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The University produces an Environmental Report every year as a part of its Environmental Management System procedures and to help demonstrate compliance with the ISO14001:2015 standard.

nce over the course of the

The 2019/20 academic year has been an unusual one in all respects, as a result of the global Covid-19 pandemic which led to significant changes in daily life and the operations of the University. This has obviously had implications for our environmental performance and the contents of this report. Following the recommendation of the UK Government on March 16th, Bangor University advised on March 17th that

The compilation of this report, and its presentation to the Sustainability Strategy Group (SSG) as part of the Management Review Meeting, are undertaken as requirements of the ISO14011:2015 standard for Environmental Management Systems.

The purpose of the Management Review is to review the Environmental Management System (EMS) environmental performance.

The new system for electronic auditing has worked well during the year and a wider range of internal auditors have been utilised too.

Due to all non-essential staff being required to work from home, not all the internal audits were completed during the 2019/20 academic year. The audits not completed represented themed audits and it was felt the majority represented areas where reduced activity and reduced staff and students on site rendered the audit non-essential. Where essential services and activities remained, for instance from oil storage and delivery, PaCS maintained their regular schedule of inspections throughout the lockdown period and no issues were identified. Any uncompleted audits will be rescheduled to the next academic year if Covid-19 restrictions and internal procedures allow.

Environmental aspects are ways in which the operations of an organisation interact with and impact upon the environment. The identification and evaluation of all aspects is a key undertaking of the Environmental Management System.

potential impacts, control measures and associated risks and opportunities.

The ISO14001:2015 standard requires organisations to take actions to address their most significant environmental aspects. As such, all identified environmental aspects are evaluated to determine their overall significance; the most significant aspects are those which pose the greatest environmental risk. The most significant aspects were determined to be those receiving more than 50 points in the evaluation of consequence and likelihood (out of a possible total of 108). The EMS docu

aspects deemed to be most significant. For further details of the assessment please refer to the

Both the Register and Evaluation of environmental aspects were reviewed by CEPT in 2018. In total, 42 environmental aspects were identified and evaluated as part of this review. Of these, 13 were identified as being significant.

In order to ensure the University is taking action to address these significant, objectives and targets have been set in relation to energy use, waste, procurement, construction, travel.

Procedures are in place for ensuring the proper management of chemical and biological materials and for preventing pollution. These are monitored and managed through the internal auditing process.

The Register is due for review before the end of the 2020/21 academic year.

As already stated, the document is due to be reviewed before

Information pertaining to the needs and expectations of interested parties can be found in EMS, last updated in March 2019. Currently the document is not scheduled for review until 2022.

As stated above, the Environment Policy has been updated in line with the change from the Sustainability Task Group to the Sustainability Strategy Group.

Objective	Target	Status
Remain compliant with relevant legislation and other obligations	T1. Ensure compliance with all relevant legislation and obligations associated with our activities and prevent the pollution of the natural environment and demonstrate compliance	Achieved
Manage waste through reduction, re-use, energy recovery and the promotion of recycling	T2. Achieve 60% reuse and recycling by July 2020	Achieved
Minimise resource consumption	T3 a) Reduce energy use by 3% compared to the previous year, as a function of i) m² useful floor area and ii) FTE students & staff	Achieved
	T3 b) Reduce water consumption by 2%compared to the previous year, as a function of i) m² useful floor area and ii) FTE students & staff	Achieved
	T4 a) Update the Sustainable Travel & Transport Plan	Not Achieved
	T4 b) Achieve and annual reduction in vehicular business travel ∞₂ emissions	Achieved

amongst students and staff through improved communication	T8. c) Increase student awareness of the Sustainability Lab and environmental/sustainability	Not Achieved
and involvement	related events & opportunities from surveys	
	T8. d) Increase number of	
	departmental/school/service webpages that refer to	Not possib6s4
	sustainability and link to the Sustainability Lab and/or	
	CEPT & EMSwebpages	

Objective: Remain compliant with relevant legislation and other obligations

Target 1. Ensure compliance with all relevant legislation and obligations associated with our activities and prevent the pollution of the natural environment and demonstrate compliance

Performance against Target 1	Achieved
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The University remains compliant with all relevant legislation and obligations. Related documents
-to-date and monitored
regularly as part of the schedule of internal EMSdocumentation audits.

- EMS auditing and reviews include evaluation of flood risk, municipal and catering waste and composting, with no significant adverse findings.

- Radiation audits and inspections have been undertaken with no significant adverse findings. The Univer external specialist and a Sub-Committee. Level of awareness amongst radiation workers is high.
- The schedule of auditing and the local controls offers reassurance that license requirements are being met and are understood.

A more robust depository for waste transfer notes for all staff involved in the process would improve reporting.

The Waste Coordinator, CEPT and PaCS have been working closely together throughout 2019/20 to prepare for the roll-out of the new system. This included submitting an application for funding to the Welsh Government Circular Economy Capital Fund 2019-20. The application was successfully awarded £124,599 to cover the cost of the new bins required in offices and learning spaces plus an electric vehicle to be used in the collection and transportation of waste on site. New bins for Halls of Residences are being funded by Commercial Services.

The new bins purchased were selected specifically because they were made from 100% recycled plastic. Purchasing products made from recycled materials is an essential part of the circular economy, ensuring there is a viable market for recycled materials.

In addition to the new bins, plans are being developed to make more of a feature of recycling points around the University to encourage people to dispose of their waste responsibly.

Initially it had been planned to roll-out the new system in June 2020, however the restrictions in place as a result of Covid-19 have meant this has had to be delayed until 2020/21.

The Waste Awareness Week campaign ran for its third consecutive year in 2019. 17 waste related events were held over nine days from Saturday 28th September to Sunday 6th October, including

During 2019/20 it was discovered that there had been significant issues with meter readings for one

For energy consumption per FTE, Bangor University was 102^{nd} of the 159 institutions for which data was available, and only fractionally below the sector average. This is illustrated in the graph below.

For context, in 2017/18, Bangor was 75th.

Figure 4

Combined Heat and Power (CHP)

The University also has three gas-fired Combined Heat and Power units (CHPs), currently, only 1 unit is in operation. CHPs burn gas to generate electricity but also use the heat created by this process to provide heating and hot water in connected buildings. This is more efficient than a standard gas boiler which only

Objective: Minimise resource consumption

Target 3 b: Minimise the consumption of Water reduce consumption of Water by 2% compared to the previous year as a function of a) m^2 useable floor area and b) FTE students & staff

	2019/20	Compared to 2018/19	Compared to 2005/06
Total Water Consumption	118,212.00 m ³	-22.3%	-27.2%
a) Water consumption per m² useful floor area	515.8 litres	-22.2%	-42.9%
Performance against Target 3b		Achieved	
b) Water consumption per FTE (students & staff)	11,343.94 litres	-22.7%	-34.9%
Performance against Target 3b		Achieved	

Table 10

Total water consumption

Leation Stalis in tions in the alter, but bas on 158 instituted in the granning and the gra Water use has not received as much attention in recent years as other areas including waste, energy and emissions. Although water use did fall during 2019/20, Bangor is falling behind in the sector.

Improved metering and monitoring would be beneficial to help pinpoint areas where water use may be excessive and where reduction measures may be most effective. At present we are largely reliant on bills for consumption data.

Objective: Reduce the contribution of University business travel on the environment

Target 4 a. Update the Sustainable Travel & Transport Policy and Plan

Target 4 b. Achieve an annual reduction on vehicular business travel O_2 emissions

Update the Sustainable Travel & Transport Policy and Plan

Performance against Target 4a Not Achieved

The development of an Estate Strategy is still ongoing and as such, it has not been possible to make any advancements with a Travel Policy/Plan. CEPT and Sustainability Lab are collaborating with the Director of PaCS in the creation of the Estate Strategy, ensuring that sustainability is embedded across all elements, including travel.

A travel survey was conducted with both students and staff between December 2019 and January 2020, looking at how people commute to the University for work and study. Response rates were good, with 24% of staff and 5.28% of students

Achieve an annual reduction on vehicular business travel ${\rm CO}_2$ emissions

	2019/20	Compared to 2018/19	Compared to 2005/06
Business Mileage (from Expenses)	672,256	986,454	1,987,778
Petrol & Diesel Purchased* (litres)	63,477	94,490	

*2010/11 is the baseline for	total greenhouse gas emissions as this is the earliest date for which sufficient data is available
	electricity emissions (ie. Accounting for our 100% renewable supply)
	2019/20

Figure 9.				
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As was reported last year,	our accounting of Sc	ope 3 (indirect) em	iissions is in need of	improvement.

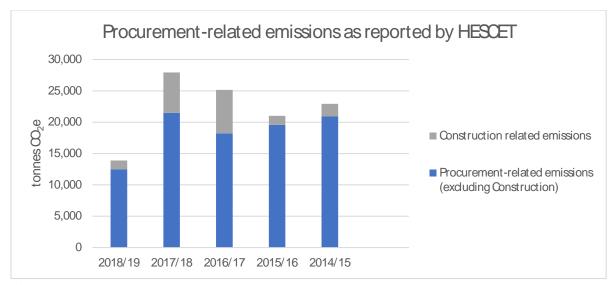


Figure 10

In June 2019, Bangor University followed the UK, Welsh and Scottish Governments, as well as many local authoritie

As a result, in June 2020, the Sustainability Strategy Group approved implementing a target to achieve net-zero carbon (Scope 1 & 2) by 2030, which was also approved by the University Executive.

As outlined above in <u>Section 7.6.5 Qimate Emergency</u>, there is need to develop an action plan and schedule of annual emission reduction targets to ensure we are able to deliver on the net-zero by 2030 target.

Objective: Enhance biodiversity of the University estate

Target 6 a. Promote biodiversity conservation and improvement across the University estate

Target 6 b. Increase unimproved grassland/wildflower meadow areas across the University estate

Target 6 c. Biodiversity Action Plan

Biodiversity Headlines 2019/20

- Biodiversity progress hampered by Covid-19 restrictions
- New Biodiversity Enhancement Plan requires approval by SSG

Bangor University is

Increase unimproved grassland/wildflower meadow areas across the University estate

Performance against Target 6b Partial Progress

Despite a lot of work to identify sites with potential for expanding wildflower meadow areas around University sites in both 2018/19 and 2019/20, the timing of the Covid-19 restrictions meant it was not possible to prepare any new sites.

The existing meadows were surveyed during the 2019/20 academic year, identifying more than 150 species of flowering plants which provide for a huge range of wildlife including fungi, bees, flies, beetles, spiders, moths, butterflies, reptiles, amphibians, small mammals, bats and birds.

The wildflower meadows are a very visual sign of biodiversity at the University and are popular with students, staff and visitors.

Once approved, the new Biodiversity Enhancement Plan will create a stronger focus on biodiversity preservation and enhancement across the University estate and improve reporting of biodiversity achievements.

Objective: Embed sustainability within the procurement process

Target 7 a. Conduct Sustainability Risk Assessments for all contracts over the value of £25,000 and use Community Benefit Measurement Tool data for all contracts over the value of £1 million

Target 7 b. Where appropriate, ensure contracted suppliers have an Environmental Management System

Procurement Headlines 2019/20

- Targets 7a & 7b Partially Achieved
- Good examples of positive sustainability practices in procurement not otherwise captured by the targets

Conduct Sustainability Risk Assessments for all contracts over the value of £25,000 and use Community Benefit Measurement Tool data for all contracts over the value of £1 million

Performance against Target 7a Partially Achieved

A total of 27 tenders were undertaken during the financial year 2019/20 with SRAs being completed for two of these.

The Sustainable Risk Assessment was modified in November 2019 to try and simplify completion. The two SRAs undertaken were completed following the introduction of the new form. As in previous years, the main barrier to completion is time, with many tendering exercises considered urgent.

There were no contracts with an estimated value of over £1m, however, community benefit dauses were included in the Deiniol building redevelopment project with an estimated value of £800,000. We are still awaiting confirmation of the benefits achieved.

Where appropriate, ensure contracted suppliers have an Environmental Management System

Performance against Target 7b

Partially Achieved

An EMSwas stated as a requirement in 3 contracts. There were potentially 10 contracts where it might have been acceptable to select a supplier with an EMS However, a number of these contracts were for specialist research equipment and it is difficult to judge whether an EMS would have been appropriate or not.

It is not always possible or practicable to ask suppliers to demonstrate that they have an Environmental Management System e.g., sole traders, small consultancy firms or where a market is particularly limited.

Over the course of the 2019/20 year, environmental/sustainability principles have been applied in procurement exercises in ways that are not sufficiently captured by the targets set out above.

- Prospectus Printing Service Bidders were requested to provide details on sustainability processes e.g. use of paper sourced from sustainable sources, use of quality vegetable-based inks, recycling practices for waste products. They were also asked to provide certification with regards to any environmentally friendly practices.
- Supply and maintenance of gym equipment bidders were asked how the environmental impact of vehicles, waste and similar could be reduced and how the proposed gym equipment could assist the University to reduce its carbon emissions.

for renewal. The Procurement team have been familiarising themselves with ISO20400, a non-certified international standard for Sustainable Procurement. It is hoped they will be able to develop a new Procurement Strategy around this standard.

Objective: Raise environmental awareness and awareness of the UN Sustainable Development Goals amongst students & staff through improved communication and involvement

Target 8a. Increase level of digital engagement

Target 8b. Establish a baseline for non-digital/face-to-face engagement

Target 8c. Increase student awareness of the Sustainability Lab and environmental/sustainability related events & opportunities from surveys

Target 8d. Increase number of departmental/school/service webpages the	at
refer to sustainability and link to the Sustainability Lab and/or CEPT & EM	S
webpages	

Increase level of digital engagement

2019/20

2018/19

The Waste Awareness Week 2019 hashtag, #WAW19, reached a total of 446,847 people across Facebook, Twitter and Instagram, an 408% increase on #WAW18 in 2018/19. For more information about WAW, refer to section 7.2 Waste or see the following webpages;

- Waste Management (Resource Efficiency)
- <u>Sustainability Campaigns</u>

Other events included:

- Welcome Week Talks on sustainability for new students (September 2019)
- Sustainability Lab stand at Serendipity 2019
- Climathon 2019 (October 2019)
- Contributions to the Bangor Climate March Q&A session in Pontio (November 2019)
- Contributions to the Youth Climate Summit organised by the School of Education (February 2020)

discussion sessions, formerly known as Sustainability Think

Tanks, were held prior to the Covid-19 restrictions, although attendance was low. An online session was run in May 2020 via Microsoft Teams, which attracted 21 participants.

	2019/20
Number of Events held	126
Number of people engaged	1184
Target	Achieved

Table 18

Increase student awareness of the Sustainability Lab and environmental/sustainability related events & opportunities from surveys

During the 2019/20 academic year Undeb made changes to the questions included in the Undeb Student Survey, as such some comparisons with previous years are not possible.

2019/20	2018/19	2017/18

	Positive/Affirmative
	Responses
reducing unnecessary resource use (e.g. no unnecessary printing)	93%
recycling	97%
reducing unnecessary travel	88%
increasing my use of video conferencing/ Skype etc	74%

Table 20

More than half of staff reported that they were aware of the work of the Sustainability Lab and of

	Positive/Affirmative Responses
I am aware of Our Environmental Policy and its aims	53%
I am aware of the work of the Sustainability Lab	56%

Table 21

Less positively, less than half of staff were aware of the Univ System or how to report an environmental incident.

	Positive/Affirmative Responses
I am aware of Our Environmental Management System (ISO14001)	36%
I know who to report and environmental incident or problem to	45%

Table 22

Incidents is all available on promotion and signposting is required.

Due to the very low level of awareness of the EMS and Environmental Incident reporting, the Sustainability Lab and CEPT

(formerly Sustainability Think Tanks) to give an introduction to the ${\it EMS}$ Twenty-one people

6.9.4 Y Papur Gwyrdd/The Green Paper

Increase number of departmental/school/service webpages that refer to sustainability and link to the Sustainability Lab and/or CEPT & EMSwebpages

Progress against Target 8d.	Not possible to report
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It is not possible to report

Objective: Embed the environment and sustainability in the curriculum across the University
Target 9. Establish the number of courses and modules validated which refer to the environment to obtain a baseline

Performance against Target 9

Partial Progress

The number of courses/modules presented above is, of course, an underestimate, resulting from the limitations of the data and the methodology. There are many more courses and modules that offer complimentary courses with si

been included in the basic audit of the curriculum above. Equally, it may not be unreasonable to assume that all courses/modules within Schools such as Natural Sciences and Ocean Sciences are in some way relevant to the environment, but this is not being picked up in using the current approach.

The work in this area over the past year has highlighted two important points;

- There is a clear need to redevelop the methodology and better define what we are trying to achieve. Working closely in collaboration with colleagues in the Colleges and Schools, to undertake a more comprehensive and in-depth review of modules/course content will be critical to ensuring success.
- There has been increasing interest in identifying how courses/ modules relate to

Target 10. Set environmental objectives for all major construction projects (over £100k) and evaluate the effectiveness of these following completion of the projects

Performance against Target 10

Partially Achieved

The ReFit energy efficiency programme

Five emails were complimentary, all related to the announcement of the 100% renewable electricity supply.

Other emails were suggestions of areas students or staff would like Bangor to investigate or improve on, largely related to waste, recycling and sustainability of promotional freebies.

The Sustainability Lab and CEPT have also sent out a large number of communications across a range of platforms and in-person over the course of the 2019/20 year;

- Talks to new students as part of Welcome Week
- Stand at Serendipity