



Environmental Sustainability Performance Report 2015-2016

Table of Contents

1.	Executive Summary	3
2.	ISO 14001	4
3.	CRC Energy Efficiency Scheme.....	4
4.	Carbon emissions	4
5.	Energy management.....	7
6.	Recycling and waste management	10
7.	Water management.....	12
8.	Sustainable construction	13
9.	Emissions, discharges and abstraction	14
10.	Sustainable travel.....	14
11.	Biodiversity.....	15
12.	Sustainable procurement	15
13.	Sustainable food	16

 University of Portsmouth	University of Portsmouth – Environmental Management System					
	Environmental Sustainability Performance Report 2015-2016					
	Version:	Issued :	Revised:	Drafted by:	Reviewed by:	Approved by:
1.0	16.11.2016		Marian Michalsky and Ian McCormack	Ian McCormack	Estates & IT Committee	

1. Executive Summary

This annual environmental performance report is the fourth since approval of the 5 year Environmental Sustainability Statement and Performance Plan 2013-2017. The performance of the University is reported by academic years which run from 1st August to the 31st July. Commentary on certification to the ISO 14001 environmental management system and the CRC Energy Efficiency Scheme is provided as well as progress towards headline objectives and targets.

The University continues to retain its ISO 14001 certification (environmental management system) following successful completion of two surveillance audits by external auditors SGS during the period. Improvements and efficiencies to the environmental management system continue to be implemented which help to ensure that best practices and compliance with legal requirements are maintained University wide.

The second year of Phase 2 of the CRC Energy Efficiency Scheme was completed successfully. To maintain compliance with the scheme 14,755 tonnes of CO₂ emissions were reported to the Environment Agency and £249,395 of carbon allowances were purchased to cover the cost of this carbon tax. Phase 2 of the scheme ends in 2019 and it is considered the scheme will be abandoned but government revenues maintained by simply increasing the climate change levy (CCL) currently seen on electricity and gas bills.

The current Carbon Management Plan has now come to an end and will be redrafted during 2017. Although the original aspirational 30% reduction target was not achieved emissions virtually achieved the 18% reduction forecast from the combined impact of emission reduction projects and changes to the estate forecast over the 5 years of the plan. This final year recorded the lowest emissions 13,671 tCO₂ down from 16,620 tCO₂ in 2009-10.

Recycling rates have plateaued at about 70%, the target set. Rates for future years could drop as global markets for recyclable waste materials are currently less buoyant.

Water consumption reductions are proving challenging to achieve and the target will not be met. Closer monitoring of consumption with our supplier is being undertaken in order to reduce the duration of potential leaks and understand consumption patterns in more detail.

The preparation of a new Travel Plan is being co-ordinated by Hampshire Services and is due for completion in May 2017. The Travel Plan will recognise that the University contributes to traffic in the city which has an impact on local air quality and adds to carbon emissions. A new plan would aim to reduce these impacts and contribute to quality of life improvements in the city by promoting sustainable travel choices i.e. walking, cycling, public transport and car sharing.

Progress continues to be made in many other areas of environmental sustainability. The sustainable construction benchmark BREEAM 'Excellent' has been specified for the 'Future Technology Centre' project extension to Portland Building.

Efforts to increase the availability of sustainable food have been recognised by the Soil Association's 'Food for Life' standard with one catering outlet achieving bronze level. The Sustainable Restaurant Association have also recognised efforts by awarding the University the maximum 3 star rating - a first in the area.

2. ISO 14001

The University has continued to retain certification to the internationally recognised environmental management system standard ISO 14001 (2004) following a total of four days of surveillance audit. The audits in October 2015 and March 2016 included site visits to Port Royal depot, Ravelin Recycling Compound and Dentistry, Burnaby and King Henry buildings. Continued certification is a combined effort by many departments and services and all aspects of the management system and sampling of buildings is scheduled every 6 months.

The University has until September 2018 to migrate to the revised ISO 14001 (2015) standard. The revised standard will require a closer scrutiny of environmental objectives, targets and performance tracking and procurement activity, plus a clear commitment from senior management to include environmental objectives in strategic thinking.

3. CRC Energy Efficiency Scheme

Compliance with the Carbon Reduction Commitment (CRC) year, April 2015 to March 2016, was completed successfully. Carbon allowances were purchased and surrendered to cover 14,755 tonnes of carbon emissions from our electricity and gas consumption at a cost of £249,395.

Phase 2 of the scheme ends in 2019 and it has been reported that the scheme will be abandoned. However, government revenues will be maintained by simply increasing the climate change levy (CCL) currently seen on electricity and gas bills. As a result there is unlikely to be any reduction on costs.

4. Carbon emissions

Headline objective	Progress summary
To reduce carbon emissions from electricity and gas consumption, fleet vehicle fuel use, water consumption and recycling and waste volumes.	Carbon emissions were monitored over the course of the university's first carbon management plan. A reduction was achieved.
What's our target	Progress summary
The University of Portsmouth will reduce the carbon emissions from its activities by 30% from a 2009-2010 baseline by August 2016.	Emissions reduced by 18% against the 2009-2010 baseline. The review of the carbon management plan in 2014 concluded that a 20% reduction was more likely and not 30%.

The University measures Scope 1 and 2 carbon emissions and some Scope 3 carbon emissions, waste and water consumption only (Table 1). Their annual total, measured since 2009-10 recorded their lowest year in part due to a decrease in carbon conversion factors from the UK generating more renewable energy (Figure 2). Although the original aspirational 30% reduction target was not achieved emissions very nearly achieved the 'emissions in the chosen plan' target line, an annual forecast of the combined impact of reduction projects and changes to the estate.

Carbon Emission Scopes

When measuring and calculating carbon emissions they are categorised into 3 scopes:

1. *Scope 1 – Direct emissions. These are emissions which occur on a site owned or controlled by an organisation (e.g. onsite gas consumption).*
2. *Scope 2 – Indirect energy emissions. These are emissions which occur due to an activity of an organisation, but occur at a source owned or controlled by another organisation (e.g. electricity production).*
3. *Scope 3 – Other indirect activities. Other emissions not covered by scope 2 which occur due to the activities of an organisation, but not on a site owned or controlled by that organisation (e.g. waste disposal, procurement, business and commuter travel).*

Overall, in terms of an absolute reduction in carbon emissions, there has been an 18% reduction in emissions since measurement against the 2009-2010 baseline.

Table 1 – University’s carbon emissions for Scope 1, 2 and measured Scope 3 emissions, in tonnes CO₂ equivalents.

	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Scope 1 - Direct emissions (e.g. Onsite gas consumption) (Tonnes CO₂e)							
Natural Gas	4,000	3,538	3,389	3,913	3,265	3,491	3,362
Vehicle Fuel	118	115	113	118	142	107	48
Total Scope 1	4,118	3,654	3,502	4,032	3,406	3,598	3,410
Scope 2 - Indirect energy emissions (e.g. Electricity production) (Tonnes CO₂e)							
Electricity Productic	11,364	10,440	10,266	10,407	11,042	10,363	9346
Total Scope 2	11,364	10,440	10,266	10,407	11,042	10,363	9346
Scope 3 - Other Indirect emissions (e.g. Disposal of waste) (Tonnes CO₂e)							
Electricity Distributi	915	892	811	890	966	856	845
Waste	154	127	140	89	25	23	23
Water	70	76	74	80	66	65	69
Total Scope 3	1,139	1,095	1,024	1,059	1,057	944	937
Total Emissions (Tonnes CO₂e)							
Gross Emissions	16,620	15,189	14,792	15,498	15,504	14,905	13,693
Target	16,602	16,779	16,749	14,236	14,369	13,867	13,520

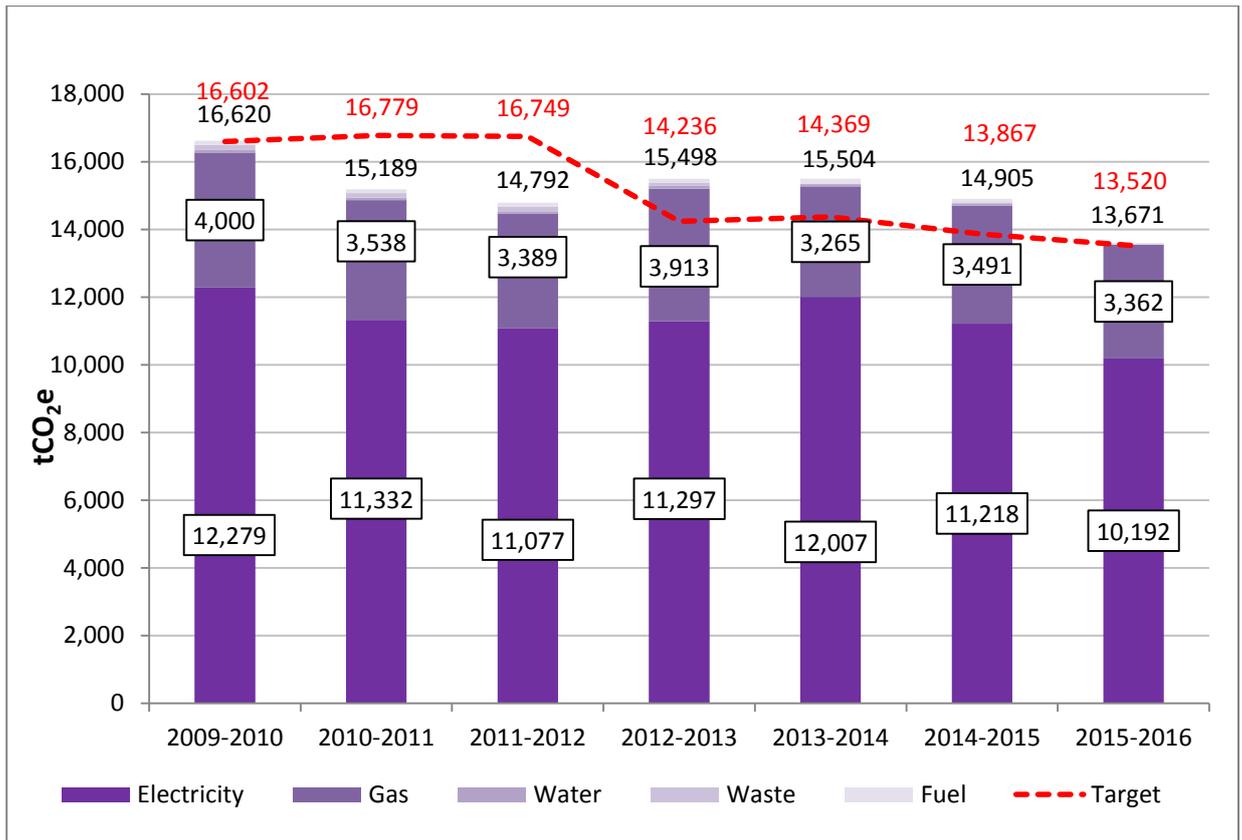


Figure 1 – University carbon emissions (scope 1, 2 and measured scope 3 emissions) compared to the ‘emissions in the chosen plan’ target line (combination of reduction projects and impact of changes to the estate).

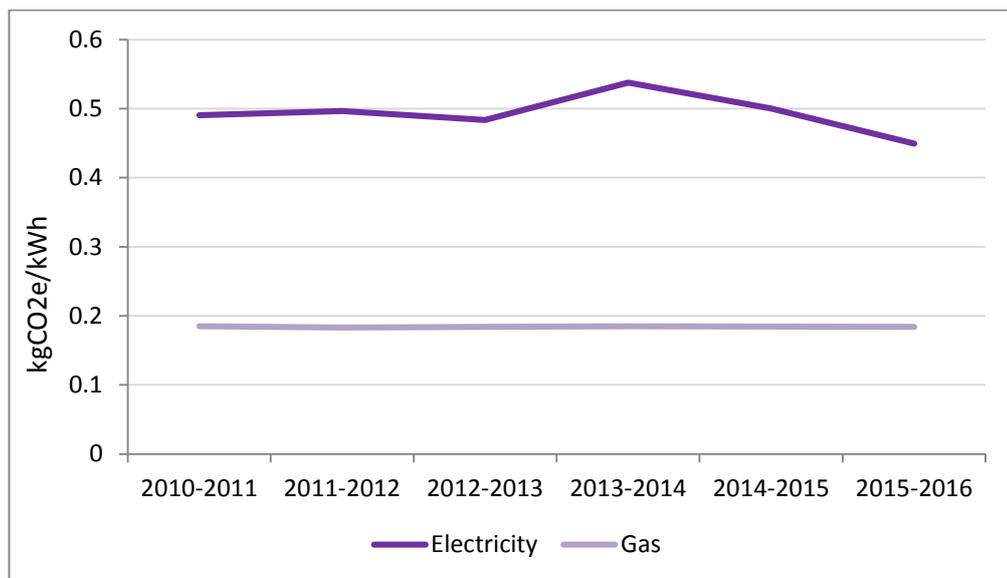


Figure 2 – Tracking of how government conversion factors for gas and electricity have changed over time.

5. Energy management

Headline objectives	Progress summary
<ul style="list-style-type: none"> To generate building energy certificates (DEC) on an annual basis in line with legislation. 	✓ Completed
<ul style="list-style-type: none"> To improve the analysis of energy consumption and target high users. 	✓ Completed – electricity and gas smart meters are providing accurate rather than estimated readings on a monthly rather than quarterly basis.
<ul style="list-style-type: none"> Support the process of energy tenders with accurate consumption data and metering service. 	✓ Completed
<ul style="list-style-type: none"> Improve the accuracy and frequency of the energy billing process by providing automatic meter readings to our gas supplier and electricity supplier (non-half hourly meter readings). 	✓ Completed
What's our target	Progress summary
<ul style="list-style-type: none"> Generate 32 building energy certificates annually (this could increase subject to legislation enforcement in January 2013 and July 2015). 	✓ Completed
<ul style="list-style-type: none"> Achieve certification University wide to the new ISO 50001 energy management standard by 2015. 	No progress
<ul style="list-style-type: none"> To reduce energy consumption in line with the 30% carbon emission reduction target. 	The review of the carbon management plan concluded that a 20% reduction is more likely.

Overall, electricity consumption remain relatively static this year (Figures 3). However, the academic part of the estate did experience an increases due to additional premises being added to the estate portfolio (White Swan Building and Hippodrome House) and buildings being open for longer with increased provision of IT facilities (Library and Eldon Building). Energy efficiency projects in the residential estate continue to show a reduction in consumption and offset an increase in the academic estate. Gas consumption decreased following a decrease in the number of 'degree days' during the year (days when heating is generally required in buildings).

Degree days

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 daily results throughout the year.

Table 2 – Degree days per year.

Degree Days	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
No. of days	2,262	1,823	1,567	1,980	1,373	1,530	1,416

The relatively static level of electricity consumption has come against a background of University expansion. Higher turnover, more students and more research activity tends to increase demand on energy and utilities in general. The Carbon Trust acknowledges that organisations which adopt a ‘business as usual’ approach i.e. without concern for energy management, experience a continual background upward trend in energy consumption. Figures 3 and 5 show a downward trend in absolute electricity and gas consumption against University turnover increasing.

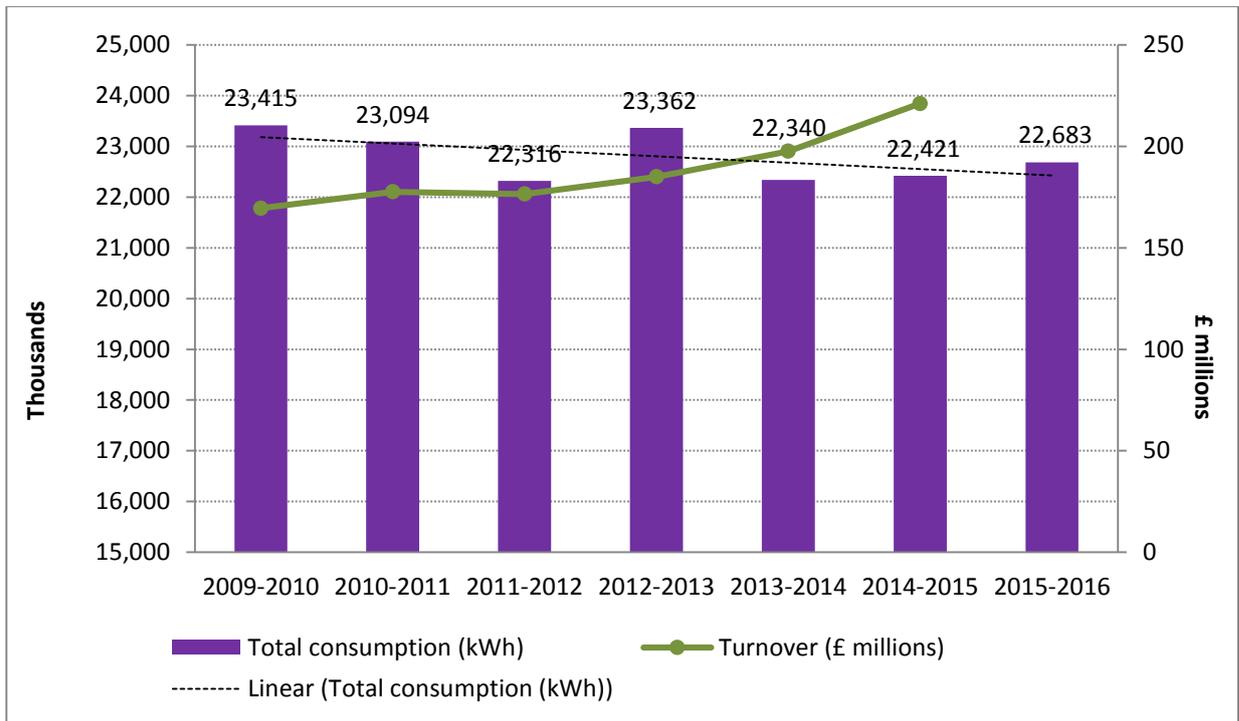


Figure 3 – Absolute electricity consumption per year in kWh against University annual turnover.

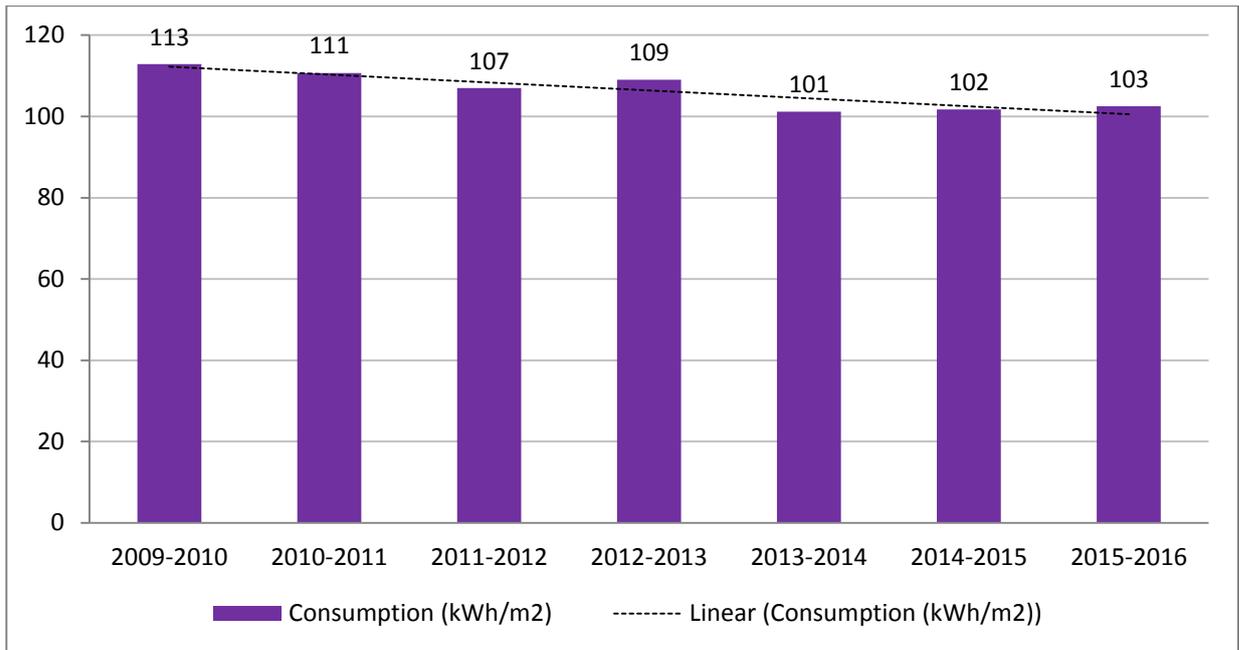


Figure 4 – Electricity consumption in kWh per m² of gross internal area.

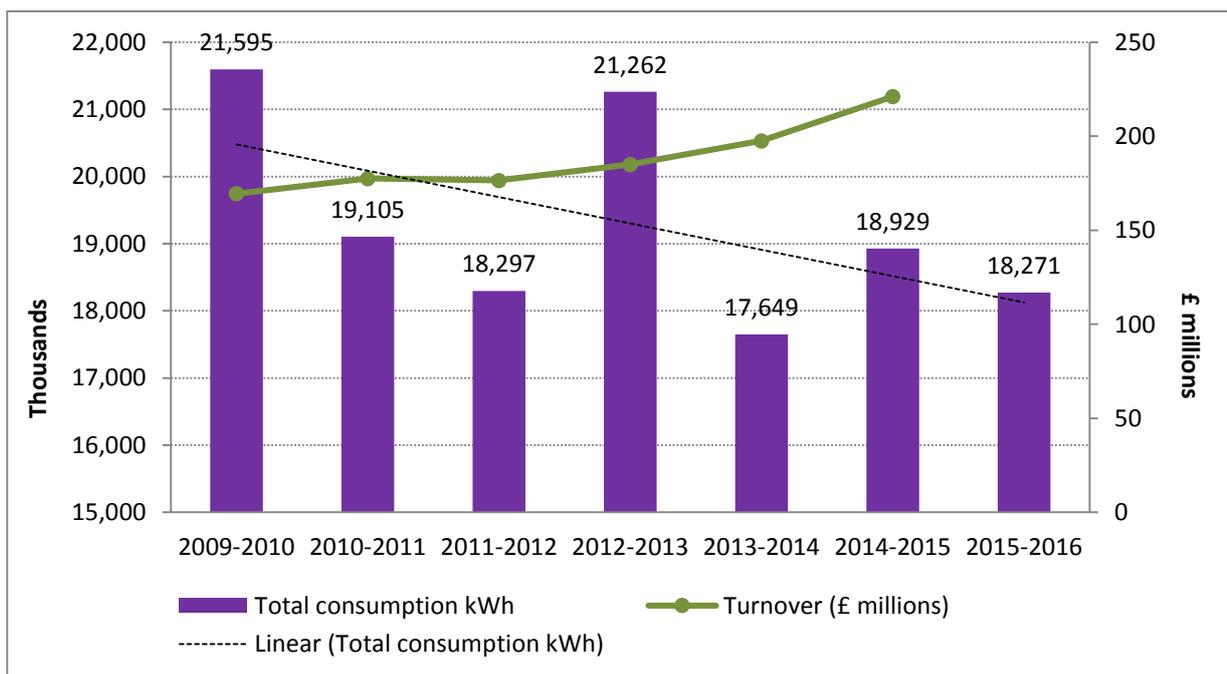


Figure 5 – Absolute gas consumption per year in kWh against University annual turnover.

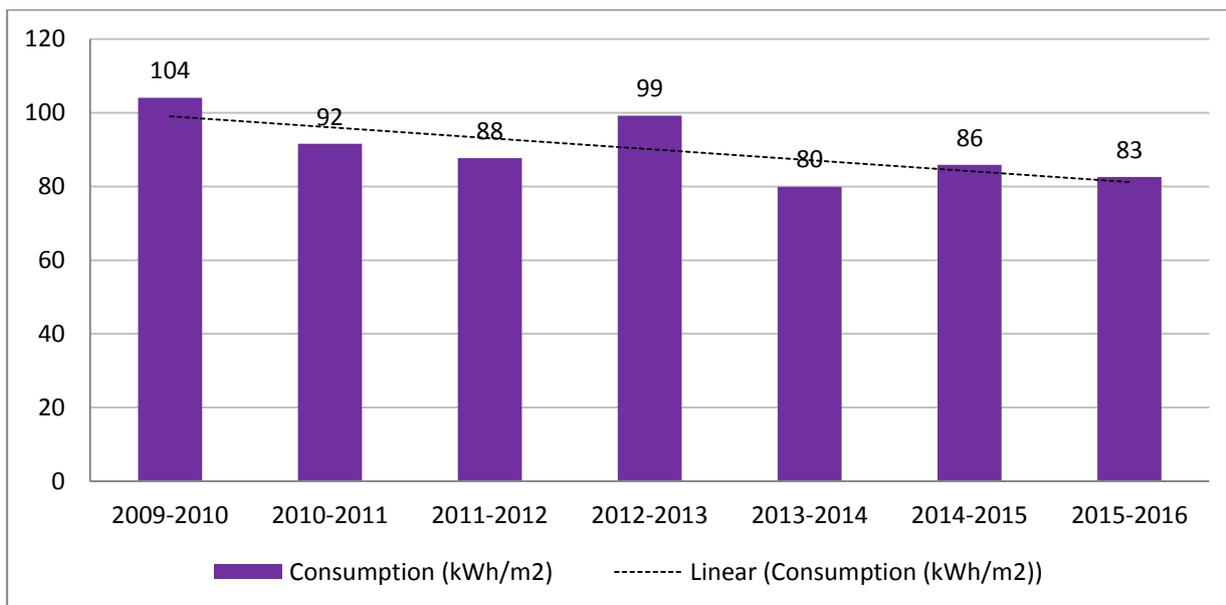


Figure 6 – Gas consumption in kWh per m² of gross internal area.

6. Recycling and waste management

Headline objectives	Progress summary
<ul style="list-style-type: none"> Zero waste to landfill. 	✓ Completed
<ul style="list-style-type: none"> Introduction of food recycling in offices, recycling bin provision in all teaching spaces and the removal of desk side general waste bins in offices. 	✓ Completed
<ul style="list-style-type: none"> Establishing contracts and service level agreements for all waste streams. 	✓ Completed
<ul style="list-style-type: none"> The collection of accurate waste data for all waste streams (that are practical). 	✓ Completed
What's our target	Progress summary
<ul style="list-style-type: none"> To recycle 50% of our waste by 2013-14, 60% by 2014-15, and 70% by 2015-16 (excludes construction waste due to the high volumes generated during construction projects). 	✓ Completed

As a result of the introduction in April 2013 of the two bin waste system (recycling and food waste bins only) the recycling rate has plateaued at about 70%. Recycling and food waste bins are now available in all academic and halls of residence buildings where staff 'green champions' and student 'green living assistants' provide advice and guidance. There is still some room for improvement as more waste furniture needs to be targeted for reuse. The current drop in the recycling rate is due to less global demand for recyclable materials.

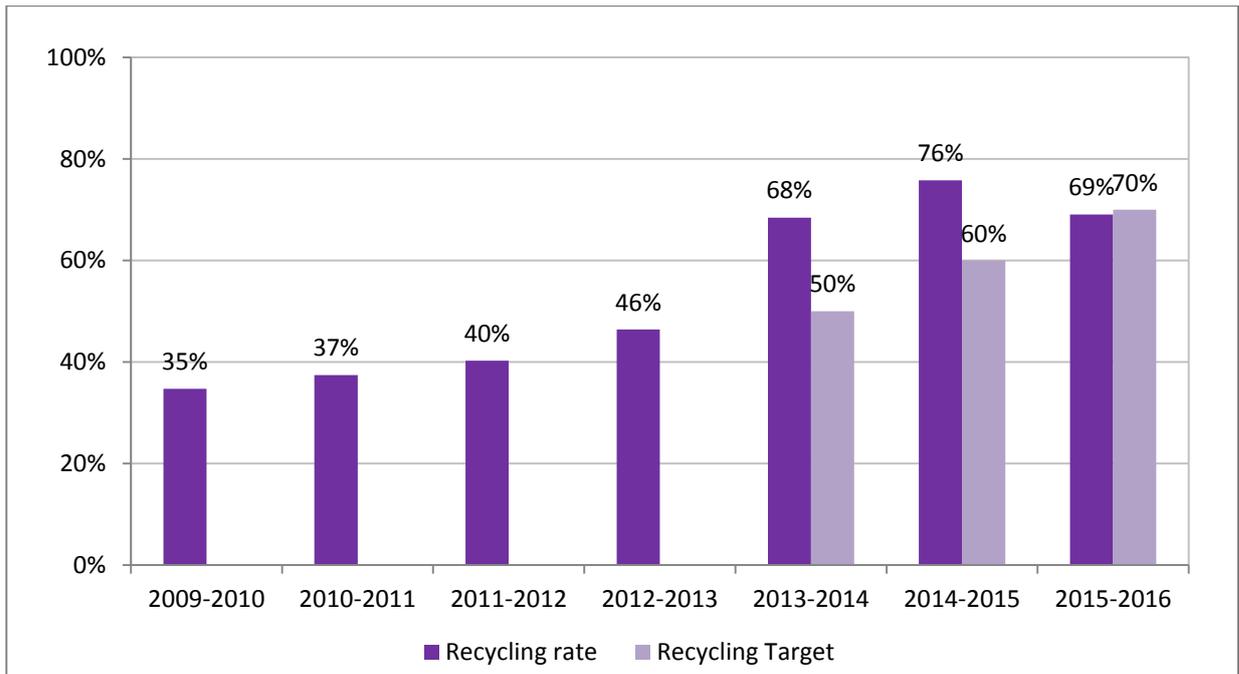


Figure 7 – Recycling rate for all waste produced by the University (excluding construction waste).

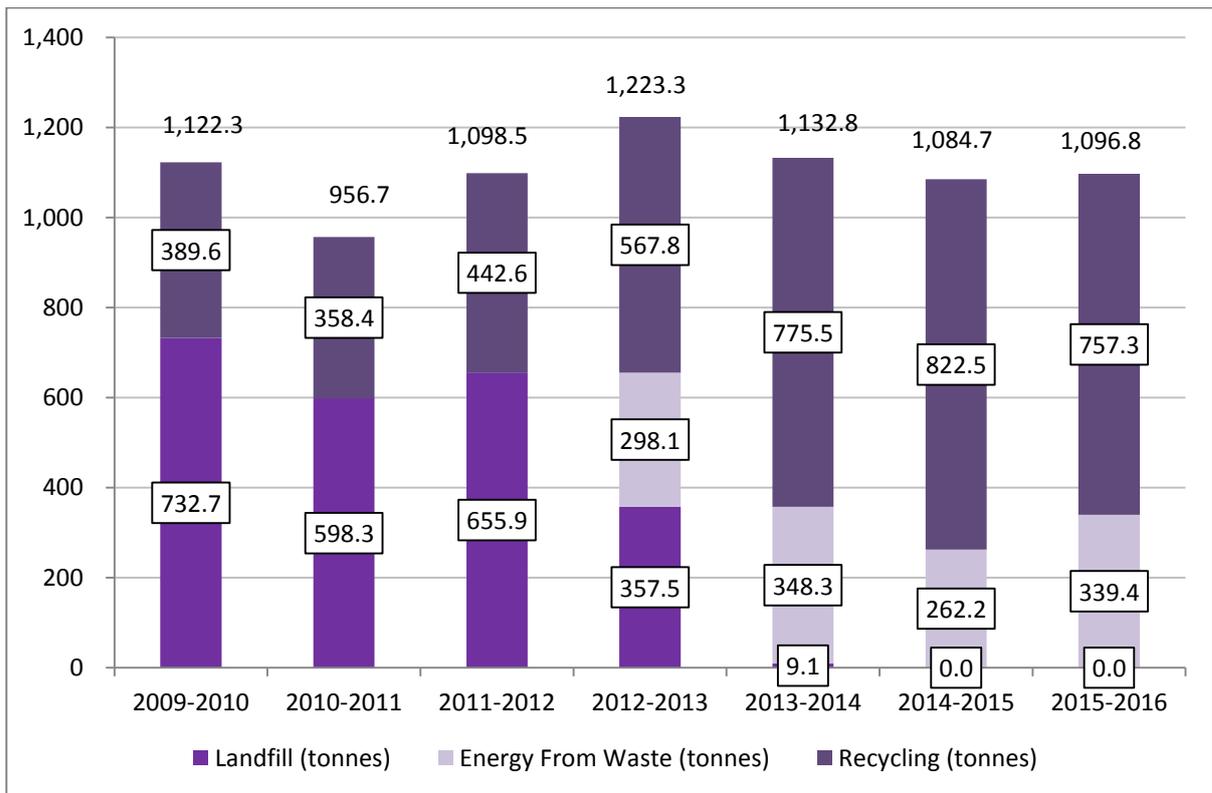


Figure 8 – Tonnes of waste produced by the University in each academic year (excluding construction waste).

7. Water management

Headline objectives	Progress summary
<ul style="list-style-type: none"> To introduce monthly billing (subject to Portsmouth Water agreement and cost). 	✓ Complete
<ul style="list-style-type: none"> To increase the frequency of water meter readings from quarterly to monthly to support the detection of water leaks. 	✓ Complete
<ul style="list-style-type: none"> To reduce water consumption to the lowest point 166,190m³ (measured in 2008-09), subject to health and safety risk assessment. 	In progress - water consumption continues to trend upwards. This is being investigated.
What's our target	Progress summary
<ul style="list-style-type: none"> To reduce water consumption to 166,000m³ by 2017 i.e. to 0.80 m³ per m² (subject to health and safety risk assessment). 	Progress is not on target and will not be met.

Since the target was set a range of factors have affected the ability to achieve the ambitious target. Factors have included a water flushing legionella control regime, an increase in the size of the estate and an increased number of students using facilities. Initial fluctuations in annual data (Figure 9) have flattened as improvements in data collection and a move to monthly billing are resulting in a better understanding of the data.

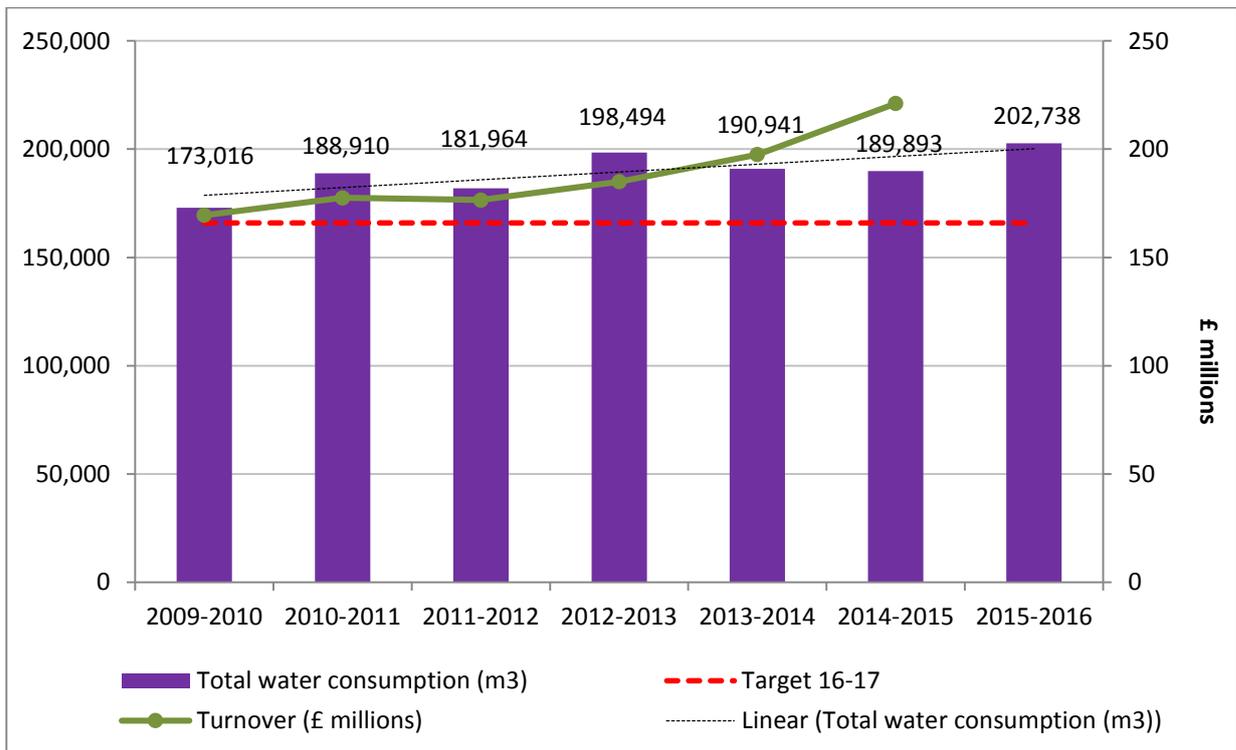


Figure 9 – Total water consumption for the University over the last 5 academic years against University turnover.

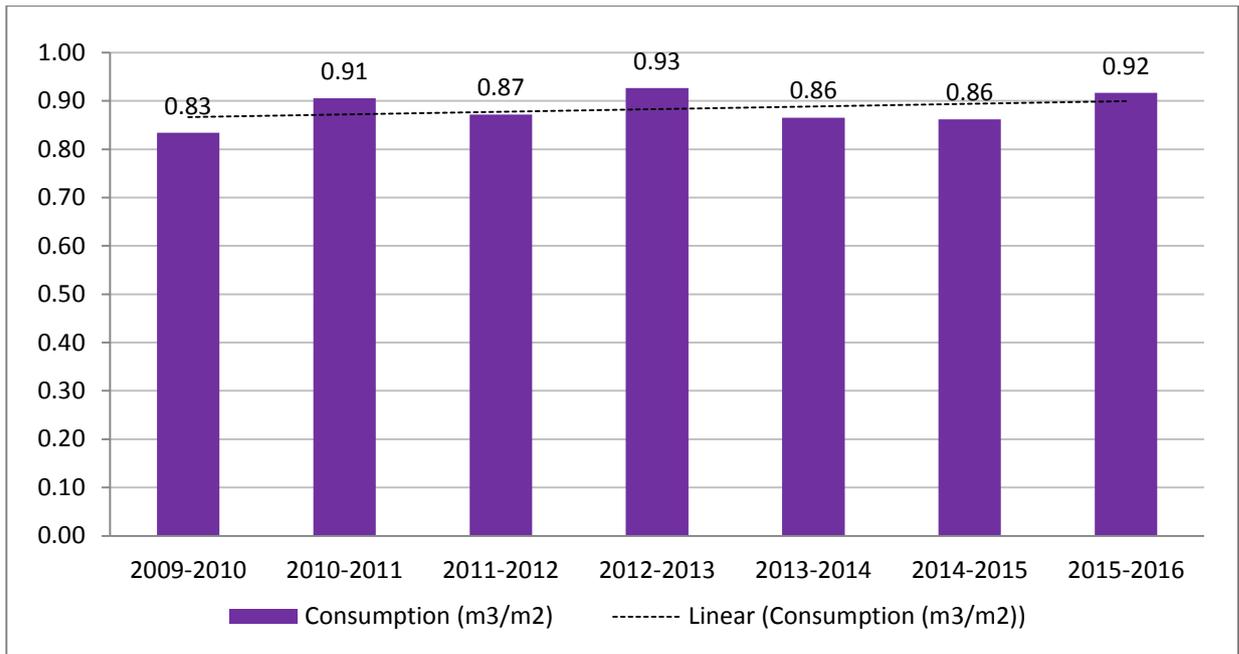


Figure 10 – Water consumption per m² of gross internal area over the last 5 academic years

8. Sustainable construction

Headline objective	Progress summary
<ul style="list-style-type: none"> To extend BREEAM assessments to major refurbishment projects where practical. 	No projects identified
<ul style="list-style-type: none"> To develop specifications for energy efficiency, water and waste management. 	A standard engineering specification has been produced to cover initial energy and water efficiency considerations.
What's our target	Progress summary
<ul style="list-style-type: none"> New construction to achieve a 'Very Good' rating. 	Eldon building extension achieved a 'Very Good' rating. Portland Building 'Future Technology Centre' extension is specified to achieve an 'Excellent' rating.

9. Emissions, discharges and abstraction

Headline objective	Progress summary
<ul style="list-style-type: none"> To investigate monitoring of emissions to air from science based teaching. 	No progress planned to date.
<ul style="list-style-type: none"> To stay within water abstraction permission limits granted by the Environment Agency. 	✓ Completed
What's our target	Progress summary
<ul style="list-style-type: none"> To control levels of discharges to drains and emissions to air to remain within consent requirements. 	✓ Completed for discharge to drains. No progress to report for emissions to air.

The University has a sea water abstraction licence from the Environment Agency for its Institute of Marine Sciences site. The quantity of water abstracted is monitored on a monthly schedule and reported to the Environment Agency annually.

10. Sustainable travel

Headline objectives	Progress summary
<ul style="list-style-type: none"> Reduce travel carbon emissions (not currently measured). 	No data available to record any progress.
<ul style="list-style-type: none"> Support air quality improvements. 	✓ Completed – worked in partnership with Portsmouth City Council's Local Sustainable Transport Fund.
<ul style="list-style-type: none"> Support local travel partnerships. 	✓ Completed - worked in partnership with Portsmouth City Council's Local Sustainable Transport Fund.
<ul style="list-style-type: none"> Raise the profile of travel information. 	✓ Completed – 'Open Day' and general travel options now promote Park & Ride. Staff options and discount schemes available through environment pages.
<ul style="list-style-type: none"> Incentivise walking, cycling and public transport. 	In progress -15% discount commuter train tickets available for staff through the EasitPortsmouth network. Cycle to Work scheme launched in April 2015.
<ul style="list-style-type: none"> Reduce car parking pressure and infrastructure costs. 	No progress to report.
What's our target	Progress summary
<ul style="list-style-type: none"> To reduce commuter solo car use by 5% by 2017. 	No progress to report

A planned rewrite of Travel Plan co-ordinated by Hampshire Services is underway and is due for completion in May 2017. The current Sustainable Travel Plan recognises that the University contributes to traffic in the city which has an impact on local air quality and adds to carbon emissions (unmeasured scope 3 emissions). A new plan will also aim to reduce these impacts and contribute to quality of life improvements in the city by promoting sustainable travel choices i.e. walking, cycling, public transport and car sharing.

11. Biodiversity

Headline objective	Progress summary
<ul style="list-style-type: none"> To maintain and improve the biodiversity value of the University estate. 	In progress – actions in the Biodiversity Action Plan are being implemented through the grounds maintenance contract and monitored via the annual biodiversity survey completed by Hampshire Wildlife Trust.
What's our target	Progress summary
<ul style="list-style-type: none"> To conduct a biodiversity survey on an annual basis. 	✓ Completed
<ul style="list-style-type: none"> To implement the actions in the Biodiversity Action Plan. 	In progress - actions are being implemented via the grounds maintenance contract.

12. Sustainable procurement

Headline objectives	Progress summary
<ul style="list-style-type: none"> To use the assessment methodology developed in-house to grade supplier environmental performance and use this to guide and track improvement. 	Methodology developed and tested but a lack of staff resource in the procurement and environment teams has meant that systematic checks to encourage main supplier improvement has not been possible.
<ul style="list-style-type: none"> To generate reliable carbon emission data associated within procurement activity should this be required to be reported in the future. 	No requirement at present.
<ul style="list-style-type: none"> To produce a sustainable procurement code of practice to support implementation of the Flexible Framework. 	✓ Completed.
What's our target	Progress summary
<ul style="list-style-type: none"> To complete all Flexible Framework stages (1-5). 	No progress.

The University has completed up to Stage 4 of the Government's Guidance '*Sustainable Procurement-Flexible Framework*', which is largely concerned with organisational change to improve sustainable procurement activity.

13. Sustainable food

Headline objectives	Progress summary
<ul style="list-style-type: none"> To reduce our food miles. 	No data available to record any progress.
<ul style="list-style-type: none"> To provide food that comes from environmental and social responsible sources. 	✓ Completed – Fairtrade status retained.
What's our target	Progress summary
<ul style="list-style-type: none"> To achieve the Food for Life standard certification by the Soil Association by 2014. 	In progress - 'Food for Life' bronze standard achieved at St. Andrew's Court.

Fairtrade status has been retained year on year since 2005 and Catering Services are working with the Soil Association to gradually achieve the Food for Life standard for all catering outlets. However, due to the many sustainable food choices made by Catering Services the Sustainable Restaurant Association has awarded the University their highest 3 star rating.

We always have and always will use free range eggs and meat.



All our milk is Organic and local.



100% of our coffee, tea, sugar, Orange and Apple juice is Fairtrade.



Because we buy local we are members of Hampshire Fare.



As we care about what we put in your food we have the Soil Association Food for life award.

