


# **Environmental Sustainability Performance Report 2020-21**

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 <b>UNIVERSITY OF PORTSMOUTH</b>	University of Portsmouth – Environmental Management System					
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	1.6	18.11.2013	10.1.2022	Ian McCormack	Marian Michalsky	Ian McCormack

## 1. Executive Summary

This is final time this format is likely to be used to report environmental sustainability performance. The University Strategy has firmly established an ambition to lead in environmental sustainability and become climate-positive by 2030. As a result, the new Sustainability Strategic Delivery Group will develop a new sustainability plan and reporting format including climate-positive actions. One of the first 'quick win' actions of the group was to update and redesign the sustainability webpages and these now provide a good demonstration of our ambition to become one of the UK's leading universities in environmental sustainability (<https://www.port.ac.uk/about-us/our-ambition/sustainability>). To achieve this goal the University will:

- Achieve transformation through research
- Promote sustainability through civic leadership
- Partner with our students and staff on sustainability
- Deliver sustainability across all our operations

This report focuses on providing the results of our work to deliver sustainability across all our operations including our ISO 14001 certification, utility consumption, sustainable construction and changes to service delivery. The performance graphs provide an update on the last academic year to 31<sup>st</sup> July 2021 and illustrates that due to the Coronavirus pandemic, consumption of utilities does not follow normal usage. Closure periods continue to cause a downward step change in consumption even with the extra ventilation of buildings and water system flushing regimes employed to keep buildings safe.

## 2. ISO 14001

The University retained certification to the ISO 14001 standard following the recertification audit in February 2021. Continued certification requires collaboration with many departments and services during scheduled internal audit checks and the annual surveillance audit by the certification body.

This internationally recognised environmental management system standard requires environmental objectives, actions and performance to be monitored and achieved, alongside continued commitment from senior management to integrate environmental ambition and objectives in strategic planning.

The system is used to record environmental sustainability policy, objectives and actions. This is a practical way to manage and monitor progress against identified significant environmental impacts. The system is also an effective tool for monitoring compliance with environmental legislation. It is worthwhile noting that continued certification provides additional value as it satisfies environmental management criteria within funding applications and contract bids.

## 3. Carbon emissions

Carbon emissions remain at a low point due to reduced energy demand from fewer staff and students on campus during the Coronavirus pandemic. It is also worth noting that the carbon conversion factor for electricity (kg CO<sub>2</sub>e/ kWh) is currently at its lowest since 2009-10 as a result of UK grid decarbonisation efforts, whilst the conversion factor for gas is set to increase due to its fossil fuel origins. Low energy emissions are also due to the continued tight control of heating and ventilation systems and aligning their provision to timetable space bookings, plus a proportion of ventilation systems being upgraded with energy efficient fans.

Table 1 illustrates our carbon emissions categorised by Scope 1, 2 and 3 emissions. Note that travel and procurement activity emissions usually represented in Scope 3 are not included as

there have been no mechanisms to collect this data. However, during 2022, the Sustainability Strategic Delivery Group will for the first time take full account of Scope 3 emissions and include travel and procurement activity in our carbon footprint. It is estimated this will result in our full organisational carbon footprint measuring approximately 69,000 tCO<sub>2</sub>e. If the University chooses, our certified 100% renewable electricity supply (wind, solar, hydro or wave) can also be represented as zero emissions and reduce the annual total reported here by 3,507 tCO<sub>2</sub>e.

Table 1 – Carbon emissions for Scope 1, 2 and measured Scope 3 emissions (excludes travel and procurement related emissions) in tonnes CO<sub>2</sub>e equivalent.

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
<b>Scope 1 - Direct emissions (e.g. Onsite gas consumption in tonnes CO<sub>2</sub>e)</b>							
Natural Gas	3,491	3,406	3,387	3,505	2,835	2,487	2,929
Vehicle Fuel	107	48	43	39	35	25	36
<b>Total Scope 1</b>	<b>3,598</b>	<b>3,453</b>	<b>3,429</b>	<b>3,545</b>	<b>2,870</b>	<b>2,511</b>	<b>2,965</b>
<b>Scope 2 - Indirect emissions (e.g. electricity production in tonnes CO<sub>2</sub>e)</b>							
Electricity Production	10,363	9,353	7,188	5,777	4,892	3,812	3,507
<b>Total Scope 2</b>	<b>10,363</b>	<b>9,353</b>	<b>7,188</b>	<b>5,777</b>	<b>4,892</b>	<b>3,812</b>	<b>3,507</b>
<b>Scope 3 - Other indirect emissions (e.g. disposal of waste in tonnes CO<sub>2</sub>e)</b>							
Electricity Distribution	856	846	672	492	415	328	331
Waste	23	23	17	19	15	9	6
Water	65	71	55	61	51	36	18
<b>Total Scope 3</b>	<b>944</b>	<b>939</b>	<b>744</b>	<b>573</b>	<b>481</b>	<b>373</b>	<b>356</b>
<b>Total emissions (tonnes CO<sub>2</sub>e)</b>							
<b>Gross Emissions</b>	<b>14,905</b>	<b>13,745</b>	<b>11,361</b>	<b>9,894</b>	<b>8,243</b>	<b>6,696</b>	<b>6,827</b>

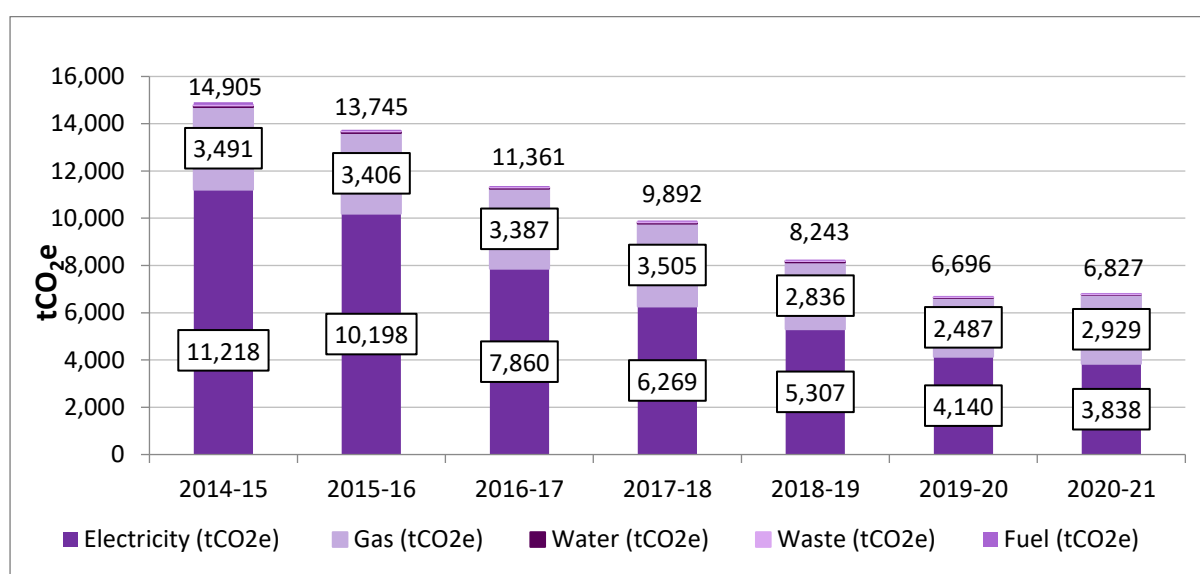


Figure 1 – Annual carbon emissions for Scope 1, 2 and Scope 3 emissions (excluding travel and procurement related emissions)

#### 4. Energy management

Electricity and gas consumption remained lower than normal due to the continued pandemic causing low building occupancy levels (Figure 2) but gas consumption did increase (Figure 4) in line with the colder winter indicated by the higher number of degree days (Table 2. days below 15.5 degrees when heating is required). Additional heat loss due to Covid ventilation requirements will have added to gas consumption.

It is still the case that organisations that adopt a ‘business as usual’ approach (i.e. without concern for energy management) experience a continual upward trend in energy consumption. The University can demonstrate a downward trend in absolute electricity and gas consumption.

Table 2 – Degree days per year.

Heat Degree Days	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Number of degree days	1,530	1,416	1,385	1,517	1,377	1,334	1,561

*In the UK a degree day will only occur when external mean temperatures drop below 15.5 °C (the temperature at which heating is generally considered necessary). Degree days are calculated by subtracting the daily mean temperature from 15.5 °C and totalling these for the year.*

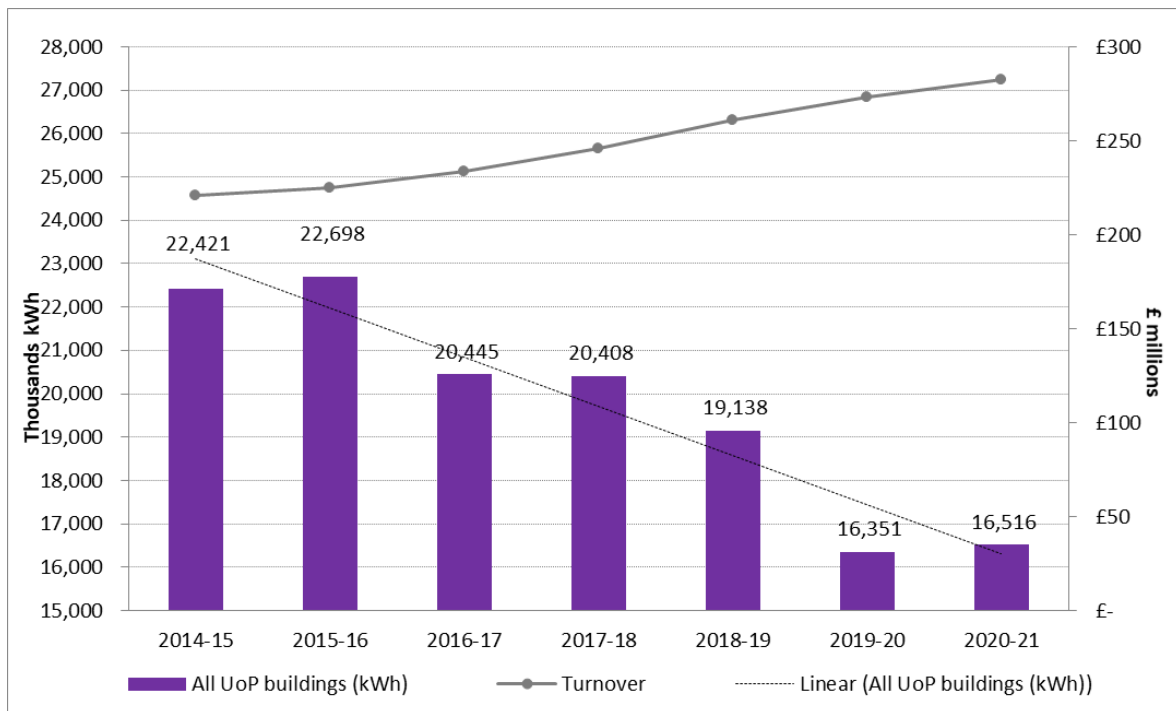


Figure 2 – Absolute electricity consumption per year against annual turnover

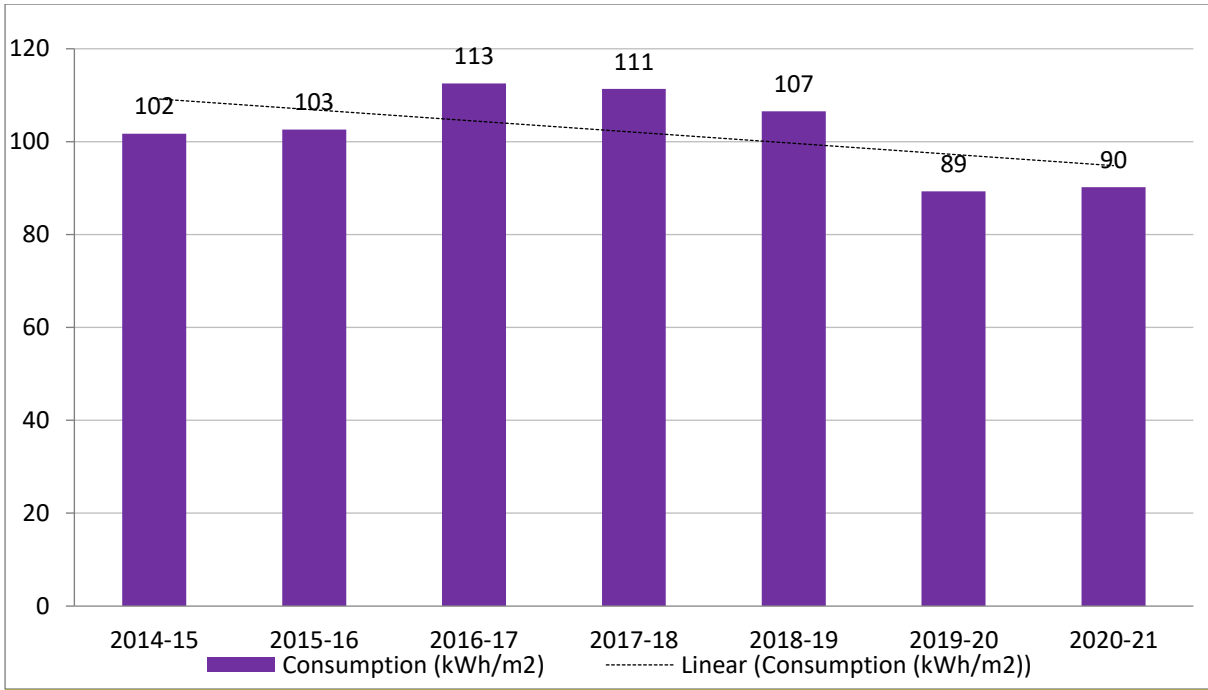


Figure 3 – Electricity consumption per m<sup>2</sup> (kWh/m<sup>2</sup>) per year.

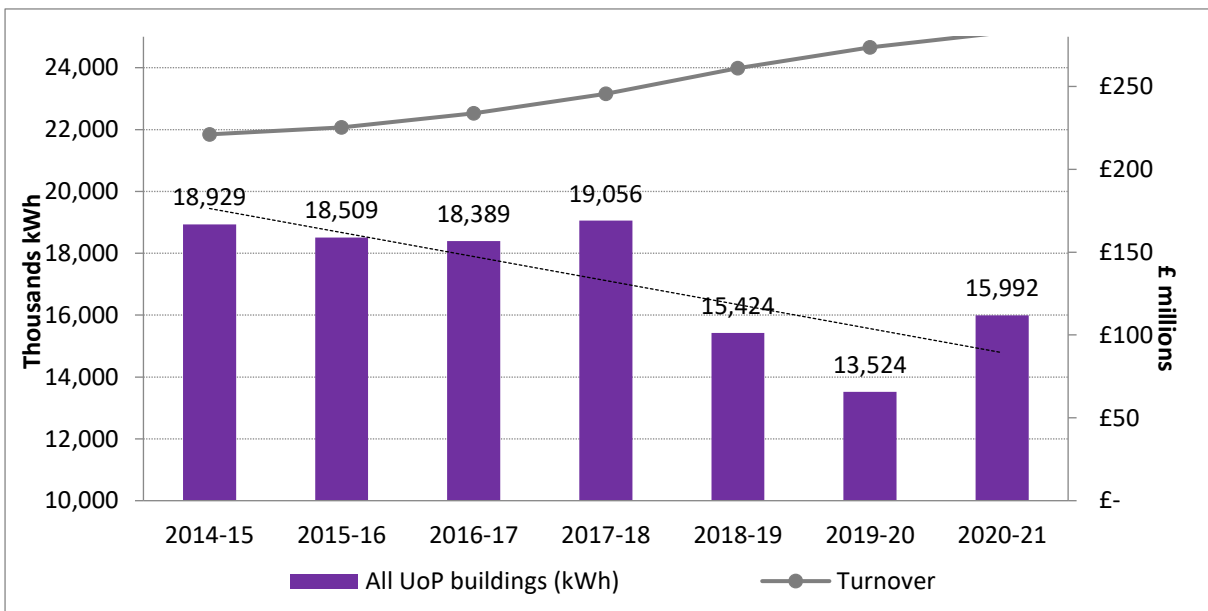


Figure 4 – Absolute gas consumption per year against annual turnover

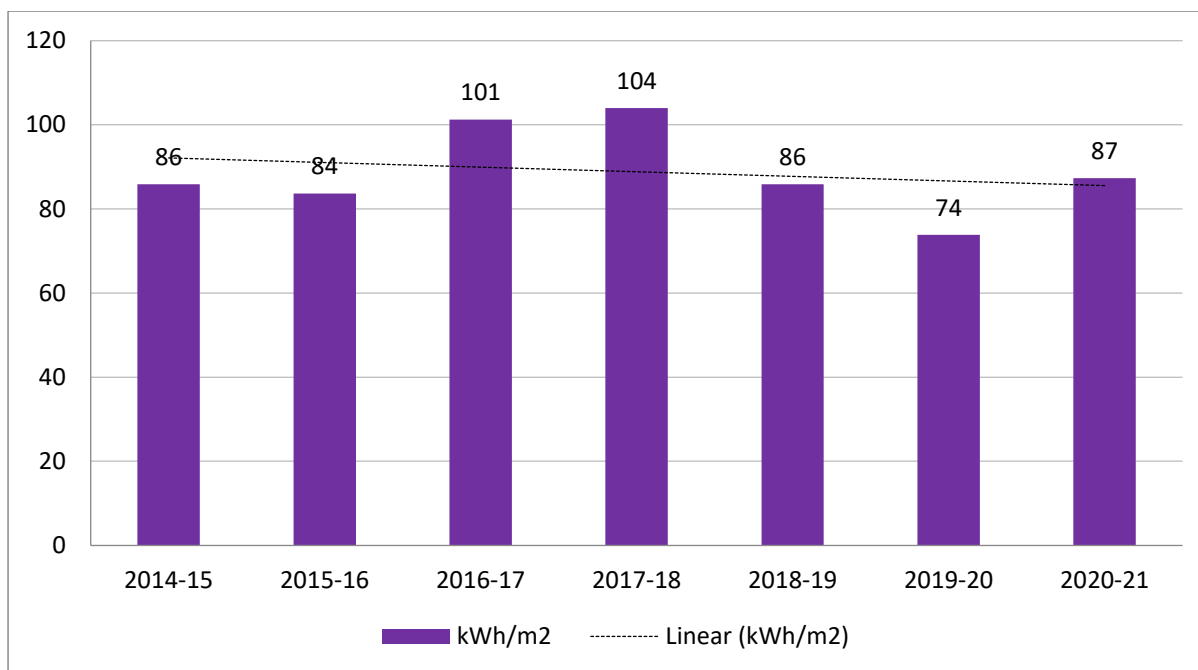


Figure 5 – Gas consumption per m<sup>2</sup> (kWh/m<sup>2</sup>) per year

## 5. Recycling and waste management

Over the last year the recycling rate has remained at the 70% mark, but waste volume has fallen considerably with the pandemic restricting staff/students access on campus.

There is potential to further increase recycling rates consistently above the 70% mark by appointing a dedicated furniture reuse/ recycling contractor. In addition, updating our recycling scheme colour coding/ instruction signage early in 2022 and introducing recycling points for difficult to recycle materials (plastic packaging, office supplies, PPE, snack packets and art products) should all support an increase in recycling rates.

The colour coding upgrade is important, European markets for recyclable materials are now less tolerant of contamination with food and other non-recyclables. The upgrade will standardise lime green colour coding for recycling bin facilities (as some already are) whilst converting a small number of recycling bins to general waste provision with black lids in an effort to reduce contamination of recycling.

There has been considerable effort university wide to eliminate the use of single use plastics. Catering outlets have removed most single use plastic items such as straws, cutlery, sachets and have moved to milk deliveries in reusable glass bottles. Print Services now recycle PVC banners and are reusing the frames of pop up banners. Ultimately, the University's Revolution Plastics campaign will reduce the use of plastics internally and seek to develop internationally recognised environmentally sustainable waste management solutions for treating plastic waste worldwide.

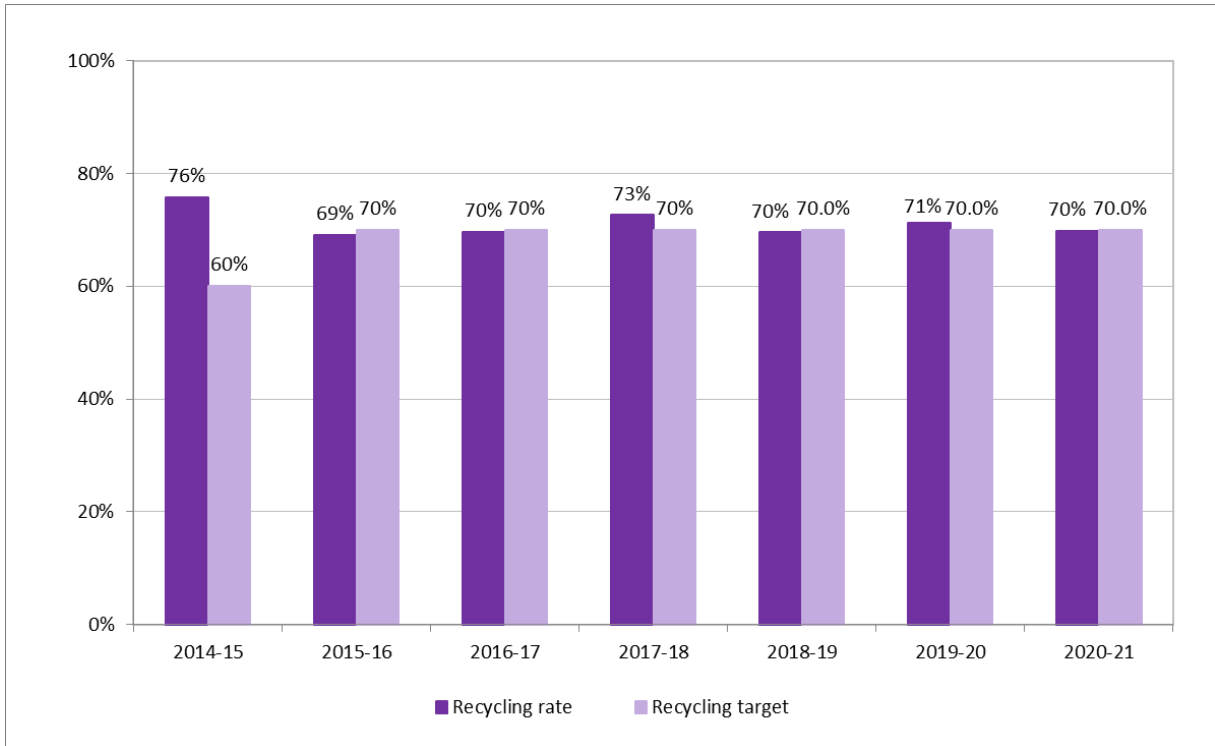


Figure 6 – Annual percentage of waste recycled (excluding construction waste).

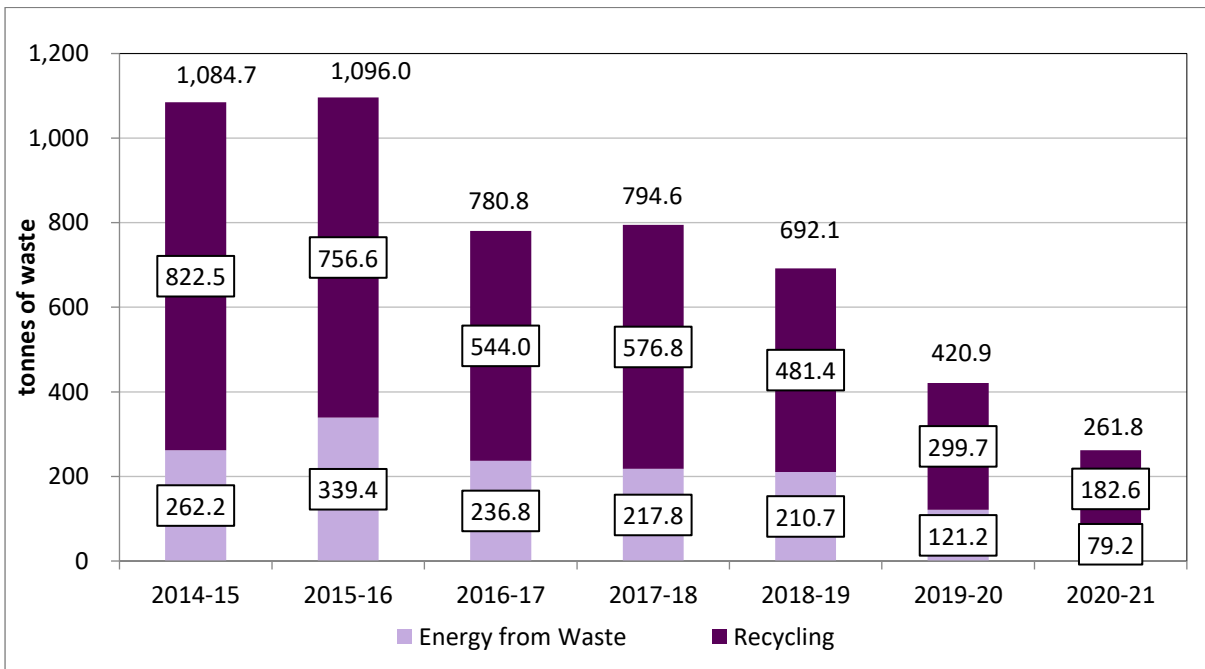


Figure 7 – Annual tonnages of waste sent for recycling and energy from waste treatment (excluding construction waste)



## 6. Water management

Water consumption picked up with the start of the return to campus but consumption never dropped considerably due to extra water system safety flushing introduced during the pandemic closure months. The ability to monitoring consumption online will continue in order to alert to high usage and keep consumption within expected use. Increases in consumption automatically results in higher sewerage bills and so monitoring for potential leaks is an important part of managing costs.

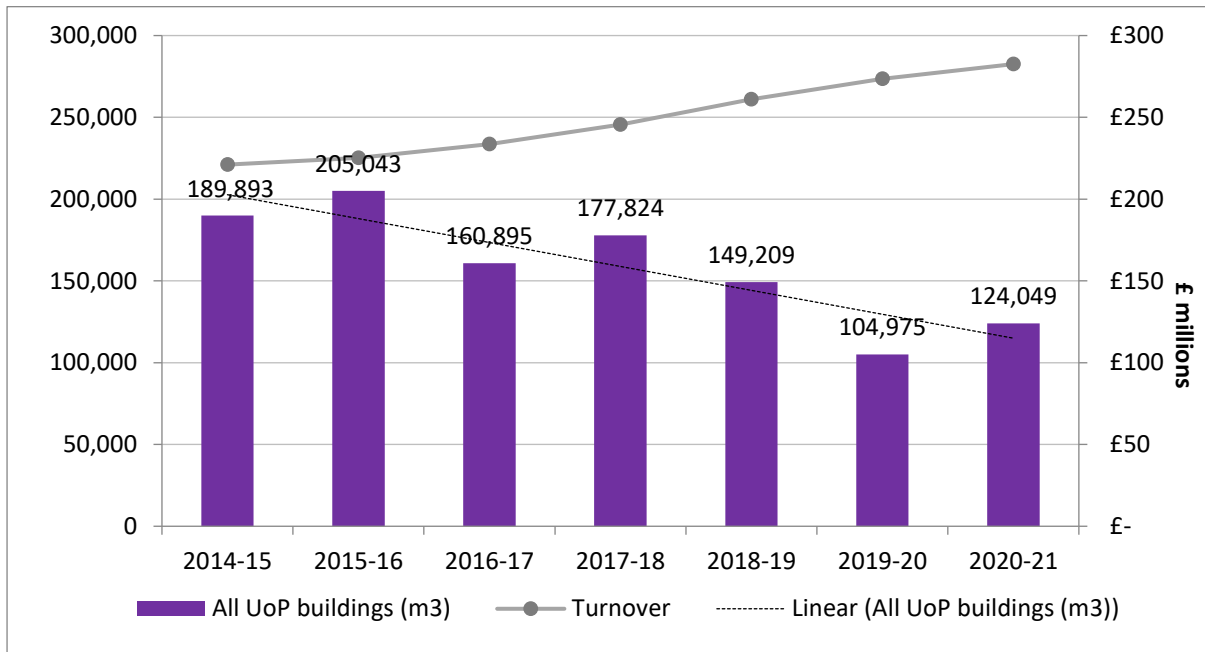


Figure 8 – Annual water consumption (m<sup>3</sup>) against annual turnover.

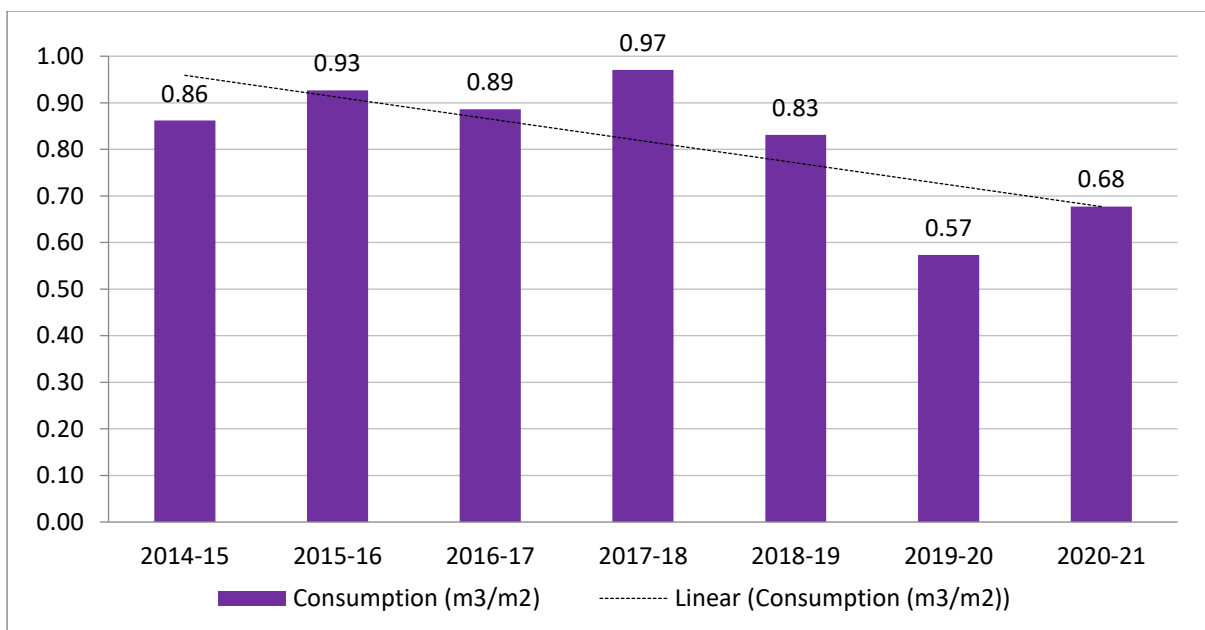


Figure 9 – Water consumption per m<sup>2</sup> (m<sup>3</sup>/m<sup>2</sup>) per year

## **7. Sustainable construction**

The design of the new Ravelin Sports Centre aims to create new standards for sustainability and energy efficiency and become one of the UK's greenest sports facilities. The design stage received an 'Outstanding' rating from BREEAM UK, the world's leading sustainability assessment for buildings and won the Public Sector Project: Design Stage Award at the BREEAM Awards 2020. This is a prestigious award which recognises projects demonstrating the highest level of innovation in terms of sustainable construction. The design includes features to produce renewable energy from roof mounted solar panels and internal heat recovery systems. Pool water will be reused for toilet flushing and biodiversity will be enhanced by creating an urban orchard and biodiverse grassed roof with beehives.

This policy to design to the highest sustainability standards continues with the design of the new Victoria Park Building with the ambition to be net carbon ready and achieve a top rating of 'Outstanding' from BREEAM UK. Designed to be environmentally responsible, it will be a smart energy building that will maximise natural light by enabling daylight deep into its heart. Photovoltaic panels cover the angled roof, producing renewable power and a high performing façade will manage heat and light.

## **8. Emissions, discharges and abstraction**

The University has a sea water abstraction licence issued by the Environment Agency for the Institute of Marine Sciences. The volume of water abstracted is recorded monthly and reported annually. The University also hold trade effluent discharge permits for Spinnaker Sports Science, Anglesea and Ravelin Sports Centre. More generally, the university holds an acknowledgment from Southern Water to discharge to drain from its laboratories which was subject to concentrations at the time.

## **9. Sustainable travel**

Transport is a source of carbon emissions. By promoting low-carbon transport modes to staff, students and visitors, the new Travel Plan (2021-24) can contribute to becoming climate-positive by 2030. The Travel Plan also has a role to play in helping the university to support staff and student wellbeing by supporting active travel (cycling, walking and other non-vehicular forms of transport). This may help to build exercise into more people's daily routines, which can deliver mental and physical health benefits. The Travel Plan can also help to address and manage car parking issue, increase site accessibility and travel choices (particularly for people with mobility problems or disabilities), and improve awareness of transport options.

Key actions recommended in the plan include improving bicycle security, providing more storage and changing facilities for active travellers. Supporting the use of electric vehicles for travel and exploring whether a season ticket loan could reduce the financial barriers to public transport use are additional measures.

A new online google map helps staff and students identify active travel facilities (bike storage, locker and shower facilities) on campus whilst bike lockers have been introduced for the first time as an alternative to bicycle cages and to increase security in some locations.

## **10. Biodiversity**

The biodiversity of the estate continues to be managed through the grounds maintenance contract and is being enhanced with a wildflower meadow and beehives in Ravelin Park associated with the Ravelin Sports Centre design and surrounding public realm improvements.

## **11. Sustainable procurement**

The Sustainability Strategic Delivery Group is currently reviewing sustainable procurement activity and the ability to measure supply chain carbon emissions through the use of the NETpositive tool.

## **12. Sustainable catering**

The Catering Service's efforts to increase their sustainability performance has been recognised by the Sustainable Restaurant Association awarding the maximum 3-star rating. The team have also signed up to a WRAP campaign to monitor and reduce food waste and continue to reduce the use of single use plastics.

All Food on Campus outlets are virtually free of single-use plastics due to:

- Using recyclable glass milk bottles and large milk dispensers in catering and coffee shops to save over 13,000 milk sachets a year.
- Using bamboo cutlery to save between 10,000 and 15,000 pieces of plastic cutlery a year
- Using eco-friendly corn starch cups to save nearly 60,000 plastic cups a year
- Using sugar cane platters and plates
- Replaced plastic straws with biodegradable wheat straws
- Offering customers discounts if they use their own cups when buying hot drinks
- Introducing refillable, biodegradable bottles or canned water in our catering outlets

Food waste is currently less than 2%. All our food waste is weighed as we are part of the Waste and Resources Action Programme (WRAP) initiative 'Guardians of Grub'. Any leftover food is donated to Portsmouth Food Cycle, who serve free hot meals to members of the local community.

Catering Services are now part of the Public Sector Procurement of Local Food Project, a scheme to increase the number of local farmers and producers supplying the public sector. This encourages diversity and local business growth and reduces delivery frequency, lowering carbon emissions. Catering is also a member of Hampshire Fare, a local supplier scheme providing fresh, seasonal produce to enhance food assurance, minimise food miles and support our local economy.

Catering have also started to promote sustainable diets on campus to help tackle climate change and reduce our impact on the natural environment, promote healthy eating and wellbeing and uphold high standards in animal welfare. As a result we are now one of the top 10 most vegan friendly universities in the UK - 40% of the food on our menus is plant-based. We are also one of the first universities to join the Kale Yeah! loyalty scheme developed by Friends of the Earth to combat climate change. As a Kale Yeah! Kitchen, we promote sustainable diets by offering more plant-based options and serving less, but higher welfare, meat, dairy and fish products.