Has Your Strategy Performed And Transformed?

HES Experience Of Design, Development And Implementation

Dr Mairi H Davies

Climate Change Manager

- **Historic Environment Scotland** is the lead public body for Scotland's historic environment.

- Our mission is to **protect**, **conserve** and **manage** the historic environment for the enjoyment, enrichment and benefit of everyone.

- We have in our direct care over **300 properties** of national and international importance.

- Around **176** energy consuming sites (Electricity, Gas, LPG, Burning Oil, etc.).

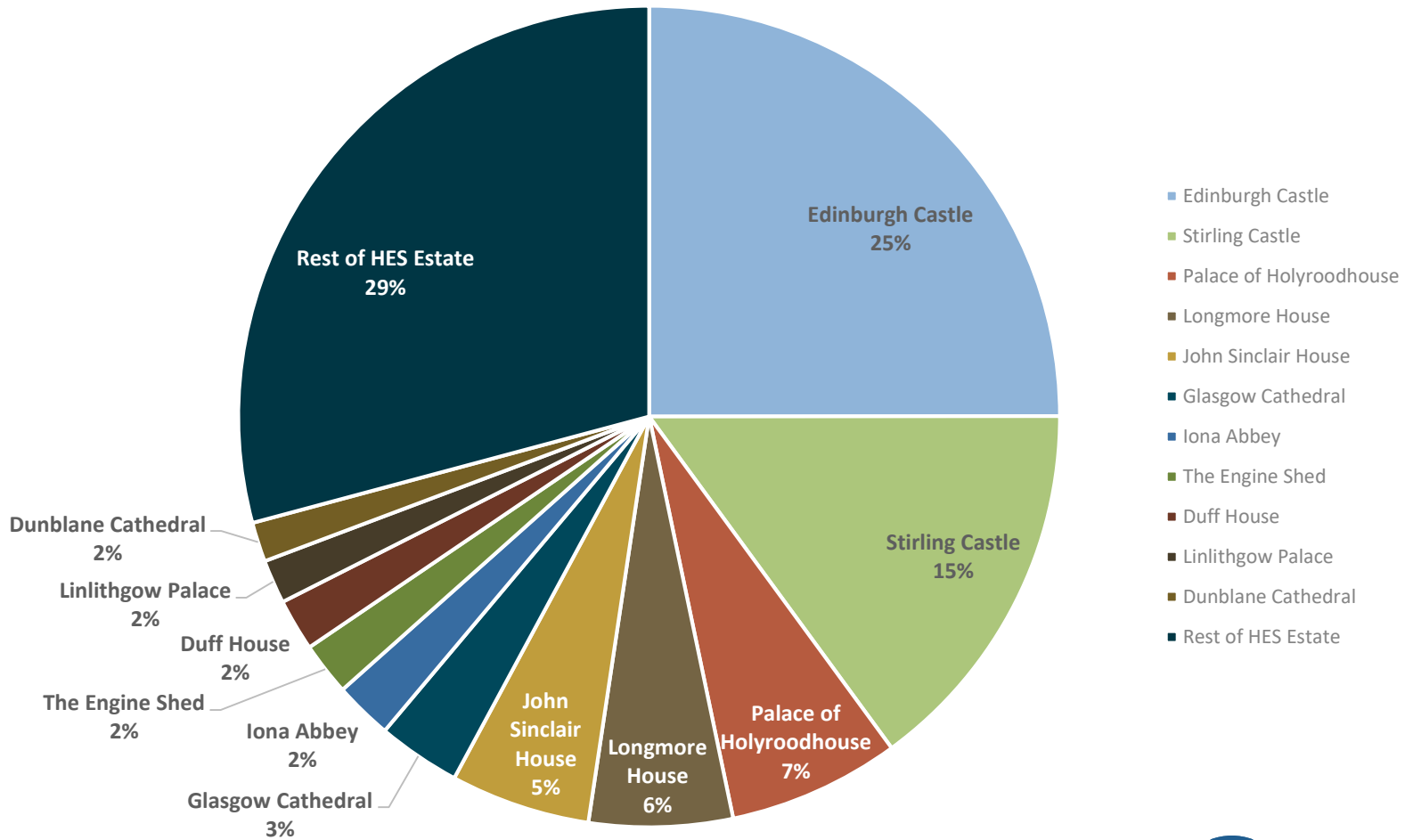- Diverse and complex estate: Building ages, types, uses, ownerships, etc.
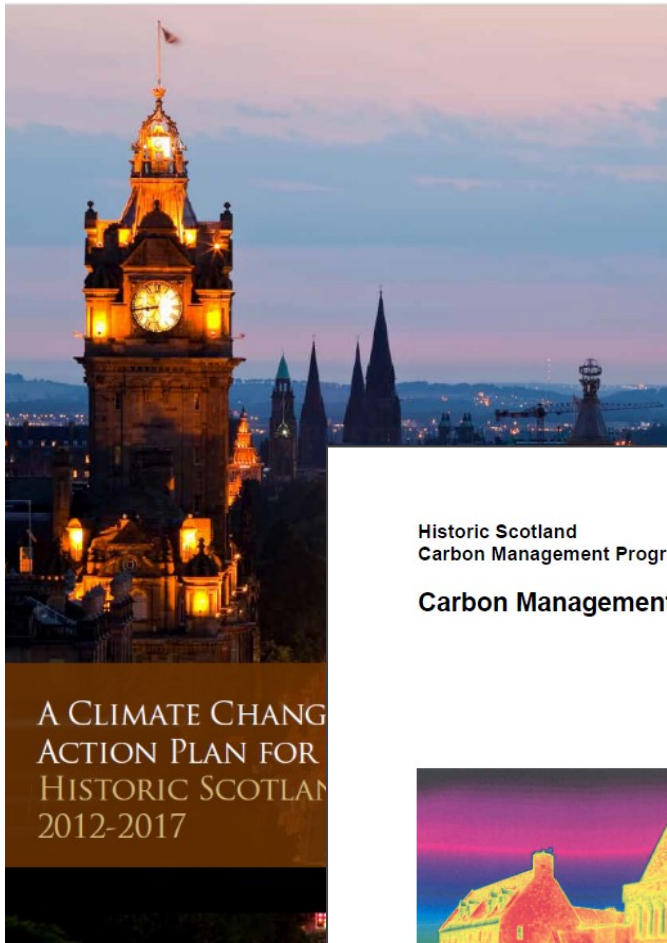
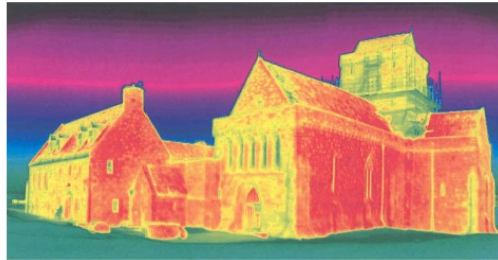HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA

REDUCING ENERGY AND EMISSIONS
BUILDINGS - % OF ENERGY RELATED GHG
ACROSS HES ESTATE

Pie chart legend:
- Edinburgh Castle
- Stirling Castle
- Palace of Holyroodhouse
- Longmore House
- John Sinclair House
- Glasgow Cathedral
- Iona Abbey
- The Engine Shed
- Duff House
- Linlithgow Palace
- Dunblane Cathedral
- Rest of HES Estate

Pie chart data labels:
- Edinburgh Castle 25%
- Stirling Castle 15%
- Palace of Holyroodhouse 7%
- Longmore House 6%
- John Sinclair House 5%
- Glasgow Cathedral 3%
- Iona Abbey 2%
- The Engine Shed 2%
- Duff House 2%
- Linlithgow Palace 2%
- Dunblane Cathedral 2%
- Rest of HES Estate 29%

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Historic Scotland CMP 2011-2015:

- Ambitious target of 25% emissions reduction by 2015 (from 2008/09 baseline levels)
- Each year measured as reduction directly against baseline
- Final year (2015/16) was 17% (would have been 21% but for changes to electricity carbon metric). Also impacted by increasing HES estate.
- Major early challenges: accurate measuring, monitoring and reporting; installation of AMR; poor systems for corporate travel and waste data.
- Subsequent challenges: lack of investment and corporate focus.
- Numerous successful "invest to save" projects –initially targeted to highest-using sites
- External Review of CMP by Urban Foresight in 2015.

Historic Scotland
Carbon Management Programme

Carbon Management Plan

May 2011

A CLIMATE CHANG
ACTION PLAN FOR
HISTORIC SCOTLAN
2012-2017

HISTORIC
ENVIRONMENT
SCOTLAND

ÀRAINNEACHD
EACHDRAIDHEIL
ALBA

OUR APPROACH TO CARBON MANAGEMENT

CARBON HIERARCHY – HOW WE DELIVER REDUCTIONS

Approach: 'maximum benefit with minimum cost and complexity.'

1 Reduce energy consumption
Measuring & monitoring; automated metering; staff training & behaviour change; systems controls etc.

2 Retrofit buildings to improve energy efficiency
Insulation, improved lighting & heating, secondary glazing, draught proofing etc.

3 Diversify energy supply
Install renewables at appropriate sites.

4 Organisational change
Policy & operations e.g. procurement, property management & construction.

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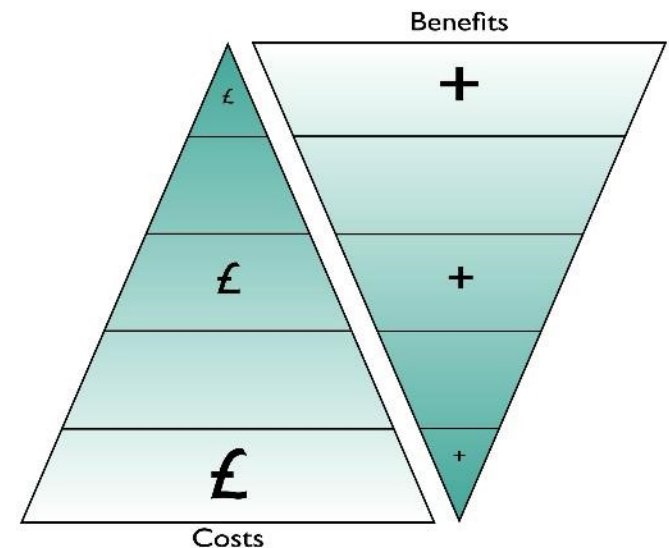
Successful Energy Reduction Measures

People & Behaviour:

• Climate Change Awareness Training for staff

• Green Champions Network

• Staff good practice –closing doors, turning down radiators etc.

• Energy Focus Groups from 2011 giving dialogue between HS and other occupants

• Regular reporting and feedback, including identification of areas for further improvement.

Fabric & Systems:

• Heating systems and controls (replacement of gas boilers to condensing type; Building Management System (BMS) upgrades etc)

• Installation of variable speed drives to heating pumps (VSD's)

• PIR lighting controls

• Insulation and draught-proofing

• Lagging of heating distribution pipework

• Relamping to LED (incl. floodlights)

• Heat recovery systems

Historic Environment Scotland (HES) Carbon Management Review

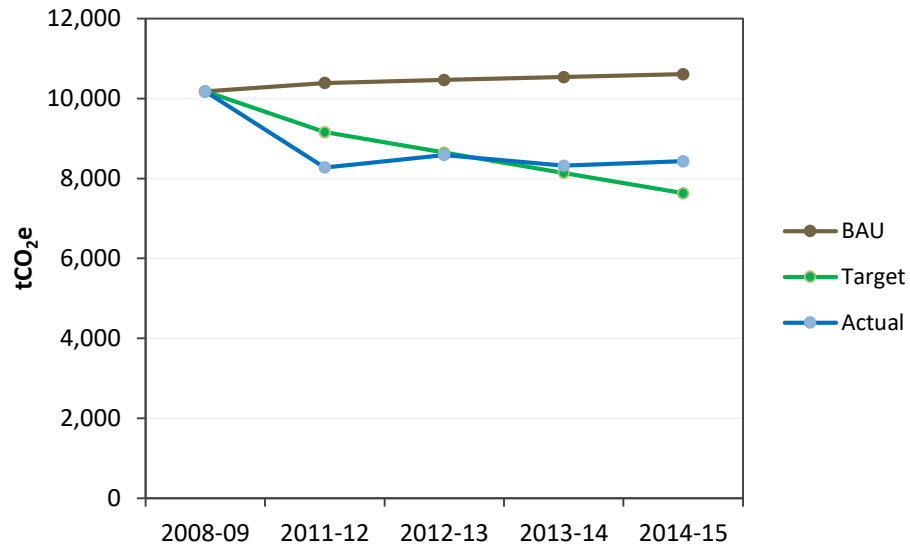Prepared for Historic Environment Scotland

RESOURCE EFFICIENT SCOTLAND

Growth that doesn't cost the earth

A programme from ZERO WASTE SCOTLAND

natural scotland
SCOTTISH GOVERNMENT

Actual annual carbon emissions against target and business as usual

Annual projected investment versus actual investment (cumulative). Loss of investment in years 2013-14 and 2014-15 was due to budget cuts.
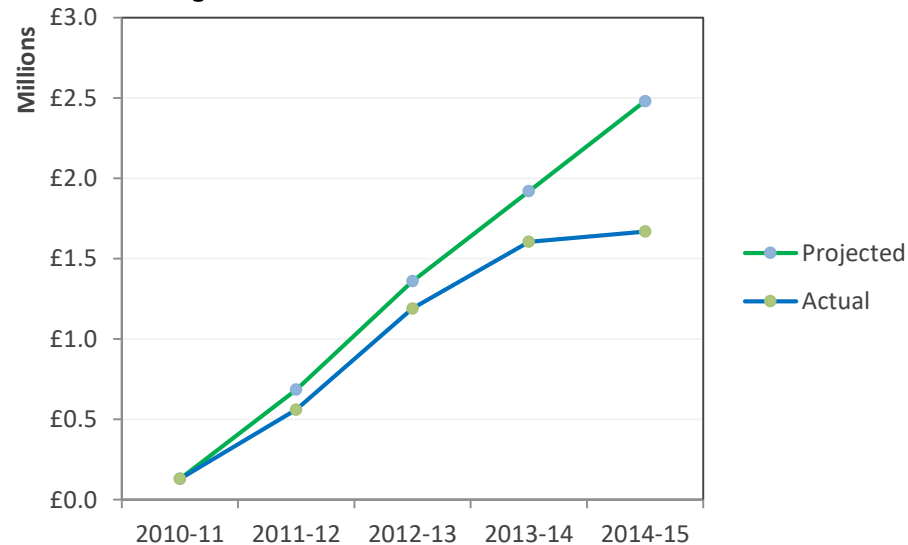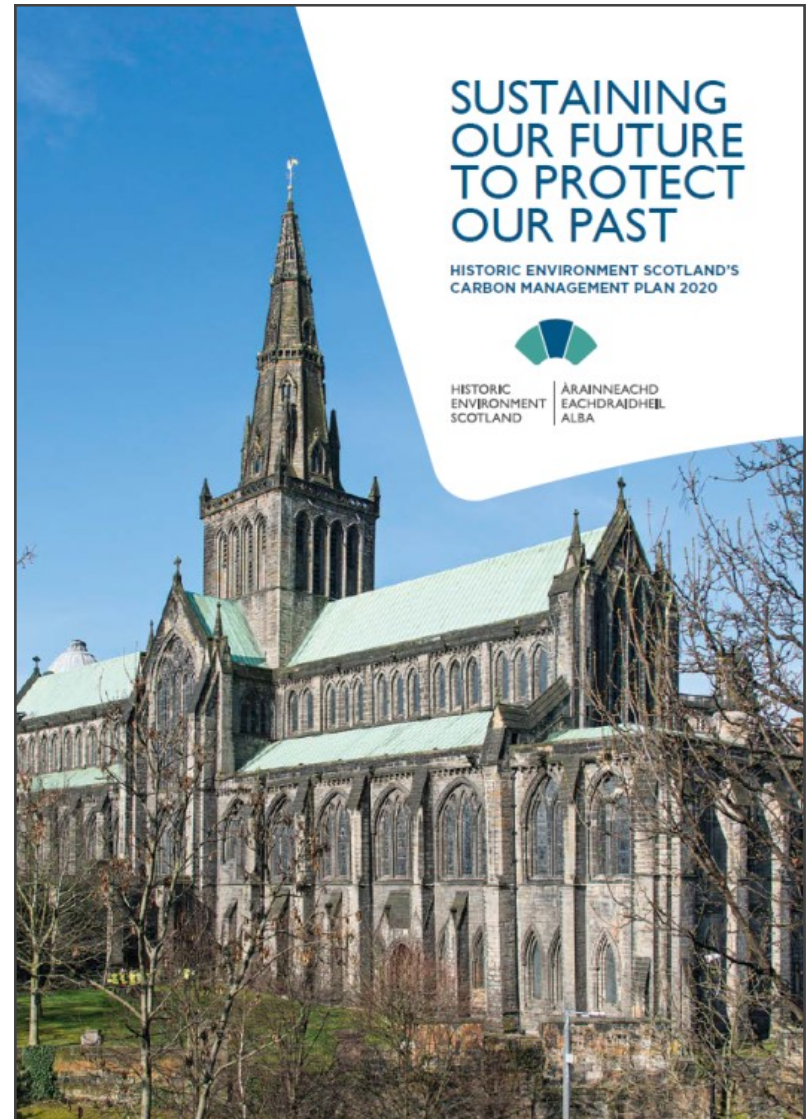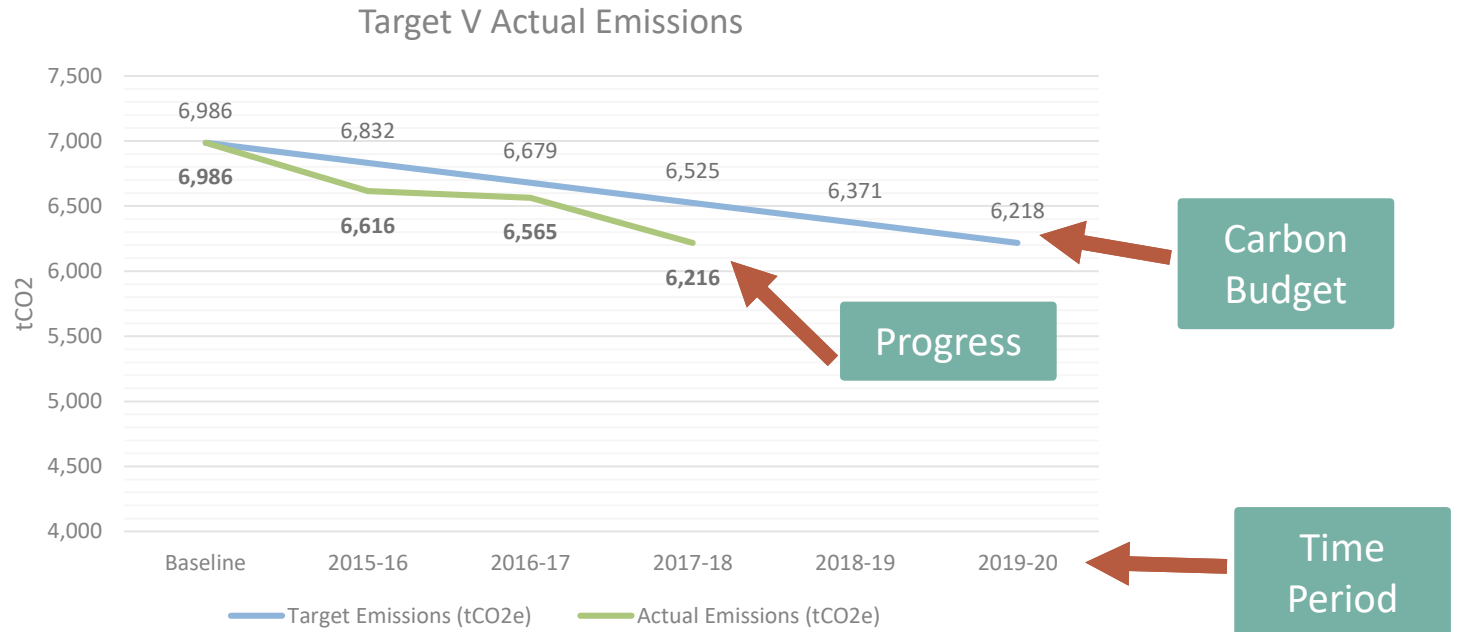
CARBON MANAGEMENT PLAN 2020

KEY POINTS

- New approach to align us better with SG targets and provide long term focus: series of 5 year periods each of which is allocated a specific carbon budget.

- Requires progressive decrease in emissions of 2.2-2.4% each year, and giving an overall reduction of 11% for the period 2015-2020.

- Requires ongoing actions across our activities (energy, travel and waste); in effect 'continuous improvement', in order to improve efficiencies.

- Legal requirement that we report on progress through annual Public Bodies Climate Change Report, published as our Sustainability Report alongside HES Annual Report and Accounts.

- Challenging target requiring integration of carbon reduction into our everyday operations as a normal part of our business.

HES Corporate Plan: KPI 9 "*reduce our carbon emissions against our baseline year in line with our published Carbon Management Plan*"

SUSTAINING OUR FUTURE TO PROTECT OUR PAST

HISTORIC ENVIRONMENT SCOTLAND'S CARBON MANAGEMENT PLAN 2020

HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA

SUMMARY OF PROGRESS

PERIOD 1: HES OVERALL EMISSIONS TO DATE

Target V Actual Emissions

Period 1				
Financial Year	Target Emissions BUDGET (tCO2e)	Actual Emissions (tCO2e)	Change (%)	Difference (tCO2e)
Baseline	6,986	6,986	-	-
2015-16	6,832	6,616	-5.3%	-216
2016-17	6,679	6,565	-3.9%	-114
2017-18	**6,525**	**6,216**	**-5.3%**	**-309**
2018-19	6,371	-	-	-
2019-20	6,218	-	-	-

Time Period

Carbon Budget

Progress

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SUMMARY OF PROGRESS
HES: ANNUAL EMISSIONS

Annual Carbon Performance

Baseline

6,986 tCO2 6,616 tCO2 6,565 tCO2 6,216 tCO2

Water
Business travel
Waste
Energy

2014-15   2015-16   2016-17   2017-18

tCO$_2$e

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HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA
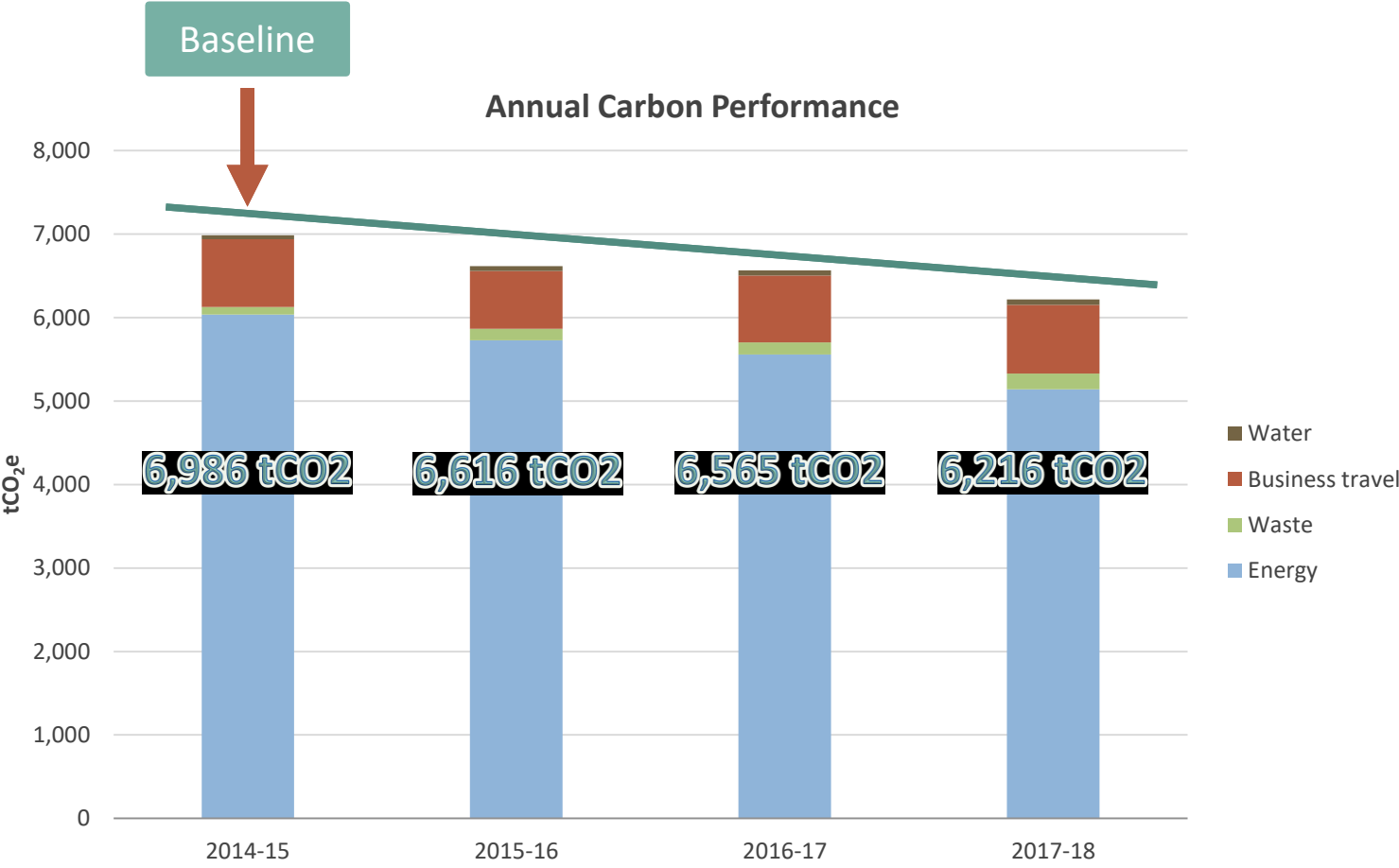
EDINBURGH CASTLE SUPPORTS CLIMATE WEEK 2018

Scottish Charity No. SC045925

1

We've invested approximately

£481,907
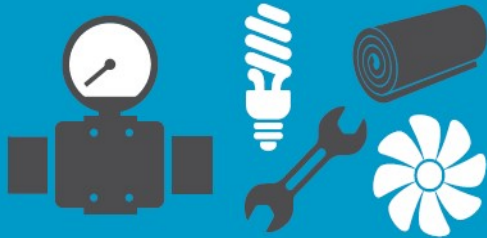
in upgrades and improvements

2

We've reduced our

Energy use ⬇ 30%

Emissions ⬇ 40%
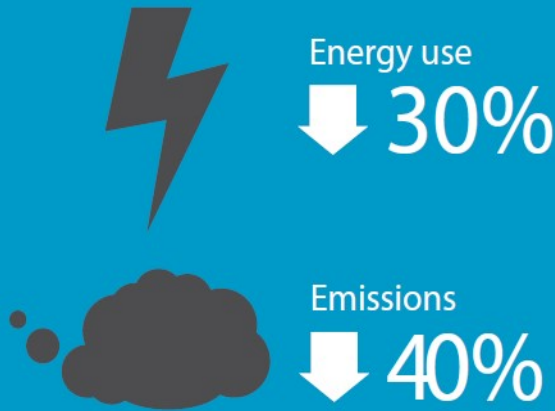
3

We've a cumulative energy saving of

£782,357

Resulting in a payback of approximately 5 years and a continued saving of

£300,450

ANNUAL REPORTING
ACCOUNTABILITY AND BUY-IN FROM SMT

KPI 9 "reduce our carbon emissions against our baseline year in line with our published Carbon Management Plan"

KPI 5 "Increasingly lead the sector in climate change action"
What success will look like:
• Reduced our own greenhouse gas emissions and evidence of reducing emissions in the wider historic environment sector

CARBON MANAGEMENT PLAN 2020
ACTIONS TO DRIVE PROGRESS

- New Carbon Management Governance Group to be chaired by Chief Executive

- Ensure progress on carbon targets is reported at Executive level (e.g. financial reporting to SMT)

- Carbon reduction to be included in Directorate Plans to encourage responsibility across the business

- Move towards integration of carbon and financial budget allocations across operational areas (devolving carbon budgets to individual business areas to improve accountability (e.g. travel data, taxi use) and explore moving towards devolving responsibility to business areas in the future.

- Further improvements to monitoring/measuring: Gas and Electricity AMRs (100% and 90%, but 40% of latter have no signal), signalling and utility company limitations (trying since 2010!), issues of estimated bills/retrospective validation.

- Increase and expand Energy Focus Groups to encompass other sites beyond the 'Top 8' energy users

- Empower and support Green Champions to take ownership and action

- Increase availability and engagement with Quarterly Energy Reports for sites and regions

- Further development of projected carbon/financial savings/paybacks for new projects (business cases)

- New projects; including renewables, district heating (wider benefits)

- Behavioural change: individual responsibility for our actions to drive change (lead by example)

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