University of Chichester

**Interim Carbon Management Plan (CMP) 2022-23**



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| February 2023 | v2 | 28.02.2023 |

# Introduction

This report is an interim Carbon Management Plan (CMP) for one year, following which a new four-year Carbon Management will be produced. This will support and underpin the newly developed Sustainability Strategy that is being developed in Spring 2023.

Although titled “2022-23 Interim CMP”, it should be noted that the HESA data set referred to throughout this document relates to the last full reportable year which is 2020-21. (August 2020 to End July 2021)

The CMP was produced in line with the Good Practice Guidance provided by the Higher Education Funding Council for England (HEFCE), now Office for Students (OfS).

The sources of the data within this plan originates from the *HESA Estate Management Returns (EMR)* for the last complete year of 2020/2021 along with benchmarking reports generated by Heidi, an online database containing statistics on all UK higher education institutions. Details on the EMR data collection procedure can be found here.

The Estates Management Record (EMR) return became optional for HE providers in England and Northern Ireland in 2019-20 but the University of Chichester has continued to submit the return. It is accepted that over time, a number of providers may choose to opt out of the return process. This will reduce the accuracy of data comparisons and benchmarking.

The University’s Carbon Management Plan was implemented in 2010/11. This set an interim target of a 25% reduction in CO2 emissions between 2007/08 and 2014/15 as well as a longer-term target to achieve a 43% reduction in CO2 emissions by the reporting year 2020/21

The Covid-19 pandemic impacted the way the University has operated from March 2020 through to the end of the reporting year (end of July 20) and carrying through into this reporting year. Government guidelines dictated remote teaching, home working for many, along with many other restrictions.

This had a direct effect on energy usage due to fewer personnel on site, and only selected buildings being opened for key staff.

Consequently, the current reporting year of 2020/21 cannot be considered to be ‘business as usual’, and caution should be considered when comparing the data from previous years, and any comparison to other providers should be considered to be relative to, rather than absolute.

A number of documents under-pin this plan and can be found on the University website: [https://www.chi.ac.uk/about-us/policies-and-statements/sustainability-and-environment/sustainability-and-](https://www.chi.ac.uk/about-us/policies-and-statements/sustainability-and-environment/sustainability-and-environmental-policies-and-plans) [environmental-policies-and- plans.](https://www.chi.ac.uk/about-us/policies-and-statements/sustainability-and-environment/sustainability-and-environmental-policies-and-plans) These include the following:

* Environmental Policy
* Carbon Management Plan
* Sustainable Food Charter
* Biodiversity Action Plan
* Waste Management Information & Guidelines
* Sustainable Travel Plan

# Background

Climate change is one of the greatest challenges facing our planet and all Universities and colleges have a vital role in tackling it.

The transformation of the global economy needed to achieve net-zero emissions by 2050 is universal and significant – the next decade will be decisive, but also rich in opportunity. Our collective efforts in reducing the amount carbon in our atmosphere will reduce the odds of catastrophic impacts due to climate change. The whole of the University has a part to play and we are actively engaging with staff and students to enlist their support to meet our environmental objectives. This may include changes in the way we work and study and to continue to look for all the changes we can make on campus that will enable us to live and work more sustainably.

The University has had considerable success in achieving carbon reduction from the baseline position through to the year 2021/22, being the latest available information for this report.

The University has invested over £2.6M in energy efficiency projects across the University’s expanding estate - which has a 62% increase of gross internal area (GIA) than 2007-08. Potential future developments planned are expected to increase size further to 87% by 2026/27, along with a significant increase of students living on campus. This increase in estate size and student numbers will have a continued proportional negative impact on energy usage and operating costs which highlights the need to continue to reduce our carbon emissions if we are to achieve our 2050 target of net zero by adopting a wider range of energy efficient technologies and seek opportunities of sustainable power generation.

# Executive Summary

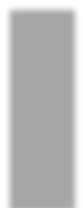
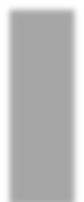
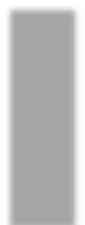
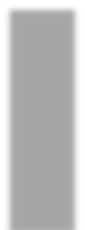
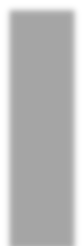
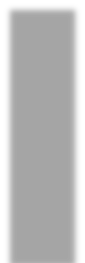
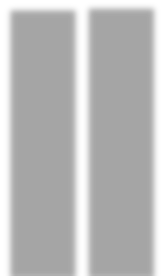
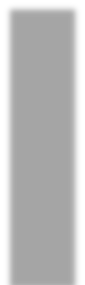
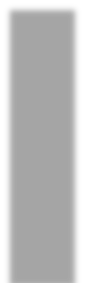
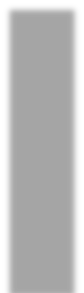
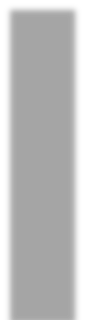
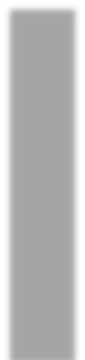
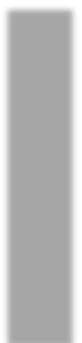
* The University Estate has grown by 62% from the baseline year of 2007/08 to 2020/21– whilst reducing carbon emissions by 43% (1,1463 tonnes CO2e) over the same period, meeting the target set out in our first CMP (2010/11) Cumulatively 10,730 tonnes of CO2e have been prevented from entering the earth’s atmosphere.
* The metric of Notional energy emissions (kg CO2) per metre2 of GIA have reduced by 63% from the baseline year 2007/08. This indicates the energy intensity per square meter of internal area and is generally recognised as a key metric by HESA.
* In order to maintain momentum on this important agenda, the University has established a Sustainability, Environment and Energy Management Advisory Group (”SEEM”). This group consists of a wide array of staff and critically, also student representatives. This group will focus on our continued efforts in this area, developing future strategies and projects and ensuring our future targets are met and we continue to provide Environmentally Sustainable campuses.

## Definition of Scope 1 & Scope 2 emissions

* **Scope 1**: emissions are direct emissions that occur from sources owned or controlled by the organisation, for example emissions from combustion in owned or controlled boilers/ furnaces/ vehicles.
* **Scope 2**: accounts for emissions from the generation of purchased electricity consumed by the organisation.

## CO2 emissions from 2007/08 to 2020/21

The chart below shows University’s total scope 1 & 2 carbon emissions from the baseline year 2007/08 through to the last full reporting year 2020/21. It can be seen that an overall reduction of 43% of CO2e has been achieved over this period. Cumulatively 10,730 tonnes of CO2e have been prevented from entering the earth’s atmosphere.



**Total (tonnes CO2e)**

**4,500**

(**43% CO2**

**4,000**

reduction from **3,500**

3,634

3,820

3,386

3,093

baseline year 2007/08)

2,987

3,016

2,895

2,911

2,763

2,582

2,410

2,359

2,113

2,171

**3,000**

**2,500**

**2,000**

**1,500**

**1,000**

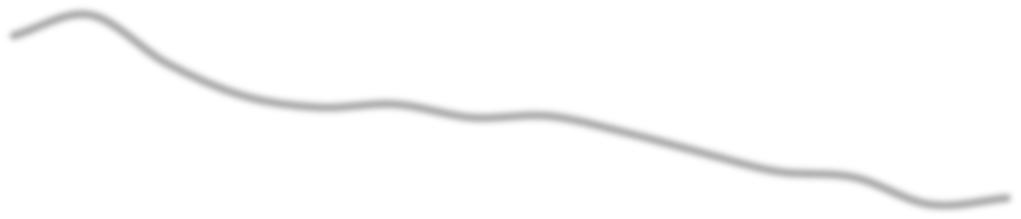
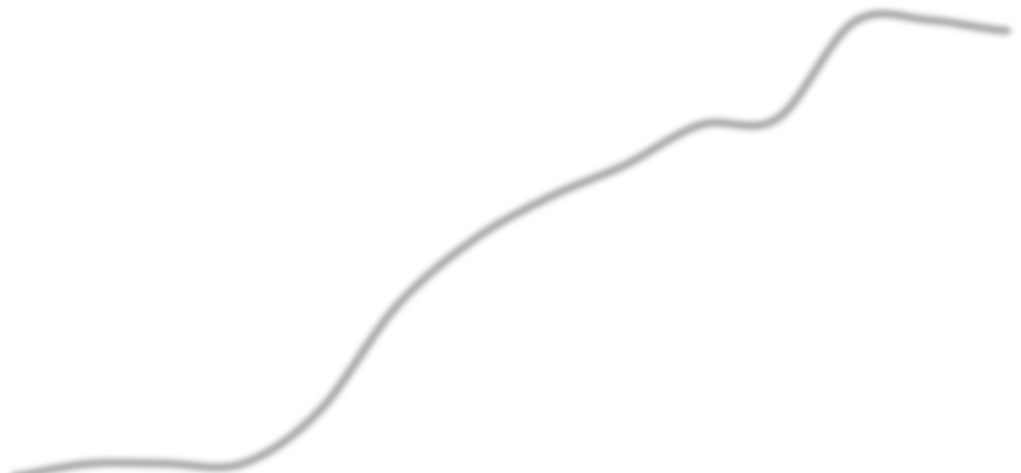
**500**

**0**

Total (tonnes CO2e)

## Estate size vs CO2 emissions

The University has had considerable growth resulting with an increase of gross internal area (GIA) of 31,410m2 (62%), and further significant plans for expansion by 2026/27 will see the GIA increase a further 12,647m2 (25%) taking the total increase to 87%.



**Estate size vs CO2 emissions**

**62%**

4500

4000

(**0% CO** reduction

**2**

from baseline year)

(Increase from3500 baseline year)

3000

2500

**43% CO2**

**(**Reduction from baseline year)

(Increa**0**se**%**from baseline year)

2000

1500

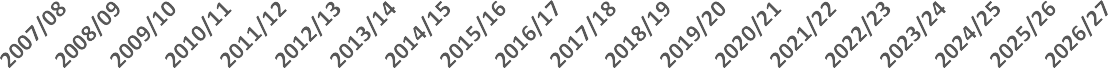
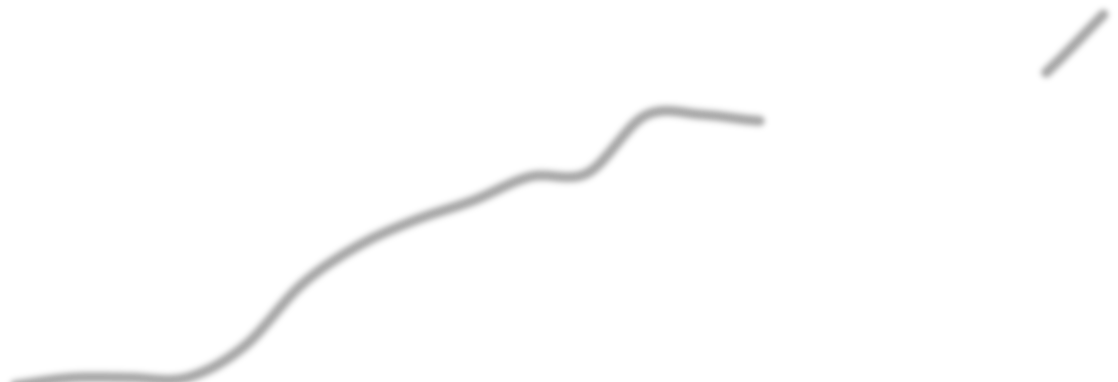
1000

500

0

GIA % variation to 2007 -08

Total (tonnes CO2e)



**Estate Growth (%) - projected to 26/27**

**87%**

**62%**

**74%**

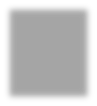
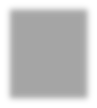
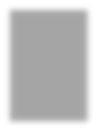
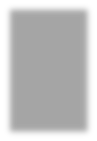
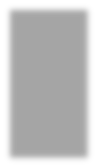
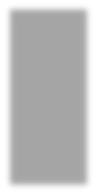
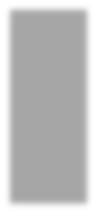
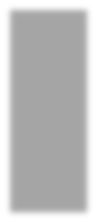
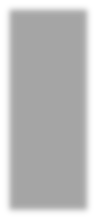
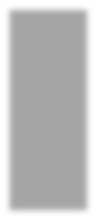
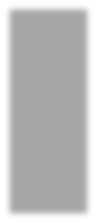
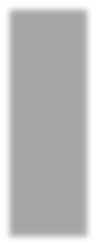
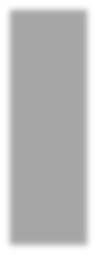
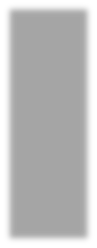
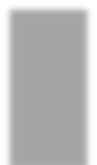
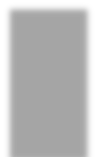
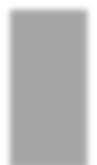
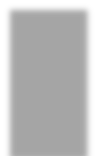
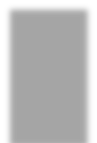
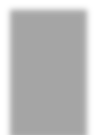
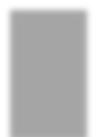
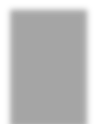
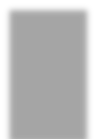
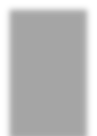
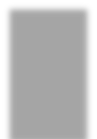
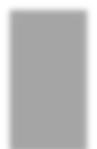
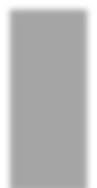
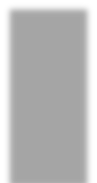
**0%**



## Composition of the University’s 2020/21 carbon footprint (Scope 1 & 2 Emissions) by fuel type

The chart below shows the make up for the University’s scope 1 & 2 carbon emissions; it can be seen that the majority of the emissions produced are from gas and electricity.

The key point in the table below is that electricity emissions have declined significantly which indicates that less electricity is being used as a result of energy saving initiatives outlined in previous CMP’s.



**4,500**

**4,000**

**3,500**

**3,000**

**2,500**

**2,000**

**1,500**

**1,000**

**500**

**0**

**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 Electicity Other (Vehicle fuel, Biomass, Oil and Water)

|  |  |  |
| --- | --- | --- |
| **Composition of the carbon footprint (tonnes CO2e)**  224  132.5  204  191 136 151 134.48 118.5  1971 2030 143  1956 127.713 126.226 87.936 | | |
| 1756 | 1730 | 1724 1742 1667 103.875 71.03  1512 1274 |
|  |  | 1051 962  761.3 748.6 |
| 1530 1566 |  |  |
| 1226 1146 | 1121 | 1292 1367 1301.8 1372.2  1141 1019 1125 1108 1180 |

## Carbon emission calculations

Carbon emissions are calculated by multiplying the reported energy consumption used over a 12-month period by the conversion factor set for that reporting year which is provided by DEFRA. <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>.

This calculation is done automatically by HESA as part of the annual Estate Management Return.

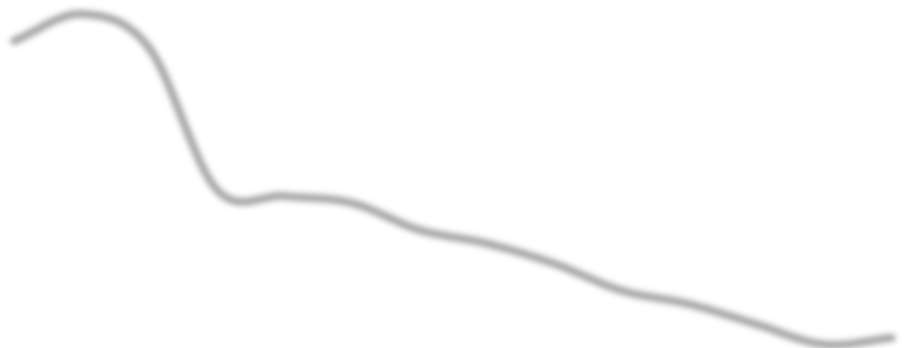
Energy consumption of the University is obtained directly from gas / electricity / water invoices that are metered. For biomass and fuel a calculation is based on the quantity of fuel used over a 12-month period and converted to kwh. Vehicle fuel consumption is calculated by analysing vehicle fuel receipts that detail litres of each fuel type.

## Notional energy emissions

Notional energy emissions (kg CO2) per meter2 of GIA has reduced by 62% from the baseline year 2007/08 to 2020/21

The acceleration of reduction of these emissions through 2009/10 to 2010/11 can be attributed to when the University sought to support its Environmental and Sustainable Development Strategy through the appointment of an Energy Officer and an Environment Officer (appointments in 2008-09), who have been instrumental by implementing energy saving technology and measures.

**Notional energy emissions (kg CO2) per m 2 of GIA 2007/08 to 2020/21**



85

75

65

55

45

38

34

35

32

25

2007/ 2008/ 2009/ 2010/ 2011/ 2012/ 2013/ 2014/ 2015/ 2016/ 2017/ 2018/ 2019/ 2020/

08 09 10 11 12 13 14 15 16 17 18 19 20 21

Notional energy emissions (kg CO2) per metre2 of GIA

% variation to 2007 -08

71

0%

75

6%

70 49

48 47 43 41 38 34 32 29 26 27

-1% -31% -32% -34% -39% -42% -46% -52% -55% -59% -63% -62%

27

26

29

41

43

47

48

49

**Notional energy emissions (kg CO2) per m2 of GIA**

70

71

75

## Looking forward

Looking forward we will focus on the following:

1. Having already achieved the 43 % Higher Education Funding Council (HEFCE) target, we will continue to reduce our scope 1 & 2 carbon emissions to support the University’s Sustainability Strategy to achieve our target of net zero carbon by 2050.
2. Projects and initiatives that will further reduce our emissions and limit our impact on the environment, these projects will be debated, monitored, budgeted and delivered via the SEEM meetings.
3. Investigating opportunities for solar power generation, both on and off site.
4. Investing further in sub metering to identify and mitigate unexpected energy use.
5. Identify possibilities for de-carbonising our older boilers.
6. Continue to communicate our achievements through poster campaigns, IT information screens, social media, newsletters etc to engage with our staff & students promoting sustainability awareness across our community.

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