

## The University of Manchester: Race to Zero 2021/22

The University of Manchester joined the [UN Race to Zero Climate for Universities and Colleges](#) campaign on 12 July 2021. This report sets out our progress against the required criteria at the time we signed the pledge.

### Commitment 1: Pledge:

*“Pledge at the head-of-organization level to reach (net) zero GHGs as soon as possible, and by mid-century at the latest, in line with global efforts to limit warming to 1.5C. Set an interim target to achieve in the next decade, which reflects maximum effort toward or beyond a fair share of the 50% global reduction in CO2 by 2030 identified in the IPCC Special Report on Global Warming of 1.5C”*

In 2019 the University committed to achieving absolute zero carbon in its direct operations by 2038. This target is in line with the one adopted by both 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 “Scope 1 and 2” carbon emissions by an average of 13% each year between the baseline of 2018 up to 2038 in order to stay within its “carbon budget”. Milestones were set by the Manchester Climate Change Partnership (MCCP). There is an interim target of reducing carbon emissions from a 2018 baseline of 54,000 tCO<sub>2</sub> to at least 21,000 tCO<sub>2</sub> by 2025.

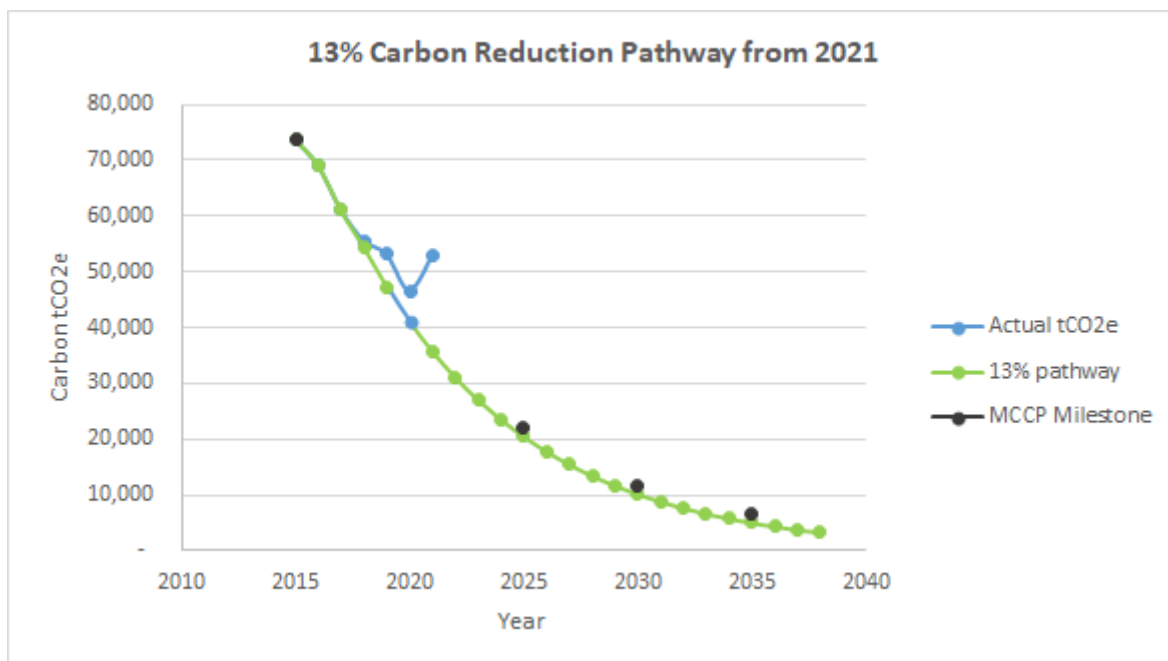


Fig. 1: actual and proposed carbon reduction pathway from 2021 to 2038

More information on our carbon targets can be found [here](#).

### Commitment 2: Plan:

*“Within 12 months of joining, explain what actions will be taken toward achieving both interim and longer-term pledges, especially in the short- to medium-term”*

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 are:

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.

As a result of the ZCM, we are taking the following actions:

1. Entering into a CPPA, commencing April 2023. This will supply additional renewable energy to the grid on behalf of the University at the earliest opportunity.
2. Developing an 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. Funding for this project in 2022/23 is £11.5m. Subject to Board approval, it is expected that a total of £136m will be committed to energy efficiency projects by 2032/33; this figure has already been approved by Finance and Capital Planning Sub-Committee. Our target runs to 2038 so between now and 2033 we will continue to seek additional funds to supplement the £136m already approved and extend the funding beyond 2033. The funding quoted here is in addition to the [annual budget](#) of the Environmental Sustainability team.
3. Exploring opportunities to replace our gas boilers and heat networks. Although this work is not currently funded, there may be opportunities to find additional funds in the coming years, including from external sources such as the Public Sector Decarbonisation Scheme (PSDS). We have already received £850k from the PSDS and will be using this to install air source heat pumps in our Booth Street East building. We will actively pursue other funding opportunities as they arise.

A summary of the ZCM and the proposed actions was received by the Board of Governors on May 25 2022. While appreciative of the funding difficulties in delivering the full decarbonisation strategy, the above actions were supported. The [Carbon Management Plan](#) on our website describes the initial actions we are taking as a result of the ZCM work.

### **Commitment 3: Proceed:**

*“Take immediate action toward achieving (net) zero, consistent with delivering interim targets specified”*

Achieving the 2038 zero carbon target is a strategic priority for The University of Manchester and considerable effort is being put into the work.

The Zero Carbon Masterplan will be overseen by a committee specifically established to manage the project. This in turn will report into the Environmental Sustainability Committee, which meets quarterly. The ESC reports into the Policy and Resources Committee, which is the University’s most senior governing body. We will publish annual updates of our progress in this “Race to Zero” document and a summary of the Environmental Sustainability team’s progress and [priorities](#) for each academic year.

The Vice-President for Social Responsibility, Prof Nalin Thakkar, is accountable for the ZCM. The Director of Estates & Facilities, Diana Hampson, is responsible for the delivery of the ZCM. The Head of Environmental Sustainability, Richard Smith, is responsible for day-to-day management of the ZCM. A number of colleagues from across Professional Services are contributing to delivery of the ZCM, including the Principal Energy Manager.

In 2022/23 we will:

1. Establish a delivery team for the proposed energy efficiency projects, including the upgrading of lighting to LED; a reduction in the “baseload” of buildings when they are unoccupied and upgrading Building Management Systems to improve the way buildings are controlled and save energy. We anticipate these and other projects will get underway in the next 12 months.
2. Install a fossil-fuel free heating system in our Booth Street East building.
3. Finalise our CPPA, to commence April 2023.
4. Carry out further studies on our buildings to understand in greater detail the actions needed to improve energy efficiency, with a view to creating a pipeline of activity and submitting further bids for external funding.
5. Examine the new criteria for continued membership of Race to Zero and work to ensure we are compliant. Indirect “Scope 3” emissions will be a particular focus.

**Commitment 4: Publish:**

*“Commit to report publicly both progress against interim and long-term targets, as well as the actions being taken, at least annually”*

The table below shows the University’s carbon emissions dating back to 2007/8.

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Gas	26,442	26,698	28,654	29,712	27,177	29,272	25,851	26,467	25,058	25,395	26,081	25,883	25,131	31,538
Electricity	53,496	51,563	52,171	47,826	47,586	46,754	45,796	46,898	44,334	38,048	31,367	27,750	22,711	20,942
Oil	272	178	497	185	246	621	142	170	189	197	228	242	166	190
Fleet Vehicles	340	398	344	336	355	333	205	197	172	146	139	141	104	101
<b>Total</b>	<b>80,550</b>	<b>78,837</b>	<b>81,666</b>	<b>78,059</b>	<b>75,364</b>	<b>76,980</b>	<b>71,994</b>	<b>73,732</b>	<b>69,753</b>	<b>63,751</b>	<b>57,815</b>	<b>54,014</b>	<b>48,112</b>	<b>52,771</b>
% change on baseline		-2.1	1.4	-3.1	-6.4	-4.4	-10.6	-8.5	-13.4	-20.9	-28.2	-32.9	-40.3	-34.5
% change on previous year		-2.1	3.6	-4.4	-3.5	2.1	-6.5	2.4	-5.4	-8.6	-9.3	-6.6	-10.9	9.7

*Fig 1: Scope 1&2 carbon emissions in tonnes CO2 at the University of Manchester 2007-2021*

From 2015 to 2020 our Scope 1&2 emissions declined each year, primarily due to the ongoing decarbonisation of the grid. Unfortunately, 2021 saw a rise for the first time since 2014, due to a combination of additional ventilation in line with safety procedures relating to COVID-19, new buildings coming into operation and the “dual running” of the North Campus and our new Engineering buildings. A significant proportion of North Campus is due to close in 2022, meaning a fall in carbon emissions is expected next year.

Richard Smith, Head of Environmental Sustainability, 12 July 2022.