

Environmental Management System (EMS) Annual Report 2022/23 (Including Objectives and Targets for 2023/24)



Environmental Management System (EMS)

Annual Report 2022/23

(Including Objectives and Targets for 2023/24)

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CEO's Statement

I am delighted to introduce the College's Annual Environmental Management System (EMS) Report for 2022/23 for Grŵp Llandrillo Menai.

The Grŵp has implemented a programme of environmental and sustainability initiatives over a period of years and I am pleased with the real progress that is being maintained across the college's operation.

The Grŵp is committed to maintaining Level 5 Green Dragon Environmental Standard (2016).

As CEO of the largest Further Education provider in Wales, I am committed to improving the Grŵp's environmental performance, tackling climate change as far as we can, and most importantly reducing the Grŵp's ecological impact.

Signed

Dafydd Evans

CEO Grŵp Llandrillo Menai

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Executive Summary

This report presents the 2022-23 environmental performance of Grŵp Llandrillo Menai.

Key Findings

In 2022/23 the Grŵp:

- Used a total of 11,664,335kWh energy, a 12.55% decrease when compared with 2021/22. The total cost of energy was £1,427,459 a decrease of £30,225 compared with 2021/22. This included;
 - 17.6% decrease in gas usage across the Grŵp.
 - 5.3% decrease in electricity use across the Grŵp.
 - 7.5% decrease in propane used at Glynllifon.
- Mileage for staff using fleet cars decreased by 2.92% whilst fleet minibus use increased by 22.28%. Mileage increased by 36.82% for staff using their own private vehicles for College business to 861,844 miles. The cost of mileage for staff using their own vehicles for College business for 2022-23 was £381,666, an increase in cost of £115,651 compared with 2021/22.
- Generated 844 tonnes of waste which was a 2.12% reduction compared to 2021/22. This resulted in a saving of 3.5ton of CO₂e
- Consumed 40,651m³ of water, a decrease of 33.6% compared with 2021/22, and a saving of £26,228.
- Used 38.78% less paper for printers and photocopiers compared with 2021/22
- Produced a total of 128 tonnes of CO₂ equivalent emissions from livestock at Glynllifon.
- Produced a carbon gain of 25 tonnes of CO₂ equivalent emissions from tree planting at Glynllifon, and produced a carbon gain of 130 tonnes from photovoltaic cells across the Grŵp.
- Produced 2,555 tonnes of CO₂ equivalent emissions a decrease of 25% compared with 2021/22.

Our carbon emissions equate 144.23kgCO₂e per student

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Introduction

The Grŵp is Wales's largest Further Education Institution and one of the largest FE college groups in the UK. The Grŵp employs 1,550 staff and delivers courses to over 17,700 students across four counties, Denbighshire (Rhyl), Conwy (Rhos and Abergele), Ynys Môn (Llangefni and Holyhead) and Gwynedd (Bangor, Dolgellau, Pwllheli, Glynllifon and Caernarfon).

The Grŵp aims to have as low an effect as possible on the local environment and encourages staff and students to support this mission. The Grŵp also aims to equip students to enter the workplace with an appreciation of environmental issues.

The Grŵp's Mission, Vision and Values

The Grŵp will

“Manage our services, resources and facilities in a sustainable manner”

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SUSTAINABILITY AND ENVIRONMENTAL POLICY

Grŵp Llandrillo Menai was formed in April 2012 following the merger between Coleg Llandrillo, Coleg Menai and Coleg Meirion Dwyfor. The Grŵp has sites in Conwy, Denbighshire, Gwynedd and Ynys Môn with provision at a large number of community-based venues. The Grŵp provides a wide range of education and training, both full and part-time, at Further and Higher Education levels and has approximately 1,550 staff and attracts about 17,720 students.

The Grŵp Policy is to support the creation of a sustainable Wales by embedding sustainability at the heart of everything we do.

To achieve this the Grŵp has committed to delivering an Environmental Sustainability Framework that works across: Grŵp Operations, Learners and their Curriculums and Developing Employers and Communities.

Objectives of the Policy:

To make sustainability, environmental best practice and global citizenship part of every aspect of College life.

To ensure compliance with all relevant legislation, compliance obligations and to adopt policies which will contribute to a sustainable future.

To ensure the development and adoption of an environmental management system which prevents pollution and supports continual improvement in the College's environmental performance.

To promote awareness of energy and water use amongst all members of the College and to improve the efficiency in use of these resources.

To reduce the consumption of materials where possible and to extend the life of materials where practicable.

To recycle or re-use materials where possible and to dispose of waste in the most environmentally friendly way.

To ensure that the College has a minimal negative effect on the local environment and makes a positive contribution to the local community and its environment.

To ensure that all students and College staff are aware of environmental issues and to provide a range of courses and training in relevant topics.

To ensure that all staff and students are aware of the environmental impacts of transport and to encourage the use of alternative forms of transport.

To monitor progress on a regular basis to identify areas for improvement.

Signed



Dafydd Evans

(C.E.O.)

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The Environmental Management System (EMS)

The Grŵp's Environmental Management System is designed to ensure:

- Compliance with any relevant legislation
- Awareness of the Grŵp's environmental impacts
- The reduction of the impacts and continual improvement of performance.

The CEO has overall responsibility for the EMS, including the Environmental Policy and providing adequate resources for implementing and maintaining the system on a strategic basis.

A review of the EMS is carried out annually. The review addresses the following issues:

- A review of environmental performance
- A review of non-conformance and audit reports
- Confirmation of preventative actions
- A review of achievement against current objectives and targets
- Setting of new objectives and targets
- A review of the Environmental and Sustainability Policy, the Environmental Manual, Procedures and Work Instructions to check that they are still relevant to the overall policies and objectives of the Grŵp
- A review of environmental training needs
- A review of significant aspects and impacts
- A review of the effectiveness of environmental projects undertaken by the Grŵp

The necessary documents and procedures to ensure that the Grŵp continues to meet the requirements of the Green Dragon Environmental standard are available on the Grŵp intranet.

A copy of this report and further information on Coleg Llandrillo, Coleg Menai and Coleg Meirion Dwyfor is available on the Grŵp web site www.gllm.ac.uk

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Aspects and Impacts

The key activities relating to the Grŵp's operations have been identified within the environmental review. The activities which produce the most significant aspects and impacts include: use of electricity and gas, transport, use of paper, waste production and water.

The aspects and impacts significance are rated using a prioritisation matrix. A "traffic light" system has been developed to prioritise the impacts. A red indicates that the impact is significant, amber that the impact could become significant and green indicates that the impact is not deemed significant. These are recorded in the Aspects and Impacts Register.

The aspects and impacts that are identified as the most significant are selected for inclusion in the annual objectives and targets following an annual review.

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Review of Targets for 2022-23

- ❖ To reduce carbon dioxide emissions due to the use of electricity, based on 2021/22 data:

The target set for the reduction of carbon emissions due to the use of electricity was a reduction of 1% across the Grŵp

Overall, across the Grŵp, there was an electricity usage reduction of 5.3%

The target was therefore met.

- ❖ To reduce carbon emissions due to the use of gas.

The target set for reduction of carbon emissions due to the use of gas was to maintain or reduce the gas usage at all sites based on 2021/22 data.

Gas usage in 2022/23 decreased by 17.6% across the Grŵp.

The target was therefore met.

- ❖ To reduce carbon emissions due to the use of LPG:

The target set was to reduce the use of LPG at Glynllifon by 3% of the 2021/22 usage.

There was a 7.5% decrease in the use of propane compared with 2021/22.

The target was therefore met.

- ❖ To reduce carbon emissions due to travel on Grŵp business:

The target was set to reduce miles travelled on Grŵp business by 1% of 2021/22 mileage.

Overall, the combined mileage for all vehicles increased by 31.29%

The target was therefore not met.

- ❖ To reduce carbon emissions due to travel to work:

The target was to continue to promote the cycle to work scheme.

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The cycle to work scheme is continually being promoted. Up until August 2022, 245 staff have joined the scheme, of which 11 joined the scheme in 2021-22.

The target was therefore met.

- ❖ To reduce the impact on resource depletion due to water use:

The target set was to reduce water use 1% of the 2021/22 data.

Across the Grŵp, there was a 33.6% reduction in water usage compared with 2021/22.

The target was therefore met.

- ❖ To reduce the impact on resource depletion due to paper use:

The target set was to reduce the quantity of paper used by 1% of the 2021/22 data

There was a 38.78% reduction in paper usage throughout the Grŵp compared with 2021/22

The target was therefore met.

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- ❖ To reduce the impact on the use of resources

The target set was to increase the quantity of waste recycled to 99% of the total amount of waste produced at Coleg Llandrillo sites, 56% at the Coleg Meirion Dwyfor sites and 90% at Coleg Menai sites

79% of waste was recycled at the Coleg Llandrillo sites

51.4% of waste was recycled at Coleg Meirion Dwyfor

67.9% of waste was recycled at Coleg Menai*

*Further details regarding differences in recycling can be found on page 18

The target was therefore not met.

- ❖ To reduce the Grŵp's impact on resource use

The target set was to reduce the amount of waste produced on all sites by 3% of 2021/22 data

The amount of waste produced in 2022-23 decreased by 2.12% compared with 2021/22

The target was therefore not met

- ❖ To reduce the Grŵp's impact on climate change:

The target set was to continue planting of hedgerow and mixed woodland trees in 2022/23

Hedgerow and tree planting is ongoing at Glynllifon; tree planting has taken place in 2022/23 with over 2,500 mixed trees planted

The target was therefore met.

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- ❖ To increase the level of Environmental Awareness amongst staff:

The target set was to carry out one to one and group Environmental Awareness talks within departments during 2022/23.

Environmental awareness is essential training for all staff delivered by iHasco software, 98% have completed the training, the EMS report is made available to everyone through the Grŵp Portal. A 5-year strategic sustainability action plan has been created to increase staff engagement, this includes termly environmental user group meetings.

The target was therefore met.

- ❖ To engage with and contribute to the local community:

The target set for the Grŵp's staff and learners to carry out at least 35 activities in which learners utilise their skills in their local community 2022/23

A minimum of 35 activities completed by staff and learners were completed, detailed under Pillar 3.

The target was therefore met.

- ❖ To reduce the Grŵp's impact on climate change:

The target set was to reduce Greenhouse Gas emissions from the buildings' energy use, transport and livestock by 3% based on the 2021/22 data.

The Carbon emissions for 2022-23 decreased by 25% compared with 2021/22

The target was therefore met.

10/13 targets were met.

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Pillar 1 - Grŵp Operations

Embed sustainability within all of our activities.

All emissions calculated in this EMS report have used the GHG Conversion Factors 2023 Condensed Set, from GOV.UK, as these are the most up to date and accurate figures.

Energy

2022-23 Performance

Gas

	kWh		CO _{2e} (kg)	
	2021-22	2022/23	2021-22	2022/23
Coleg Llandrillo	2,369,291 £115,834 (64 kWh/m ²)	2,461,883 £113,353 68KWh/m ²	435,642 (11.8CO ₂ /m ²)	443,138 12.3Kg CO _{2e} /m ²
Coleg Meirion Dwyfor	2,526,881 £123,011 (162 kWh/m ²)	1,263,776 £86,791 86KWh/m ²	464,618 (29.8 CO ₂ /m ²)	227,479 15.5 KgCO _{2e} /m ²
Coleg Menai	2,928,984 £188,143 (73 kWh/m ²)	2,284,981 £148,472 66 kWh/m ²	538,552 (13.4 CO ₂ /m ²)	411,296 11.9 KgCO _{2e} /m ²
Busnes@	N/A	439,040 £36,855 59 kWh/m ²	N/A	79,027 10.6 KgCO _{2e} /m ²
Total	7,825,156 £426,988 (84 kWh/m²)	6,449,680 £385,473 69.5KWh/m²	1,438,812 (15.5kg CO₂/m²)	1,160,941 12.5 KgCO_{2e} /m²

In 2022/23 there was a 17.6% decrease in gas consumption across the whole Grŵp when compared with 2021/22. Busnes@ has not previously been accounted for in calculating these figures, therefore there is no comparison for previous years for Busnes@, going forward it will have a comparison. As some sites were previously listed under either CLL, CM or CMD and are now under Busnes@ there are no % changes for each of the colleges this year as it is not an accurate comparison.

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The reduction in gas consumption resulted in a saving of £41,515. In 2021/22 estimate metre readings were taken in Dolgellau causing artificially high readings, this has been changed to actual metre readings to ensure accuracy.

Electricity

	kWh		CO ₂ (kg)	
	2021-22	2022/23	2021-22	2022/23
Coleg Llandrillo	1,876,811 £367,858 (52kWh/m ²)	1,788,348 £370,091 (50 kWh /m ²)	437,559 (12.2kgCO ₂ /m ²)	345,848 (9.6kgCO ₂ /m ²)
Coleg Meirion Dwyfor	1,044,538 £215,600 (51 kWh/m ²)	491,029 £100,502 (33kWh /m ²)	243,523 (11.8kgCO ₂ /m ²)	194,955 (13.3kgCO ₂ /m ²)
Coleg Menai	2,031,379 £419,363 (51 kWh/m ²)	1,625,888 £382,040 (47 kWh/m ²)	473,596 (13.7kgCO ₂ /m ²)	314,414 (9kgCO ₂ /m ²)
Busnes@	N/A	785,125 £178,615 (67kWh/m ²)		151,827 (13.3kgCO ₂ /m ²)
Total	4,952,728 £1,002,821 (51 kWh/m²)	4,690,390 £1,007,045 (48kWh/m²)	1,154,678 (12kgCO₂/m²)	1,007,045 (10.4kgCO₂/m²)

Total electricity consumption across the Grŵp reduced by 5.3%, as the cost of electricity per unit increased by between 0.26p / kWh to 0.58p /kWh there was an increase in cost of £4,224.

Busnes@ has not previously been accounted for in calculating these figures, therefore there is no comparison for previous years for Busnes@, going forward it will have a comparison. As some sites were previously listed under either CLL, CM or CMD and are now under Busnes@ there are no % changes for each of the colleges this year as it is not an accurate comparison.

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Propane

Propane is used for heating and cooking at Glynllifon and for the Engineering Department

Site	2021/22			2022/23		
	Litres	Cost	KgCO _{2e}	Litres	Cost	KgCO _{2e}
Glynllifon	81,237	£27,875	126,353	74,895	£34,941	116,836

There was a 7.5% decrease in the consumption of propane in Glynllifon, this reduced the KgCO_{2e} by 9,735Kg. There was an increase in cost of £7,066 due to an increase in unit cost of LPG, February 2022 - 31.54p /unit, February 2023 - 40.07p /unit.

Transport

2022/23 Performance

Student Transport

The Grŵp together with Conwy, Denbighshire and Flintshire LEAs provides free transport for students under 18 who live more than three miles from the College site that they attend.

College Vehicles and Private Mileage

Mode of Transport	2021/22 (miles)	2022/23 (miles)	2021/22 (KgCO _{2e})	2022/23 (KgCO _{2e})
College fleet cars (Inc. small vans)	81,358	78,985	17,965	14,664
Minibuses (Inc. large vans)	77,597	949,886	25,501	31,997
Private vehicles (all Grŵp)	629,925	861,844	189,160	236,938
Total	788,880	1,035,715	232,626	283,599

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The figures show that the mileage for college fleet cars and small vans decreased by 2.92% mileage for fleet minibuses and large vans increased by 22.28% and the private vehicles mileage increased by 36.82%.

The College fleet cars are made up of hybrid cars, electric cars and diesel cars, the carbon emissions for these different vehicle types has been calculated individually and combined for an accurate value.

Overall, there was an increase in mileage of 246,835 miles, a 31.29% increase when compared with 2021/22

The cost of mileage for staff using their own vehicles for College business for 2022/23 was £381,666, an increase of £115,651 when compared with 2021/22.

Secure storage for bicycles is provided at all sites and a 10% discount for the purchase of bicycles has been negotiated with some retailers.

To encourage staff to cycle to work the Grŵp has continued the cycle to work scheme. A total of 245 staff have signed up to this scheme since it began with 11 signing up in 2022/23

In 2019, the Staff Benefits Scheme was introduced which enabled staff to lease cars at reduced rates with especially good rates for electric vehicles. This enabled staff to obtain new, more efficient vehicles.

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Waste

2022/23 Performance

Coleg Meirion Dwyfor and Coleg Menai employ mixed recycling; the waste at Coleg Llandrillo is separated into specific streams. There are differences between Local Authorities in how they dispose of general waste. A higher volume of waste generated at Gwynedd and Ynys Môn sites is sent for refuse derived fuel whilst general waste generated at Conwy and Denbighshire sites is sorted further and then the sent for refuse derived fuel hence recycle figures for Conwy and Denbighshire sites will be higher than Gwynedd and Môn.

No waste from Grŵp Llandrillo Menai was sent to landfill.

As Refuse Derived Fuel is low on the waste hierarchy, the figures have been kept separate from the recycling figures. Total waste is the combined weight of refuse derived fuel (RDF) and recycled waste.

KgCO₂e from waste disposal was previously calculated from the total waste figure, this year and going forward each waste stream will be calculated individually. This is due to different waste types (plastic/food/wood etc) having different disposal methods and therefore different emission conversion factors. This has been calculated using the Greenhouse gas reporting: Conversion factors 2023 from GOV.uk.

The volume of total waste is expected to increase in coming years as a result of growth in the Grŵp, clearing out old buildings as new buildings are acquired.

Coleg Llandrillo Sites

	Total waste		Refuse derived fuel (RDF) (kg)		Waste Recycled (kg)		KgCO ₂ e	
	21/22	22/23	21/22	22/23	21/22	22/23	21/22	22/23
Rhos	227,752	235,930	12,951	53,928	214,801	182,002	4,783	3,946
Rhyl	80,767	89,050	5,054	14,479	75,713	74,571	1,696	973
Total	313,055	324,980	18,289	68,407	294,766	256,573	6,574	4,920

Overall, at the Llandrillo sites, the amount of waste produced has increased by 3.8% the percentage of recycled waste decreased to 79% . There was a reduction of 1,654KgCO₂e.

Coleg Menai Sites

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	Total Waste		Refuse derived Fuel (RDF) (kg)		Waste Recycled (kg)		(kgCO ₂ e)	
	21/22	22/23	21/22	22/23	21/22	22/23	21/22	22/23
Llangefni (inc. Holyhead)	219,554	194,268	31,723	60,267	187,831	133,501	4,611	3,273.1
Friars	15,088	15,096	958	4,946	14,130	10,150	317	290.03
Parc Menai	11,627	17,751	1,086	6,092	10,541	11,659	244	377.76
Bangor	29,893	38,460	3,195	13,884	26,698	24,576	628	818.47
Caernarfon	2,540	2,280	1,380	1,380	1,160	900	53	48.52
Total	278,702	267,855	38,342	86,569	240,260	180,786	5,853	4,807

At the Coleg Menai sites, the amount of waste produced has decreased by 3.9% , and the amount of waste recycled (as opposed to RDF) has decreased from 86.2% to 67.9%. KgCO₂e reduced by 1,046Kg.

Coleg Meirion Dwyfor Sites

	Total waste		Refuse Derived Fuel (RDF) (kg)		Waste Recycled (kg)		Percentage of Waste Recycled		kgCO ₂ e	
	21/22	22/23	21/22	22/23	21/22	22/23	21/22	22/23	21/22	22/23
Pwllheli (inc. Hafan)	38,223	47,160	21,979	24,756	16,244	22,404	42.5%	46.8	803	824.85
Dolgellau (inc. Marian Mawr)	113,625	67,303	39,977	32,455	73,648	34,847	64.8%	56.1	2,386	1,191.68
Total	151,848	114,463	61,956	57,211	89,892	57,251	54.2%	51.4%	3,189	2,016.5

At the Coleg Meirion Dwyfor sites, the amount of waste produced has decreased 24.6% the percentage of waste being recycled rather than RDF is 51.4%. KgCO₂e reduced by 1,172.5Kg.

Busnes@ Sites

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Site	Total waste		Refuse derived fuel (RDF) (kg)		Waste Recycled (kg)		KgCO ₂ e	
	21/22	22/23	21/22	22/23	21/22	22/23	21/22	22/23
Abergele	4,536	5,011	284	1,483	4,252	3,528	95	96.85
Llywn Brain	3,670	7,777	706	3,695	2,964	4,086	78.1	165.5
Glynllifon	59,422	71,181	34,958	39,860	24,464	31,321	1,248	1,490.06
Dolgellau	4,814	4,481	3,280	2,939	1,533	1,541	102.46	92.87
Llangefni	46,332	48,342	7,177	14,871	39,155	33,470	985.9	813.5
Total	118,774	136,792	46,121	62,848	72,368	73,946	2,509.46	2,658.73

At the Busnes@ sites there was a 15.17% increase in waste production, this resulted in an increase of 149.27KgCO₂e.

Across the Grŵp there was a 2.12% reduction in waste production, this equates to 18,288kg of waste, this resulted in a saving of 3,542.48KgCO₂e when compared to 2021/22

Glynllifon Farm Livestock

Livestock	Approx annual head count 2021-22	2021-22 (KgCO ₂ e)	Approx annual head count 2022/23	Scope 1 2022/23(Kg CO ₂ e)	Scope 1,2,3 2022/23(Kg CO ₂ e)
Dairy Cows	304	360,806	287	85,059	786,864
Beef Herd	51	32,640	69	1,380	91,011
Pigs	502	43,560	450	3,078	193,050
Sheep	420	45,114	525	18,112	32,025
Lambs	600	12,401	600	20,700	63,600
Horses	2	638	0	0	0
Total		495,159		128,329	1,139,550

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New more accurate emission factors were calculated for livestock KgCO₂e using the carbon audit of Glynllifon that was completed for the academic year 2022/23 by Bangor University. The previous emissions factor for livestock did not take into account technical advancements, renewable energy and different types of housing for livestock. For comparison a scope 1 and a scope 1,2 & 3 figure has been produced, scope 1 refers to direct emissions, scope 2 and 3 refers to indirect emissions. Scope 1,2,3 is for illustrative purposes only as this figure includes emissions from transport which is included in the transport calculations, and would result in double reporting.

Scope 1 emissions from livestock at Glynllifon totalled 128,329(KgCO₂e), scope 1,2 & 3 emissions totalled 1,139,550(KgCO₂e).

Glynllifon Tree Planting

New trees planted	KgCO₂e gain
2,000	20,000
500	5,000
Total	25,000

In 2022/23 2000 new trees were planted and 500 were infilled due to failed trees as a result of a dry may and pest issues. Trees were mainly softwoods and some hardwoods with species including hardwoods; Sessile Oak, Cherry, Birch, Hazel, holly and softwoods; Sitka Spruce, Norway Spruce, Scots Pine and Alder. In a year a fully established adult tree can store up to 40KgCO₂, as these are young trees their storage capacity is lower, this means 25,000kgCO₂e were stored from new planting.

According to the carbon audit completed in Glynllifon in 2022/23, 1,032,333KgCO₂e is stored through forestry across the entire estate.

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Building Energy Efficiency Measures

Photovoltaic Cells 2022/23

Rhos Meter Location	2021-22 KWh Generated	2021-22 (kgCO ₂ e) Carbon gain	2022/23 KWh Generated	2022/23(kgC O ₂ e) Carbon gain
MBEC, Rhos FiT	1,615	377	1,746	358
MBEC, Rhos			45,817	9,391
UCCL, Rhos	21,377	4,984	20,184	4,179
Sports Centre Rhos – Panel 1	58,699	13,685	40,654	8,332
Sports Centre Rhos – Panel 2	50,963	1,188	28,964	5,936
Colwyn Building, Rhos	21,325	4,972	45,976	9,423
Glynllifon 1	12,285	2,864	12,180	2,496
Glynllifon 2	2,915	680	2,901	595
Evans Block, Rhyl (FiT)	9,304	2,169	9,726	2,014
Motor Vehicles, Rhyl	45,732	10,662	52,901	10,843
Main Building, Rhyl	20,305	4,734	41,358	8,477
Canolfan Cefni, Llangefni	6,092	1,420	6145	1,272
Engineering, Llangefni	25,306	5900	24107	4992
Llangefni, Sports			64,829	13,424
Llangefni, Construction			29,875	6,186
Llangefni, Motor Vehicle			57,062	11,816
Pwllheli, Glaslyn			10,788	2,234
Pwllheli, Main Building			14,099	2,919
Pwllheli, Ceiri			40,087	8,301
Dolgellau, Marian Mawr			82,943	17,175
Total	275,918	53,635	632,342	130,363

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Photovoltaic cells are installed on all new buildings. In 2022/23 there was a carbon gain of 130,363kgCO₂e

When calculating carbon gain, the GHG conversion factor 2023 data from Gov.uk, this is updated regularly to reflect higher percentages of renewable energy in the UK grid. Electricity generation is moving more from fossil fuels to greener methods.

3 new sets of solar panels were fitted in Llangefni with a combined installed capacity of over 270kWp. 8 New sets of solar panels were installed across Glaslyn, Main building and Ceiri building in Pwllheli. Marian Mawr in Dolgellau also had solar panels installed with a capacity of 100kWp.

Electric Vehicle car charging points have been installed on the Rhos and Llangefni campuses.

Lighting is upgraded to LED as standard as lighting is replaced/upgraded. Where roofs are replaced, additional insulation is installed. Movement sensors are installed on new buildings and major refurbishments. As boilers are replaced, they are replaced with more efficient boilers.

A woodchip boiler supplies the heating at the PAG Building, Glynllifon. The woodchip is produced by the College's forestry department.

The Energy Centre, Llangefni has under floor heating using ground source heat and sun pipes, which supply light to rooms on the first floor.

Renewables

2022-23 Performance

Caretakers van in Pwllheli was replaced for an electric option

Upgrade lighting to LED - admin block + library in Rhyl

Upgrade lighting to LED - Health Care Block - Llangefni

Upgrade lighting to LED - Automotive Block - Llangefni

BMS Upgrade in Llangefni - more accurate control over heating of building

Upgrade lighting to LED - Parc Menai

Upgrade lighting to LED - PA@G, Glynllifon

BMS Upgrade - Glynllifon - more accurate control over heating of building

Upgrade lighting to LED - Ceiri, Pwllheli

Upgrade lighting to LED - Tegid, Dolgellau

Improved rain management to reduce flooding - Idris, Dolgellau

More efficient restaurant Air Handling unit air feed heating - Dolgellau

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Greenhouse Gas Emissions

2021-22 Performance

Carbon dioxide emissions were calculated from the buildings' energy use, transport and livestock.

Aspect	Kg CO ² 2021-22	KgCO _{2e} 2022/23
Electricity	1,154,678	1,007,045
Gas	1,438,812	1,160,941
LPG	126,353	116,836
Transport	232,626	283,599
Waste	16,941	14,402
Glynllifon Farm Livestock	495,159	128,329
Glynllifon Tree Planting (Carbon gain)	-1,306	-25,000
Photovoltaic Panels (carbon gain)	-53,635	-130,363
Total	3,409,628	2,555,789

The Carbon emissions for 2022/23 decreased by 25% compared with 2021/22.

Our carbon emissions equate to 144.23kgCO² per student

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Water

2022-23 Performance

Water consumption has not previously been calculated with an associated KgCO₂e so is in this report for information and has not been added to the total carbon emissions as it cannot be compared to previous years. Carbon emissions from water consumption are due to the processes of pumping, treating, and transporting, it is a scope 3 emission as it is indirect and not owned by the grŵp.

Coleg Llandrillo Sites

Site	2021-22		2022/23		
	Use (m ³)	cost	Use(m ³)	Cost	KgCO ₂ e
Rhos	12,500	£40,570	11,238	£40,570	1,989
Rhyl	3,098	£10,536	3,752	£13,394	664
Total	15,598	£51,106	14,990	£53,965	2,653

There was an overall decrease of 3.9% in water usage at Coleg Llandrillo sites, there was an increase of £2,859 due to increasing cost of water. For information the rates are as follows, January 2022 £1.3835 /m³ , January 2023 £1.4492 /m³.

Coleg Meirion Dwyfor Sites

Site	2021-22		2022/23		
	Use (m ³)	cost	Use (m ³)	cost	KgCO ₂ e
Dolgellau (inc. Marian Mawr)	2,325	£9,060	3,102	£12,319	549
Pwllheli (inc. Hafan)	1,026	£4,131	1,032	£4,346	182
Total	3,351	£13,191	4,134	£16,666	731

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Due to Glynllifon now being listed under Busnes@, only Dolgellau (Inc. Marian Mawr) and Pwllheli (Inc. Hafan) from 2021/22 have been compared to 2022/23, Glynllifon's figures for 2021/22 have been added to the Busnes@ Table.

There was a 23.4% increase in water consumption at the Coleg Meirion Dwyfor sites, resulting in an increased expenditure of £3,475 compared to 2021/22. The cost of water per m³ increased from £1.3652 /m³ to £1.4492 /m³ from January 2022 to January 2023.

Coleg Menai Sites

Site	2021-22		2022/23		
	Use (m ³)	cost	Use (m ³)	cost	KgCO2e
Bangor	3978	£16,629	2,961	£11,410	524
Llangefni	4,444	£15,000	5,102	£18,031	903
Parc Menai	583	£3,235	245	£1,479	43
Bangor Friars	857	£3,107	507	£1,525	89
Holyhead	141	£546	185	£729	32
Total	10,003	£38,517	9,000	£33,175	1,593

Llangefni operates under both Coleg Menai and Busnes@, the figures for previous years have been adjusted to reflect this so a comparison can be made.

There was a 10% reduction in water consumption in the Coleg Menai sites, this resulting in a saving of £5,342.

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Site	2021/22		2022/23		
	Use (m ³)	cost	Use (m ³)	cost	KgCO2e
Glynllifon	30,704	£42,541	10,812	£15,722	1,913
Llangefni	1,111	£3,750	1,275	£4,508	225
Dolgellau	232	£906	238	£916	42
Llwyn Brain	202	£1,007	200	£830	35
Total	32,249	£48,204	12,526	£21,976	2,215

There was a 61% decrease in water consumption across Busnes@, this is largely due to a leak that occurred in Glynllifon towards the end of 2021/22 resulting in unusually high water consumption. There was a saving of £26,228.

Total Grŵp 2022/23

Coleg	m ³ used	Cost	KgCO2e
CLL	14,990	£53,965.54	2,653.23
CM	9,000	£33,175.87	1,593.07
CMD	4,134.70	£16,666.04	731.84
B@	12,526	£21,976.55	2,217.08
Total	40,651	£125,784.00	7,195.23

Across the Grŵp there was a 33.6% reduction in water consumption, and a saving of £25,234 compared to 2021/22.

The MBEC and UCCL buildings at Rhos, PA@G at Glynllifon and the Energy Centre at Llangefni use rainwater harvesting.

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Paper

2021-22 Performance

	Paper used (reams)	
	2021-22	2022/23
Total	8,735	5,348

Overall, the Grŵp has reduced its paper use by 38.78% compared with 2021/22.

Admin staff are encouraged to buy 100% recycled paper, the paper is off white in colour and is cheaper than the normal printer/copier paper. 100% recycled paper accounts for 12.3% of the paper purchased in 2022/23.

A student printer allowance continues to be in place and staff are advised of their own printing total each time they print a document. The printing default on all printers is set to double sided.

There are additional multifunctional devices throughout the Grŵp which are not limited.

Supply Chain

2022-23 Performance

The Procurement Manager is responsible for addressing sustainability issues when awarding supply contracts. The procurement statement was updated in 2023, to the Sustainable Procurement Statement 2023, to ensure goods are procured in a way that enhances and protects the environment, economy and society, both now and in the future.

Building contractors for large contracts must be registered as Considerate Contractors. All sites registered with the Scheme are monitored by an experienced industry professional to assess their performance against the eight-point Code of Considerate Practice, which includes the categories Considerate, Environment, Cleanliness, Good Neighbour, Respectful, Safe, Responsible and Accountable.

Under the environment section, the contractor must be aware of the environmental impact of the site and minimise, as far as possible, the effects of noise, light and air pollution. Efforts should be made to select and use local resources wherever possible. Attention should be paid to waste management; reduce, reuse and recycle materials where possible.

All contractors are required to attend a contractor's induction session, where they are made aware of the Grŵp's environmental concerns. The Grŵp is currently exploring conducting these induction sessions online to reduce the carbon footprint.

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Legislation

2022-23 Performance

The Grŵp has prepared a Register of Compliance Obligations, which identifies environmental legislation that is relevant to its operations, these are reviewed and audited annually.

The Environmental health and safety officer updates the register when necessary, using a number of sources including updates from Croner, Tarian and IEMA. The Grŵp will continue to meet its Duty of Care when disposing of waste, by using licensed carriers and retaining transfer notes for the required time span.

Audits

2022-2023 Performance

The following audits were carried out in 2022-23

March 2023

Science/Art, (Pwllheli), Category; Satisfactory

Marine Engineering, (Hafan, Pwllheli), Category; Satisfactory

Construction, (Marian Mawr, Dolgellau), Category; Satisfactory

Engineering, (Marian Mawr, Dolgellau), Category; Satisfactory

Science, (Dolgellau, Category); Satisfactory

Catering, (Dolgellau), Category; Satisfactory

Art and Ceramics, (Dolgellau), Category; Satisfactory

Engineering, (Glynllifon), Category; Satisfactory

Farm, (Glynllifon), Category; Satisfactory

Biodiversity

2022-23 Performance

Each site in the Grŵp has a unique environment. The Rhos campus has developed a wild life break along one of its borders and there is a designated conservation area adjacent to the UCCL building; the Rhyl campus is next to a SSSI. Part of the Glynllifon campus is designated a SSSI and a Special Area of Conservation. Bat boxes have been put up in the woods on site. Llangefni (Pencraig) is bordered by farmland. A 'biodiverse' area document has been produced to map the biodiverse areas on each campus, and what it is. Wildflower signs have been installed to inform staff, learners, and members of the public.

The Grŵp has maintained the wet land area at the Rhos site. The Independent Learning students have taken charge of the pond area and are maintaining the area.

Hedgerows and trees have been planted at Glynllifon.

The Grŵp aims to increase the biodiversity of its sites where possible.

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Objectives and Targets 2023-24 - Pillar 1

'Our Sustainable Development Strategy sets out our ambitions for people, place and prosperity, and our contribution to society, the environment and the economy'

Efficient campus operations

Improving how we operate across our organisation to ensure a positive impact on the environment.

- We aspire to be a zero carbon organisation, and will set a target for net zero by 2024.
- We are embracing new technologies to help us on our sustainability journey
- We are reducing our environmental impacts, setting targets, and tracking our progress.

Objective: Introduce purchased renewable energy

Target: 25% by 2027

Objective: Increase renewable energy produced by GLLM Sources

Target: 5% increase by 2028

Objective: Reduce carbon emissions for scope 1 &2

Target: 15% reduction by 2030

Objective: Increase energy efficiency of the overall IT estate - annually

Target: 10% increase

Objective: Reduce single use plastic usage

Target: 20% reduction annually, NIL by 2028

Objective: Increase recycling rates and reduce refuse derived fuel rates

Target: RDF rates to be 25% by 2027.

Pillar 2 - Learners and the Curriculum

Embed Sustainability within all of our curriculum

Training and Awareness

2022-23 Performance

The SHE Manager, Environmental health and safety officer and other trained staff provide general environmental awareness training to both staff and students.

All caretaking staff have completed Spillage Training.

A suite of online health, safety and environmental courses by iHasco has been rolled out to all staff to complete which includes an environmental awareness course.

All level 3 learners have a net zero module.

Pollution Prevention

2022-23 Performance

A generic spillage response plan has been developed for sites where the risk of pollution from a spillage incident is assessed to be low. The Grŵp has developed Pollution Plans for Rhos, Rhyl, Glynllifon, Llangefni and Bangor and key staff have received training in dealing with spillages.

There were no pollution incidents in 2022-23.

All areas maintain chemical inventories and store chemicals in bunded secure cabinets. Spill kits and spill absorbent materials are held at appropriate places

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Objectives and Targets 2023-24 - Pillar 2

‘Our Sustainable Development Strategy sets out our ambitions for people, place and prosperity, and our contribution to society, the environment and the economy’

Learners and the curriculum

Ensuring that our curriculum is relevant and delivering excellent results, while removing barriers to accessibility.

- We will ensure that all learners have sustainability within their curriculum
- We focus on improving the health and wellbeing of our learners and staff.
- We engage with our learners and staff to help influence our environmental priorities.

Objective: Roll out a formal sustainability module to learners

Target: 50% of level 3 learners

Objective: Increase sustainability training for staff

Target: 50% of personal tutors to be trained

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Pillar 3 - Developing Employers and Communities

Offer sector leading, sustainable training to employers.

Community Activities

2022-23 Performance

The Grŵp encourages students to take part in community activities.

In 2022-23, the activities which were carried out included:

1. 32 cyclists representing the Grŵp's three colleges – Coleg Llandrillo, Coleg Menai and Coleg Meirion-Dwyfor raised over £21,000 for a variety of charities by cycling from London to Paris over 3 days.
2. Dolgellau Beauty Therapy Students took part in a Community Health Event. Beauty Therapy students provided a range of nail treatments for the area's residents.
3. Childcare students at the Pwllheli campus baked a huge range of Pudsey-themed cakes and biscuits, which they sold to eager staff and students and donated to Children in Need.
4. Staff from the Horizons' Deli, Rhos campus sold cupcakes for £1, all lovingly-baked in-house by Dylan and Dan, with all proceeds going to Children in Need.
5. Rhos-on-Sea campus Level 1 Health, Social and Childcare students were in the main reception persuading staff and students to have a go at a range of competitions, including 'guess the name of the bear' with proceeds donated to Children in Need.
6. At Llangefni campus, students from the Independent Living Skills department organised a bake-off and bake sale, bingo and karaoke, and a wellington boot-throwing competition all in aid of Children in need
7. Rhyl campus also took part in a range of fundraising initiatives, including offering files and polishes and hand and arm massages, together with organising 'guess the weight of the cake' and 'guess the number of sweets in a jar' competitions...and a raffle with money raised donated to Children in need.
8. Level 1 Beauty Therapy students at the Rhos-on-Sea campus baked and sold over 100 cupcakes to students and staff, whilst their classmates offered a variety of Pudsey-themed face painting designs in aid of Children in Need.

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9. The Level 1 Public Services students at Rhyl are helping rangers at a local nature reserve to clear areas ready to plant orchids and rebuild hedgerows to facilitate nest-building for a wide range of wildlife. They are volunteering at the Brickfield Pond nature reserve, which is located next to the college's Rhyl campus. During their time there, the EPIC students have learnt about the importance of local biodiversity, sustainability and green spaces.
10. Sport & Exercise Science and Sports Coaching & Development students from the college's Bangor site supported and assisted the attendees during the 'Well-being Day', which was organised by Llwybrau Llesiant through Gwynedd Council. The 10 students were involved with sporting activities such as basketball, football, boccia, fitness sessions, mindfulness sessions, as well as problem-solving activities such as Jenga and Connect 4.
11. ILS Students, Rhos campus sell handcrafted goods at Christmas market at Rhos campus
12. Coleg Glynllifon, in partnership with the Royal Forestry Society, hosted over 60 young people at its campus recently, to showcase the exciting sector of Forestry and Countryside Management.
13. A new partnership between Grŵp Llandrillo Menai and Denbighshire County Council's Social Care department has been formed in a bid to combat loneliness in care. The collaborative project involves Coleg Llandrillo Computing students programming an interactive, versatile robot - 'Pepper', whilst Health & Social Care students study the positive effects it can have.
14. Rhos on Sea campus held a community fun day in May 2023 for local residents, parents and children with a host of fun filled activities.
15. Llangefni campus held a community fun day in June 2023 for local residents, parents and children with a host of fun-filled activities.
16. Dolgellau campus held a community fun day in June 2023 for local residents, parents and children with a host of fun-filled activities.
17. Staff and students raised money for Shelter Cymru by arranging activities such as 'Guess the name of the teddy bear', and selling cupcakes made and donated by 'The Bistro' training restaurant at the Rhos-on-Sea campus which were sold across Grŵp campuses. Raffles were also held for hampers filled with produce and vouchers donated from local businesses.
18. Staff based within the Food Technology Centre in Llangefni got involved in litter picking, clearing footpaths, trimming bushes, digging up weeds and emptying recycle bins at Holyhead Breakwater Country Park.

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19. The Engineering and Construction Department at Coleg Meirion-Dwyfor visited Ffestiniog Railway's Boston Lodge facility, where they got hands on with maintenance and repair work.
20. Busnes@Llandrillo Menai team - spent the day helping out at 'Partneriaeth Ogwen', a social enterprise based in Dyffryn Ogwen.
21. Staff got involved in litter picking for Community Day in a variety of locations, from the beaches of Dinas Dinlle, Llanddwyn and Rhos-on-Sea, to Llyn Padarn in Llanberis.
22. Over 200 other members of staff took part in sponsored walks between college campuses, with over 50 taking part in the walk from Rhos-on-Sea to Rhyl for Community Day in aid of St Davids Hospice.
23. A group of staff rode from Dolgellau Campus to Rhyl campus visiting campuses along the way. A number of staff joined them on their way raising money for St David's Hospice.
24. Coleg Meirion-Dwyfor students built the steel gate as a project on their Level 2 Welding and Fabrication course, before heading en-masse to Harlech to fit it at the home of a very appreciative disabled man.
25. The UK's first Wind Turbine Repair apprentice has begin his training at the wind turbine training centre in Rhos.
26. Building work commenced on the Engineering Centre of Excellence at Rhyl Campus, and is recognised as " BREEAM Excellent" Efficiency Certification Standard.
27. A new scheme offered by Busnes@ aims to upskill trades and SMEs in the construction sector, preparing them for a net zero future. This was offered by the Centre for Infrastructure Skills and Technology (CiST) at Llangefni.
28. LLeyn Sheep Society's annual general meeting visited Glynllifon to learn first-hand about the exciting new developments at the college.
29. The Green Digital Academy run by Busnes@ supported the Talyllyn Railway to achieve its net zero target by 2030.
30. A Glynllifon student has had the opportunity to support an elephant conservation project in Thailand, this included promoting viable, sustainable eco-tourism programmes to the local community.
31. Students from Coleg Rhyl helped local rangers at a local nature reserve to clear areas ready to plant orchids and rebuild hedgerows to facilitate nest-building for a wide range of wildlife.

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32. The Grŵps first Net-Zero carbon building was unveiling in Llangefni, Canolfan Chwaraeon. It is ranked amongst the top 10% of buildings in the UK for environmental performance.
33. Coleg Llandrillo construction students were given VIP access to the coastal defence project at Rhos-on-Sea.
34. Work on the new Ty Menai building begins, the North Wales based construction company READ being awarded the contract. The development will be certified Net-Zero Carbon and BREEAM excellent, through the installation of solar panels, air source heat pumps and LED lighting.
35. A new building is acquired in St.Asaph which is to be a new professional, apprentice and business training centre for Busnes@ to support the delivery of the Green Digital Academy.

Communications

2022-23 Performance

Communication is an important part of EMS. Environmental news, information and stories are reported on by marketing and found on the Grŵp website, where the public can access it. Environmental change notices, such as legislation are sent out on the monthly CEO bulletins.

It is considered essential to include students in the decision making and there is student representation on the SHE Committee and the Environmental Focus Group.

A communications register is kept by the SHE department which records any environmental queries or suggestions from staff, students or the general public and what action has been taken.

New staff are given environmental awareness training at induction by the Safety, Health and Environmental Team.

Environmental Focus Group

2022-23 Performance

Termly Environmental Focus Group meetings are held online, which is chaired by the Executive Director Corporate Services. This group reviews environmental issues and elicits support for behavioural changes at all sites. Activities such as litter picks are organised as a result of this meeting

The Environmental Focus Group reports to the SHE Committees. Going forward there will be an environmental user group for each of the 3 pillars, so topics can be discussed in more detail.

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Objectives and Targets 2023-24 - Pillar 3 - Developing Employers and Communities

‘Our Sustainable Development Strategy sets out our ambitions for people, place and prosperity, and our contribution to society, the environment and the economy’

Developing Employers and Communities

Working with companies and skills partnerships to expand the economy, through training, sector-led training, and apprentice opportunities.

- We are developing sustainability skills within our local economy
- We are working with local employers to increase the number of apprentices with skills for a sustainable future
- We are developing Knowledge Transfer Hubs for industry sector development
- We are developing sustainability within our Adult and Community Learning Curriculum

Objective: Increase employer focusses training which supports sustainability

Target: 4 times higher than baseline by 2025

Objective: Increase apprentices with skills in sustainability or the low carbon/ green economy

Target: 4 times higher than baseline by 2025.

Objective: Roll out Knowledge transfer hubs

Target: 3 knowledge transfer hubs by 2030

Objective: Increase bilingual training in low carbon skills to the supply chain

Target: 4 times higher than baseline by 2025

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Future Goals

The Grŵp will continue to meet the requirements of Level 5 Green Dragon Standard.

The Grŵp will continue to reduce its environmental impacts and will continue to improve its environmental performance.

The Grŵp will continue to encourage its students to appreciate their environment and to take part in environmental projects.

The Grŵp will continue to progress with its role in Sustainable Wales (detailed in Strategic Plan 2022-2027).