Peninsula Dental
Social Enterprise

Environmental Report

2025

Contents

About this report

This annual Environmental Report relates to Peninsula Dental Social Enterprise's (PDSE's) 2024-2025 financial year (FY) which ran from 1st August 2024 to 31st July 2025.

PDSE is a social enterprise transforming educations and outcomes in dentistry. It is a Community Interest Company (CIC) and a wholly owned subsidiary of the University of Plymouth. PDSE's environmental reporting sits outside of the scope of the University's own annual environmental reporting.

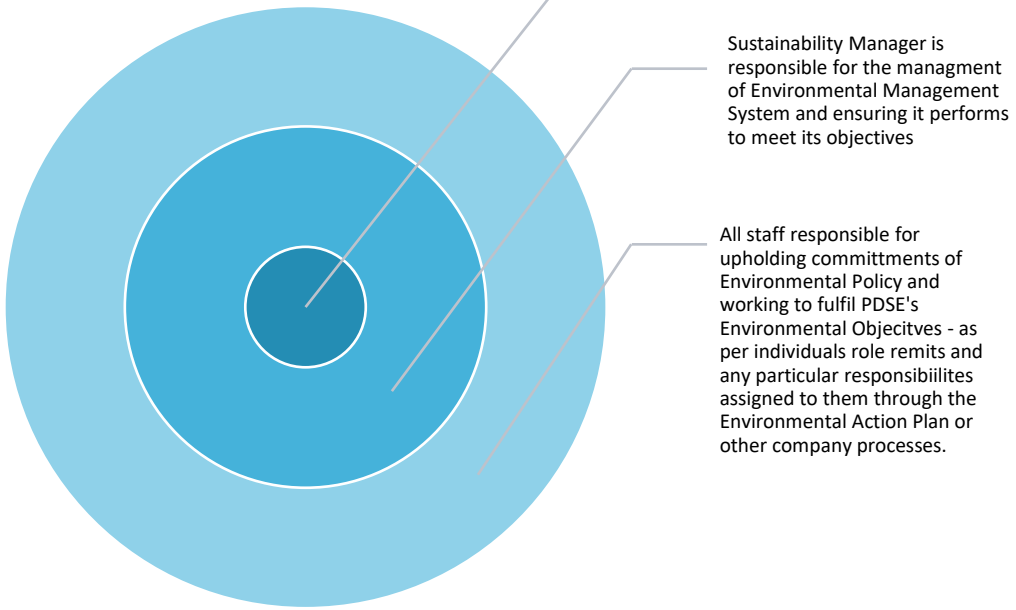
This report is the first comprehensive Environmental Report for PDSE and includes data for FY 21-22 and FY 23-24 (where satisfactory data were obtainable) to give a retrospective view of impacts for the past year and baseline year.

At the time of writing (September 2025) PDSE is in its first year of developing our environmental management system (also referred to as 'an EMS') in alignment with the requirements of the ISO14001:2015 standard for environmental management.

As part of the process of establishing this EMS PDSE's significant environmental aspects and impacts have been mapped, an Environment Policy has been created, environmental objectives established and an Environmental Action Plan (EAP) agreed – the latter laying out PDSE's plans for continuously reducing its environmental impacts, in alignment with its objectives.

This document and its future iterations represent a key tool for PDSE to evaluate its environmental performance and monitor the effectiveness of its environmental management system. It also allows us to share the status of our environmental progress with interested stakeholders – as a result, it has been written in a way which aims to provide transparent and accessible information to all.

Environmental governance at PDSE



Comments from key stakeholders

Welcome to our 2025 update on PDSE's progress on our work on improving our Environmental impact.

We continue to make good progress on reducing the CO_2 we create or cause. With the projects we now have in hand, we expect to achieve our interim target of reducing our scope 1 and 2 emissions by 2030. We are pleased that so far we are delivering this in a highly cost-effective manner by investing in schemes which deliver ongoing reductions in operational costs.

Attention can now turn to the longer-term target of achieving net zero for Scopes 1 and 2 by 2040, which will require solutions to be found for our heating requirements.

There remains a huge task to achieve the ultimate goal of achieving overall net zero by 2050. PDSE remains committed to not only achieving this but to being a leader in doing so.

Henry Warren
Chair of the Board

Our net zero strategy is not just a target; it is a transformation. As a core value of PDSE, our commitment to environmental stewardship is at the heart of everything we do. It encompasses every aspect of our operations, from energy use and supply chain management to community engagement.

This report details the progress we have made this year and the roadmap ahead, including significant investment in renewable energy from which we are already seeing the benefits.

By fostering a culture of sustainability across our teams, we can drive meaningful change and contribute to a healthier planet for generations to come.

Nathan Findlay
Chief Operating Officer

This year's environmental report represents a meaningful step forward in enhancing our Environmental Management System (EMS). By consolidating our Scope 1, 2, and 3 data, we have pinpointed key opportunities for improvement. This report enriches our understanding of our environmental impacts while illuminating potential avenues for growth.

Completing our environmental report for the second consecutive year has been an invaluable process for reflection and development. This endeavour not only strengthens our EMS but also reaffirms our dedication to transparency, guides sustainable investment, and drives continuous advancement.

As our strategy continues to evolve, we aspire for this report to serve as both a benchmark for our progress and a resource for others aiming to integrate sustainability into dental education and clinical operations, demonstrating how environmental responsibility can be seamlessly woven into everyday practice.

Tia Hartsilver
Sustainability Manager

How this Environmental Report sits within PDSE's Environmental Management System

A prerequisite for the establishment of an Environmental Management System (EMS) is the mapping of environmental 'aspects[1]'. PDSE established defined criteria to assess the likelihood and severity of environmental impacts associated with each aspect identified, to provide an overall rating of 'significance' for each aspect.

As per the requirements of ISO14001 these 'significant aspects' have been used as the framing around which PDSE's Environmental Objectives are structured. In turn, PDSE's Environmental Objectives have been used to inform and shape PDSE's Environmental Action Plan (EAP). The EAP represents the part of PDSE's EMS which defines PDSE's strategy for engaging with, and continuously developing, its environmental performance over time (in alignment with the Environmental Objectives).

This Environmental Report is a key tool monitoring the efficacy of the elements of PDSE's Environmental Management System. The report also serves as important focus to aid ensuring the '*plan, do, check, act'* cycle is closed within the EMS - ensuring an effective, iterative system for maintaining continuous improvement. Where the EMS is found to fall short of meeting the objectives in the Environmental Report, or where opportunities for more effective continuous improvement in environmental performance present, this will be flagged in the Environmental Report for inclusion and action in the EAP.

PDSE's Environmental Aspects and Impacts Register (the Environmental Compliance Register) and the Environmental Action Plan are maintained within a central document which represents the 'hub' of PDSE's Environmental Management System around which other elements of the system are being built.

PDSE's Environment Policy, Significant Aspects, Environmental Objectives and this Environmental Report are available to view on the Sustainability section of PDSE's website.

[1] An aspect can be seen of as an element of an organisation's activities or products or services that interacts (or could interact) with the environment.

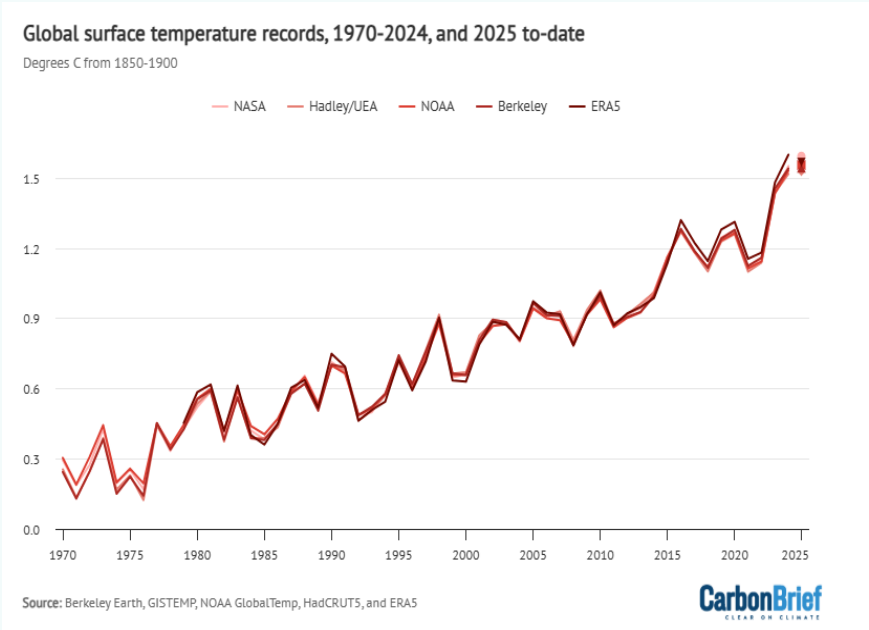
Report layout

The report is structured to provide a view of progress against each of PDSE's Environmental Objectives.

To enhance the meaning of the report for all readers, commentary on PDSE's actions is also included to provide context on the 'plan, do, check, act' cycle that underpins the environmental progress being reported on.

Environmental state of play

The past year has underscored the urgency of environmental sustainability. In 2024, global average temperatures rose to more than 1.5 °C above pre-industrial levels for the first time on record (Copernicus, 2024), and greenhouse gas emissions reached new highs. At the same time, biodiversity continues to decline at an alarming rate, with over 47,000 species now threatened with extinction (WWF, 2025) and ecosystems under increasing pressure from human activity. These trends highlight the interconnection between climate change, biodiversity loss, and the resilience of the natural systems



For businesses, these developments reinforce the importance of embedding sustainability into strategy and operations. Environmental risks are no longer distant concerns; they affect every aspect of life, including social, economic, and political factors. By committing to sustainable practices and reducing environmental impact, organisations not only help safeguard the planet's ecological balance but also build resilience and trust in an economy that is rapidly transitioning towards low-carbon and nature-positive models.

Derriford Dental Education Facility
Summer 2025

PDSE environmental headlines for 2025

Scope 1 emissions of 129 t CO_2e

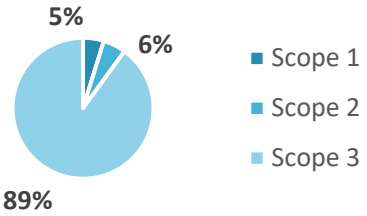
emissions from combustion of fossil fuels on site
(**-10%** on FY 21-22 baseline)

Scope 2 emissions of 141 t CO_2e

emissions from purchased electricity (and heat at Truro)
(-22% compared to FY 21-22 baseline)

Scope 3 emissions of 2,241 t CO_2e

representing 89% of PDSE's organisational emissions
(+ 6% since baseline)



The comprehensive view of Scope 3 emissions permits visibility of PDSE's overall emissions split (overall emissions of 2,511 t CO_2e)

Comprehensive view of GHG emissions provides view of GHG intensity metrics:

- **5.75 t CO_2e per student year**
- **62.5 kg CO_2e per patient appointment**

Highlight

-32%

reduction in energy consumption per patient appointment since FY 21-22 baseline

9,000 m^3

water consumption – this is **-7%** less than the FY 21- 22 baseline

Highlight

Sustainable education –
This is the first year that sustainability content has been written and incorporated into the student curriculum.

Highlight

9 t CO_2e

business travel emissions
a 36% reduction compared to last year, due to the use of the company's new electric Buzz vehicle and no flights taken this year.

27 t CO_2e

A new method of calculating commuting to work mileage was used compared with previous years, which now includes contracted staff weeks

-28%

reduction in inter-site courier emissions compared to the FY 21-22 baseline (**saving 5.5 t CO_2e**), consistent with last year

850 m^2

of greenspaces on the PDSE estate committed to 'no mow' regime from May to August to improve these areas' ecological value

1. Greenhouse gas emissions

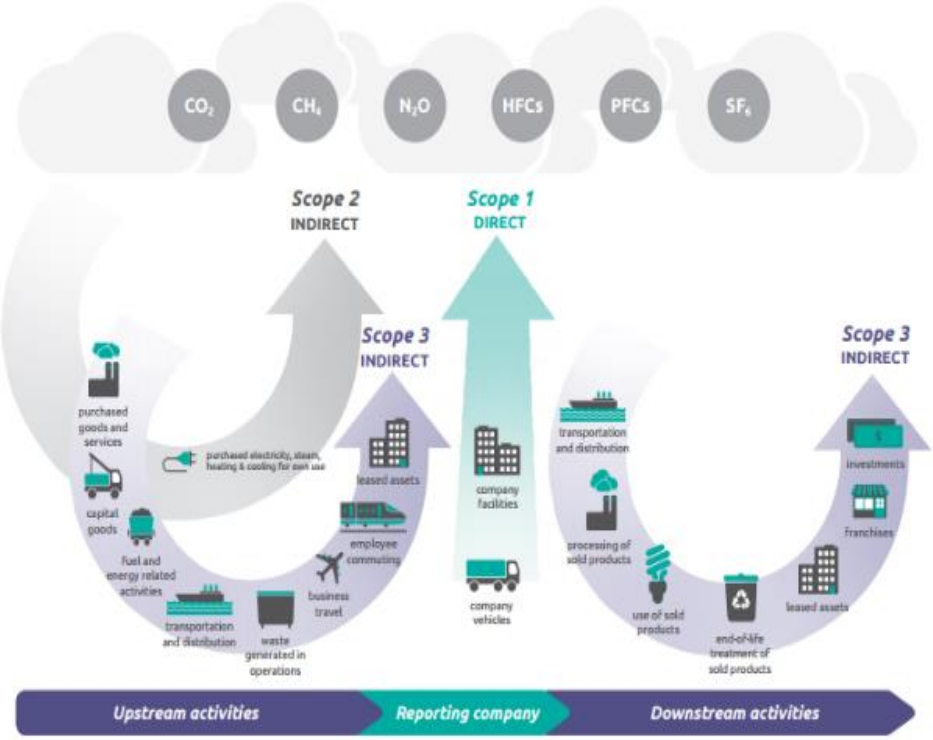
PDSE recognises that we face a climate emergency and sees the acute impacts this is already bringing to global society. As a social enterprise, PDSE is keenly alert to the increasingly severe social impacts associated with global heating and climate breakdown and is working to honour its moral responsibility to reduce its greenhouse gas (GHG) emissions in a way which is aligned to the pace of change advised upon in the strongest terms by the scientific community. This is one of the foundational principles of PDSE's Environmental Policy.

There are many different elements of an organisation's GHG emissions – some are incurred directly by the organisation's activities, and some incurred elsewhere, indirectly, as a result of the organisation going about its business. PDSE is working to report on its organisational GHG emissions in full, in alignment with the guidance of the internationally recognised GHG Reporting Protocol (GHGP) and their 22 reporting categories. For those unfamiliar with GHG reporting, a brief is now provided.

GHG emissions are split into three 'reporting scopes':

Scope	Type	Description	Example
1	direct	emissions directly created by the company from owned or operated assets	emissions from the burning of gas in PDSE's boilers
2	indirect	emissions associated to purchased energy	emissions associated to grid purchased electricity, or to the heat purchased at Truro
3	indirect	emissions from everything else – typically where the majority of an organisation's emissions are located	emissions incurred in the manufacturing of goods PDSE buys, transportation of goods site, business travel (etc)

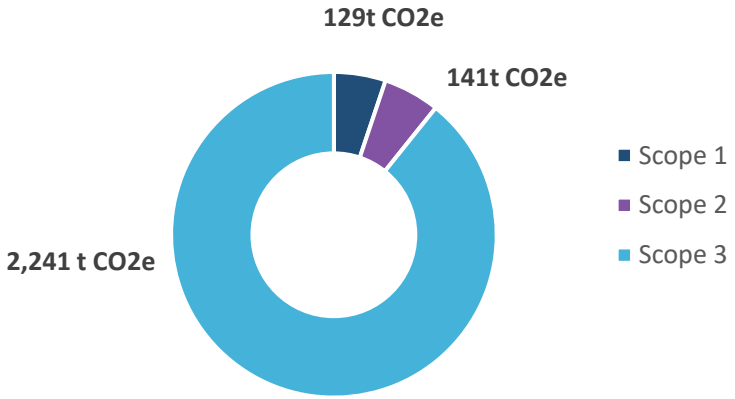
Different GHGs have different atmospheric warming characteristics. To permit simultaneous consideration of the major GHGs the warming potential of GHGs *other* than CO_2 are often converted into 'CO_2 equivalent' (or 'CO_2e' for short). This factors in the warming potential of the different GHGs over a 100-year period, in relation to CO_2, to permit a singular view of GHGs and their warming impact being formed. To give an example: methane has an atmospheric warming effect 28 times greater than CO_2 over a 100-year period, 1 tonne of methane emissions thus represent 28 t CO_2e.



Overview of GHG Protocol scopes and emissions across the value chain
Source: Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Standard

High level update on objectives relating to GHG emissions			
Environmental objective	[Obj.1a] Achieving net zero in Scope 1 and 2 emissions by 2040 (compared to FY21-22)	[Obj.1b] Achieving an interim reduction in Scope 1 and 2 GHG emissions of 45% by FY 29-30 (compared to FY 21-22)	[Obj.1c] Achieving net zero in Scope 3 emissions by 2050
Takeaways	Scope 1 and Scope 2 emissions have both decreased since the baseline year of FY 21-22 (- 16%) coming to 270 t CO_2e in FY 24-25. Improvement to efficiency has progressed in the past year, with the implementation of projects such as LEDs, the company's electric car and Solar PV. Structural changes to how PDSE's buildings are heated and to the carbon intensity of electricity used in facilities will be essential to achieve both Obj.1a and Obj.1b in full (the importance of this is heightened by the expansion of operations that are planned and currently in motion)		For the majority of Scope 3, emissions have been accounted using 'spend based' (rather than 'activity based') reporting. Scope 3 emissions have been found to represent almost 2,241t CO_2e – at 89% of overall emissions this marks the importance of prioritising this objective in the years to come.
Overall takeaway	A view of GHG emissions for all but 'investments', as per the 22 reporting categories of the GHG Reporting Protocol, has been formed for this report. The view this provides represents an important starting point from which to monitor and assess PDSE's progress towards its defined decarbonisation objectives. Achieving the science-based objectives will undoubtedly require great focus (and investment) in the years to come and the baseline now held (back to FY 21-22 for Scope 1 and 2) will be a key tool to approaching in a data-driven way.		

Organisational emissions 2025



More detailed reporting on GHG emissions

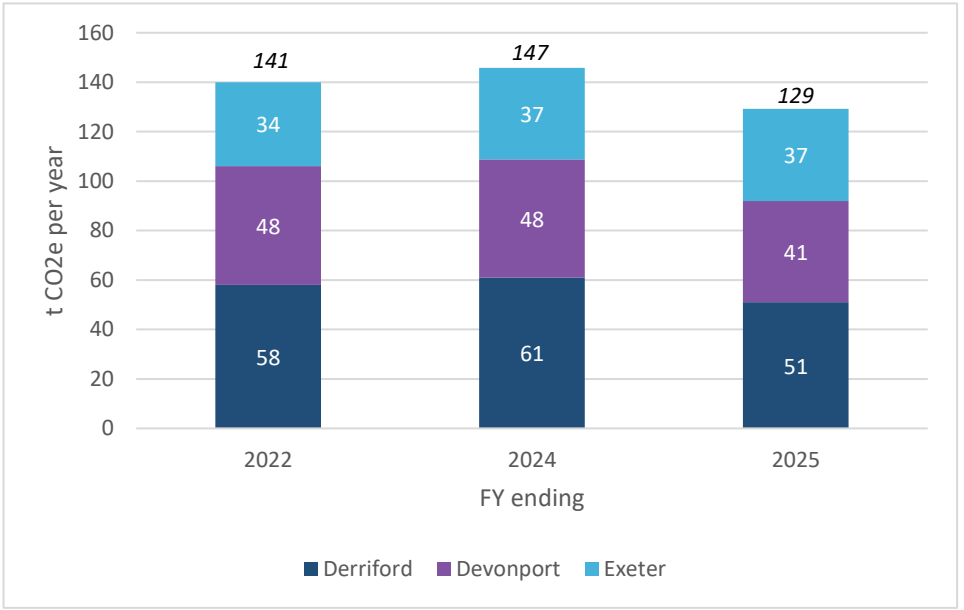
Scope 1 emissions

In FY 24-25, PDSE's Scope 1 (direct) emissions resulted from the combustion of gas in the boilers at each of PDSE's three directly operated sites (Exeter, Derriford and Devonport). No replacement of refrigerant or F-gases[2] were incurred, nor the combustion of other fuels in year at any of PDSE's sites.

In total, the gas consumed resulted in emissions of 129 tonnes CO_2e. The emissions from gas combustion can be seen to have increased at both Devonport and Exeter since the baseline year of FY 21-22 (by 17% and 5% respectively), whilst decreasing at Derriford since the baseline year (by -12%).

Gas consumption is affected by annual variation in the requirement for space heating, explored further below.

GHG emissions associated to PDSE's gas consumption by site

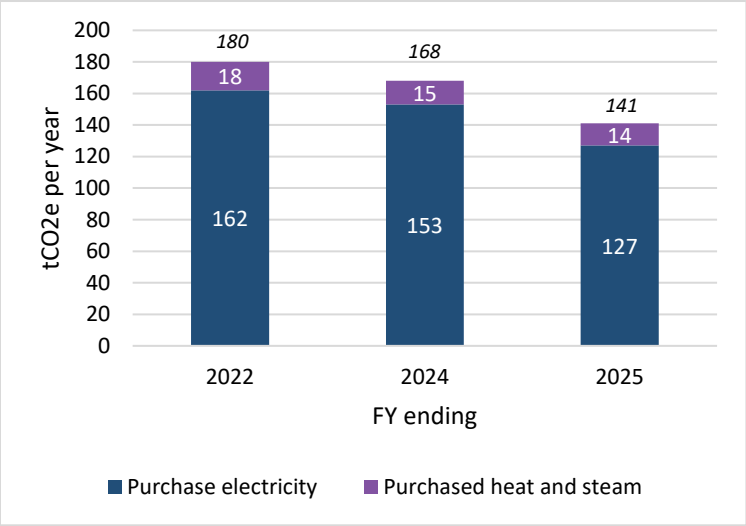


PDSE's gas boilers at Derriford
(51t CO_2e FY 24-25 - the highest emissions from boiler plant from **PDSE's three directly operated sites)**

[2] F-gases are fluorinated gases used in refrigeration, air-conditioning units and heat-pumps – they are tightly regulated owing to their very high greenhouse warming effects if released/leaked to the atmosphere.

Scope 2 emissions

Breakdown of emissions by reporting category (location-based reporting)



- **The majority of PDSE's Scope 2 emissions are comprised of emissions associated with the purchase of electricity**. A small proportion also results from emissions associated with the purchase of heat at Truro (our Dental Education Facility at Truro is in a building managed by the Royal Cornwall Hospital Trust).
- **Scope 2 emissions have decreased compared with previous years in FY 24-25**. In total the scope 2 consumption was 141 tonnes CO_{2e}. The purchase of electricity and heat energy was 22% lower this year than in FY 21-22.
- This year, the 2024 scope 2 emissions have been revised to reflect accurate figures due to prior billing errors encountered during the last report's publication. This adjustment will be applied to all sections of the paper in regard to this adjustment.

LED Project update – Lighting success!

PDSE has been diligently working over the past few years to replace all the lighting in Devonport and Derriford with LED fixtures. As a result, Devonport now achieves approximately 9 tCO2e in carbon savings per year, while Derriford has around 5 tCO2e in annual savings. Together, they realise a combined annual energy savings of about 50,000 kWh. Currently, PDSE has implemented full LED lighting across all sites, with the exception of Truro, which is managed by and located within the Royal Cornwall Hospital.

What are PDSE's Scope 2 emissions from a market-based reporting approach?

PDSE will provide yearly reports on location-based emissions by default, and the objectives will correspond to this type of reporting. If there are changes in market mechanics and if additionality can be demonstrated, this approach may be revised in the future. All of PDSE's facilities were on tariffs 100% backed by zero carbon generation in FY 24-25: the electricity consumption at Truro was 100% REGO backed[3] and at Devonport, Exeter and Derriford was 100% backed by 'Generation Declarations'[4].

[3] 'REGO' stands for 'Renewable Energy Guarantee of Origin' – a scheme to provide transparency to consumers on the proportion of electricity suppliers source from renewable electricity. The scheme provides certificates called REGOs which demonstrate electricity supplied to a consumer has been generated from renewable sources. More information is available from Ofgem.

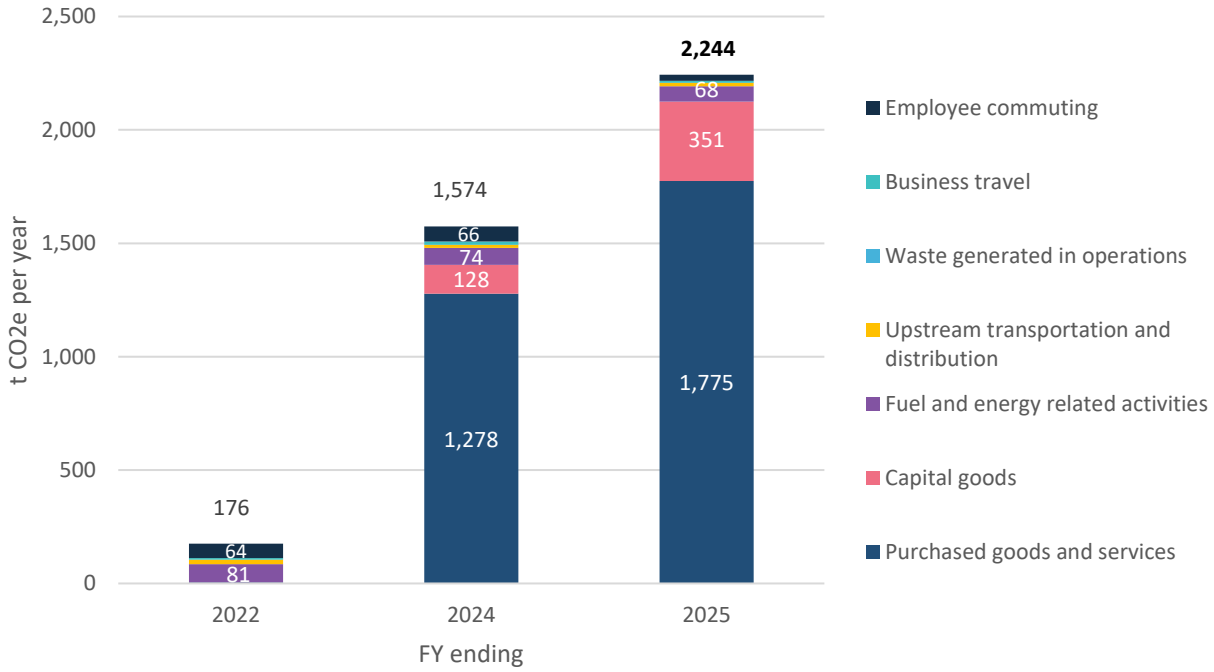
[4] A 'Generation Declaration' is similar in concept to a REGO but for non-renewable zero carbon energy – power derived from nuclear power stations.

Scope 3 emissions

Seven of the 15 reporting categories of the GHG Protocol for Scope 3 emissions apply to PDSE at present, of which all but 'Investments' have been calculated. Data were available, emissions were calculated using activity-based approaches.

As is common at present however, particularly for purchased goods, services and for capital goods, spend based reporting methodologies were used for calculating the majority of Scope 3 emissions. For spend based reporting the Higher Education Procurement Association's 'HESCET' reporting model was employed to quantify associated emissions[5]. Spend data has been archived in line-by-line resolution to permit re-calculating using further developed modelling methodologies in the future, if and when such methodologies become available and are suitable for retrospective reporting.

Scope 3 emissions by reporting category



Commentary on Scope 3 emissions breakdown

- Categories 'purchased goods and services' and 'capital goods' combined have been found to **represent over 90% of PDSE's Scope 3 emissions and over three-quarters of PDSE's emissions overall.**
- **This is figure is higher than last year, due to the increase in patients taken on this year (approx 30% more than last year).**
- The increase in capital goods stems primarily from **investment in solar PV at Devonport.**

[5] Further information on HESCET model is available on the EAUC website.

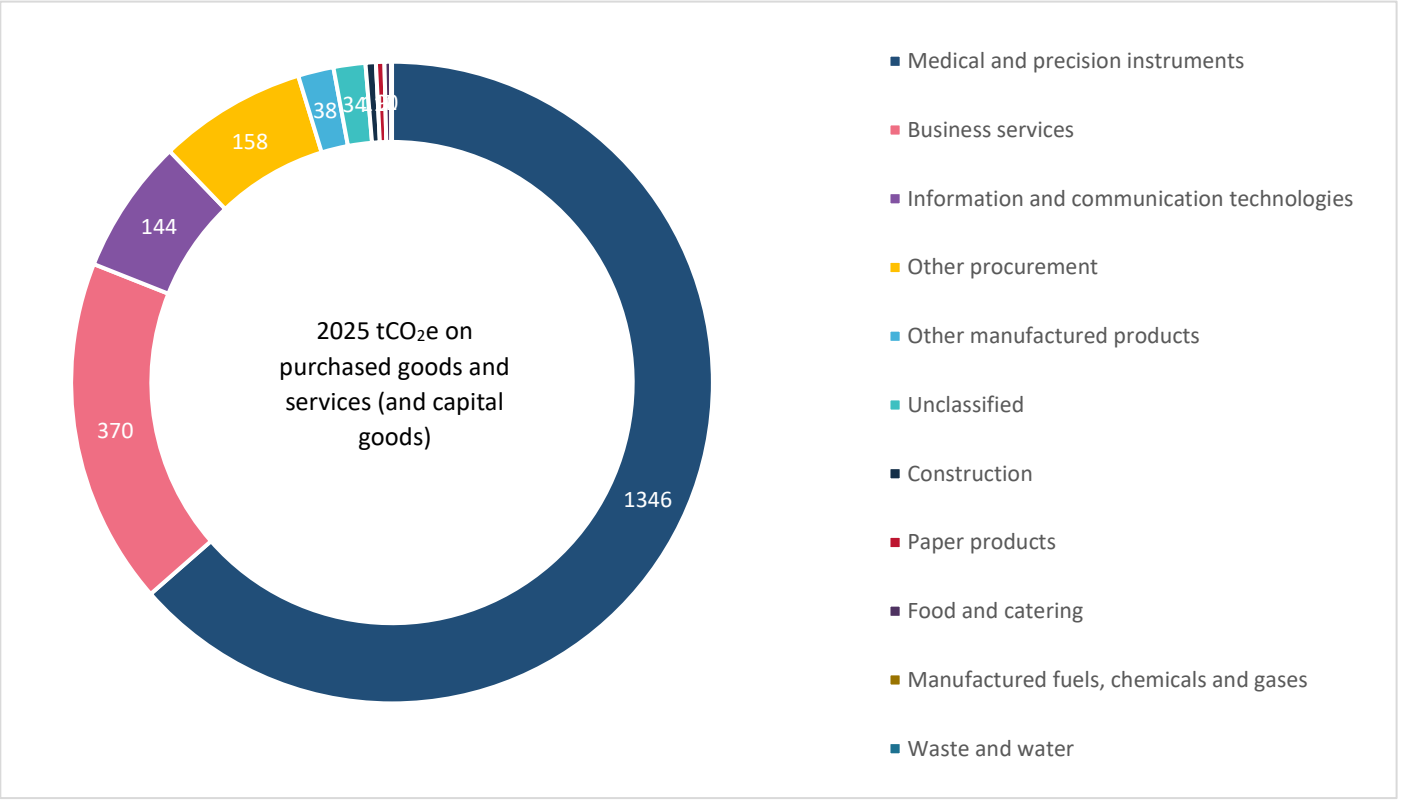
A closer inspection of emissions associated to purchased goods and services and capital goods

As previously noted, spend based modelling was employed to account for GHG emissions associated with the Scope 3 sub-categories of 'purchased goods and services' as well as for 'capital goods'. In FY 24-25 spend on capital goods was 19% of that of purchased goods and services: consequently, the two categories have been combined for presentation in the figure below right.

Over 55% of emissions are associated with these two GHGP reporting categories are thought to sit within the sub-category of 'purchase of medical and precision instruments'.

For clarity, this category includes clinical consumables and clinical equipment. The GHG intensity for this category is high in the reporting methodology employed - at around 1kg CO_2e/£ spend. The next most significant sub-category is 'business services' with associated emissions of around 370 t CO_2e.

Please note: as is inherent to spend based GHG reporting, notable generalisations and groupings of spend to particular emissions factors have to be made. With this in mind, when interpreting the results for procured goods and services, it is advised to give foremost meaning to the high-level scale of the figures reported for each category, instead of the precise standing of each.

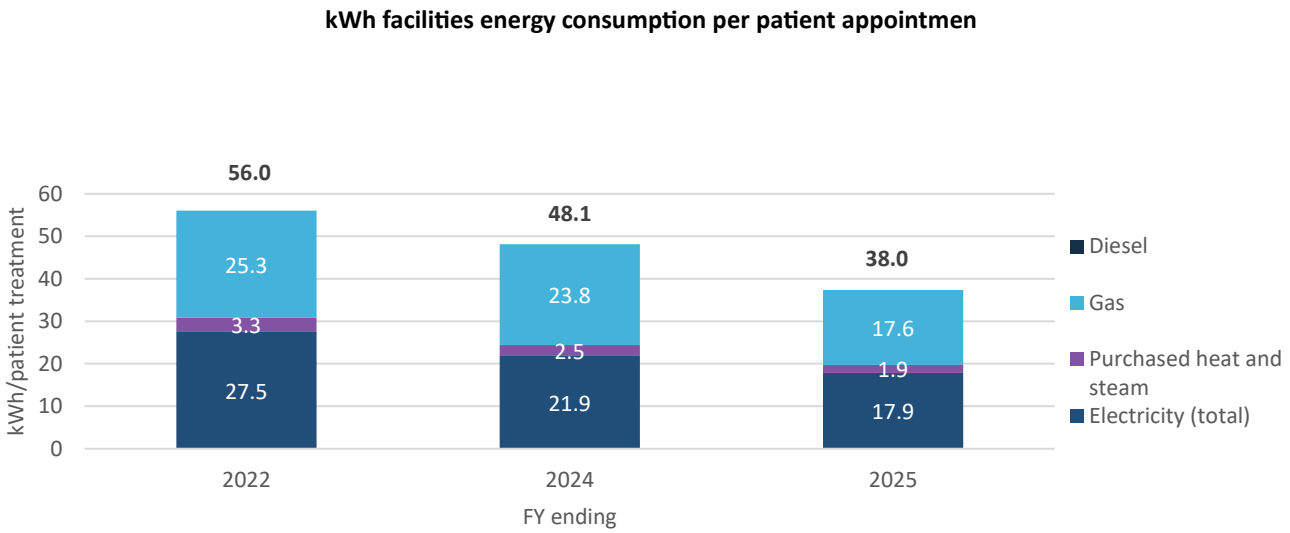


2. Energy management

PDSE recognises on-site energy consumption in its facilities is the principal driver of its direct GHG emissions (as well as a host of other environmental impacts associated to the consumption of energy). It also recognises its energy consumption is affected by activity levels on site: consequently, an intensity-based objective has been established (to reduce energy consumption per unit of activity) – to drive improvements in the efficiency of use of energy on PDSE's sites.

	High level update on energy management
Environmental objective	[Obj.2a] Reducing energy use of facilities per patient appointment at least 25% by 2030 (compared to FY 21-22)
Takeaways	This year we have met our 2030 target for energy reduction per patient appointment. 38 kWh per patient appointment in Facilities energy use in FY 24-25 (down 32% on the baseline – meeting our 2030 target)

Detailed reporting on energy management



Commentary on energy consumption per patient appointment:

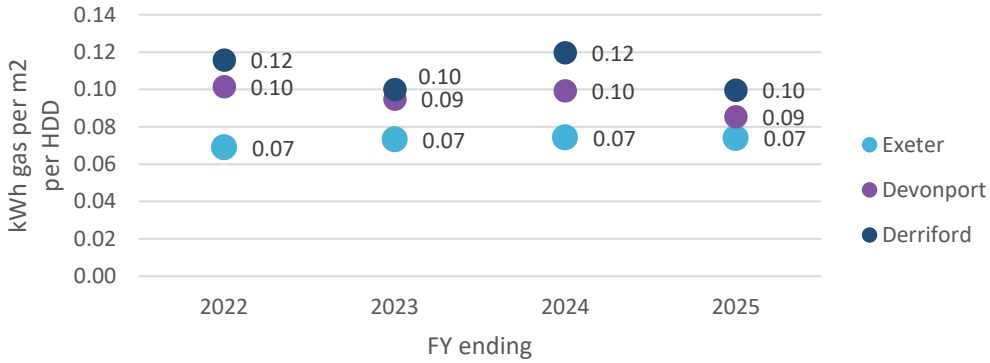
- **The intensity of energy use per patient appointment in PDSE's facilities has decreased significantly since last year and considerably since the baseline year (FY21-22).** This is thanks to a reduction in gross energy consumption over the years since the baseline and an increase in the number of patient appointments held over the same year (around 24%).
- The reduction seen to date is around 32% - exceeding the goal of 25% by 2030 and a real highlight of this year's report.

Reporting on efficiency of gas use

Gas consumption influenced by annual variability in the requirement for space heating – in colder years, more space heating is required. To allow comparison of efficiency of gas use between sites and across years requires adjusting for both heating degree days (HDDs[6]) and the differing sizes of each DEF.

kWh gas consumption per m² per HDD*

(normalised to per m² floor area to permit comparison between sites)



*Using Plymouth as location and an 18°C base temperature for the three sites – it is assumed Exeter's HDDs are, over the course of each year, comparable to the two Plymouth sites.

[Truro not featured in the figure as operational control of heating systems not held by PDSE]

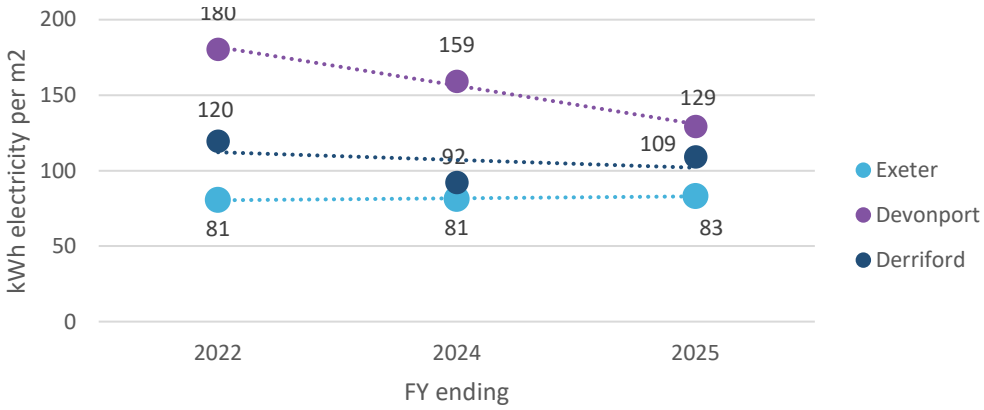
- **This analysis shows the efficiency of gas use has deteriorated at both Derriford and Devonport since last year** – seen by the decrease in the metric for both sites.
- Another key takeaway is the variability in gas consumption per HDD per m²– both from year to year and from site to site. The variability for Derriford and Devonport has fluctuated every other year, with lower and higher values.
- Derriford has, with a clear margin, consistently the highest gas consumption intensity despite it being of most recent construction (and having a ground source heat pump).
- This has allowed proposals and planning for refining the operation and control of the heating plant at Derriford and Devonport, to realise efficiencies in the use of gas at these sites.

[6] Heating degree days are a measure of how much (in degrees), and for how long (in days), the outside air temperature was below a certain level. They are commonly used in calculations relating to the energy consumption required to heat buildings.

Reporting on efficiency of electricity consumption

Whilst electricity consumption is linked to the requirement for space cooling, the overall link between electricity consumption and annual cooling demand (in the UK) is less pronounced than between gas consumption and heating degree days. Consequently, a comparable analysis which provides a view of electricity consumption per cooling degree day has not been conducted. Instead, a view of electricity consumption per m^2 has been formed for each operationally controlled site to provide a comparable view of the intensity of electricity consumption.

kWh electricity consumption per m2

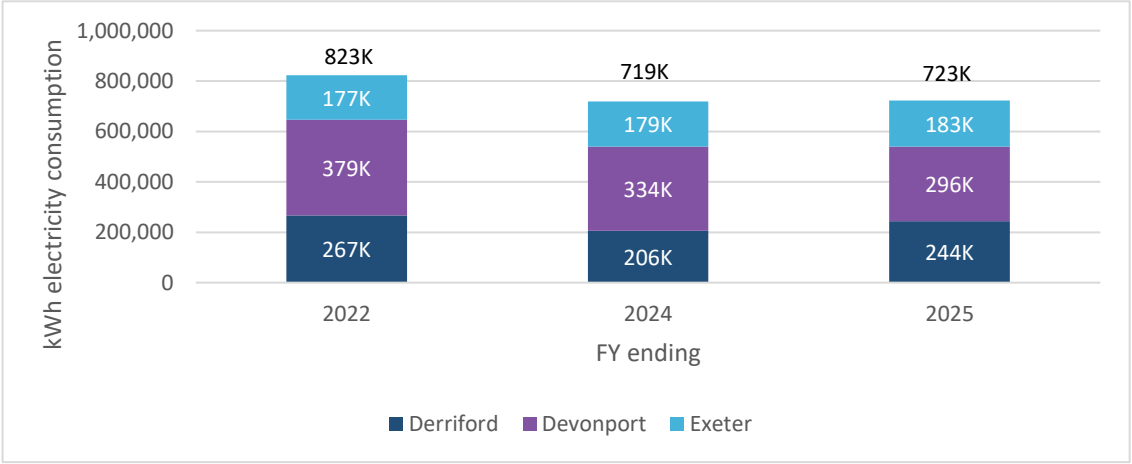


- **This analysis shows the efficiency of electricity use has improved significantly at Devonport over the past year.** Whilst remaining steady at Exeter and increasing slightly for Derriford.
- Devonport's intensity of electricity consumption is higher than the other two sites, although its consumption has decreased due to the completion of the Solar PV and LED projects. Despite using a significant amount of energy for its decontamination facilities (an improved efficiency schedule was introduced last year for this).
- Derriford is also home to a significant electrified heating plant, which the other two sites do not have, in the form of its two ground-source heat pump modules.

[Truro not featured as operational control of major electricity consuming plant (e.g. HVAC) not held]

- From an absolute perspective, across the three operationally controlled sites, electricity consumption has decreased year on year since the FY 21-22 baseline.
- Consumption increased by 4,000 kWh in FY 24-5 compared with FY23-24.This gives a cumulative reduction in electricity consumption since the baseline year of around 11% (100,000kWh).

kWh electricity consumption

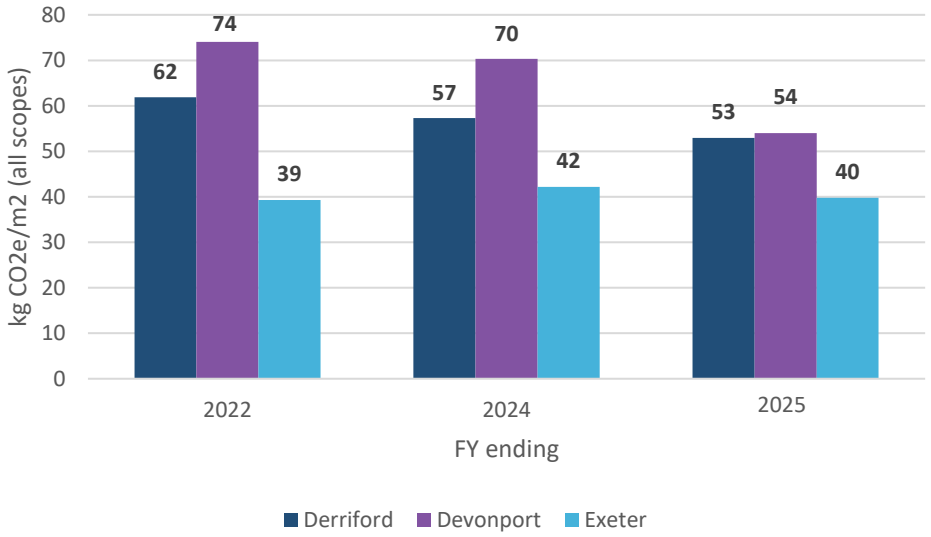


Providing a GHG perspective on the differing energy efficiency per site

The different intensity of energy requirements (and the relative splits of energy types used) at the different site determines the overall GHG intensity (per m_2) of each site.

As the UK's electricity consumption continues to decarbonise, those sites that have a greater proportion of their energy consumption met by electricity will see lower overall GHG intensities associated with the running of their facilities. This will be increased by investments in PV generation at each site, which provide zero carbon electricity that also reduces the amount of electricity purchased from the grid with GHGs associated to it.

GHG intensity of each site per m²
(considering all energy types consumed on site)

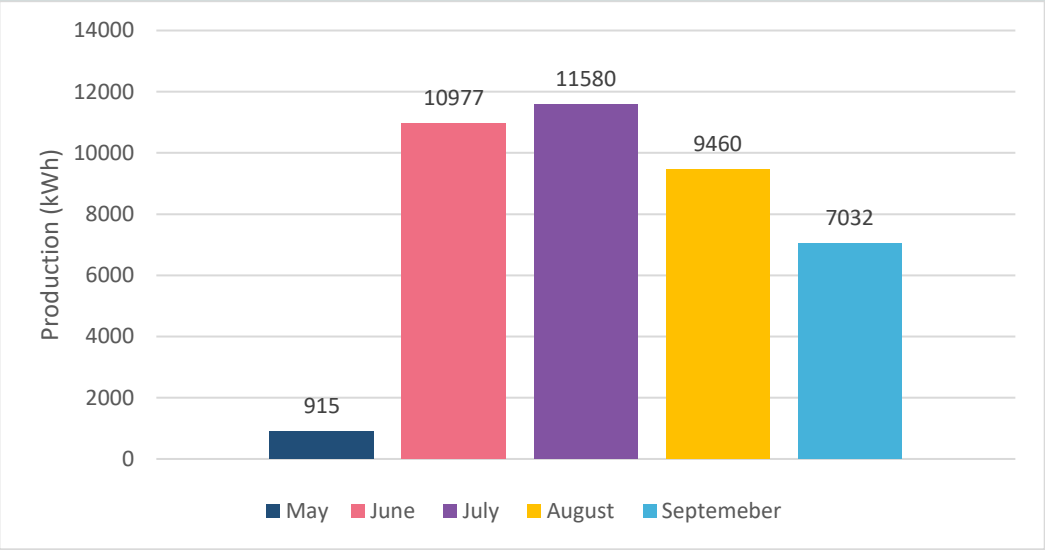


- Devonport has the highest GHG intensity of the three directly operated sites. However, its GHG intensity per m^2 has decreased significantly this year due to the installation of the solar PV system.
- Derriford's GHG intensity has decreased this year, being at a similar to Devonport with its introduction to solar.
- Exeter has seen a slower decreasing rate of GHG intensity per m^2 . This may be related to the fact that most decarbonisation projects have taken place at Derriford and Devonport.
- Next year may look very different with the introduction of solar of Exeter and Derriford still to come.
- Truro is not featured in the figure as PDSE does not have operational control of plant, its operation and the fabric of the building.

What has PDSE has been working on to improve efficiency of electricity consumption in FY 24-25?

Solar PV

- Since installation Devonport Solar PV has produced 41,000kWh of renewable energy used throughout the site during daily activities. The system is predicted to produce 68,000kWh/ year, significantly decreasing PDSE's reliance on the grid.
- The addition of solar has significantly decreased Devonport's GHG intensity.
- With further metering being installed on-site PDSE aims for this to counter energy used from decontamination activities, which accounts for approx 25% of Devonport's energy usage.



- Exeter and Derriford Solar projects are due to start in December 2025 with a predicted production of 65,000kWh per site.

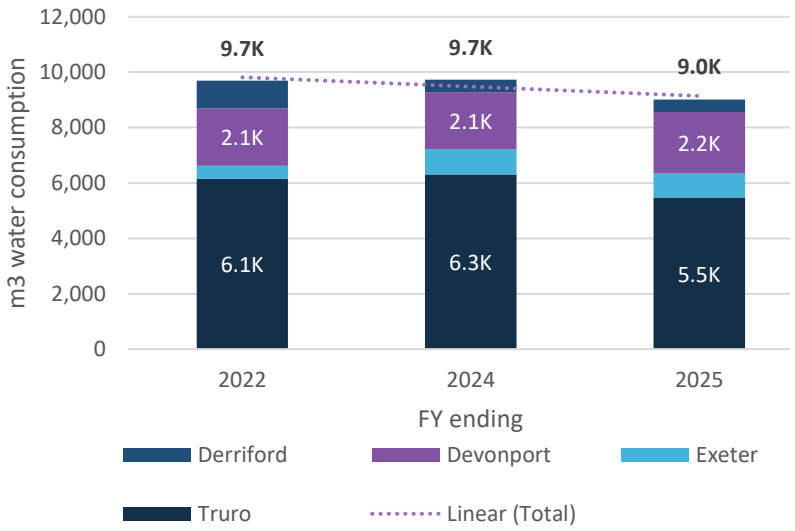
3. Water management

Water consumption is host to a range of environmental impacts and is also a periodically scarce resource in the South West – PDSE's water consumption is not seen as a 'significant aspect' at present but reporting is provided to offer transparency on our performance in engaging with our consumption and promoting resource efficiency.

	High level update on water management
Environmental objective	[Obj.3a] Reducing water use of facilities at least 25% by 2030 (compared to FY 21-22)
Takeaways	Absolute water consumption (as per data available) has decreased with FY 21-22 baseline levels, however a number of limitations around the robustness of water consumption data are apparent.

More detailed reporting on water management

Absolute water consumption reporting by site



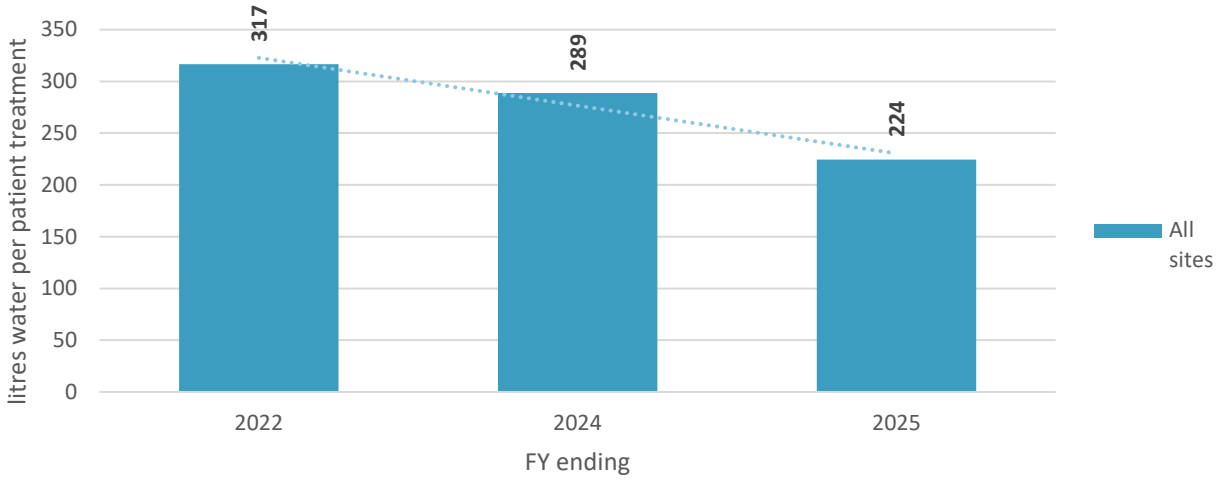
Commentary on consumption

- The reported consumption varies significantly from site to site – from just 450 m^3 for Derriford to 5,473m^3 for Truro in FY 24-25.
- The water consumption apportioning approach used by RCHT at the Truro DEF (which is based on floor area) and known on-going metering issues at Exeter and Derriford. As a result, it is thought the picture painted here is of (notably) higher than actual consumption being reported for Truro and (likely) under-reporting for Derriford. With this in mind FY 25-26 reporting for water should be seen as a starting point, with a more robust baseline for each site to be established once improved consumption data is available.

Give me a sense of scale on this?

- 10,000 m^3 of water is around the same tonnage as the HMS Belfast – the battleship moored on the Thames in London
- In terms of volume, it is about three times the volume of PDSE Derriford
- Or this is about same weight of water being consumed each day as the weight of a standard fully loaded bin-lorry

Water consumption per patient appointment



Commentary on consumption per patient appointment

- An improvement in water consumption per patient appointment can be seen – with FY 24-25 being 22% lower than FY23-24 and 29% lower than the baseline year.
- As noted on the previous page, caution should be taken when interpreting the data owing to the known issues affecting the data over the period.
- An ongoing action being taken into FY 25-26 is to improve the quality of water metering. To aid the ability to meaningfully report on water consumption and efficiency of use.

Give me a sense of scale on this?

300 l is about the same volume as a standard size wheelie bin

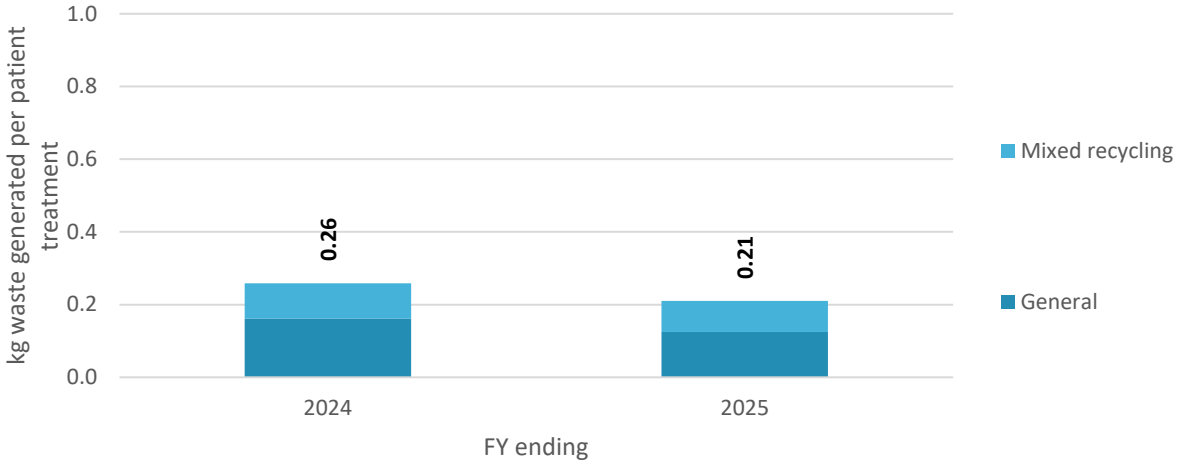
4. Waste management

Waste management encompasses a range of environmental impacts, including, but not limited to: GHG emissions associated to waste collection and transfer vehicles and GHG emissions associated to the incineration of waste in energy from waste (EFW) and high temperature incineration (HTI) plants.

PDSE's waste management services are not seen as a significant aspect at present however their impacts remain meaningful, and reporting is provided for transparency on our waste generation levels and to provide a view of progress in engaging with associated impacts, over time. A particular focus for PDSE is promoting overall efficiency of use of consumables in our operations and in reducing the generation of infectious clinical waste - which is associated with particularly high environmental impacts per tonne of waste generated.

High level update on waste management		
Environmental objective	[Obj.4a] Achieving an 80:20 ratio on offensive waste: clinical infectious generated	[Obj.4b] Reducing the overall mass of waste generated per patient appointment by 20% by 2030 compared to FY 23-24
Takeaways	PDSE's waste services have been provided by a variety of contractors and sub-contractors over the past three years – whilst some data has been provided of waste generation this data is not available at the consistency required to permit reporting on overall generation levels or evaluate trends in performance over the period. The graph below has been included as 'quick look' into two of the seven categories that will be reported on in future years.	
Overall takeaway	Provision of robust waste generation data from waste service providers is essential to monitoring our progress in reducing the impacts associated to our generation of waste. Waste generation data has not been provided in a complete fashion for the past four years and so is not reported, to avoid confusion or misinterpretation. Future action for FY25-26 is to work in collaboration with the waste supplier to improve waste reporting services and allow more categories to be reported on.	

A quick look into kg waste generated per patient treatment mixed recycling and general waste <u>only</u>



Commentary on waste generation

- Due to the ongoing issues with waste reporting from our new supplier, we can only conduct a preliminary comparison of the waste categories 'mixed recycling' and 'general waste' from last year.
- This year, we have observed a decrease in both 'mixed recycling' and 'general waste'. This improvement can be attributed to our increased efforts in promoting proper waste disposal and encouraging waste reduction throughout the organisation.
- It's important to note that this preliminary analysis does not accurately reflect PDSE's overall waste generation and will not be included in our official reporting. In future years, we plan to report on a total of seven waste categories.

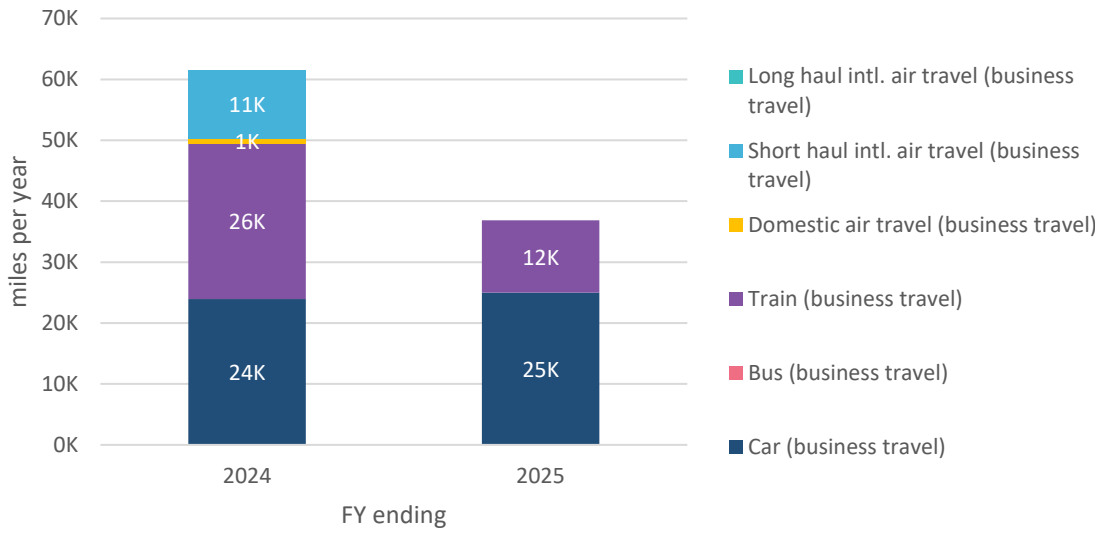
5. Travel and transport

PDSE's operations require considerable travel and transport activity– with emissions ranging from those associated with employees travelling to work, to those associated with deliveries (or collections) from our sites to the impacts of patients travelling to appointments. All of these incur (indirectly) environmental impacts and PDSE recognises its responsibility to influence these, wherever possible, to minimise environmental impacts.

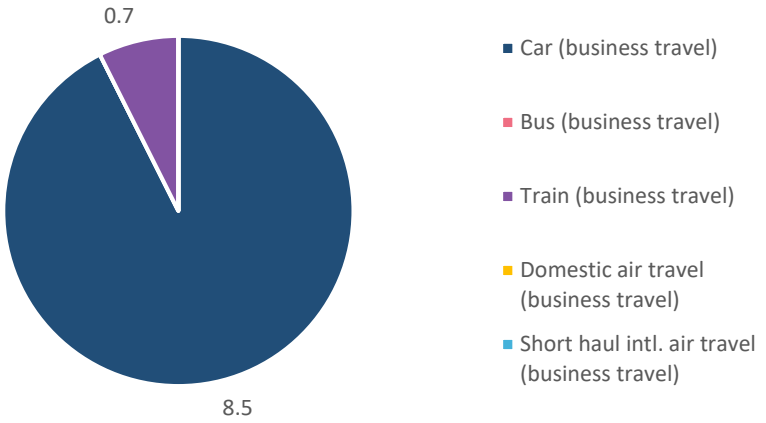
High level update on travel and transport:			
Environmental objective	[Obj.5a] *Achieving a reduction of 45% in business travel emissions by 2030 (compared to FY 23-24)*	[Obj.5b] *Achieving a reduction in commuting to work emissions of 45% by 2030 (compared to FY 21-22)*	[Obj.5c] *Achieving 45% (+) reduction in the GHG emissions of PDSE's inter-site courier services by 2030 (compared to FY 21-22)*
Takeaways	• Business travel emissions represented 9t CO_2e FY24-25.	• Commuting to work emissions represented 27t CO_2e in FY24-25.	• Inter-site courier emissions represent emissions of 14t CO_2e in FY24-25.
Overall takeaway	Travel and transport represent a notable area of PDSE's impacts – incurring around 50t CO_2e emissions in FY 24-25 for commuting to work, the inter-site courier service and business travel. Deliveries and collections from sites, and other courier services, will incur further transport related emissions. Projects such as the EV pool vehicle and provision of charge points for car park users at Exeter and Derriford were initiated at the start of the year .		

Review of business travel & associated emissions

Business travel mileage



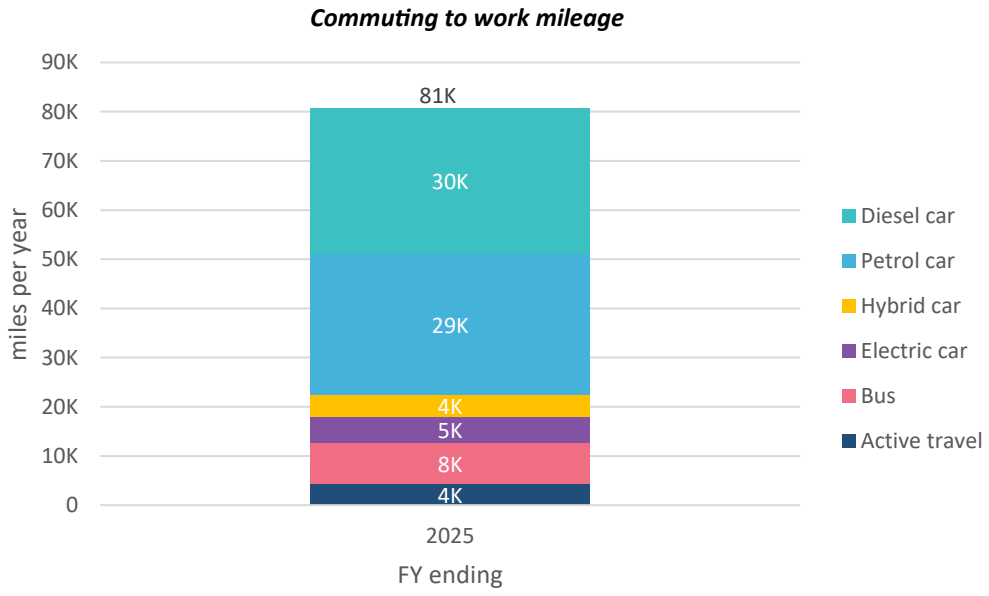
Business travel emissions FY 24-25

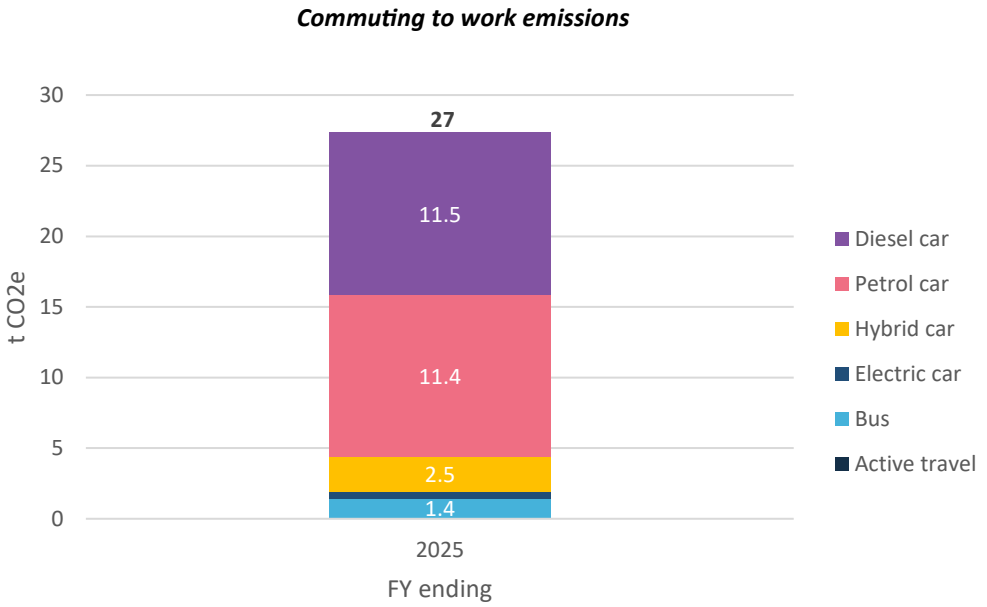


Commentary on business mileage and emissions

- The total business mileage comes to around 37,000 miles per year for FY 24-25.
- Around 52% of business travel mileage was completed by car – with the remainder on public transport
- Air travel was not used this year, which has added to the decrease in business miles and emissions.
- Overall business travel emissions came to 9 tonnes CO_2e, significantly lower than last year by 5 tonnes CO_2e.
- The biggest differences being no air travel was taken this year and the train business miles were approx halfed.

Review of commuting to work emissions



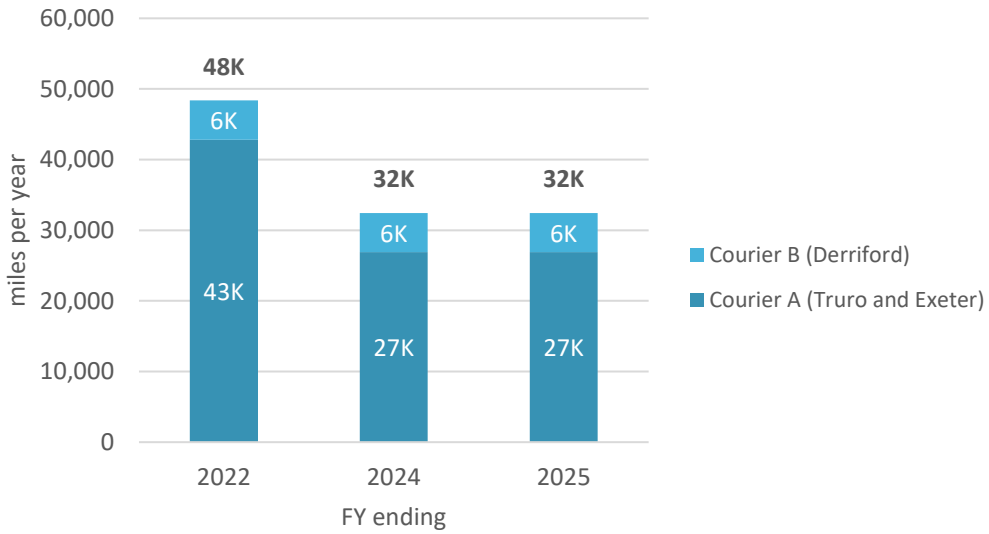


Commentary on commuting to work mileage and emissions

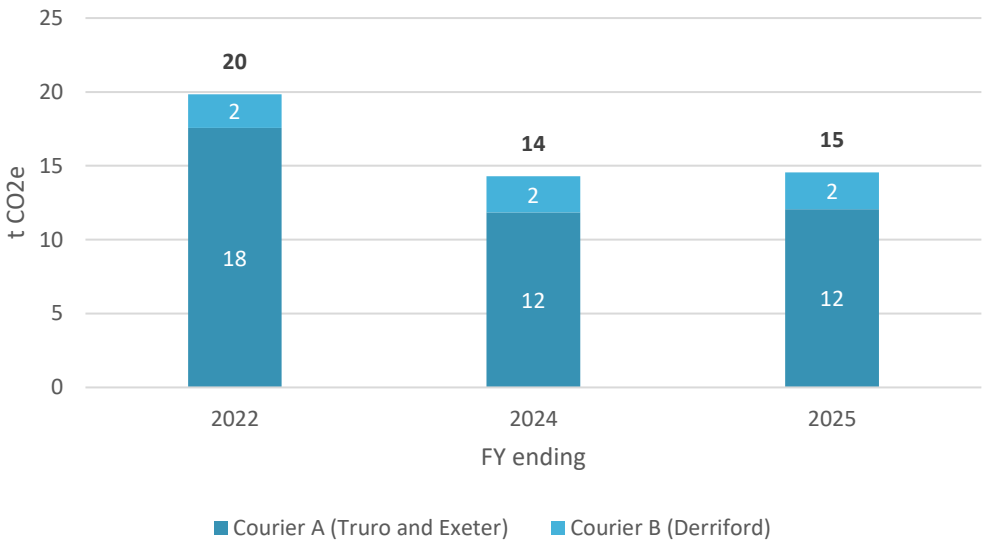
- This year's data collection was more reliable and less reliant on assumptions regarding employee mileage and contracted weeks, compared to previous years.
- The data collection method has been refined this year to include important categories such as contracted weeks for a more accurate result. Therefore, this year will be the baseline for the following years to come.
- 84% of employee commuting was done by car (11% of car travel done by hybrid or electric) with the rest up to bus and a small portion to active travel.
- Approx 94% of commuting to work emissions were associated with car commuting in FY24-25.

Review of inter-site courier GHG emissions

Inter-site courier mileage



Inter-site courier emissions



Commentary on inter-site courier mileage

- Mileage on the inter-site courier was reduced significantly last year by adopting far more demand-responsive visits to Exeter and Truro.
- In August 2024, the service was reduced to just one visit per week – a third of that of during peak times and reducing mileage by around 400 miles per week.
- Mileage for both couriers has remained consistent with last year.

Commentary on emissions

- Both couriers use diesel vans to deliver the services at present, with an assumed real-world emissions intensity of around 0.44kg CO_2e per mile.
- Overall inter-site courier emissions are around 15 tonnes CO_2e – the majority of this sits with the courier service to Truro and Exeter. Despite being less frequent, the visits to these sites incur a higher mileage – one visit to Truro and one visit to Exeter incurs 200 miles (and around 90kg CO_2e)

Give me a sense of scale on this distance?

32,000 miles per year is equivalent to 1.3 x the circumference earth's equator

6. Procurement & construction

The procurement of goods and services represents the majority of PDSE's organisational GHG emissions. Although infrequent, construction and refurbishment activities are also associated with very high environmental impacts and so are included in this reporting section.

High level update on procurement and construction			
	[Obj.6a]	[Obj.6b]	[Obj.6c]
Environmental objective	Delivering on-going programme of supplier engagement, starting with suppliers understood to have highest GHG emissions of goods & services provided – working with each to reduce impacts of service delivery	Programme of consumables replacement (or removal) with those with lower associated environmental impacts	For newly conceived projects, BREAM 'Very Good' on relevant new build construction and 'SKA Gold' on relevant refurbishment works
Takeaway	This objective has proven challenging with many different components associated. Supplier collaboration is currently on-going and cannot be reported on this year.	Appraising the environmental merits of differing products has its challenges – the merits of a product at face value may not be backed up in material environmental value. These factors are being considered going forward.	No new projects initiated since objective established.
Overall takeaway	Procurement of goods and services (including construction) objective will be reviewed this year to algin with PDSE's current needs.		

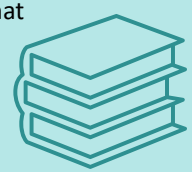
7. Education

Through its contact with the UoP's dental students, thousands of members of the community as well as direct interaction with hundreds of public health and industry stakeholders each year PDSE recognises its potential to realise significant positive environmental impacts through developing and disseminating learnings around sustainable dentistry.

High level update on education				
Environmental objective	[Obj.7a] Empowering PDSE employees to take Environmental Sustainability informed decisions in going about their work	[Obj.7b] Leveraging our learnings from our EMS to enrich the UoP's teaching of Sustainability in dentistry	[Obj.7c] Doubling the number of people engaged through our outreach work compared to 23-24 by 2030	[Obj.7d] Realise our potential to be a leader, facilitator and accelerant of the transition to Sustainable dentistry
Takeaway	Newsletters, social media and company away days are being utilised to educate staff, with more deliverables being carried out towards the end of the year and FY25-26.	This first-year sustainability curriculum has been developed and integrated into student learning as part of a module set to launch next year. Lectures, handbooks, and inductions have also played a significant role in enhancing student learning.	No update for FY 24-25 – outreach work planned for FY25-26	No update for FY 24-25 – collaborations currently in progress.
Overall takeaway	A key opportunity area for positive environmental impacts to be realised in the future. Momentum has been building, and preparation is already underway for FY25- 26.			

Sustainable education highlight:

This year PDSE has achieved a key milestone with the development and integration of sustainability curriculum into student learning. This represents the first time that sustainability has been formally embedded within the educational programme delivered to students. The curriculum is supported by structured teaching through lectures, handbook guidance and induction materials, ensuring that sustainability principles are consistently reinforced throughout the student journey. By embedding these practices at the outset of professional training, the organisation is contributing to the development of future dental professionals who are equipped to incorporate sustainable approaches within clinical practice.



This initiative represents a significant advancement in aligning educational delivery with the organisation's wider environmental and sustainability objectives. PDSE remains committed to continuous improvement in this area, with future plans focused on strengthening sustainability education, monitoring its impact, and further integrating environmental responsibility into both teaching and clinical practice.

8. Biodiversity

PDSE recognises the acuity of the ecological emergency faced globally. PDSE recognises it has a range of impacts (and potential impacts) on the ecological emergency and that many of its upstream and downstream impacts, are hard to appreciate fully at present. As well as upstream and downstream impacts (for example, as are incurred through the procurement of a particular product or service) PDSE also has a range of direct and local impacts - for example, how PDSE looks after and manages the greenspaces at its facilities.

As PDSE's agency to both understand its impacts and act to improve impacts is greatest on our immediate estate, it represents the focus of our associated objectives at present. Where opportunities are identified to reduce upstream (and downstream) impacts on biodiversity and ecological abundance, then PDSE will integrate these and act on them accordingly.

High level update on biodiversity		
Environmental objective	[Obj.8a] Champion ecologically considerate grounds maintenance practices at our sites	[Obj.8b] Create new (or expand existing) ecologically rich habitats at each of our sites by 2030
Takeaway	The grounds contractor was instructed to set aside 850m^2 of grassed areas from mowing for three months (May to August) this year - to improve the areas' ecological value.	
Overall takeaway	Further areas to be improved and more ambitious opportunities to develop in the coming years, as per the EAP.	

One month of no mowing saw a range of wildflowers and insects return to areas of PDSE's estate (June 2025)

9. Ethical investment & banking

Indirect environmental impacts associated with investment and banking services are typically very significant[7]. As an organisation with cash reserves and which, like most, facilitates the investment of money in pension services on behalf of its employees, PDSE recognises its responsibility to be mindful of the impacts of how and where it places its money.

GHG impacts associated to PDSE's use of financial services have not been reported on for FY 24-25 owing to a lack of clarity on best practice for accounting methodology – impacts will be reported on when methodologies develop and the transparency of the impacts of financial services improves.

	High level update on ethical investment and banking
Environmental objective	[Obj.9a] Banks and any investment funds used to achieve MSCI/Sustainalytics rating of 'BBB' (minimum) by FY 26-27.
Takeaway	This is a very recently established objective, with actions around it set to commence in FY 24-25.

[7] See 'The Global Emissions of the UK Financial Sector' – published by WWF and Green Peace in 2021 for more information around the environmental impacts of financial services.

Predicted progress to scope 1 & 2 emissions targets

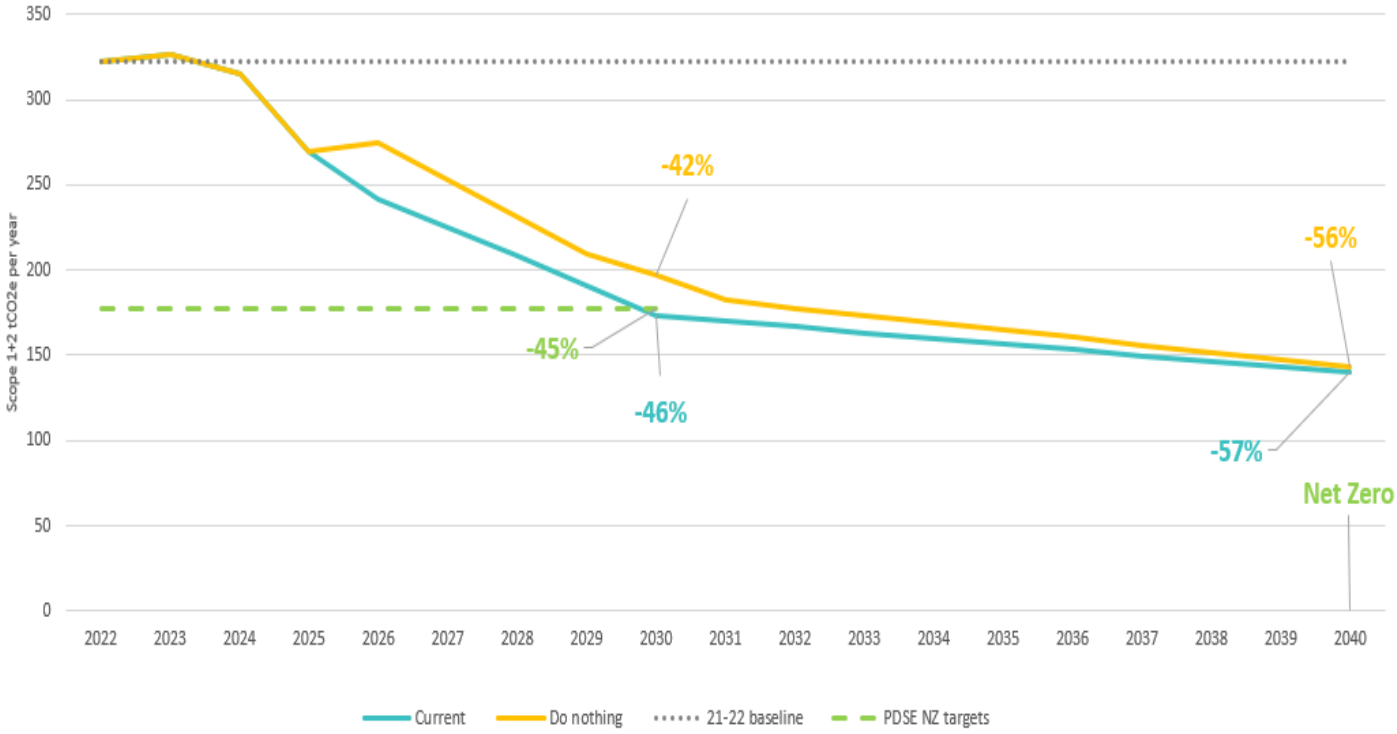
An overview of PDSE's GHG emissions targets for scope 1 & 2

PDSE have compiled this graph to get a glance at our carbon footprint and predictive progress to our scope 1 & 2 environmental objectives, which are the following:

1. Achieving Net Zero in Scope 1 and 2 emissions by 2040 (location-based reporting)
2. An interim reduction in Scope 1 and 2 emissions of 45% by FY29-30 compared to FY21-22

The graph shows where we are in 2025, and using data from the environmental report, we can see where we have been over the past few years (FY 21-22 to FY 24-25). It considers all our site activities and the predicted impacts for our new practice opening in 2026. The projected emissions pathway indicates that, based on our current decarbonisation projects and the anticipated reduction in grid carbon intensity under the UK Government's Clean Power 2030 Action Plan, we are on track to meet our 2030 emissions target.

Continued progress will depend on the successful delivery of planned projects and wider changes in the UK energy system. Looking even further into the future, PDSE recognises that significant planning & strategies will need to be developed to reach our 2040 Net Zero target. Actual results may vary depending on future energy and operational developments. These projections present assumptions and will be reviewed as external conditions evolve. See the table below for a brief breakdown of categories.



Predictive Carbon Forecast for Scope 1 & 2 emissions by year to 2040 by ambition pathway

Breakdown of graph categories:

Bottom axis titles	Detail
Current	What PDSE are currently doing – Solar projects, LEDs and BMS optimisation – all projects expected to be completed by 2030
Do nothing	If PDSE did nothing to improve GHG emissions
FY 21-22 baseline	Baseline established for FY21-22 used as the start point and comparison for other goals
PDSE NZ targets	-45% = An interim reduction in Scope 1 and 2 emissions of 45% by FY29-30 compared to FY21-22 Net Zero = Achieving Net Zero in Scope 1 and 2 emissions by 2040 (location-based reporting)

Peninsula Dental
Social Enterprise

Thank you for your interest

For any questions or queries, please contact
pdse-info@plymouth.ac.uk

Further information available at
peninsuladental.org.uk/sustainability