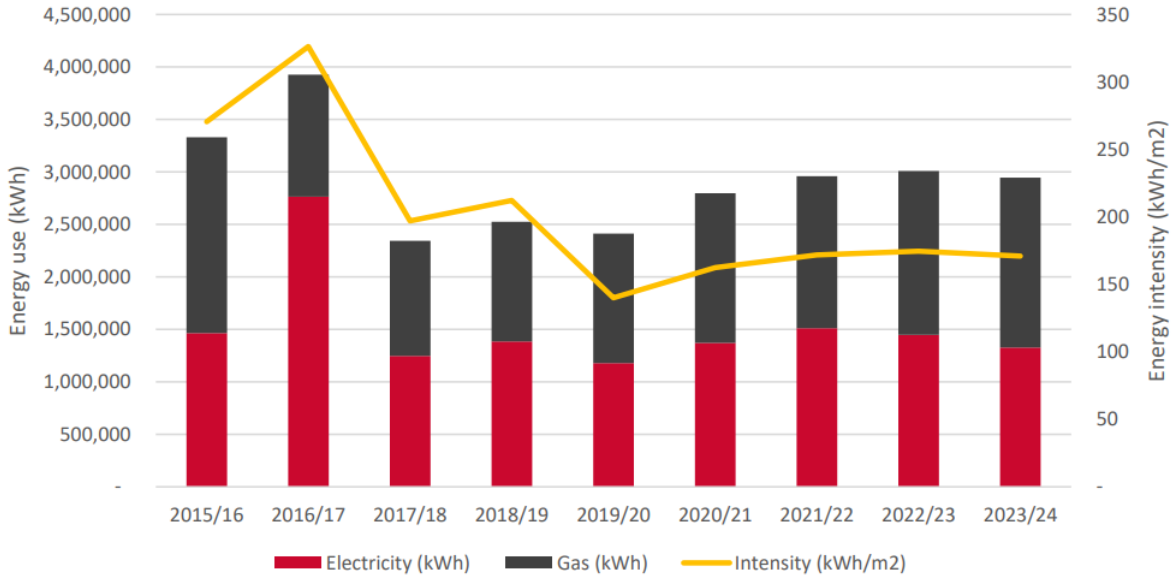
The college has implemented a range of initiatives to reduce carbon emissions including:

- Scope 1: Heat decarbonisation plan to reduce heat losses in pipework, improve controls and swap from gas boilers to electrical heat sources.
- Scope 2: Efficiency projects include LED lighting, voltage optimisation, AC upgrades and IT infrastructure upgrades, supported by grid decarbonisation.
- Scope 3: Engage with suppliers, construction partners and staff to embed low carbon practices and support low carbon travel.

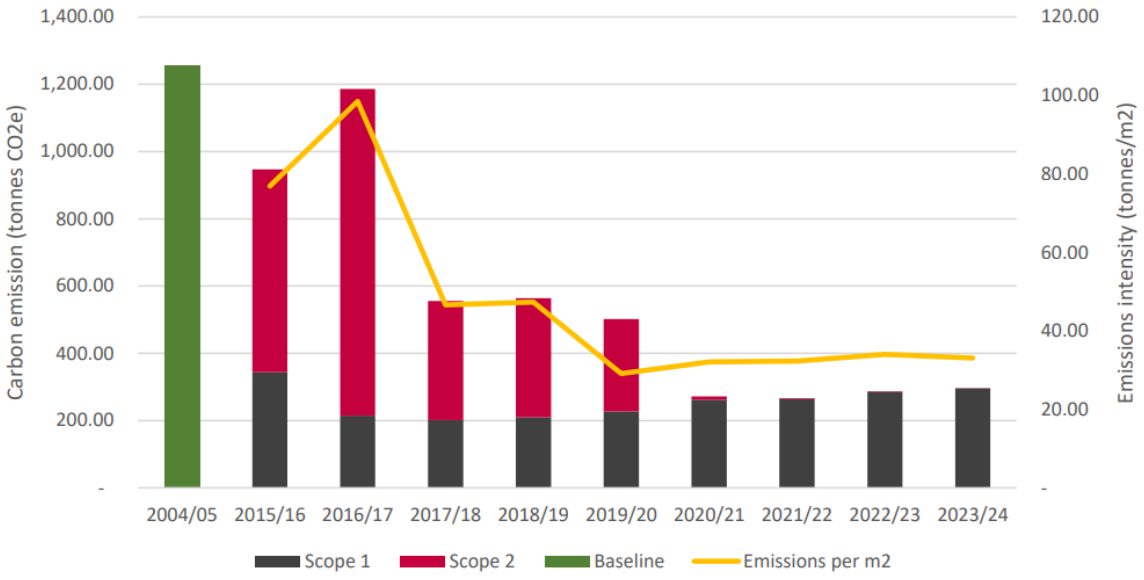
The college has made good progress on delivering carbon reductions across scopes 1 and 2 from 2004/05, reducing emissions by 55% (using the location-based reporting method) and 76% (using the market-based method).

This places the college ahead of its carbon reduction target for 2026/27 and on track for our longer-term net zero objective.

Energy use

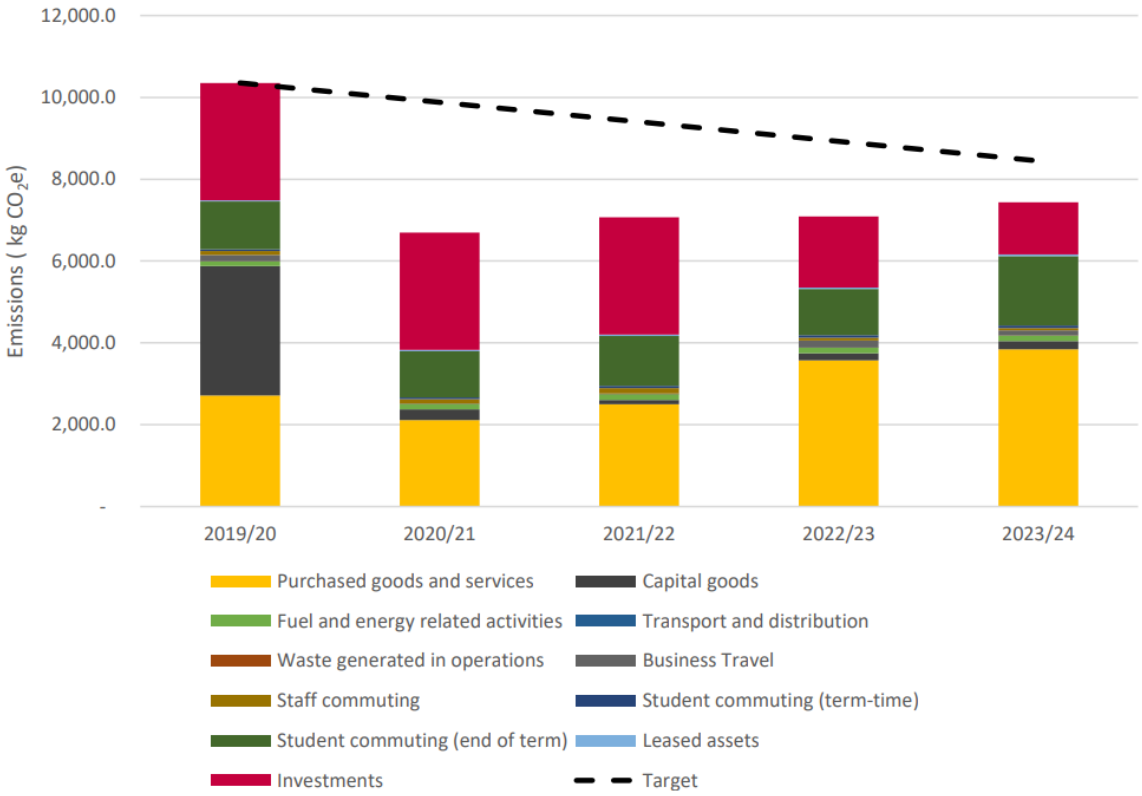


Carbon emissions: Scope 1 and 2



Carbon emissions: Scope 3

We have updated our scope 3 emissions reporting methodology, expanded the scope of reporting and updating the calculation methodology for some emissions to ensure more consistent, comparable reporting. Updated scope 3 emissions are set out below, along with the target trend to achieve the proposed updated net zero emissions targets.



Improved carbon emissions reporting

Since publishing our previous carbon management plan, we have expanded and improved our carbon reporting methodology, in particular, reporting more scope 3 emissions sources and standardising the approach for student travel at the start and end of term.

As part of this update to our carbon management plan, we have recalculated our historic emissions in line with the expanded methodology to ensure the disclosures are as comprehensive as possible and to ensure emissions are comparable over time.

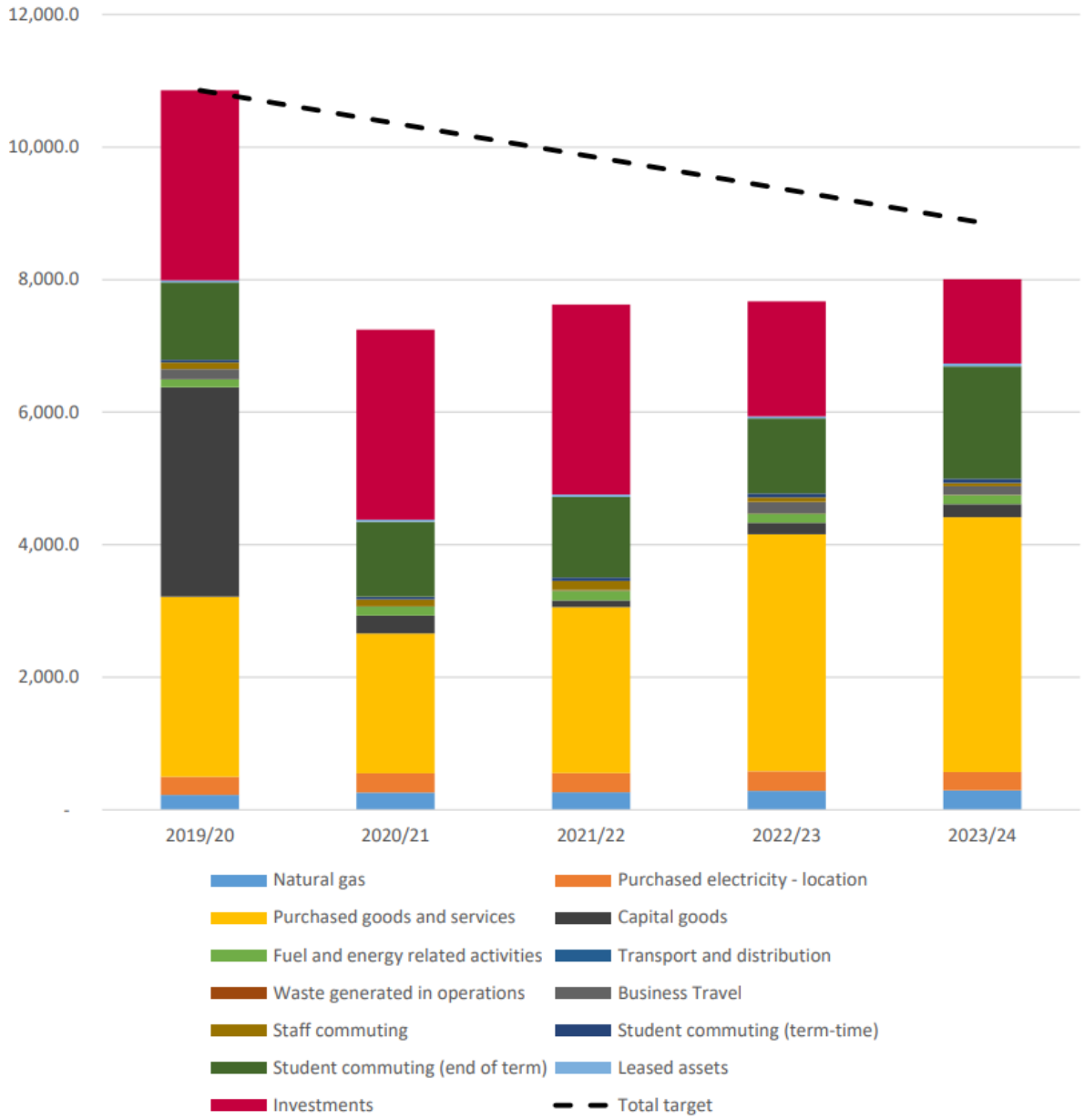
Our updated historic emissions are set out below, with totals reported using the location-based approach.

Figure 1: Updated carbon emissions 2019/20 – 2023/24

	Emissions (kg CO2e)	2019/20	2020/21	2021/22	2022/23	2023/24
Scope 1	Natural gas	227.2	261.5	264.6	285.8	295.6
Scope 2	Purchased electricity - location	274.5	291.0	292.0	299.7	275.0
	Purchased electricity - market	274.5	-	-	-	-
Scope 3	Purchased goods and services	2,713.9	2,110.3	2,503.4	3,571.4	3,846.4
	Capital goods	3,162.4	267.5	100.8	174.3	195.3
	Fuel and energy related activities	119.7	137.2	145.8	141.0	139.4
	Transport and distribution	-	-	-	-	-
	Waste generated in operations	0.3	1.7	2.3	1.7	1.7
	Business Travel	152.0	4.4	10.3	172.7	127.7
	Staff commuting	100.3	102.6	135.5	66.7	52.2
	Student term-time travel	39.9	40.5	53.7	62.0	63.1
	Student travel (start and end of year)	1,169.0	1,133.0	1,214.2	1,128.7	1,692.2
	Leased assets	29.4	29.4	35.2	35.0	44.0
	Investments	2,866.0	2,866.0	2,866.0	1,734.0	1,272.0
Total	Scope 1	227.2	261.5	264.6	285.8	295.6
	Scope 2 (location-based)	274.5	291.0	292.0	299.7	275.0
	Scope 3	10,353.0	6,692.6	7,067.1	7,087.5	7,434.0
	Total	**10,854.7**	**7,245.0**	**7,623.8**	**7,673.1**	**8,004.6**

Full emissions breakdown

Figure 2: Updated scope 1, 2 and 3 carbon emissions 2019/20 – 2023/24



Overall, our scope 3 emissions make up more than 90% of our total footprint, with the largest sources being purchased goods and services (48%), student commuting at start/end of term (21%) and investments (16%).

Due to the reduction in emissions associated with capital spend since 2019/20 and the reduction in emissions associated with investments, the RCM is ahead of the short- and long-term net zero target trends, however the year-on-year increases driven by purchased goods and services is narrowing the gap.

Updated net zero targets

We are committed to achieving net zero and reducing our emissions in line with a 1.5 degree scenario. We had established a long-term target to achieve net zero carbon by 2035, with an interim target to reduce scope 1, 2 and 3 emissions by 43% from a 2019/20 baseline by 2026/27. As part of the review of our carbon management plan, we have re-examined the targets and propose adjusting the net zero target year to 2039/40, reflecting the following factors:

- Key decarbonisation projects involve swapping from gas to electricity. The heating and hot water systems in the new courtyard buildings are gas and replacing them before the end of their useful life will incur additional costs and environmental impacts.
- Decarbonisation of the UK electricity grid is likely to occur after 2035, affecting our emissions and those in our supply chain.
- We are collaborating on carbon reductions with our close neighbours through the South Ken ZEN+ initiative. The initiative's target is net zero by 2040 and aligning our targets will support collaboration.
- The extended programme will align more closely with the expected end-of-life of key plant and equipment and key milestones in our estates strategy and capital plan.

A target year of 2039/40 aligns closely with those set by peer organisations. UK institutions that have signed up to the United Nations Race to Zero programme have, on average, set net zero targets for 2040.

Reflecting our level of control and influence over emissions sources, we have retained separate targets for scopes 1 and 2, and for scope 3, and propose adopting the following short- and long-term targets:

	Short-term 2029/30	Long-term 2039/40
Scope 1 and 2	We will reduce scope 1 and 2 emissions by 76% by 2029/30 from a 2019/20 baseline	We will reduce scope 1 and 2 emissions by 90% by 2039/40 from a 2019/20 baseline
Scope 3	We will reduce scope 3 emissions by 46% by 2029/30 from a 2019/20 baseline	We will reduce scope 3 emissions by 90% by 2039/40 from a 2019/20 baseline

We will review the targets at least every 5 years and will set a further short-term target for 2034/35.

Carbon management strategy

There are three key areas where we will target emissions reductions. Our approach will focus on emissions avoidance through efficiency initiatives and changes to fuel sources, supported by policies and supplier partnerships.

- Scope 1: Gas use

  We predominantly use natural gas for heating and hot water, with a small amount used for catering. We will reduce our gas usage by minimising losses (e.g. from pipes) and adopting lower carbon heat sources including heat pumps and point of use water heaters.
- Scope 2: Electricity use

  We will maximise energy efficiency across the estate, deploying tools which include voltage optimisation, air conditioning system rationalisation, lighting replacement and IT infrastructure efficiencies.
- Scope 3: Indirect emissions

  Our scope 3 emissions are dominated by our supply chain (principally purchased goods and services, investments and student travel at the start and end of term). We will improve the granularity of our scope 3 data, and take action where we have direct control or indirect influence to deliver progress towards net zero.

Reduction plan: scope 1 and 2

We completed a detailed energy and carbon audit of our estate in 2025 and have defined a programme to deliver carbon reductions that will achieve net zero emissions across scope 1 and 2 by 2039/40.

Figure 3: Summary of Decarbonisation Projects

Project	Electricity Saving (kWh/year)	Gas Saving (kWh/yr)	Cost Saving £/annum	Year Installed
Voltage Optimisation	63,224		13,909	2024/25
Energy monitoring and awareness	63,224	53,151	16,779	2025-28
Britten Theatre commission heat pump coils	(-35,434)	106,303	(-2,055)	2025/26
AFCH Chandelier Lighting to LED	33,767		7,429	2025/26
Point of use hot water	(-38,682)	64,470	(-5,029)	2025-27
Britten Theatre Stage Lighting	56,268		12,381	2025-27
BMS optimisation	82,191	138,193	25,545	2025-30
Smart rooms	4,200	49,231	3,582	2025-30
41-43 Jay Mews Heat Pump	(-15,535)	54,374	(-482)	2026/27
AFCH Remaining Lighting to LED	59,412		13,071	2026-28
Thermal Improvements		90,357	4,879	2026-32
Air handling unit efficiency upgrades	108,030		23,767	2028-34
39 Jay Mews Heat Pumps	(-88,927)	311,243	(-2,757)	2029-31
Provide heat pumps for AFCH	(-90,357)	271,071	(-5,241)	2032/33
Convert Kitchen to fully electric	(-39,427)	49,284	(-6,013)	2033/34
Courtyard heat pumps	(-26,843)	128,380	1,027	2038-40
Replace central boilers with heat pumps	(-54,387)	290,249	3,701	2033-36
Total	80,699	1,606,306	104,494	

RCM carbon emissions will reduce as the UK energy supply reduces its carbon emissions.

Since 2016/17 the carbon emissions associated with UK grid supplied electricity have reduced by over 40%. The UK Government Clean Power Action Plan published in December 2024 aims to reduce the average carbon intensity of electricity to below 50gCO2e/kWh by 2030 – the current figure used for 2023/24 emissions is 207gCO2e/kWh. A number of independent research reports are sceptical of achieving this and cite 2035 as a more realistic timeframe. For the purposes of this report, we have assumed that the intensity target of 50gCO2e/kWh will be achieved by 2034/35 and a net zero intensity by 2039/40.

For natural gas, there has been a small reduction in carbon intensity from action on reducing leakage from pipes and from the introduction of some biogas into the national network. We have assumed there will be a steady reduction over the next 10 years with the emission factor being around 8% lower in 2035/36 and 11% lower in 2039/40.

At present the organisation can report emissions based on both market-based and location-based factors. As the grid decarbonises, market-based factors become less relevant, and it can be argued that using market- based emissions can lead to concentration on gas reduction schemes to the detriment of electricity reduction schemes. In producing a future roadmap, there is also less certainty as to how much electricity will have recognisable renewable or zero emission contracts.

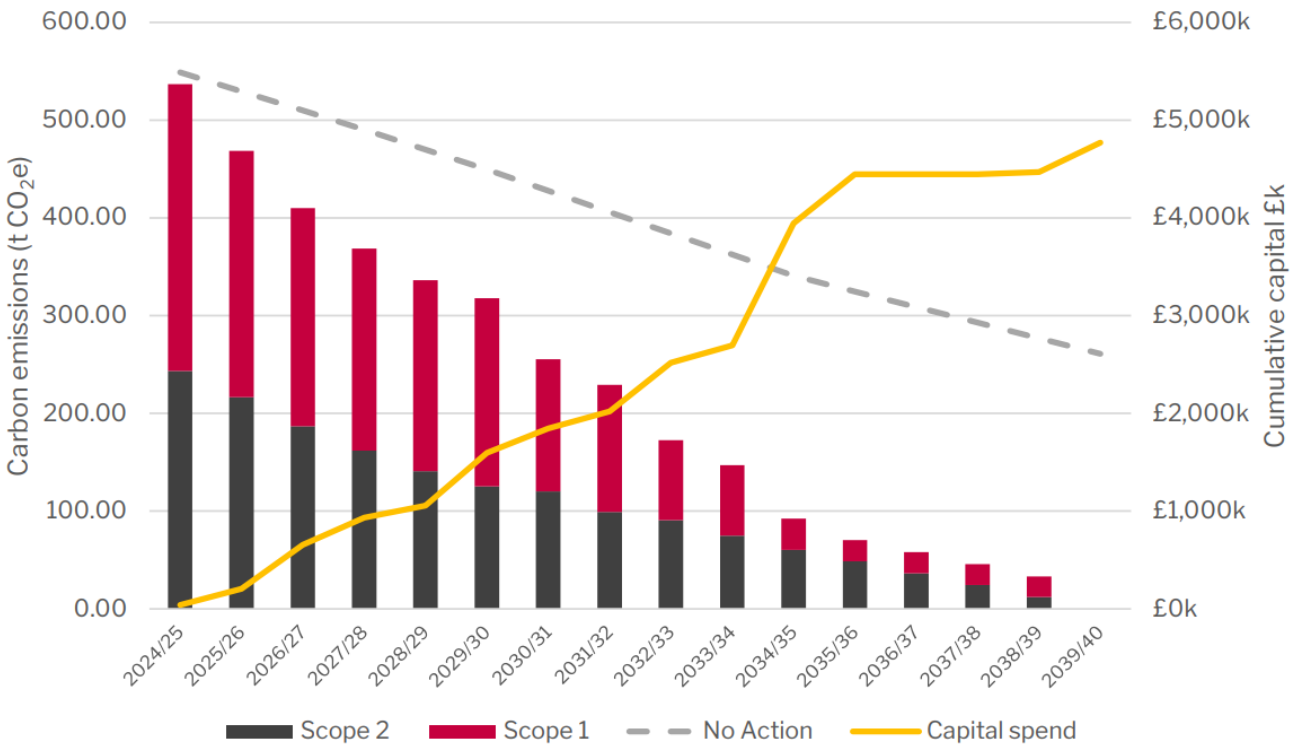
For clarity, the roadmap therefore uses location-based calculations.

Reduction roadmap: scope 1 and 2

The effect on scope 1 and 2 carbon emissions of the measures in figure 3 have been calculated. This is shown in figure 4, which also shows the 'no action' reduction due to emission factor changes and the cumulative capital budget.

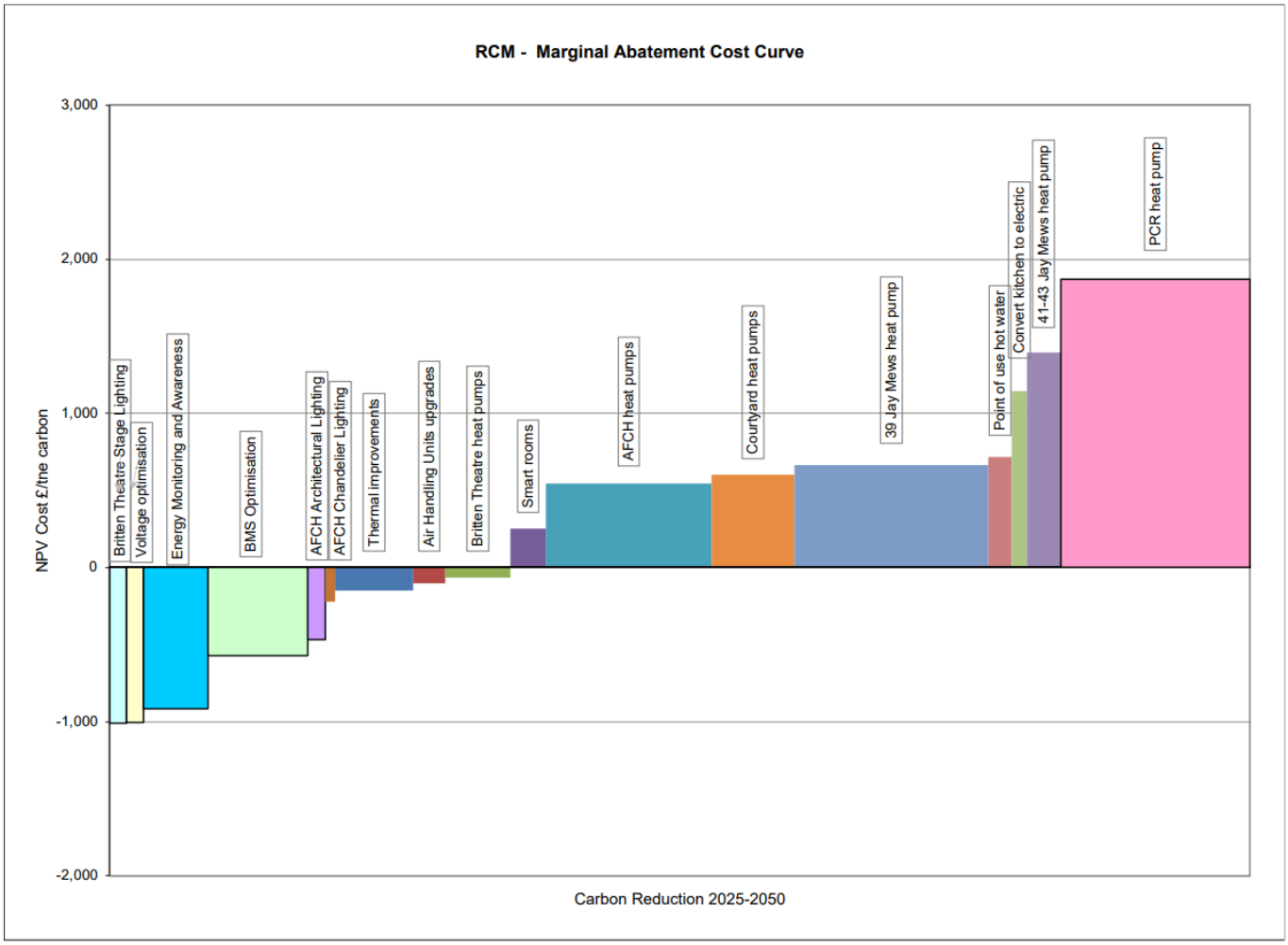
Overall, by 2035/36 the scope 1 and 2 emissions will have reduced by 87% and the remaining 13% by 2040 if the UK grid is fully decarbonised by then.

Figure 4: Emissions Reduction Roadmap 2025-2040



Marginal abatement cost curve

Figure 6 shows the results of a marginal abatement cost analysis. The graph is a representation of the net present value of costs for different interventions against their carbon saving contribution over the life of the intervention. The comparison compares all measures as being installed from year 1 and assumes a 3% real discount rate, with gas prices rising at 5% above inflation. Heat pumps and straight gas conversions to electricity have an overall cost to abate carbon whereas efficiency and control improvements lead to savings in both cost and emissions.



Director of Estates
Aida Berhamovic
October 2021, May 2025

Approved by
Council
October 2021, July 2025