Dynamic Earth

Net Zero Report / Action Plan 2026

Dynamic Earth

Date: 25/11/26

TOTAL EMISSIONS	NET ZERO BY
639 tCO2e	2045

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Introduction

Dynamic Earth is Edinburgh's Science Centre and Planetarium, telling the epic story of planet earth *From Beginning to Mend*.

The iconic Dynamic Earth building, in the shadow of the notable geology of Arthur's Seat, was completed in 1999. It comprises a large open-plan atrium and welcome space, and two floors of interactive gallery experiences. This includes a gift-shop, café, planetarium, learning spaces and underground car park. We are also a contemporary events venue, able to host a large variety of events from small meetings to gala dinners and weddings.

Our journey towards Net Zero has already begun but there is much work still to do. As a Science Centre, we are well aware of the need to rapidly transition away from the use of fossil fuels. The age of our building and 'tent-like' roof design present particular challenges in this regard. In 2021, we made the SME Climate Commitment to reduce our emissions.

To help us meet these challenges, our Green Committee was re-formed in October 2024. The Committee's role is to, as accurately as possible, determine our carbon footprint, provide an achievable action plan and produce a policy framework that will allow us to achieve our stated goals and commitments.

Vision

FOREWORD

Our vision is to actively seek to reduce and ultimately eliminate our carbon footprint by embedding sustainability at the heart of everything we do. We are dedicated to engaging all stakeholders in this journey and aim to empower all to take meaningful action for the planet, ensuring that the story of Earth continues to be one of regeneration, balance, and hope.

Dynamic Earth has a particular focus on Earth and space science. As such, there is an additional pressure on us, not only to meet the challenges of the day but to be boldly leading the way. There is no time to lose.

Summary

NET ZERO

Our commitment is twofold. First, to reach 50% of our FY 2019-2020 Scope 1 & 2 emissions by 2030. This is in line with our commitment to the SME Climate Hub and also within the target set by the SBTI for SMEs. Second, to reach Net Zero by 2045. We will also seek to minimise our Scope 3 emissions wherever possible. Our strategy follows the principles of the Greenhouse Gas Protocol.

Our baseline Scope 1 & 2 emissions were calculated as 750 tCO_2e for FY 2019-2020 and our 2025-2026 footprint is 639 tCO_2e. This includes Scope 1, Scope 2 and what is reasonable/relevant of Scope 3.

In FY 2025-2026 our Scope 1 emissions accounted for 42%, Scope 2 accounted for 31% and Scope 3 accounted for 26% of the total.



Our net zero lead is **Dr Alastair Bruce,** Planetarium Manager and Chair of our Sustainability Committee. This strategy document will be updated yearly to reflect the action and progress made.

Emissions Boundary and Errata

Emissions Boundary for FY 2025-2026 Carbon Footprint

Our operational boundary has been created in line with the principles of the Greenhouse Gas Protocol. We have included Scope 1 and 2 emission sources and have chosen what is “reasonable” and “relevant” from Scope 3.

Our boundary will be reviewed and reset in year **2027** to include more emission sources. This is explored more in the ‘Action’ section of this document.

Errata for FY 2024-2025 Reporting

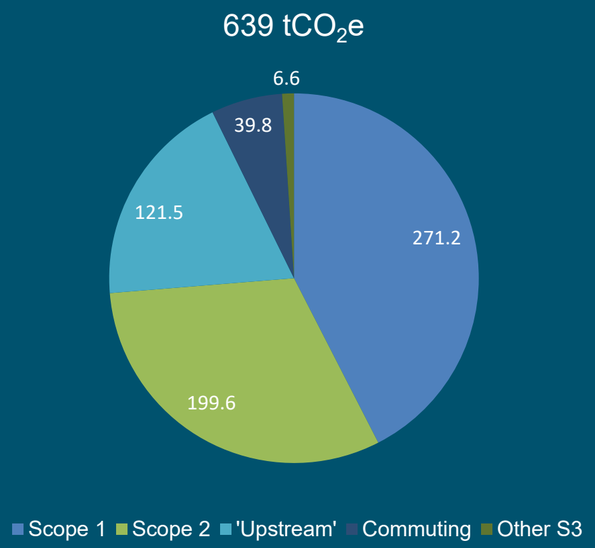
Our chosen carbon calculator, Ecometrica, was missing some calculations, particularly for Scope 3, when producing the report upon which our FY 2024-2025 was based. The calculations have since been updated and will be used in future reporting. The updated figures are below.

In FY 2024-2025 our Scope 1, 2 & 3 emissions were: 284.9, 202.3 and 124.8 tCO_2e respectively.
We had previously reported these to be: 284.9, 195.1 and 63.0 tCO_2e.

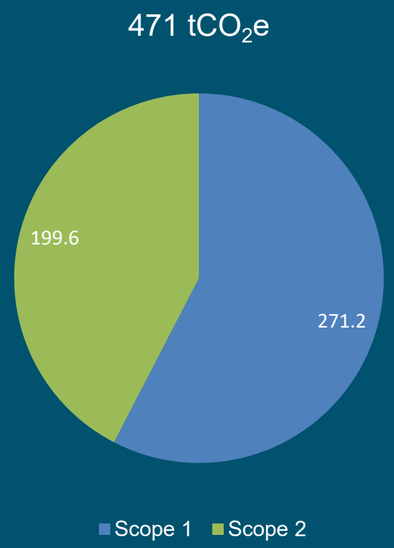
APPLICABLE AND INCLUDED	NOT INCLUDED
Scope 1 – natural gas *(actual consumption)*	Scope 3 – visitor travel *(Insufficient data available)*
Scope 1 – refrigerant losses *(estimate based on reports)*	Scope 3 - upstream emissions due to purchased goods/services *(further research required, staff time availability)*
Scope 1 - fleet, equipment *(actual & estimates)*	Scope 3 – downstream emissions due to gift shop products *(further research required, staff time availability)*
Scope 2 – electricity *(actual consumption, green certified)*	Scope 3 – pensions, banking *(further research required, staff time availability)*
Scope 3 – waste & recycling *(actual based on waste/recycling reports)*	
Scope 3 – business travel *(estimates based on distance/method of travel/cost)*	
Scope 3 – water consumption *(actual based on meter readings)*	NOT RELEVANT (e.g. emission sources that do not exist in your organization)
Scope 3 – commuting, home working *(estimate based on staff travel survey)*	

Carbon footprint FY 2025-2026

Footprint(s) constructed using Ecometrica



Total footprint



Scope 1 and 2

The footprint shows that natural gas consumption constitutes the highest portion of our carbon footprint at 42% with electricity consumption (31%) and upstream / T&D losses (19%) representing the two next largest contributors.

These numbers are location-based, though it should be noted that we have a green electricity certificate for this period.

Scope 1 and 2: ***471*** tCO_2e

Overall Footprint: ***639*** tCO_2e

By metric Carbon Footprint: ***5.6*** tCO_2e per ***staff member***

Net Zero Targets

To reach Net Zero by 2045 we have to set several nearer-term targets.

LONG-TERM TARGET:

Net Zero by 2045

SHORT-TERM TARGET:

50% reduction in emissions by 2030 (Scope 1 & 2) relative to FY 2019-2020

YEARLY REDUCTION TARGET:

An absolute total reduction of at least 20 tCO_2e, with a targeted 4% reduction in electricity & gas consumption

Carbon Reduction Action

Our 2019-2020 baseline indicates our Scope 1 & 2 emissions are 750 tCO_2e. Our 2025-2026 footprint indicates our Scope 1 & 2 emissions are 471 tCO_2e. To reduce our Scope 1 & 2 emissions by 50% relative to 2019-2020, we need to reduce our emissions by a further 96 tCO2e by 2030.

The 2025-2026 footprint shows that natural gas consumption constitutes the highest portion of our carbon footprint at 42% with electricity consumption (31%) and upstream / T&D losses for Scope 1 & 2 (17%) representing the two next largest contributors.

We have segmented our actions into 4 main categories. They cover:

- **Scope 1** Natural gas
- **Scope 2** Electricity
- **Scope 3** Waste & Recycling
- **Scope 3** Travel & Policy

OVERVIEW OF PLANNED ACTIONS AND OUTCOMES:

- Building heating / survey review
- Install lighting motion detectors
- Applied for funding for heat pump feasibility project
- Applied for funding for solar feasibility project
- Perimeter lighting survey / review

Previous Year Action Summary

Reduce absolute footprint by **20** tCO_2e – MISSED TARGET, actual reduction 18 tCO_2e

SCOPE 1:

Reduce natural gas consumption by **4%** from **1,550,240** kWh to **1,488,230** kWh – ACHIEVED, actual reduction 4.7%
Install draft excluders on top deck & ice gallery – PARTIALLY COMPLETED -- scope widened for more work in 2027
Removal of maintenance van -- COMPLETED

SCOPE 2:

Reduce electricity consumption by **4%** from **973,061** kWh to **934,139** kWh – MISSED TARGET, actual reduction 1.2%
Repair power factor correction equipment – COMPLETED
Obtain 30-min cadence utility data for review – COMPLETED
Gallery LED spotlight replacement begins – IN PROGRESS, 10 spots replaced with LED equivalents, more to follow in 2027

SCOPE 3:

Conduct updated staff travel survey – COMPLETED
Install updated public/staff signage at bins – SLIGHT DELAY, eta Nov 2026
Staff training/awareness to maximise recyclables – 2 SESSIONS HELD
Explore salary sacrifice EV scheme – COMPLETED
Low-flow taps installed wherever possible – COMPLETED
Cistern ballast to minimise water losses – COMPLETED
Increase sustainable transport fraction (commuting) from **74%** to **80% --** MISSED TARGET, actual 69% (low survey response rate)

Year 2
Carbon Reduction Action Plans

SCOPE 1: NATURAL GAS

Target: Reduce natural gas consumption by **4%** from **1,476,636** kWh to **1,417,570** kWh.

ACTION	DEADLINE	WHO IS RESPONSIBLE?
BMS optimisation (timings, temp set-points etc.)	Ongoing	Building Services
Conduct building heating survey/review	September 2027	Building Services
Complete installation/repair of draft excluders	September 2027	Building Services
Conduct heat pump feasibility study	September 2027 (pending funding application)	Building Services
Install power meter on iceberg chiller	December 2027	Building Services
Install new utility meter(s)	December 2027	Building Services

Year 2
Carbon Reduction Action Plans

SCOPE 2: ELECTRICITY

Target: Reduce electricity consumption by **4%** from **961,332** kWh to **922,878** kWh.

ACTION	DEADLINE	WHO IS RESPONSIBLE?
BMS optimisation (timings, temp. set-points etc.)	Ongoing	Building Services
Conduct perimeter lighting survey / review	September 2027	Building Services
Increase LED fraction to 90%	September 2027	Building Services / Technical Team
Install lighting motion sensors in key staff areas	September 2027	Building Services
Conduct solar feasibility study	September 2027 (pending funding application)	Building Services
Install new utility meter(s)	December 2027	Building Services

Year 2
Carbon Reduction Action Plans

SCOPE 3: WASTE & RECYCLING

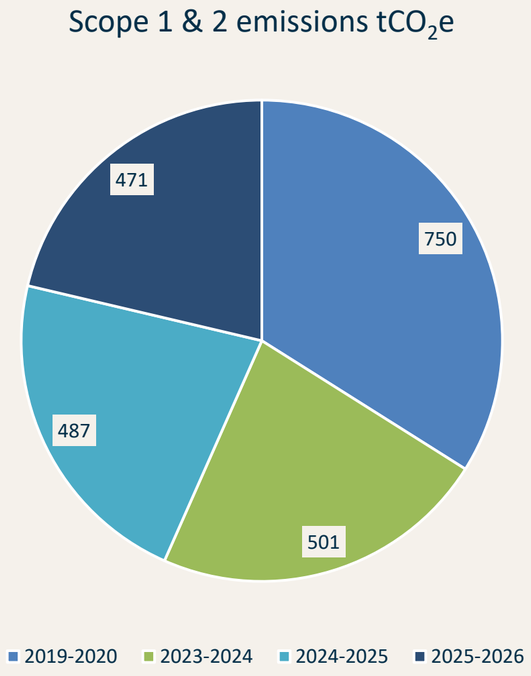
ACTION	DEADLINE	WHO IS RESPONSIBLE?
Reduce recycling bag contamination	September 2027	Green Committee
Install updated public/staff signage at bins	October 2026	Green Committee
Switch to paperless car parking system	September 2027	Building Services

Year 2
Carbon Reduction Action Plans

SCOPE 3: TRAVEL & POLICY

ACTION	DEADLINE	WHO IS RESPONSIBLE?
Produce first draft of sustainability policy	December 2027	Green Committee
Conduct updated staff travel survey (target: min. 50% response rate)	April 2027	Green Committee
Conduct visitor travel survey	April 2027	Green Committee
Review Scope 3 boundary for 27-28	April 2027	Green Committee

Progress to Date



1st key win

- Gas consumption down 4.7% on last year; 77% of 2019-2020 levels

2nd key win

- Electricity consumption down 1.2% on last year; 57% of 2019-2020 levels

3rd key win

- Water consumption decreased by 396 m^3 on last year

Longer Term Action Timeline

ACTION	DATE
Workable timeline in place for complete phase-out of gas boiler use	December 2027
Workable timeline in place for complete roof redesign/refurbishment	December 2027
Increase internal LED lighting fraction to ~95%	2028
Widen scope 3 coverage to include estimates for purchased goods & services and visitor travel (boundary/target review)	2028
Secure EV alternative for diesel Learning Van	2028

Wider sustainability initiatives

Premises:

Refrigeration survey/review completed – some older units replaced/recycled

New water meter(s) installed

3x new passenger lifts installed inc. wheelchair lift

Live plants added to key public spaces

Car park utilisation survey planned

Roof window seals due for repair late 2026

Strategic Sustainability Ambition: Dynamic Earth and the Holyrood Energy Island

Dynamic Earth's strategic plan - From Beginning to Mend - is an ambitious statement of intent for how we will enhance and transform our science centre and achieve environmental sustainability. Our transformation provides a once-in-a-generation opportunity to position environmental sustainability, energy resilience and carbon reduction at the heart of both our organisation and the wider Holyrood landscape. Through the redevelopment of our building, we will seek to deliver substantial improvements in energy performance through enhanced insulation, glazing, airtightness and building systems, while exploring opportunities to integrate renewable energy generation, including solar and potentially wind technologies.

Beyond our own estate, we will investigate the creation of a Holyrood Local Heat and Energy Network, bringing together the assets of Dynamic Earth, Holyrood Park, Parliament and Palace within a collaborative low-carbon energy ecosystem. Through shared heat generation, renewable electricity, energy storage and intelligent energy management, this could evolve into a Holyrood Energy Island: an increasingly self-sufficient district capable of generating, storing and sharing its own low-carbon energy.

This ambition would deliver multiple long-term benefits, including reduced carbon emissions, increased energy security, lower exposure to future energy price volatility and a visible demonstration of the power of collective action. As the UK's only dedicated Earth science centre, Dynamic Earth has a unique opportunity not only to interpret the science of planetary sustainability but to become a living example of it.

Declaration

This Carbon Reduction Plan has been reviewed and signed off by the Chief Executive and Senior Leadership Team.

Name: Gwilym Gibbons CEO

Date: 25/11/26

Signature:



Close and thank you

Special thanks to the Dynamic Earth Green Committee and the Leadership, Finance, Technical and Maintenance Teams for their invaluable contributions. We are also extremely grateful to the Edinburgh Climate Change Institute and the team at Ecometrica for their guidance, support and collaboration in the preparation of this report.

Dynamic Earth Charitable Trust (known as Dynamic Earth) is a registered Scottish Charity, SC020363, regulated by the Scottish Charity Regulator (OSCR).

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