

# Scope 3 Emissions Report



## **University of Salford Scope 3 Emissions**

Addendum to Energy, Water and Carbon Management Plan 2018

June 2021

Version 2.1

<b>Document Control Information</b>			
<b>Author</b>	<b>Summary of changes</b>	<b>Version</b>	<b>Authorised &amp; Date</b>
Head of Environmental Sustainability	Updated Scope 3 emissions data where available for 2019/20 and 2018/19 as new data available	V2.1	H. Williams, COO 30 <sup>th</sup> June 2021
Head of Environmental Sustainability	Updated Scope 3 emissions data where available for 2019/20	V2.0	
Environmental Sustainability Officer	Added student accommodation data	V1.1	Environmental Projects Board May 2020
Environmental Sustainability Team	Creation of document	V1.0	

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## 1. Executive Summary

In 2011, the University of Salford launched their first Carbon Management Plan with targets to reduce scope 1 and 2 carbon emissions by 43% by September 2020 compared to a 2005/06 baseline. As of end of academic year 2017/18 the University had already reduced its scope 1 and 2 carbon emissions by 64%. This has been achieved partly through reductions in energy use at the University through investment, partly through reductions in the grid electricity emissions factor, and also partly through the University's divestment of its student accommodation in 2007/08.

Our new Energy, Water and Carbon Management Plan approved 2018 builds on our significant progress in carbon reduction to ensure we can achieve our objective of a scope 1 and 2 81% reduction by 2030 and work towards net zero carbon by 2038 in line with the Greater Manchester carbon reduction strategy. Environmental sustainability is a core element of the ambitious University Campus Masterplan, launched in the last year. Central to the plans is an energy strategy that takes a major step towards a zero carbon future, while providing high quality spaces for residential, teaching, research and commercial uses that are cost-effective to run. University of Salford buildings will undergo refurbishment to make them highly energy efficient, with maximum potential for renewable energy generation.

The 2005/06 baseline is to be used for absolute carbon emissions, and this has therefore been adopted under the Energy, Water and Carbon Management Plan (EWCMP). Other relevant baselines are included in the Objectives, Targets and Action Plan and include the academic year 2016/17 as a baseline for energy, gas and water consumption, to be used in the University's ISO50001 Energy Management System.

Carbon emissions are broken down into three categories by the Greenhouse Gas Protocol in order to better understand the source.

**Scope 1 – All Direct Emissions from the activities of an organisation or under their control. Including fuel combustion on site such as gas boilers and fleet vehicles.**

**Scope 2 – Indirect Emissions from electricity purchased and used by the organisation. Emissions are created during the production of the energy and eventually used by the organisation.**

**Scope 3 – All Other Indirect Emissions from activities of the organisation, occurring from sources that they do not own or control. These are usually the greatest share of the carbon footprint, covering emissions associated with business travel, procurement, waste and water.**

This document supports the EWCMP through measuring these in-direct, Scope 3 carbon emissions which account for over 80% of the University's total emissions. The report details the planned management activities and reduction targets for each emission source. Whilst we monitor emissions year on year, caution must be taken when comparing between years (and with other institutions) as monitoring methods, access to data and accuracy may vary.

SCOPE	Emission Source	Baseline Year	Baseline (tCO <sub>2</sub> e)	2018-19 (tCO <sub>2</sub> e)	2019-20 (tCO <sub>2</sub> e)	Target
3	Operational Waste	2017/18	66	44	8	12 tCO <sub>2</sub> e (2020/21)
3	Construction Waste	2019/20	0.02	NR	0.02	Net Zero Carbon by 2038
3	Water and Wastewater	2016/17	107	46	62	63 tCO <sub>2</sub> e (end 2019/2020)
3	Business Travel	2018/19	1312	1321	668	Net Zero Carbon by 2038
3	Staff Commuting	2018/19	2395	2395	1330	Net Zero Carbon by 2038
3	Student Commuting	2011/12	8812	8812	6493	Net Zero Carbon by 2038
3	International student travel to/from home address	2019/20	5336	NR	5336	Measure and Monitor
3	Student Accommodation	2018/19	883	883	1262	Measure and Monitor
3	Home Working	2019/20	45	NR	45	Measure and Monitor
3	Procurement	2016/17	24313	27970	24013	Net Zero Carbon by 2038
3	Electricity & Gas Scope 3	2016/17	1924	1260	1043	TBC
2	Electricity	2016/17	5496	3977	3107	Reduce by 81% by 2030 and net zero carbon by 2038
1	Gas	2016/17	2988	2393	2339	
1	Vehicle fuel	2016/17	39	38	27	
			<b>48074</b>	<b>49139</b>	<b>45734</b>	

*Table 1 Summary of carbon emissions and targets*

University of Salford Carbon Emissions Scope 1, 2 and 3



Figure 1 Baseline Scope 1, 2 and 3 emissions totals

## 2. Operational Waste

Scope 3 emissions associated with the end-of-life disposal of materials arising from the University's operations and capital projects, using a variety of disposal methods.

<b>Baseline</b>	<b>66 tCO<sub>2</sub>e 2017/18</b>
<b>Target</b>	<b>12 tCO<sub>2</sub>e 2025/26</b>

### 2.1 Background

The University of Salford Estates and Facilities Team manages, measures and monitors the majority of waste from University day-to-day operations. Currently around 40% of waste is recycled with a target to increase this to 65% by September 2025. There is also a target to reduce waste by 12% from 2018/19 baseline. The target for scope 3 carbon emission reductions has been determined by taking into account the existing targets for waste reduction and increase in recycling.

### 2.2 Methodology

The carbon emissions associated with the University's disposal of waste are calculated using the appropriate Department for Business, Energy & Industrial Strategy carbon conversion factors. These conversion factors apply a CO<sub>2</sub>e figure for each kg of waste generated, which varies depending on the waste stream and disposal route.

Currently scope 3 emissions are only calculated from operational waste but we will explore the potential for evaluating emissions from construction waste going forward.

### 2.3 Performance

	<b>2017/18</b>	<b>2018/19</b>	<b>2019/20</b>
<b>Recycling rate</b>	38%	40%	39%
<b>Carbon emissions, tCO<sub>2</sub>e</b>	66	44	8

*Table 2 Waste Scope 3 Emissions*

The recycling rate for operational waste has steadily increased over the past few years and is currently at 40%. The University also now diverts 98% of its operational waste from landfill, achieved through a combination of onsite, off-site recycling and energy recovery from waste.

The baseline year has been chosen as 2017/18 as the University moved waste contractors who provided more accurate waste management data than previous years. The waste in 2019/20 was significantly reduced due to the impacts of Covid-19, this also impacted on recycling.

Carbon from construction waste was also calculated in 2019/20, this was negligible at 0.2 tonnes.

## **2.4 Action Plan**

- Work with waste contractors to work towards zero to landfill and other lower carbon impact waste disposal options
- Decrease waste produced and increase onsite recycling in line with established targets
- Investigate potential for monitoring of scope 3 carbon emissions from construction related waste

## 3. Water and Waste Water

Scope 3 emissions from water use associated with the energy used in supplying water to the University and the treatment of waste water removed from the university, via the sewerage system.

<b>Baseline</b>	<b>107 tCO<sub>2</sub>e 2016/17</b>
<b>Target</b>	<b>63 tCO<sub>2</sub>e 2025/26</b>

### 3.1 Background

The University monitors overall water consumption and reports this to the Higher Education Statistics Agency via the Estates Management Record.

The target for associated Scope 3 emissions has been calculated from the 12% reduction target for water set on a 2018/19 baseline.

### 3.2 Methodology

The carbon emissions associated with the University's use and treatment of water are calculated using the appropriate Department for Business, Energy & Industrial Strategy carbon conversion factors. These conversion factors apply a CO<sub>2</sub>e figure for both water supply and treatment.

### 3.3 Performance

	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>	<b>2019/20</b>
<b>Water carbon emissions, tCO<sub>2</sub>e</b>	35	27	23	20
<b>Waste water carbon emissions, tCO<sub>2</sub>e</b>	72	56	48	42
<b>TOTAL</b>	<b>107</b>	<b>83</b>	<b>71</b>	<b>62</b>

Table 3 Water and Wastewater Scope 3 carbon emissions

There has been a large decrease in water use over the last few years, mainly due to a leak which occurred in the baseline year which was subsequently identified and fixed. The water use targets have recently been reviewed to take this into account.

### 3.4 Action Plan

- Undertake water audits on current estate to identify efficiency improvements
- Install AMR on all fiscal water meters to improve leak detection and billing accuracy
- Carry out leak detection surveys on high risk areas
- Continue to implement grey water, rainwater and borehole systems on new buildings



## 4. Business Travel

Scope 3 emissions associated with business travel that is paid for by the University and undertaken by academic staff, support staff and students. E.g. travel undertaken by academics to attend conferences or events.

<b>Baseline</b>	<b>1321 tCO<sub>2</sub>e 2018/19</b>
<b>Target</b>	<b>Under development to support target for Net Zero Carbon by 2038</b>

### 4.1 Background

Business Travel is an essential part of the University's operation, undertaken by all departments and faculties. Although the emissions associated with this form of travel occurs externally to the University, the carbon impact is now being monitored and measures are in place to encourage alternatives to travel and lower carbon forms of travel.

### 4.2 Methodology

Data relating to travel booked by staff members is collated centrally by the University Finance Teams. Additional data has been included as access to data has improved. The associated scope 3 carbon emissions have been calculated by using data from a number of sources (as below) and then converting to carbon using the relevant Department for Business, Energy & Industrial Strategy carbon conversion factors.

<b>Data</b>	<b>Source</b>
<b>Business Travel mileage claims, miles travelled</b>	University Finance
<b>Business Travel air &amp; public transport data</b>	University Travel Management Suppliers

*Table 4 Data Sources for Business Travel Data*

### 4.3 Performance

	2018/19	2019/20	Data Limitations
<b>Business Travel Mileage Claims</b>	79	59	
<b>Business Travel Vehicle Hire</b>	11	7	
<b>Business Travel Air</b>	1045	555	
<b>Business Travel Rail</b>	51	19	
<b>Business Travel Taxi</b>	7	5	Only includes taxi account not staff claims
<b>Business Travel Coach</b>	13	23	Only includes one school data for 2018/19 (majority of trips)
<b>Hotel Stays</b>	116	75	
<b>TOTAL</b>	<b>1321</b>	<b>743</b>	

*Table 5 Summary of Business Travel Scope 3 Emissions in tCO<sub>2</sub>e*

### 4.4 Action Plan

- Ensure University Travel Policy encourages low carbon travel options
- Monitor and report
- Establish reduction targets
- Investigate the potential for University EV fleet

## 5. Staff and Student Commuting

Scope 3 emissions from students and staff travelling to and from their home address (term-time only) to the University.

Baseline	2385 tCO <sub>2</sub> e 2018/19 staff	8812 tCO <sub>2</sub> e 2011/12 students
Target	Under review	

### 5.1 Background

The environmental impact associated with staff and students commuting to and from the University is significant. This section highlights the indirect carbon emissions associated with commuting on a periodic (largely daily) basis. The University Sustainable Travel Plan is currently under review but will look to include scope 3 emission reduction targets alongside and subsequent targets established for increasing sustainable travel.

A target for both staff and student commuting will be determined as part of the Sustainable Travel Plan review due 2020/21.

### 5.2 Methodology

The data collected for the staff and student travel comes from two sources;

- Periodic staff travel survey- 25% response rate (2018/19)
- Periodic student travel survey- 3% response rate (2011/12)

Within the survey both staff and students were asked their approximate distance to the University and their main mode of travel. For each mode of travel and using the mileage provided (approximated and average figures used) the distance was multiplied by the relevant Department for Business, Energy & Industrial Strategy carbon conversion factors for that mode of travel. Assumptions have been made for number of days and weeks travelled then the data extrapolated for those who have not completed the survey. The data has been taken from the travel survey completed in 2018/19 for staff, for students the survey data from 2011/12 has been used as the 2018/19 survey did not have sufficient response. The data for 2019/20 has been estimated from the same survey data but adjusted for reductions due to University closure and working from home requirements due to Covid-19.

### 5.3 Performance

	2018/19	2011/12	2019/20					
Mode	Total tCO2e	Staff	Total tCO2e	Students	Total tCO2e	Staff	Total tCO2e	Students
Bus	73		2330		41		1717	
Car (Driver & passengers)	1990		4775		1105		3519	
Motorbike / Scooter	12		115		7		85	
Train	303		1507		168		1111	
Tram	17		85		9		63	
<b>Tonnes CO2e</b>	<b>2395</b>		<b>8812</b>		<b>1330</b>		<b>6493</b>	

Table 6 Summary of Scope 3 Carbon Emissions from Staff and Student Commuting

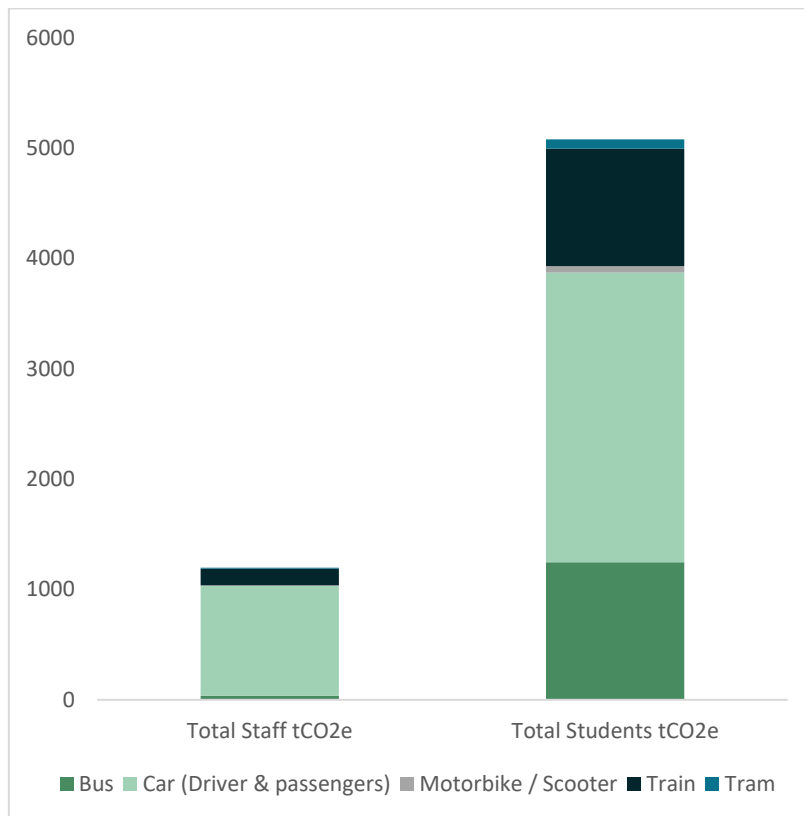


Figure 2 Comparison of Commuting Scope 3 Carbon Emissions

### 5.4 Action Plan

- University Sustainable Travel Plan review including establishing targets
- Monitor and report

## 6. International Students Travel from/to Home Address

Scope 3 emissions from international students travelling from and to their home address to the University.

Baseline	5336 tCO <sub>2</sub> e
Target	Under review

### 6.1 Background

In addition to the impact of students commuting to and from the University during term-time, we have also estimated the impact of international students travelling to and from the University of Salford at the start and end of term. This section highlights the indirect carbon emissions associated with commuting on a periodic (largely daily) basis.

### 6.2 Methodology

The data collected for international student travel comes from registration data by country. We have assumed 1 return journey from the capital airport of each country per international student.

### 6.3 Performance

	2018/19	2019/20
<b>Tonnes CO<sub>2</sub>e</b>	<b>NR</b>	<b>5336</b>

*Table 7 Summary of Scope 3 Carbon Emissions from International Student Travel from/to Home Country*

### 6.4 Action Plan

- Monitor and report

## 7. Home Working

### Scope 3 emissions from home working of University staff.

Baseline	45 tCO <sub>2</sub> e
Target	Under review

### 7.1 Background

Due to the CV-19 pandemic, home working increased significantly during 2019/20. A comparison was useful to review the impact of increased home working against reduced commuting and business travel; therefore the carbon impact of home working was estimated for this academic year.

### 7.2 Methodology

The methodology in the whitepaper produced by EcoAct in partnership with Lloyds Banking Group and NatWest Group was used. Assumptions were made regarding the number of staff working from home and the hours worked. The equipment and lighting power and heating power required was estimated using the whitepaper guidance.

### 7.3 Performance

<b>Tonnes CO<sub>2</sub>e</b>	2019/20	45
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*Table 8 Summary of Scope 3 Carbon Emissions from staff home working*

### 7.4 Action Plan

- Monitor and report, if feasible

## 8. Procurement

Scope 3 emissions for procurement are associated with the goods and services purchased by the University. This covers the emissions occurring in the supply chain. The emissions generated by purchasing goods and services do not only refer to the act of procurement but also covers activities including extraction, production and transportation of the goods/services purchased or acquired.

Baseline	24313 tCO <sub>2</sub> e 2016/17
Target	Monitor and Measure

### 8.1 Background

The University of Salford procurement scope 3 carbon emissions are those arising from goods or services procured on behalf of the University.

The University is a member of the North West Universities Purchasing Consortium (NWUPC) which is the organisation from which the University has access to multiple buying frameworks.

Most of the commodities bought by the University are through the frameworks by NWUPC.

NWUPC convert University spend into Proc-HE codes, which can be assigned to a Department for Business, Energy & Industrial Strategy carbon conversion factor for each spend type.

### 8.2 Methodology

Annual university spend is tracked and converted into Proc-HE code categories and uploaded to the NWUPC Scope 3 emissions calculator. NWUPC uses Department for Business, Energy & Industrial Strategy £/CO<sub>2</sub>e conversion factors for each spend type. The methodology has recently been updated using the HESCET tool.

Any spend associated with Electricity, Gas, Water or Waste is removed to prevent a double counting of emissions.

The expenditure data for Supply Chain (Procurement) has been divided into University Operations (sub categories, including: Business Services; Paper Products; Other Manufactured Products; Manufactured Fuels, Chemicals and Glasses; Food and Catering; Information and Communication Technologies; Medical and Precision Instruments) and Construction.

Construction data is highlighted separately due to the considerable fluctuation year on year which is dependent on the University's capital project programme.

### 8.3 Performance

The total scope 3 carbon emissions from the above categories in the baseline year of 2016/17 is **24313** tCO<sub>2</sub>e. This includes 4526 tCO<sub>2</sub>e from construction, as shown in the graph below.

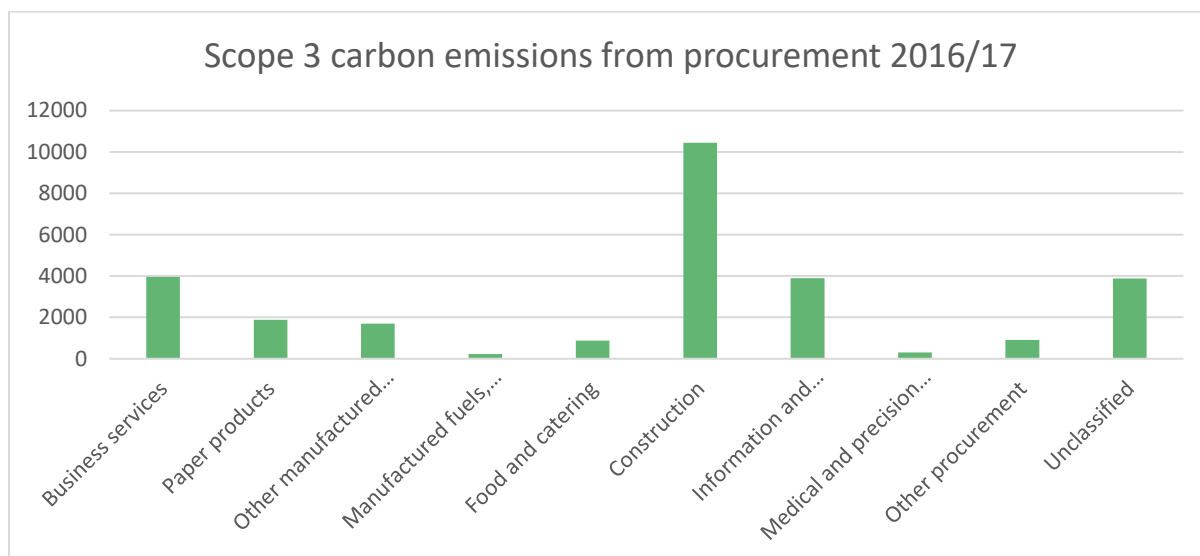


Figure 3 Detail of Scope 3 Carbon Emissions from the Proc-HE code categories

The graph below shows the procurement carbon emissions comparison between 2018/19 (27,970 tCO2e) and 2019/20 (24013 tCO2e) using the updated methodology.

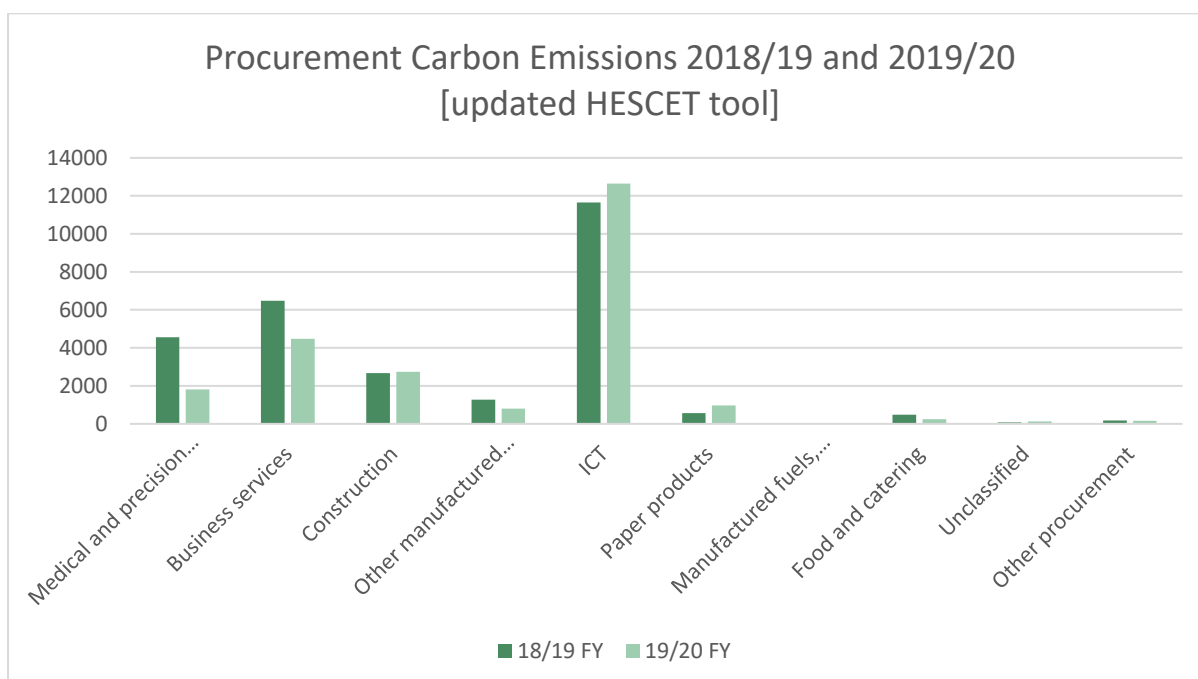


Figure 4 Detailed comparison of 2018/19 and 2019/20 carbon emissions from procurement using HESCET tool

## 8.4 Action Plan

- Reach level four of the Flexible Framework
- Carry out sustainable and ethical procurement training workshops for staff
- Incorporate sustainability criteria into future purchases and contracts
- Implementation of the Energy Design Standard and other environmental criteria into refurbishments and capital projects



## 9. Student Accommodation

Scope 3 emissions associated with provision of student accommodation on campus. The emissions included are those generated by gas and electricity consumed by accommodation sites managed by our key partners and do not include those from water, waste etc. Other accommodation sites off campus are not included.

<b>Baseline</b>	<b>883 tCO<sub>2</sub>e 2018/19</b>
<b>Target</b>	<b>Monitor and Measure</b>

### 7.1 Background

The University partners with Campus Living Villages (CLV), who manage two accommodation villages: Peel Park Quarter, and John Lester and Eddie Colman Courts.

### 9.2 Methodology

CLV provide energy consumption data which is converted using the relevant Department for Business, Energy & Industrial Strategy carbon conversion factors for that type of energy.

### 9.3 Performance

The total scope 3 carbon emissions from the onsite accommodation in the baseline year of 2018/19 was 883 tonnes of CO<sub>2</sub>e.

In 2019/20 this had increased to 1262 tonnes of CO<sub>2</sub>e.

### 9.4 Action Plan

- Continue to monitor and measure scope 3 carbon emissions from CLV accommodation
- Investigate and agree a suitable target for reduction with CLV
- Continue to work with CLV in initiatives such as Green Impact and Go Green Salford
- Investigate further initiatives in partnership with CLV and students to encourage energy reductions

## 10. Electricity & Gas Scope 3 Emissions

In-direct scope 3 emissions associated with the consumption of electricity and gas. This covers the transmission and distribution grid losses of electricity and well-to-tank factors.

<b>Baseline</b>	<b>1924 tCO<sub>2</sub>e 2016/17</b>
<b>Target</b>	<b>TBC tCO<sub>2</sub>e 2029/30</b>

### 7.1 Background

Electricity consumed by the University is accounted for within both the Scope 2 and Scope 3 emission calculations. This is due to the multiple processes involved in supplying electricity from the power plant to the University where energy is lost in transmission and distribution (T&D) from which associated emissions are classed as scope 3. The well-to-tank (WTT) factor also accounts for the upstream Scope 3 emissions associated with extraction, refining and transportation of the raw fuel sources to an organisation's site (or asset), prior to combustion.

The target for reduction in scope 3 carbon emissions from electricity and gas use will be developed in line with the Net Zero Carbon by 2038 Strategy, including an 81% reduction in scope 1 and 2 emissions from 2005/6 baseline and the strategy to move to an all electric campus (which will benefit from decarbonisation of the national grid and use of renewable energy)

### 10.2 Methodology

Electricity kWh data is converted into carbon using the relevant Department for Business, Energy & Industrial Strategy carbon conversion factors.

### 10.3 Performance

	2016/17	2017/18	2018/19	2019/20
<b>Electricity T&amp;D, tCO<sub>2</sub>e</b>	<b>514</b>	<b>380</b>	<b>338</b>	<b>267</b>
<b>Electricity WTT, tCO<sub>2</sub>e</b>	<b>876</b>	<b>662</b>	<b>555</b>	<b>429</b>
<b>Electricity WTT T&amp;D, tCO<sub>2</sub>e</b>	<b>82</b>	<b>56</b>	<b>47</b>	<b>37</b>
<b>Gas WTT, tCO<sub>2</sub>e</b>	<b>452</b>	<b>384</b>	<b>311</b>	<b>304</b>
<b>Fuel Use WTT, tCO<sub>2</sub>e</b>			<b>9</b>	<b>6</b>
<b>TOTAL</b>	<b>1924</b>	<b>1482</b>	<b>1260</b>	<b>1043</b>

*Table 9 Summary of Scope 3 Carbon Emissions from Electricity and Gas Use*

### 10.4 Action Plan

- Manage electricity and gas performance based on Electricity, Water and Carbon Management Plan and ISO 50001 targets and management plans
- Develop Net Zero Carbon Strategy