Carbon Baseline Report

Carbon counting report for academic years 2019-2024

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Summary

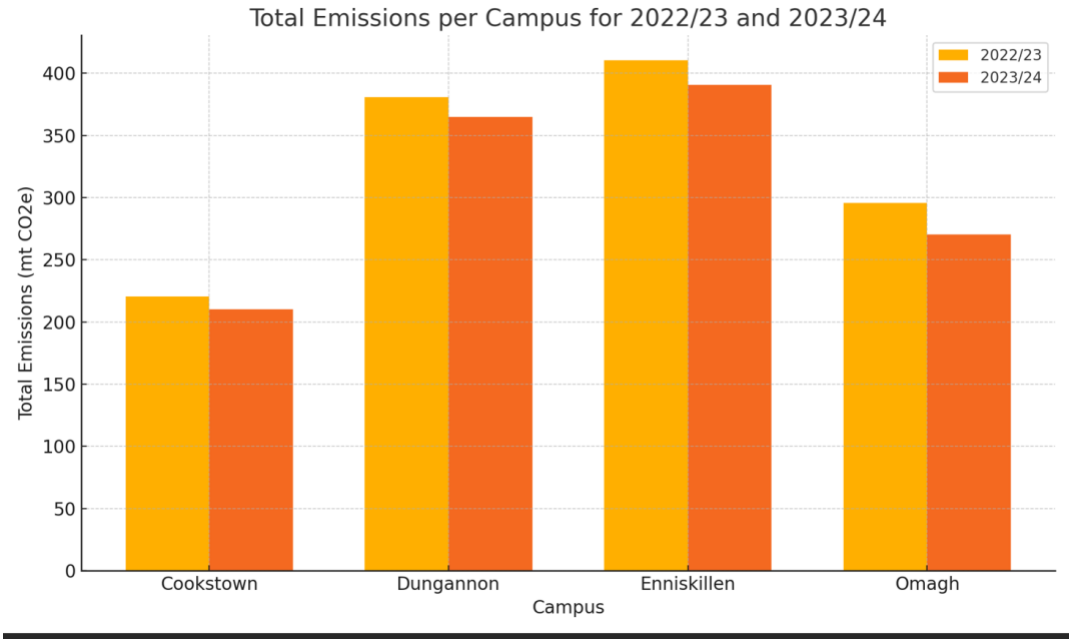
South West College (SWC) is committed to achieving excellence in Sustainability and Climate Action, with a strategic ambition to reach net-zero carbon emissions by 2050. Following the original baseline assessment in Academic Year 2021/22, total emissions were calculated at 1805.69 $mtCO_2e$, reducing to 1771.84 $mtCO_2e$ after applying renewable energy offsets.

In the most recent reporting year, 2023/24, SWC's total carbon emissions fell to 1324.36 $mtCO_2e$ — a reduction of 26.7% compared to 2021/22. This demonstrates substantial progress in implementing effective decarbonisation strategies, including enhanced energy efficiency, behavioural change, and cleaner energy systems across all campuses.

A key contributor to this success remains the College's investment in photovoltaic (PV) generation and the integration of renewable technologies, which together have significantly offset emissions while promoting local clean energy production.

SWC continues to set a strong example of environmental leadership within the education sector, underpinned by its Sustainability Action Plan, Net Zero Action Plan, and sector-leading building performance, with estate-wide benchmarks outperforming standard consumption metrics for both electricity and fossil fuel use.Looking ahead, SWC will remain proactive in reducing emissions across all three scopes — including indirect (Scope 3) emissions — through detailed project planning, collaboration with partners, and targeted retrofit programmes. Remaining emissions, once reductions have been maximised, will be responsibly offset through verified schemes to achieve a genuine net-zero status.

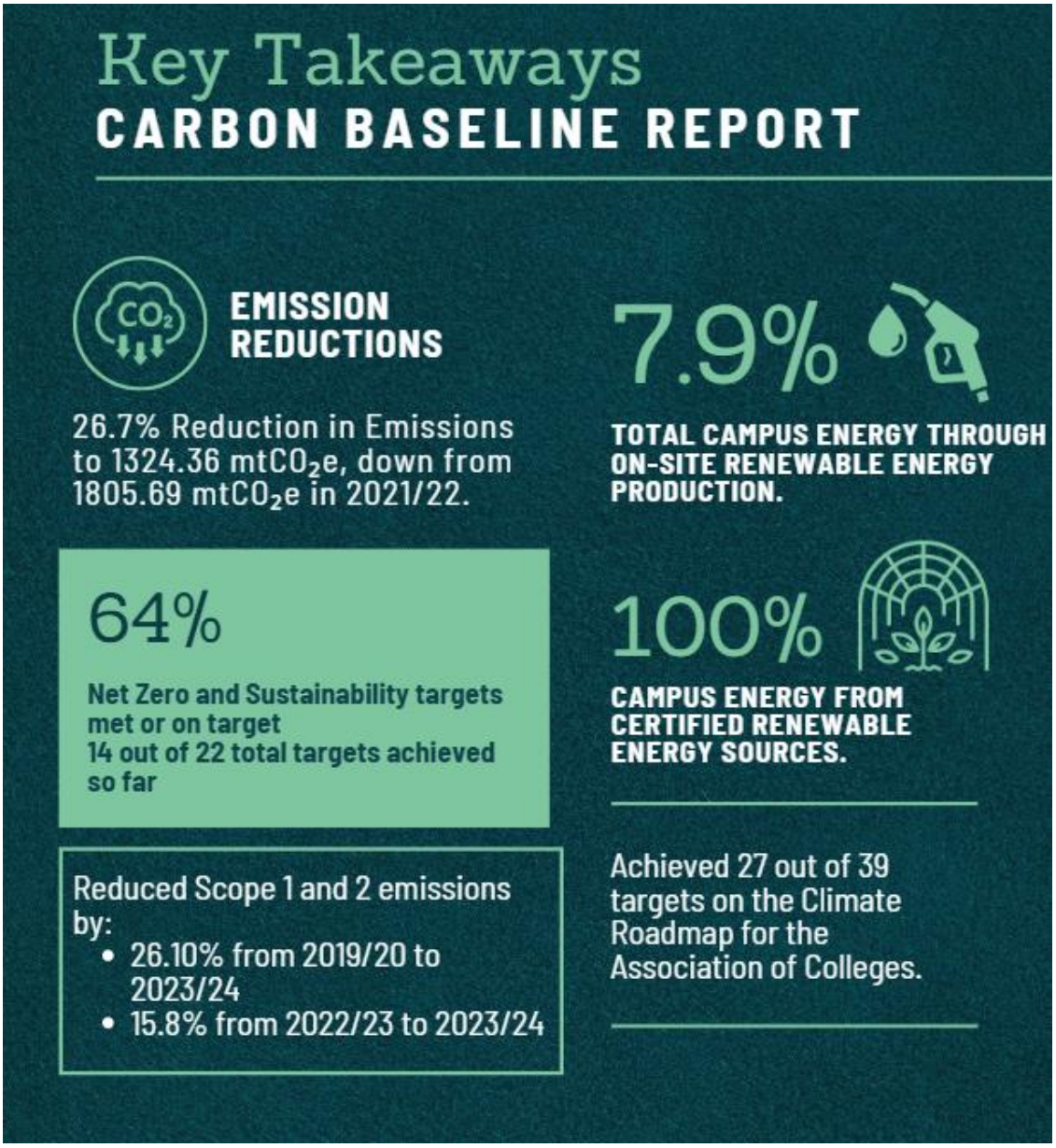
Ongoing carbon footprint monitoring and annual reporting will ensure transparency and drive continual improvement as the College advances toward its 2050 target.



Key Takeaways

Between 2019/20 and 2023/24, South West College has achieved a 26.7% overall reduction in reported carbon emissions, decreasing from 1805.69 $mtCO_2e$ in 2021/22 to 1324.36 $mtCO_2e$ in 2023/24. This reflects the successful implementation of targeted sustainability initiatives and decarbonisation strategies across the college estate.

- Scope 1 emissions (direct) reduced by 26.2%, driven by enhanced energy efficiency measures, plant upgrades, and behaviour change across campuses.
- Scope 2 emissions (indirect from electricity use) are reported in two ways:
    - Market-based: 0 $mtCO_2e$ — SWC procures 100% certified renewable electricity, resulting in zero emissions under this accounting method.
    - Location-based: 466.65 $mtCO_2e$ — reflects grid-average emissions intensity and is reported for comparative purposes.



Scope 3 emissions (indirect from supply chain, commuting, etc.) have decreased significantly thanks to improved operational practices, remote work uptake, and more sustainable procurement.

In addition to procuring green electricity, SWC has invested in on-site solar PV systems, generating clean energy that contributed 34.24 $mtCO_2e$ in carbon offsets in 2021/22. These systems continue to displace grid electricity, further reducing operational emissions and enhancing energy resilience.

Together, these efforts underscore SWC's role as a leader in sustainability within the further education sector — delivering real-world reductions aligned with its Net Zero 2030 interim goals and 2050 full decarbonisation target.

1.0 Baseline Performance

During the updated baseline assessment for Academic Year 2023/24, South West College (SWC) calculated its total gross carbon emissions to be 1324.36 metric tonnes of CO_2 equivalent ($mtCO_2e$). This marks a significant 26.7% reduction from the 2021/22 baseline figure of 1805.69 $mtCO_2e$, prior to renewable offsets. When including solar PV generation, which continues to displace grid electricity, the net emissions are further reduced by 34.24 $mtCO_2e$, demonstrating the impact of on-site renewable investment.

This reduction has been achieved through a combination of improved energy efficiency across the estate, a transition to 100% certified renewable electricity procurement, and continued behavioural change initiatives supported by the College's sustainability strategy. The most recent emissions profile consists of Scope 1 (750.26 $mtCO_2e$), Scope 2 (466.65 $mtCO_2e$), and Scope 3 (107.45 $mtCO_2e$).

The carbon emissions breakdown for SWC for 2023/24 was calculated at:

- Scope 1: 750.26 $mtCO_2e$ (direct emissions)
- Scope 2: 466.65 $mtCO_2e$ (indirect electricity – 0 $mtCO_2e$ under market-based)

The following table summarises South West College's carbon emissions from 2019/20 through 2023/24, including both location-based and market-based Scope 2 emissions.

Net emissions reflect the impact of on-site renewable generation through photovoltaic (PV) offsets.

Year	Scope 1 ($mtCO_2e$)	Scope 2 ($mtCO_2e$, location-based)	Scope 2 ($mtCO_2e$, market-based)	Scope 3 ($mtCO_2e$)	PV Offset ($mtCO_2e$)	Total Gross Emissions ($mtCO_2e$)	Net Emissions (after offset)
2019/2020	1068.19	535.65	0	175.23	7.24	1771.84	1764.6
2020/2021	922.17	427.44	0	65.66	7.71	1406.38	1398.67
2021/2022	1017.09	508.4	0	282.41	34.24	1805.69	1771.45
2022/2023	943.87	500.33	0	107.45	34.24	1621.21	1586.97

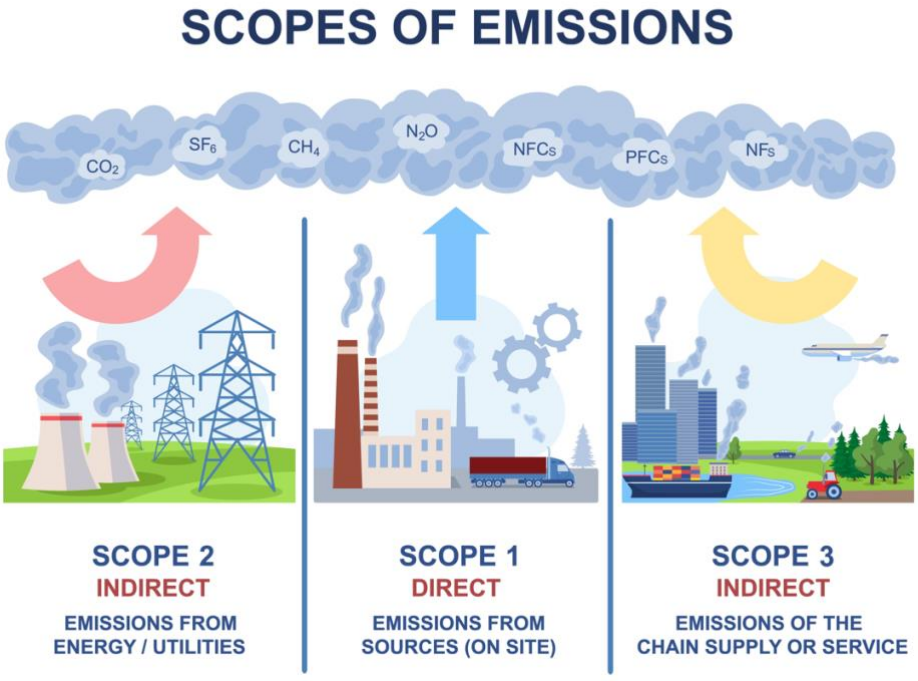
2023/2024	750.26	466.65	0	Unavailable	34.24	1324.36	1290.12

To complete this work, an assessment boundary was established. This selection was based on data availability, it's potential for direct action towards achieving reductions and its viability for setting and monitoring emission targets.
The assessment boundaries used for SWC are shown below.

Scope 1	Scope 2	Scope 3
Natural Gas Oil Biomass LPG Fleet Fuel Motor Gas Oil Lead Replacement Petrol Refrigerants	Electricity	Transmission and Distribution Electricity Water Supply Water Treatment Materials – Paper Non-Hazardous Waste, Recycled via MRF, Energy Recovery, Anaerobic Digestion Business Travel Remote Working

Data availability was the primary factor in deciding the assessment boundary. Direct GHG emissions stemming from sources under the operational control of the SWC were prioritised. Scope 3 emissions arise from third-party operations and thus monitoring, controlling, and reducing them pose greater challenges.

Scope 3 for educational facilities is largely voluntary, consequently, both public and private sector carbon action has traditionally focused on Scope 1 and 2 emissions. SWC's inclusion of selected scope 3 emissions underscore our commitment to influence change beyond their immediate control. The GHG protocol separates scope 3 (i.e. supply chain) into fifteen different emission sources. Many of the emission sources are not applicable to the College's operations and therefore excluded from this baseline.



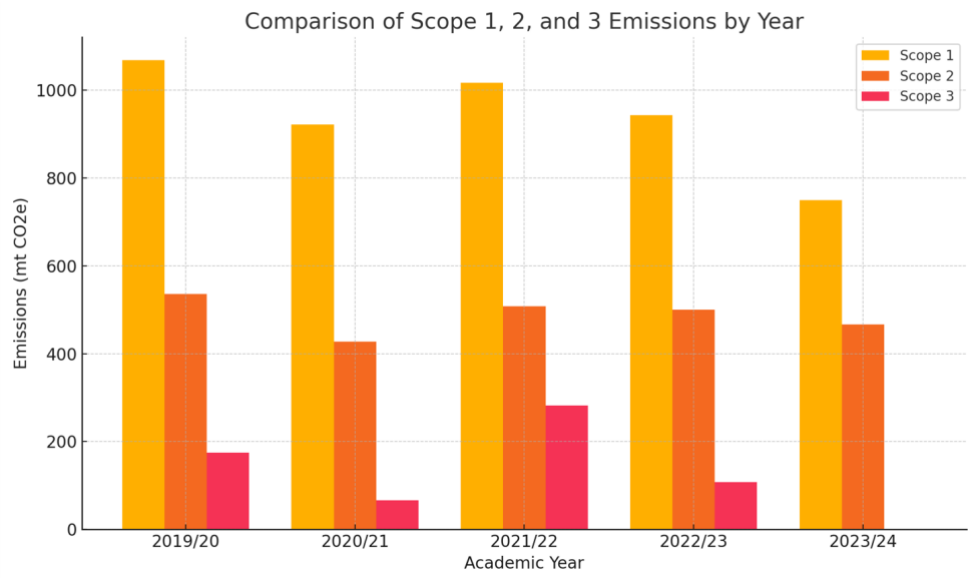
Notes and Exclusions

Whilst reasonable steps have been taken to ensure that the information contained within this publication is accurate and up to date, the authors, their agents, contractors, and sub-contractors provide no warranty and accept no liability for any errors or omissions.
The assessment boundary for South West College (SWC) was collaboratively established by the Estates Department with support from Business Industry Support. It includes all Scope 1 and Scope 2 emissions, as well as selected categories of Scope 3 emissions considered material and measurable for the College's operations.

Notes and Exclusions:

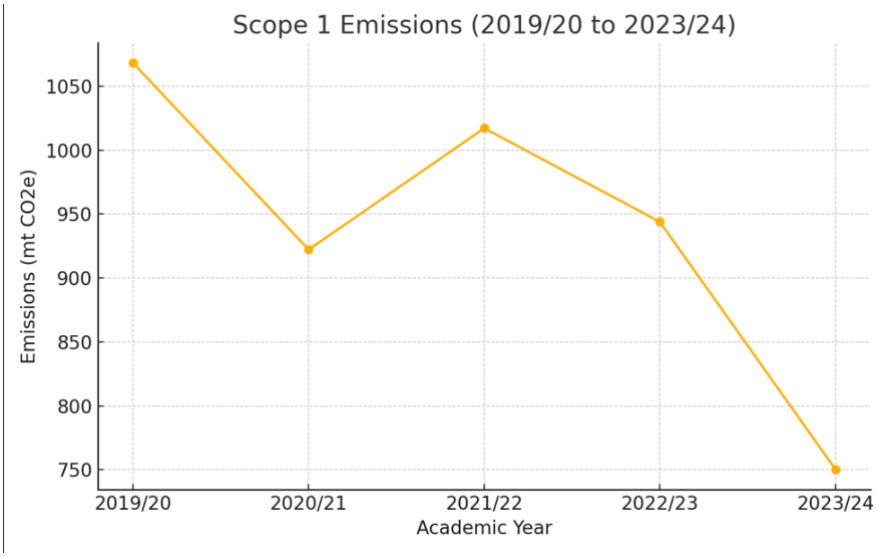
- Reporting follows the academic calendar, covering emissions from August to July of the following year.
- DEFRA/BEIS conversion factors from the calendar year corresponding to the academic year-end were applied (e.g., 2020 factors used for 2019/2020).
- Fuels such as Biomass, LPG, Heating Oil, Diesel, and Petrol were converted from litres or tonnes to kilowatt-hours (kWh) prior to applying emissions factors.
- Motor Gas Oil was treated using the same conversion factors as standard diesel, per DEFRA guidance.
- Travel-related data (business travel and mileage claims) was sourced directly from the SWC Finance Department.
- Remote working emissions were excluded from years prior to 2022/23, as government conversion factors only became available in 2022.
- All Scope 2 emissions are reported under both location-based and market-based methods. Under the market-based approach, emissions are recorded as 0 $mtCO_2e$, reflecting SWC's exclusive use of 100% certified renewable electricity.
- Carbon offsets from on-site photovoltaic (PV) generation have been accounted for from 2021/22 onwards, with validated annual savings of 34.24 $mtCO_2e$.

This methodology supports transparent, accurate, and evidence-based carbon accounting to inform progress tracking against SWC's Net Zero 2030 and 2050 commitments.



Scope 1 Emissions

In the academic year 2023/24, South West College (SWC) recorded 750.26 metric tonnes of CO_2 equivalent ($mtCO_2e$) under Scope 1 emissions — representing a 20.5% reduction compared to the 2022/23 total of 943.87 $mtCO_2e$.



Each campus exhibits distinct emissions profiles due to differing infrastructure and heating systems. While overall reductions were seen across most sites in 2023/24, it should be noted that the timing of fuel deliveries (e.g., purchases falling outside the summer period and into the following reporting year) may influence year-to-year comparisons. The reduction is therefore likely a combined effect of reduced usage and timing variance, rather than consumption improvements alone. Sites such as Gortin Road did not see reductions, reinforcing this consideration.

Annual Scope 1 Emissions

Academic Year	Scope 1 Emissions ($mtCO_2e$)
2019/20	1068.19
2020/21	922.17

2021/22	1017.09
2022/23	943.87
2023/24	750.26

Scope 2 Emissions

In 2023/24, SWC's location-based Scope 2 emissions amounted to 466.65 $mtCO_2e$, down from 500.33 $mtCO_2e$ in 2022/23 — a 6.7% reduction year-on-year.

Scope 2 includes indirect emissions from the generation of purchased electricity used across the estate. This decrease is attributed to:

- Enhanced energy awareness among staff and students
- Ongoing lighting upgrades, including rollout of LED retrofits
- Preparations for further energy efficiency and renewables projects

Importantly, under the market-based accounting method aligned with the GHG Protocol, SWC reports 0 $mtCO_2e$ for Scope 2 emissions due to the exclusive procurement of **100% certified renewable electricity**.

This dual-reporting approach enhances transparency and demonstrates SWC's sector-leading climate leadership.

Captured Carbon
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CERTIFICATE OF RENEWABLE SOURCE ELECTRICITY SUPPLY

1ST JANUARY 2023 – 31ST DECEMBER 2023

SWC SOUTH WEST COLLEGE
electric Ireland
Captured Carbon CERTIFIED

This certificate confirms that the electricity consumed by the Consuming Company; **South West College**, as a client of Supply Company; **Electric Ireland,** has been verified as being sourced from 100% renewable electricity generation by **Captured Carbon Limited** for the period outlined above. The location of consumption is set out below:

MPRN	Location
81090955180	BURN ROAD,LIBRARY BUILDING,BT80 8DJ,COOKSTOWN,TYRONE
81442668761	2,MOUNTJOY ROAD,OMAGH COLLEGE,BT79 7AH,OMAGH,TYRONE
81675500130	1,CORNAGRADE ROAD, SOUTHWEST COLLEGE,BT74 6DU,ENNISKILLEN,FERMANAGH
81719372215	KILLYHEVLIN INDUSTRIAL ESTATE,SKILLS CENTRE,BT74 6HN,ENNISKILLEN,FERMANAGH
81801516630	CIRCULAR ROAD,CAMPUS,BT71 6BQ,DUNGANNON,TYRONE
81907616950	UNIT 6,KILCRONAGH ROAD,BT80 9HG,COOKSTOWN,TYRONE
81968042872	49,GORTIN ROAD,BT79 7HX,OMAGH,DOWN

FOR MORE INFORMATION CONTACT: WWW.CAPTUREDCARBON.IE
CERT No. CCL/NI/GP/23/34

Future Approach

SWC recognises the importance of extending its carbon reduction efforts beyond Scope 1 and 2. To that end, the College will:

- Expand Scope 3 coverage by including additional GHG Protocol categories over time
- Encourage sustainable transport, including carpooling, active travel, and public transport use
- Enhance waste diversion, reuse, and recycling initiatives in line with circular economy principles
- Support hybrid working models, especially where it can reduce commuting and resource consumption
- Work with suppliers and contractors to identify and reduce embodied carbon across the value chain

Further detail on Scope 3 strategy can be found in the College's Net Zero Action Plan, which outlines short-, medium-, and long-term priorities for holistic emissions reduction.

Carbon Offsetting

Electricity generated from photovoltaic (PV) systems plays a key role in reducing South West College's overall carbon footprint. The renewable electricity produced across SWC campuses offsets emissions primarily from electricity use, contributing directly to reductions in Scope 2 emissions under the location-based method.

In the academic year **2023/24**, SWC's campuses generated a total of **177,085 kWh** through installed PV systems. This renewable energy generation resulted in an emissions offset of **34.24 mtCO_2e**, calculated using the official DEFRA/BEIS 2023 conversion factor for grid electricity emissions (**0.19338 kg CO_2e per kWh**).

PV Generation by Site (2023/24)

Campus	Generation (kWh)	Emissions Factor (kg CO_2e/kWh)	Offset (mtCO_2e)

Cookstown	14,488	0.19338	2.80
Enniskillen – Skills	7,913	0.19338	1.53
Enniskillen – Erne	154,684	0.19338	29.91
Total	**177,085**		**34.24**

This offset has been consistently applied to SWC's net emissions across Scope 1, 2, and 3, reducing the **total net carbon footprint for 2023/24 to 1290.12 mtCO_2e**.

The **Erne Campus** PV installation, introduced in 2021/22, continues to provide a significant share of SWC's clean electricity. Covering an area equivalent to **nearly 14 tennis courts**, the system accounted for approximately **70% of Erne Campus's electricity production** as of April 2023.

Looking ahead, SWC anticipates further emissions reductions through the ongoing use of its PV systems. These systems are particularly valuable for offsetting residual emissions that cannot be eliminated through operational changes alone, making them a key pillar in the College's Net Zero strategy.