

Annual Carbon Emissions Report 2019/20



**Northumbria
University**
NEWCASTLE

Keith Slater
Carbon Manager

Key Performance Indicators

Target	Description	Annual Progress	Estimated Annual Progress with out COVID	Annual % reduction Target	Annual % reduction Achieved	Overall Progress 2015 to 2020
Overall Reduction of Scope 1 & 2 emissions	32% reduction from 2005/6 baseline, with annual minimum year on year reductions of: <ul style="list-style-type: none"> 6% 2015/16 7.5% 2016/17 10% 2017/18 to 2019/20 			10%	19% (6%)	
Improved efficiency of buildings	Annual improvement in building efficiency (Scope 1 & 2 emissions per m ²) of at least 3%			3%	19% (6%)	
Overall Reduction of Scope 1, 2 and 3 emissions	Annual reductions in Scope 1, 2 and 3 emissions of: <ul style="list-style-type: none"> 4% 2015/16 5% 2016/17 7% 2017/18 to 2019/20 			7%	30% (4.8%)	
Improved efficiency per student	Reduce Scope 1,2 & 3 emissions per student by at least 3% per year			3%	30% (4.8%)	
Water reduction	Reduce water consumption by 2% per year from 2015/16			2%	21% (-2%)	

The table above shows our performance against the Key Performance Indicators for the year. As it is was an unusual year due to COVID lock downs and restrictions we have shown what was achieved, and also what we estimate would have been achieved without the COVID restrictions (shown in brackets).

Total Carbon Emissions for 2019/20

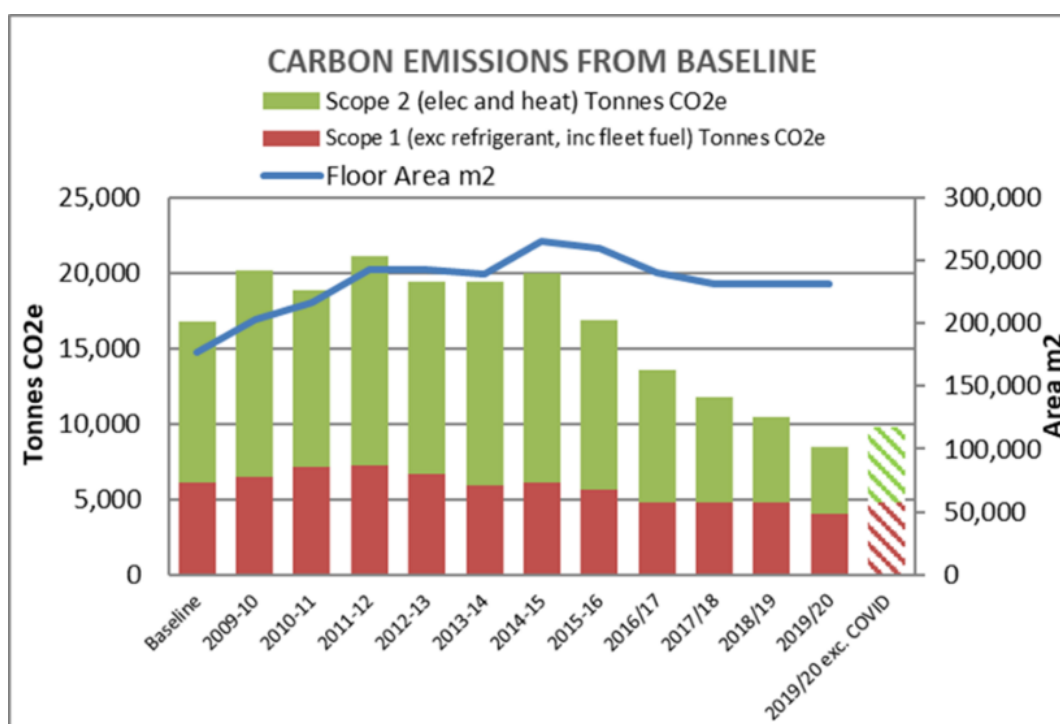
The scope of emissions includes all electricity and gas use, fleet fuel consumption, refrigerant gases for air conditioning units, heat purchased, water, waste, business travel and electricity distribution for the year 1st August to 31st July. It excludes emissions from procurement and commuting. Electricity is from renewable sources via a green tariff, but is reported as grid average. Figures in blue are estimates of what emissions would have been without COVID restrictions.

		Emissions 2014/15	Emissions 2015/16	Emissions 2016/17	Emissions 2017/18	Emissions 2018/19	Emissions 2019/20	2019/20 exc. Covid	Units
Scope 1	Gaseous fuels	6,059	5,570	4,725	4,725	4,791	4,029	4,756	tCO _{2e}
	Vehicle fleet	65	19	18	27	26	19	19	tCO _{2e}
	Refrigerant Gases	107	153	106	225	72	19	19	tCO _{2e}
	Total	6,231	5,742	4,849	4,978	4,889	4,067	4,794	tCO_{2e}
Scope 2	Purchased electricity (Grid)	13,189	10,670	8,278	6,507	5,118	3,943	4,570	tCO _{2e}
	Purchased electricity (Other)	0	0	0	0	0	0		tCO _{2e}
	Heat purchased	686	579	569	540	507	498	498	tCO _{2e}
	Total	13,875	11,248	8,847	7,047	5,625	4,441	5,068	tCO_{2e}
Scope 3	Business Travel	5014	4,616	3,603	3,560	3,420	1,134	3,420	tCO _{2e}
	Water	213	238	243	231	160	126	160	tCO _{2e}
	Waste	26	26	34	32	30	23	30	tCO _{2e}
	Other	1,087	965	774	554	434	339	393	tCO _{2e}
	Total	6,340	5,845	4,654	4,377	4,044	1,622	4,003	tCO_{2e}
Total emissions		26,446	22,835	18,349	16,402	14,558	10,130	13,865	tCO_{2e}

Summary

- **50% reduction in Scope 1 and 2 emissions¹ by 2020 compared to 2005/6 baseline**
- **Reduction in annual gas use of 7 million kWh**
- **Reduction in annual electricity use of 8.9 million kWh**
- **32% reduction in water use, saving 72 million litres per year**
- **Almost £6m costs avoided due to reduced energy use compared to Business as Usual**

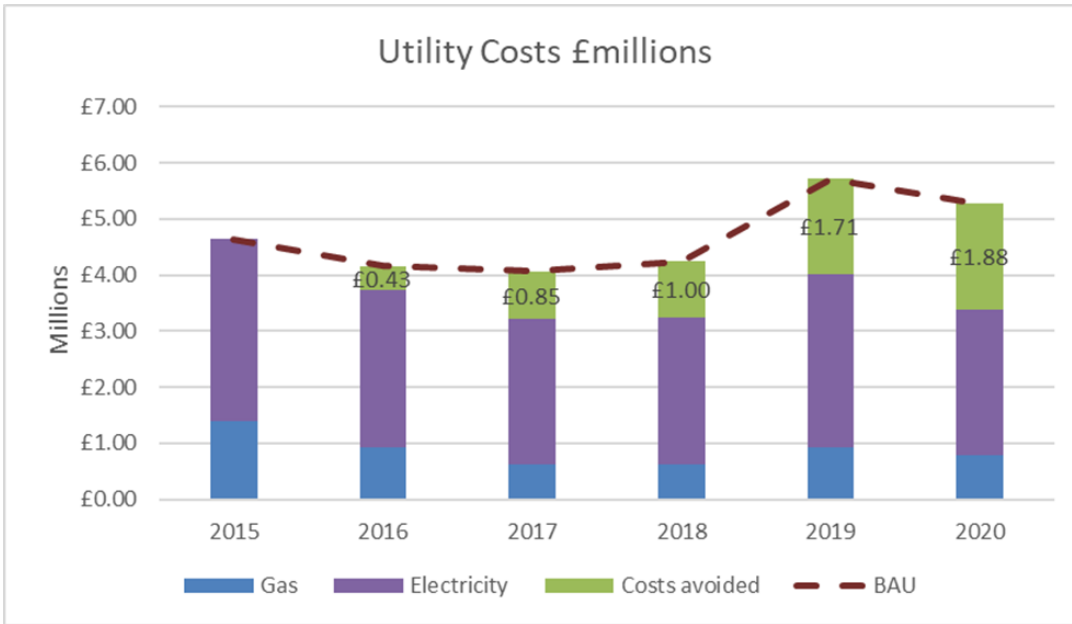
The original Target set in 2010 was to achieve a 32.5% carbon reduction in Scope 1 and 2 emissions by 2020, based on 2005/6 emissions. We had exceeded this in 2019, and by 2020 had achieved a 50% reduction (estimated 41.5% reduction excluding reduced energy use due to COVID).



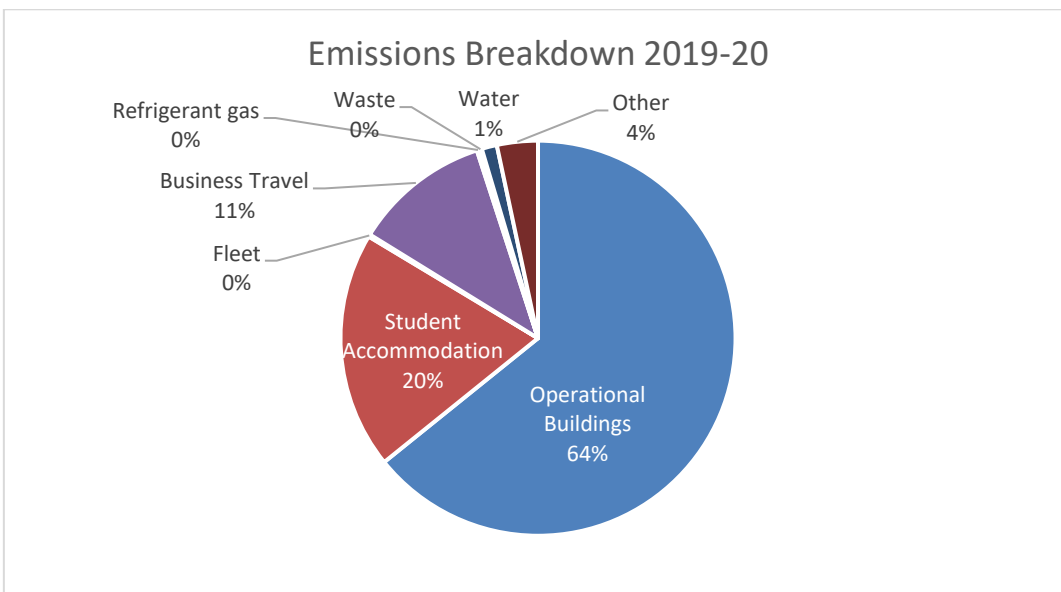
Since 2015 we have reduced emissions 58% (estimated 51% excluding COVID reduced energy use). This is a fantastic achievement, with electricity reduced by 8.9 million kWh per year, gas by 7 million kWh per year and water by 72 million litres per year since 2015.

This has resulted in costs avoided of almost £6m since 2015, and by 2019/20, annual utility costs were £1.9m less than they would have been with a Business as Usual scenario, even excluding the reduced energy use from COVID.

¹ Scope 1 and 2 emissions cover the main emissions from our buildings, including managed student accommodation, and fleet vehicles: Gas, electricity, petrol, diesel and heat purchased from the Trinity Square heat network. Scope 3 emissions reported include business travel, waste, water, refrigerant gases and electricity transmissions losses.



In 2015 we started reporting on Scope 3 emissions, including business travel, waste, water, refrigerant gases and electricity transmissions losses. Since 2015 our total emissions, including these Scope 3 emissions has reduced by 61%. A significant contributor to that was the reduction in business air travel as a result of the COVID restrictions in 2020. The graph below shows a breakdown of all the emissions for 2019/20.



Next Steps

A new Carbon Management Plan for 2020 to 2030 is being developed which will set the University on a trajectory to achieve Net Zero Carbon.

As well as continuing to target energy efficiencies, the plan will aim to tackle the very difficult problem of fossil fuel use in heating, and adapting the existing buildings so they can utilise renewable heating sources, such as Heat Pumps. With over 90% of heating being delivered by gas, this will be a major challenge over the next ten years.

For further information contact Keith Slater, Carbon Manager: keith.slater@northumbria.ac.uk