Our Carbon Action Plan

Climate change is the greatest threat facing humanity. The 2015 Paris Agreement outlined the need for urgent reductions to global carbon emissions to keep the average temperature rise to 1.5 degrees Celsius or lower.

Our commitments.

1. **To achieve zero direct carbon emissions by 2038** *(direct emissions otherwise known as "scope 1 and 2" are those which come from the production and use of energy across the University)*
2. **To achieve net zero for our scope 3 emissions by 2050** *(scope 3 emissions are emitted as an indirect result of our activities such as the goods we purchase, or staff and student travel)*

Scope 1 and 2

The University of Manchester has been tracking its direct ("Scope 1 and 2") carbon emissions since 2007. Since then, our emissions have fallen by 45% but we are committed to doing much more.

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Gas	26,442	26,698	28,654	29,712	27,177	29,272	25,851	26,467	25,058
Electricity	53,496	51,563	52,171	47,826	47,586	46,754	45,796	46,898	44,334
Oil	272	178	497	185	246	621	142	170	189
Fleet Vehicles	340	398	344	336	355	333	205	197	172
Total	**80,550**	**78,837**	**81,666**	**78,059**	**75,364**	**76,980**	**71,994**	**73,732**	**69,753**
% change on baseline		-2.1	1.4	-3.1	-6.4	-4.4	-10.6	-8.5	-13.4
% change on previous year		-2.1	3.6	-4.4	-3.5	2.1	-6.5	2.4	-5.4

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Gas	25,395	26,081	25,883	25,940	32,304	31,258	32,788	29,233	29,585
Electricity	38,048	31,367	27,750	22,857	21,306	20,127	18,599	17,966	14,121
Oil	197	228	242	166	190	194	229	198	160
Fleet Vehicles	146	139	141	104	101	107	115	100	96
Total	**63,751**	**57,815**	**54,016**	**49,067**	**53,901**	**51,686**	**51,730**	**47,497**	**43,962**
% change on baseline	-20.9	-28.2	-32.9	-39.1	-33.1	-35.8	- 35.8	-41	-45
% change on previous year	-8.6	-9.3	-6.6	-9.2	9.9	-4.1	0.1	-8.2	-7.4

Fig 1: Scope 1&2 carbon emissions in tonnes CO_2 at The University of Manchester 2007-2024

In 2019 the University committed to becoming zero carbon in its direct operations by 2038 from a 2018 baseline. This target is in line with the one adopted by the city of Manchester and was set by colleagues at the University's Tyndall Centre for Climate Change Research.

The 2038 target commits the University to reducing its carbon emissions by an average of 13% each year between 2018 to 2038 in order to stay within its "carbon budget". Milestones were set by the Manchester Climate Change Partnership (MCCP).

In 2021 the University produced its first "Zero Carbon Masterplan" (ZCM), an exploratory document highlighting the strategic and technical actions required to achieve the 2038 target.

The main recommendations of the ZCM were:

1. The University should embark on a programme of energy efficiency measures which will reduce our energy consumption and carbon emissions and save money in the longer term;
2. The University should enter a "Corporate Power Purchase Agreement" (CPPA), meaning the University's electricity demand will be matched by a developer generating renewable energy on our behalf. Critically, the electricity generated must be "additional" to what would have been created should the CPPA not exist;
3. The University should decarbonise its heating through a gas boiler and heat network replacement programme. Air source heat pumps are currently considered the most viable alternatives to gas.

Scope 1 and 2 Actions

As a result of the ZCM, these are our actions:

Sourcing more of our energy from renewables	In 2024 we entered into a Corporate Power Purchase Agreement (cPPA) which is a long-term energy contract with a developer of renewable power, Enviromena. This will see up to 65% of our electricity demand supplied through a brand-new solar farm based in Medebridge, Essex. Medebridge Solar Farm started operating in September 2025 and comprises 104,000 solar panels across 175 acres of low-grade agricultural land, the equivalent of around 70 football pitches.
Delivering our energy reduction programme	Projected work includes replacement of lighting with LEDs, "baseload optimisation" (reducing the amount of energy used by buildings when they are unoccupied) and upgrading Building Management Systems so they run more efficiently. Lighting surveys have been completed for ten buildings, and four of these (Michael Smith, Arthur Lewis, Carys Bannister and Car Park D) are now entering the commercial tender stage before works will commence to remedy known improvement areas. This year we will also conduct a power system and heat network study to review further opportunities to decarbonise our buildings. £157m has been committed to energy efficiency projects by 2032/33. Our target runs to 2038 so between now and 2033 we

	will continue to seek additional funds to supplement the £157m already approved and extend the funding beyond 2033. We have received Salix funding of £2.2 million to decarbonise our Zochonis building, which is included in the above figure.
Delivering a phased approach to zero carbon building works	Phase 1 of the zero-carbon works in our Booth Street East and Dalton Ellis buildings were completed in 2024. This is estimated to save 332 tonnes of carbon annually. We have created a video to showcase our first zero carbon building, Booth Street East. Works to a further four buildings are planned in Phase 2, including Zochonis, Humanities Bridgeford Street, Simon and Crawford House. Projects include air source heat pumps, photovoltaics, new roofing systems, new glazing and internal insulation systems. Once completed, these projects are predicted to save 1,406 tonnes of carbon annually.

Scope 1 and 2 carbon emissions attributed to residential accommodation.

The University of Manchester Owned Residences

The Carbon Management Plan includes Scopes 1&2 emissions for residences owned by The University of Manchester.

In 2024/25 (our latest confirmed data), carbon from these residences made up 13% of our total Scope 1 &2 footprint.

Emissions	2024-25	Historical Data							
		2023-24	2022-23	2021-22	2020-21	2019-20	2018-19	2017-18	2016-17
Residential* scope 1 and 2 carbon emissions total (t CO_2e)	**5,706**	5,785	6,148	6,650	6,316	6,331	7,369	8,354	9,232

*11 residential buildings provide rooms for 4,134 students.

External Residences

Alongside these University owned residences, we partner with other landlords to provide an additional 2,562 rooms in six external residential buildings.

Whilst we have no operational control over energy use, nor access to data on the amount consumed, we estimate (using average emissions per room for our University owned residences) that the scope 1 and 2 emissions for our external residences for 2024/25 is 3,536 (t CO_2e).

Scope 3 baseline and targets

In July 2023, the University set a Scope 3 emissions (which are emitted as an indirect result of our activities) target of net zero by 2050. We are currently developing our plans on how to meet this aspiration and aim to publish this in 2026. We have already set the following targets:

Category	**2018/19 Baseline CO_2e**	**Target**	**2022/23 Progress**	**2023/24 Progress**
Purchased goods and services	96,368	Net zero by 2050	203,036	192,794
Capital goods including building and refurbishment	63,089	Net zero by 2050	13,634	29,174
Transportation of goods to the institution	Included in our purchased goods and services calculations using HESCET data.			
Waste	831	Recycle 45% of the waste we produce through campus operations by 2025. Divert 100% of waste from landfill via new waste contracts from 2023 onwards.	227	163
Business Travel	16,504	Aim to limit annual emissions from air travel to 50% of our 2018/19 level Net zero by 2050	11,313	14,531
Staff commuting	3,639	Net zero by 2050	5,845	7,181
UK Student Travel & International Student Travel	97,461	Net zero by 2050	169,722	
Student accommodation	10,811 (including 3,442 from	Net zero by 2050	10,534	9,227

(including externally managed accommodation on university estates)	private accommodation)			

	Target	Progress
Waste <0.1% of our Scope 3 Emissions in 23/24	Recycle 45% of the waste we produce through campus operations by 2025.	In 24/25 we recycled 38% of our waste.
	Divert 100% of waste from landfill via new waste contracts from 2023 onwards.	Currently our landfill diversion rate was 100%.
Business Travel 2% of our Scope 3 Emissions in 23/24	Aim to limit annual emissions from air travel to 50% of our 2018/19 level.	Aviation emissions dropped by 46% in 2022/23 but have since rebounded, with reductions falling to 32% by 2024/25 (vs. pre-COVID). While lower emission factors in 2025/26 mean we are confident of meeting the 50% reduction target this year, we remain focused on cutting high-emission activity- particularly long-haul business travel - and reducing overall distance travelled.
Investments 38% of our Scope 3 Emissions in 23/24	Reduce weighted average carbon intensity (WACI) of public equity holdings by at least 50% against 2019 baseline by 2027.	Currently, at 59% reduction from the 2019 baseline, we have exceeded our target.
	Reduce carbon intensity within the investment grade credit allocation by 40% by 2027.	The University's portfolio has a WACI which is c39% lower than the baseline and is therefore on track to achieve 2027 target.

	Reduce energy consumption within the investment property portfolio by 10% by 2027 compared to the 2019 baseline year.	The property portfolio has reduced its energy usage by 6% compared to the target for 2027 of 10%.
	Reach net zero on investment portfolio by 2038.	For a full report of our progress, see our Investment Portfolio Climate Change Report.
	Reach 100% renewable energy use within the endowment investment property portfolio by 2027	The percentage of landlord procured REGO backed renewable energy for 2023 was 100%. Therefore, the University has now hit this target ahead of the 2027 date.

Scope 3 Reporting

To set and deliver future targets for emissions reductions it's important that we're measuring ourselves against a baseline.

Our baseline for scope 3 emissions is 2018/19, this year was selected as it is the best data set we have pre-pandemic, which would have skewed results.

In 2023 we published this scope 3 emissions baseline, this can be found in our Scope 3 report.

Part of our journey towards net zero is also to learn more about reporting, improve data quality and increase data sources. We will be fully transparent and share our learnings as we go.

When calculating our scope 3 data set for 2022/23, it was noted that the figures, some of which based on spend data, did not account for inflation.

Rectifying this for 22/23, we also noted we needed to recalculate our 18/19 baseline data so that the methodology and emission factors used, for both data sets, aligned.

Scope 3	2018/19 NOT factored for inflation (A)	2018/19 factored for inflation (B)	2022/23 factored for inflation (C)	% difference (C) vs (B)
tCO2e	342,820	390,672	459,142	17.6%

Scope 3 data:

	Total Scope 3 emissions (tCO_2e)	
2018/2019 (baseline)	390,672	Read the full Scope 3 emissions report
2022/2023	459,142	Read the full Scope 3 Results and Workshop 2022/23 report
2023/2024	617,090	Read the full Scope 3 emissions report

The scope of the footprint has been increased in line with carbon accounting best practice. With the newly included emission sources, the overall emissions value has increased compared to both the baseline and the previous year, with the baseline value being exceeded by 58%. There are some large increases in emissions for individual categories too, including a nearly 3-fold increase for upstream leased assets. Areas of significant progress are:

- Waste – the University produces less than a quarter of the waste it did in 2018/19.
- Upstream transportation and distribution – the University spends 35% less of shipping and freight services than it did in 2018/19.
- Capital goods – the University spent less than one-tenth the amount on capital goods in 2023/24 as it did in the baseline.

In the like-for-like comparison we see a 1% decrease in overall emissions compared to the previous year. However, when the like-for-like emissions are compared to the baseline year, an increase of 16% is seen. This is largely driven by an increase in emissions from purchased goods and services. The emission sources that were calculated for the first time in this iteration of the footprint but excluded from this like-for-like analysis are:

- Energy use in 19 upstream leased assets (6,925 tCO2e).
- Student placement travel (6,769 tCO2e).
- Use of sold products (10 tCO2e).
- Energy use in 23 downstream leased assets (5,555 tCO2e).
- Emissions associated with the Greater Manchester Pension Fund and Universities Superannuation Scheme (16,200 tCO2e and 130,000 tCO2e, respectively) have been included for the first time this year. The resulting emissions of the category were more than five times greater than if the additional funds had not been included. As a result of the increased scope, the total emissions are 36% greater than they otherwise would have been.

The scope of included emissions was increased for this iteration of the footprint in order to better align with the guidance of the Greenhouse Gas Protocol (GHG) and the carbon accounting practices of other universities.

Our top 10 Scope 3 priorities

Scope 3 carbon emissions are indirect emissions from sources outside of an organisation's direct control and make up over 90% of The University of Manchester's carbon footprint. There are 15 different categories covering a wide range of activities such as buying goods and services, waste and travel. To focus our efforts on the areas where we can make the most

impact in reducing our Scope 3 emissions, we have calculated our top 10 priorities. The methodology we used looked at 33 different Scope 3 subcategories and evaluated them by:

- The size of carbon emissions (based on 2022/23 data)
- A priority survey which was carried out in February 2025 and received 127 responses from staff and students
- Difficultly interviews undertaken in February 2025 with 42 experts from across the University

When this information was analysed, we decided to combine some categories as the actions to reduce carbon in those areas were the same, for example “food and drink” and “catering services”. We then applied the following weightings to our calculations:

- 50% emissions size
- 30% priority
- 20% difficulty

This prioritised our top 10 as:

1. Capital goods*
2. Computer supplies and services*
3. Pensions and investments
4. Laboratory equipment*
5. Business travel
6. Estates services*
7. Student travel home (international)
8. Staff and student commuting
9. Professional and bought in services*
10. Food and drink, catering services

*based on spend data

These top 10 categories make up 73% of our total Scope 3 emissions. They will form the basis of our Scope 3 framework which identifies actions we will take to reduce carbon emissions in these areas.

Carbon Action Governance

Achieving the 2038 zero carbon target is a strategic priority for The University of Manchester and considerable effort is being put into the work. Zero Carbon works are overseen by a group specifically established to manage the project. This in turn reports into the Environmental Sustainability Committee (ESC), which meets quarterly. The ESC reports into the Executive Committee, which is the University’s most senior governing body beneath the Board of Governors.

The Vice-President for Social Responsibility, Prof Nalin Thakkar, is accountable for achieving the zero carbon 2038 target. The Chief Property Officer, Barra Mac Ruairí, is responsible for the delivery of the works supporting the target. The Head of Environmental Sustainability, Julia Durkan, is responsible for day-to-day management of the project. A number of colleagues from across Professional Services are contributing to delivery of the work, including the Head of Energy, Pete Murray.

In 2025 we:

1. Made progress on major capital projects including Rutherford building and Zochonis Building, with anticipated total annual carbons saving of 230 tonnes.
2. Finalised the Corporate Power Purchase Agreement (cPPA) from 1st September 2025 and we started to purchase energy from the 'new to earth' solar farm. It is expected to cover around 60% of the University's energy demand and reduce carbon emissions by 12,000 tonnes per year..
3. Completed the high-level decarbonisation study, highlighting how various technologies could decarbonise our heat networks at scale. These recommendations will be integrated into the emerging integrated infrastructure plan.
4. Will develop and publish a short to medium term plan for meeting our Scope 3 target of net zero by 2050.

Progress against our carbon budget

Our colleagues at the Tyndall Centre for Climate Change Research have estimated that from 2018, The University of Manchester can emit up to 450,000 tonnes of carbon dioxide into the atmosphere before exceeding our remaining carbon budget. The chart below shows the amount of carbon we have already emitted since then.

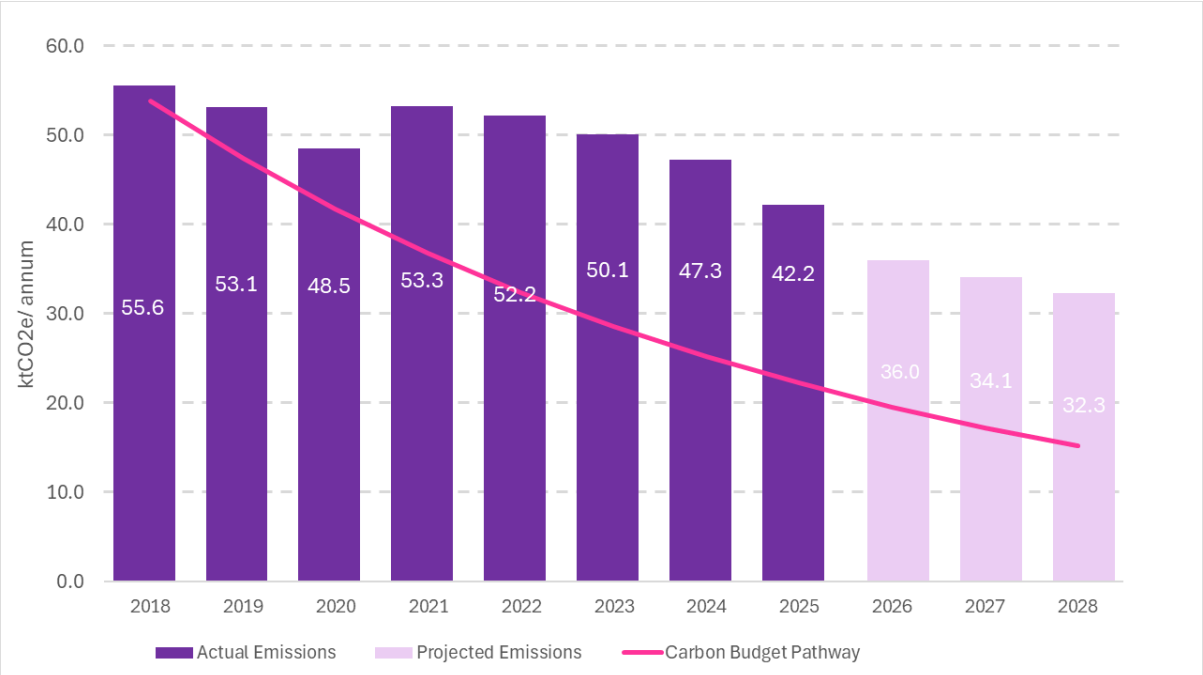

Fig. 2: carbon emitted since setting our carbon budget

We are aware that at our current emissions rate, we will exceed our carbon budget far sooner than the target date of 2038. We have started the cPPA in September 2025 and it is expected to help reducing

our carbon emissions by 12,000 tonnes per year. We remain committed to doing everything we can to ensure that we stay below the budget for as long as possible.

The targets and our progress against them will be continually reviewed to ensure they are relevant and being acted upon. Where necessary we will update them.