

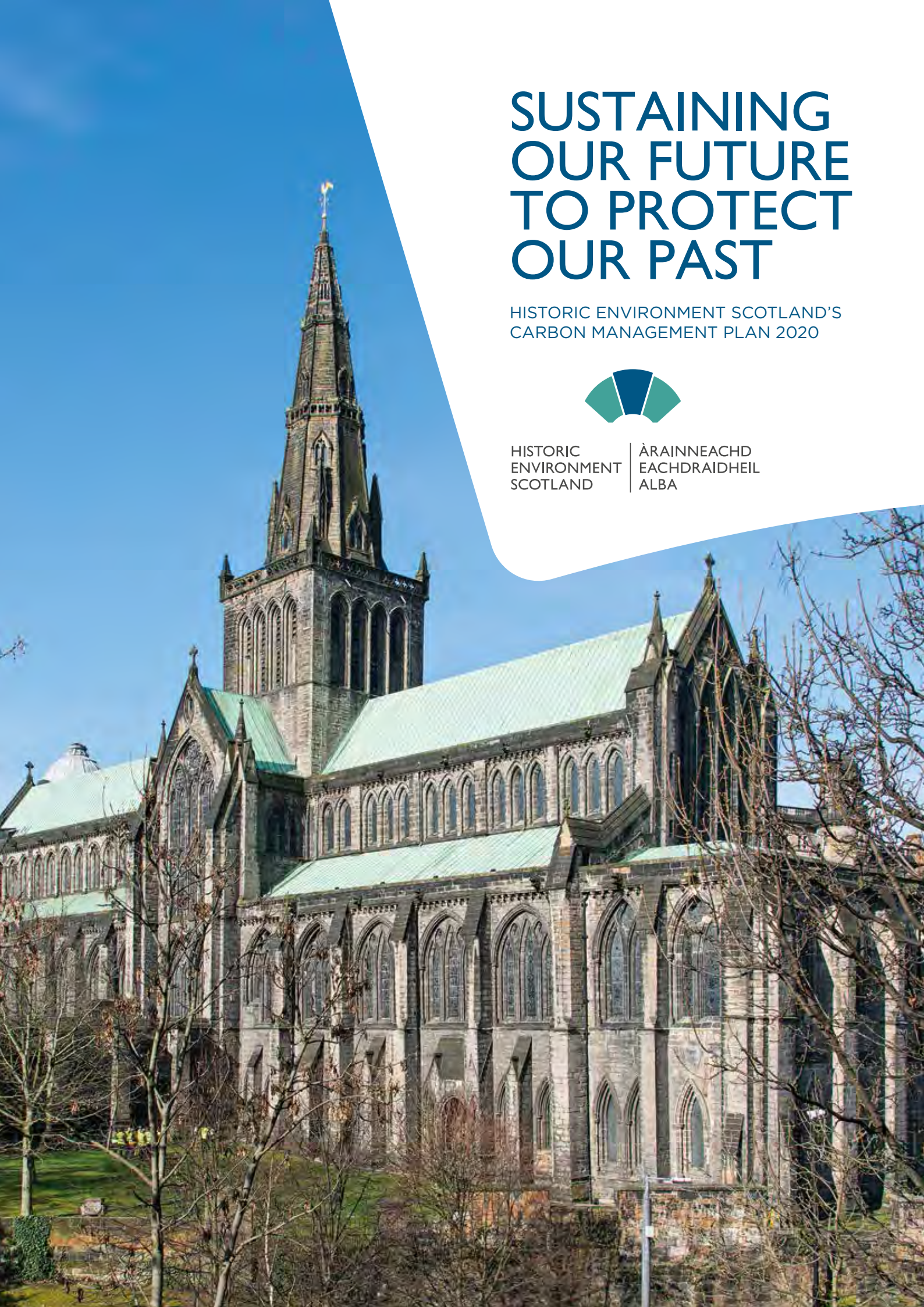
SUSTAINING OUR FUTURE TO PROTECT OUR PAST

HISTORIC ENVIRONMENT SCOTLAND'S
CARBON MANAGEMENT PLAN 2020



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SCOTLAND

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FOREWORD

This document sets out Historic Environment Scotland's intention to reduce greenhouse gas emissions through its operations in line with national targets to 2050

Our Carbon Management Plan takes an innovative approach to carbon management, focused through a series of five-year periods, each of which is allocated a specific carbon budget.

In practice, for the duration of this current plan, this requires a progressive decrease in carbon emissions of between 2.2 per cent and 2.4 per cent each year to 2020, leading to an overall 11 per cent reduction for the period 2015-2020.

This ambitious target requires a transformational change in the way we factor carbon into our business operations. As well as continuing to reduce energy use across our estate, we will decrease emissions through addressing areas of our operations such as travel and waste.

By integrating carbon management into our business planning processes, we will bring about increased efficiencies in areas such as procurement of goods and services and through our IT and HR systems, many of which can play a part in lowering emissions at source.

Carbon management is good for business – it has provided efficiencies and financial savings for us in the past, and it is based on the establishment of robust monitoring systems and transparency through regular public reporting.

The challenge now is to integrate a step change in the way we embed carbon management into our everyday operations so that it becomes a normal part of our business. In this way, we intend to play a leading role in demonstrating how emissions reduction can work hand in hand with developing our business, and to support the wider historic environment sector in playing its part in supporting national climate change targets and helping to ensure a sustainable future.

Progress on this plan will be reported publicly through our annual Public Bodies Climate Change Duties Report, and our Sustainability Report published alongside our Annual Report and Accounts.

Alex Paterson
Chief Executive

LIST OF DOCUMENTS REFERRED TO IN THE TEXT

SCOTTISH GOVERNMENT

- Climate Change (Scotland) Act 2009
- *Public Bodies Climate Change Duties: Putting them into practice 2011*
- Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Order 2015
- Scottish Government's RPP2 (*Low Carbon Scotland – Meeting our Emissions Reduction Targets 2013-2027*)
- Scottish Government's *Conserve and Save: Energy Efficiency Action Plan* (published 2010)
- *Climate Ready Scotland: Scottish Climate Change Adaptation Programme* (published 2014)

HISTORIC SCOTLAND AND HISTORIC ENVIRONMENT SCOTLAND

- *Historic Scotland Carbon Management Plan 2010-15*. Historic Scotland, May 2011
- *Historic Scotland Climate Change Action Plan 2012-17*. Historic Scotland, April 2012
- Historic Environment Scotland (HES) *Carbon Management Review. Urban Foresight/Resource Efficient Scotland*, Jan 2016
- *A review of Historic Scotland's Carbon Management Plan 2010-15*. Historic Environment Scotland, March 2016
- *For All Our Futures* (Historic Environment Scotland Corporate Plan 2016-19)
- Historic Environment Scotland *Sustainability Report 2015-16*

OTHER PUBLICATIONS

- *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* – World Resources Institute, 2013.
- *Greenhouse Gas Reporting: Conversion Factors* – Department for Business, Energy & Industrial Strategy (BEIS; formerly DECC), 2016.
- *Zero Waste Scotland's Carbon Footprint Forecast and Projects Tool* – Resource Efficient Scotland, 2015.

GLOSSARY

- **AMR** – automated meter reading ('smart meters' – utility meters that automatically transfer data to a central database)
- **Anthropogenic** – caused by human activity
- **Carbon footprint** – the total quantity of greenhouse gases produced to support an organisation or individual's activities, usually expressed in equivalent tonnes of carbon dioxide (tCO₂e).
- **CMP** – Carbon Management Plan
- **Fossil fuels** – a collective term for oil, gas and coal, which are formed by the decay of plants and animals over hundreds of millions of years
- **FY** – financial year
- **GHG** – greenhouse gas emissions, including carbon dioxide, methane, nitrous oxide, and ozone
- **HES** – Historic Environment Scotland
- **HS** – Historic Scotland
- **LED** – light emitting diode lamp, a type of energy-efficient light bulb
- **M&T** – monitoring and targeting
- **Mobile generation** – portable energy sources, such as diesel generators
- **NDPB** – non-departmental public body
- **NGO** – non-governmental organisation
- **PBCCD** – Public Bodies Climate Change Duties
- **RCAHMS** – the Royal Commission on the Ancient and Historical Monuments of Scotland
- **SG** – Scottish Government
- **tCO₂e** – tonnes of carbon dioxide equivalent
- **T&D** – transmission and delivery.

I. INTRODUCTION

1.1. OUR ORGANISATION

Historic Environment Scotland (HES) is a non-departmental public body (NDPB) of the Scottish Government and a registered charity. Our vision is that Scotland's historic environment is cherished, understood, shared and enjoyed with pride, by everyone. Our mission is:

- to enhance knowledge and understanding of Scotland's historic environment
- to protect, conserve and manage the historic environment for the enjoyment, enrichment and benefit of everyone – now, and in the future
- to share and celebrate our cultural heritage with the world.

Our operations are wide-ranging and geographically extensive. Spanning the length and breadth of Scotland, we employ about 1,088 staff (full-time equivalent) and manage 336 historic sites.

Our activities include the repair and maintenance of our properties, providing access and interpretation for visitors, retail and catering, functions and events, as well a range of support services such as human resources, information technology, training, finance and procurement. HES also has a wider, external-facing remit to support Scotland's historic environment including the built heritage, historic landscapes (including marine) and archaeology, through the designation of significant historic buildings, monuments and other sites, training and education, the provision of funding and grants, publications, consents, advice and guidance.

HES has a complex estate. It consists of a wide range of historic and traditionally constructed buildings as well as newer buildings, including castles, churches and cathedrals, cottages, visitor centres, shops, works depots, industrial units and offices. Our historic sites may be occupied or ruinous, and several are co-occupied by third-party organisations, such as the Ministry of Defence or the National War Museums of Scotland, and some properties are still active places of worship.

While most of our properties are connected to national utility networks (mains electricity and gas), a significant number are off-grid (e.g. remote or island properties) and some are heated using diesel oil and require generators for power. Due to significant gaps in the gas network, particularly in rural Scotland, only 32 of our sites are heated by mains gas.

Our corporate operations are wide and varied, reflected in activities such as travel and transport requirements which includes fleet vehicles and plant, vehicle rental, boat, ferry, rail and air travel.

1.2. OUR CLIMATE IS CHANGING

Since the Industrial Revolution, our planet has seen significant changes to its climate, understood to have been driven predominantly by anthropogenic (human-made) greenhouse gas (GHG) emissions.

These changes are indiscriminate – they do not recognise borders or discern between race, religion, culture, gender, age or wealth. Global temperatures are rising, as are sea levels, and we are now experiencing more frequent variable and intense weather events than ever before. These effects are having an impact on the provision of fresh water and food, energy consumption, human habitation, animal species survival, migration and land use. Importantly, climate change is not something that will just occur in the future; it is happening now.

In Scotland, we are already experiencing warmer, drier summers and milder, wetter winters and this pattern is set to continue and accelerate. As a direct result, we are seeing extended agricultural growing seasons, more frequent large-scale flooding, the spread of non-native species including pests and diseases, and the start of accelerated degradation of both our natural and built environments.

Tackling climate change occurs on two primary fronts – 'mitigation' and 'adaptation'. Mitigation is concerned with the reduction of anthropogenic GHG emissions (commonly referred to as carbon reduction) in order to reduce the primary source of

climate change, while adaptation is about ensuring that we are prepared for climate change impacts, many of which are already inevitable. This report is concerned with the former; our adaptation work is outlined in a number of other documents including the *Scottish Government's Scottish Climate Change Adaptation Programme*.

As an organisation with responsibility for the historic environment and, in particular, a large public sector estate, HES is already well aware of the direct impacts of climate change. For example, through increased precipitation and warmer weather, we are now experiencing increased organic growth and accelerated decay of many of our historic properties, and more frequent weather extremes are causing localised flooding, accelerated coastal erosion and damage to coastal sites and sea defences.

These impacts have a considerable cost, not only on financial budgets but, also their impact on our national cultural heritage. As a public body, we have a duty to minimise the impact of climate change and ensure that we as a nation can continue to benefit from our historic built environment for generations to come.

1.3. KEY DRIVERS AND CONTEXT

Our key drivers for mitigating our environmental impact and reducing GHG emissions are:

- Through the *Climate Change (Scotland) Act 2009* ("the Act"), the Scottish Government has set some of the world's most ambitious climate change targets; to reduce Scotland's national GHG emissions by 80 per cent by 2050, with an interim target of 42 per cent by 2020. In 2016, Scotland exceeded its

42 per cent interim target, with a new target of 50 per cent set to be achieved by 2020. Furthermore, in 2015 renewables generated 59.4 per cent of Scotland's electricity requirements, beating our national interim target of 50 per cent by 2020.

- In January 2017, the Scottish Government published its Draft Climate Change Plan: *The draft Third Report on Policies and Proposals 2017-2032* (RPP3) and Draft Scottish Energy Strategy: *The Future of Energy in Scotland*. The former document outlines the approach to meeting Scotland's annual greenhouse gas emissions targets over the next 15 years and sets out a new target of reducing greenhouse emissions by 66 per cent by 2032. This target is supported by a range of actions that include specific carbon targets for different sectors of society which include 100 per cent of electricity generated by renewables by 2032; 40 per cent of all new cars in Scotland to be ultra-low emission by 2032 and 80 per cent of domestic buildings' heat to be supplied by low carbon technologies by 2032.
- The Scottish Government has also developed *The Climate Change (Annual Targets) (Scotland) Order 2016* ("the Order"), which sets annual targets for each year in the period 2028-2032 in accordance with the Act. It is accepted that achieving these targets will require substantial changes across all areas of our society and economy. This statement sets out, in respect of the annual targets set by the Order, reasons for setting those targets at these levels.



- Scotland's public sector has a significant role to play in driving these changes both directly, through reductions in corporate GHG emissions, and indirectly in the influence it has over the sectors across which it operates. Through the Scottish Government's *Conserve and Save: Energy Efficiency Action Plan* (published 2010), HES (then Historic Scotland) is cited as having a leading role in "researching and promoting energy efficiency in traditional housing", specifically undertaking case study projects and disseminating findings to provide advice, skills and qualifications for public and professionals on energy efficiency improvement in traditional housing. This mandate, to directly contribute towards emissions reduction in the wider sector, plus our close links and influence to the sectors in which we operate (e.g. provision of guidance and training to homeowners, sector professionals and trade bodies), and our role as a provider of grant funding, provides us with an opportunity to ensure that the historic environment plays its part in ensuring a sustainable future.
- In 2011, the Scottish Government published *Public Bodies Climate Change Duties: Putting them into practice*. This provides guidance to public sector organisations on how to comply with the duties placed upon them by the Act. It stipulates that public bodies must contribute to meeting national targets by reducing their own GHG emissions and where possible use their wider influence to ensure reductions elsewhere. It requires climate change and carbon management to be embedded within organisational culture and there is an expectation that 'major players' (of which HES is one) will go that extra step to demonstrate leadership and act as an exemplar to others. The Scottish Government's RPP2 (*Low Carbon Scotland - Meeting our Emissions Reduction Targets 2013-2027*) states that "by 2027 we will have witnessed a complete transformation in the way Scottish public bodies work and in how their estates are managed".
- Part 4 of the Act stipulates that Scottish Ministers may set reporting requirements on selected public bodies and, in early 2015, they chose to implement this. *The Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Order 2015*

introduces mandatory reporting requirements (known as Public Bodies Climate Change Duties (PBCCD) Reporting) for all major player public organisations. The aim of this is to consolidate and standardise data and improve reporting consistency across the public sector. The reporting takes the form of standardised templates for each segment of the public sector (e.g. NDPBs, NHS, local authorities, etc.). As a major player, this means that HES is required by law to provide an annual PBCCD report to the Scottish Government. Our first mandatory report was submitted in November 2016, in line with the requirements, following five years of voluntary annual Sustainability Reports published by Historic Scotland alongside its Annual Report and Accounts and participation in voluntary PBCCD reporting in November 2015.

- HES's Corporate Plan 2016-19 *For All Our Futures* places emphasis on corporate responsibility including reducing environmental impacts and associated financial costs. We have set sustainability and climate change (including carbon management) at the core of what we do in order to help us to deliver a better and more efficient public service. The carbon reduction targets presented in this plan are linked to corporate-level key performance indicators (KPIs), and HES will continue to publish a Climate Change/Sustainability Report alongside its Annual Report and Accounts. Achieving the objectives laid out within this plan is therefore the responsibility of HES's Senior Management Team.

The current (2017) Draft Climate Change Plan described above (RPP3) proposes particularly challenging emissions reduction targets for the 'Services' sector (which includes non-domestic buildings and public sector estates). At the time of writing, the draft RPP3 is undergoing parliamentary scrutiny and may be subject to revision. The carbon reduction targets outlined in this report are aligned to the overall long-term 2050 national targets, which, because they are aligned to international climate change agreements, are unlikely to change. Nevertheless, should the final published RPP3 require significantly different targets, then this HES Carbon Management Plan may be subject to revision and change.

2. CARBON MANAGEMENT IN HES: WHAT WE HAVE ALREADY ACHIEVED AND LESSONS LEARNED

In 2011, Historic Scotland published its first Carbon Management Plan and, until its expiry in March 2015, delivered a wide range of projects to reduce corporate GHG emissions. In that time it produced significant results, delivering a final 17 per cent reduction in emissions against a 2008-09 baseline year. The challenges encountered during delivery of the first plan were considerable, beginning with the fact that the organisation had little in place in the way of systems to effectively monitor consumption or expenditure in terms of utilities, waste, transport and travel etc.

A large effort was made to put such systems in place, for example the installation of automated meters AMRs for gas and electricity in 90 per cent of our energy-using sites. We now have 90 per cent (AMRs) for electricity (half-hourly and non half-hourly) across our estate and 100 per cent for gas. Likewise, data gathering on waste and travel was poor for an organisation of this size and geographical extent (and in certain aspects these remain a challenge today). IT remains an issue, specifically in relation to data collection, both the reliance on manual systems (e.g. paper-based travel and subsistence claims) and through technical issues such as a lack of mobile phone coverage in remote areas, which prevent wireless communication and necessitate installation of new

cabling to AMRs or manual meter readings. Many of these fundamental aspects remain a challenge to this day and limit our ability to manage our consumption and emissions as effectively as we would like.

The previous CMP was based on a strategy of undertaking a series of projects to deliver maximum benefit with minimal cost (and complexity), in advance of undertaking larger and more challenging projects (see Figure 1). This meant that initial activity was focused on improving aspects of monitoring, measuring and reporting, and the establishment of an accurate carbon footprint for the organisation, including baseline figures for key areas such as energy, travel and waste to enable improvements to be measured.

Most of these carbon reduction projects were 'invest to save' energy efficiency-focused initiatives, for example, extensive relamping of large sites to LED lighting, fabric works such as loft insulation and draught-proofing, and an extensive scheme of boiler replacements. These projects were mostly focused on the largest energy using sites across our estate, together accounting for more than two thirds of our energy use and corporate carbon emissions.

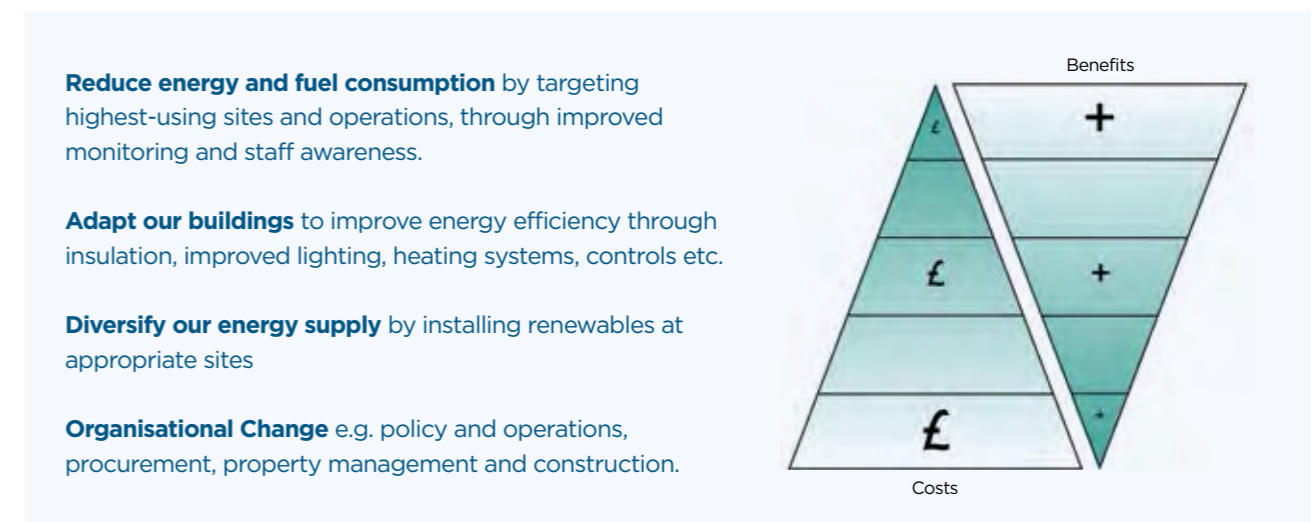


Figure 1. Carbon management hierarchy from the previous (Historic Scotland) CMP, with focus on undertaking projects with minimum cost/complexity delivering maximum benefit, in advance of undertaking more complex carbon reduction measures

Activities under the CMP in the early years had a considerable impact in terms of savings (both financial and carbon), helped considerably by good corporate buy-in and access to financial investment. However, in the latter years of the CMP, the rate of progress slowed and some areas stalled, in part due to a severe cut in budget and also changes in corporate governance and focus (specifically the protracted merger of HS with RCAHMS).

Despite these challenges, good progress has continued to be made, particularly in areas where less financial investment was required, such as the development of corporate policies on waste and sustainable travel and the setting up of a green champions network. Such initiatives, and the large number of potential projects across the estate awaiting funding (at the time of writing there are >45 specific site-based carbon reduction projects listed which could be undertaken over the next three years), mean there is much potential for further carbon reduction and continued financial savings and efficiency improvements across a wide range of operations throughout the organisation.

In 2015, a formal review (*A Review of Historic Scotland's Carbon Management Plan 2010-15*) was carried out to extract key lessons from the first CMP and to make recommendations for carbon reduction going forward. Much of this was based on an external audit of the programme undertaken by Urban Foresight (a UK consultancy specialising in the sustainable transformation of cities, business and NGOs) funded by Resource Efficient Scotland through its public sector support programme. The review process has proved valuable in informing the new CMP, which draws directly on this and our own experiences and expertise gained through the delivery of Historic Scotland's original *Carbon Management Plan*. Recommendations from this review were:

- carbon management should be fully integrated within HES's core governance structure
- carbon management should be included as a standing agenda item on Board and Executive-level meetings.



- sustainability/energy/carbon criteria should be a consideration as part of business cases and business planning at corporate and directorate level (e.g. consider the carbon impact when taking on new buildings/functions/equipment/service contracts etc.)
 - a multi-year target approach should be adopted to provide a more inclusive and realistic measure of performance across the full CMP term. Longer-term targets (e.g. 10+ years) should also be considered as these will help bind future CMPs and senior management turnover together
 - carbon management should be led by HES's Finance team to ensure more corporate delivery and accountability
 - improved communication across the organisation is required to ensure carbon management is integrated within everyday operations, and staff are engaged
 - the existing Green Champions Network needs to be re-engaged and used as more active change agents
 - the organisation's carbon management function needs to identify new channels of funding
 - processes should be implemented to improve the selection and performance of investments. This means that project bids should be clearly defined along with the expected benefits to allow the best options to be selected.
- Post-completion analysis should be carried out to demonstrate true benefits and feed into the future selection of projects
- further improvements to analysis and reporting mechanisms to quantify the efficiency of pounds saved per pound invested
 - consider adopting a project management approach to carbon management risk and using sensitivity analysis to indicate the potential impact of those risks on both projects and targets
 - develop a clear risk management strategy for CMP projects and targets.

These recommendations are addressed overleaf and particularly within identified key operational areas which set out the framework within which the CMP will operate.

3. OUR CARBON FOOTPRINT AND BASELINE EMISSIONS

3.1 OUR CARBON FOOTPRINT

Figure 2 illustrates the proportion of carbon emissions for the 177 energy-consuming sites across our estate. It shows that 71 per cent of our carbon emissions (from properties) arise from only 11 sites, while the remaining 29 per cent are from 166 other sites. This is similar to our previous CMP footprint and highlights some of the operational challenges to carbon reduction in a complex organisation, specifically the need to concentrate effort at a few sites in order to maximise reductions, while balancing efforts across a large number of smaller sites in order to embed carbon reduction practices (and energy efficiency) across the organisation (as required by the PBCCD). This, along with other operational challenges, is discussed further below.

3.2. BASELINE EMISSIONS AND COSTS

The baseline period selected is financial year 2014-15 as this represents the final year of the previous CMP and the most complete and accurate data set available at the time of writing this plan. The baseline is principally used to develop our 2050 target and to calculate carbon budgets across the period. The baseline also serves to highlight the organisation's carbon footprint, essential for understanding the range of operational emissions and determining (and

communicating) the carbon reduction strategy going forward. This section presents a detailed breakdown of emissions from the various sources used to calculate the 2014-15 baseline. The baseline has been calculated by aggregating emissions data from Historic Scotland and RCAHMS prior to the formation of HES in October 2015.

During financial year 2014-15, HES's predecessor bodies HS and RCAHMS, emitted a combined total of 6,986.02 tonnes of carbon dioxide equivalent (tCO₂e) from their operations, at a total cost of just over £2.3 million.

Note that this 2014-15 baseline total differs from the total emissions published in our 2014-15 Sustainability Report (8,431 tCO₂e) because of a change in conversion factors used to calculate carbon emissions from the various waste streams. This recalculation has been necessitated by a change in the Scottish Government's preferred carbon conversion system, from the Zero Waste Scotland (ZWS) Carbon Metric for Waste to the conversion factors published by the UK Department for Business, Energy & Industrial Strategy (BEIS) (formerly the Department of Energy & Climate Change; DECC).

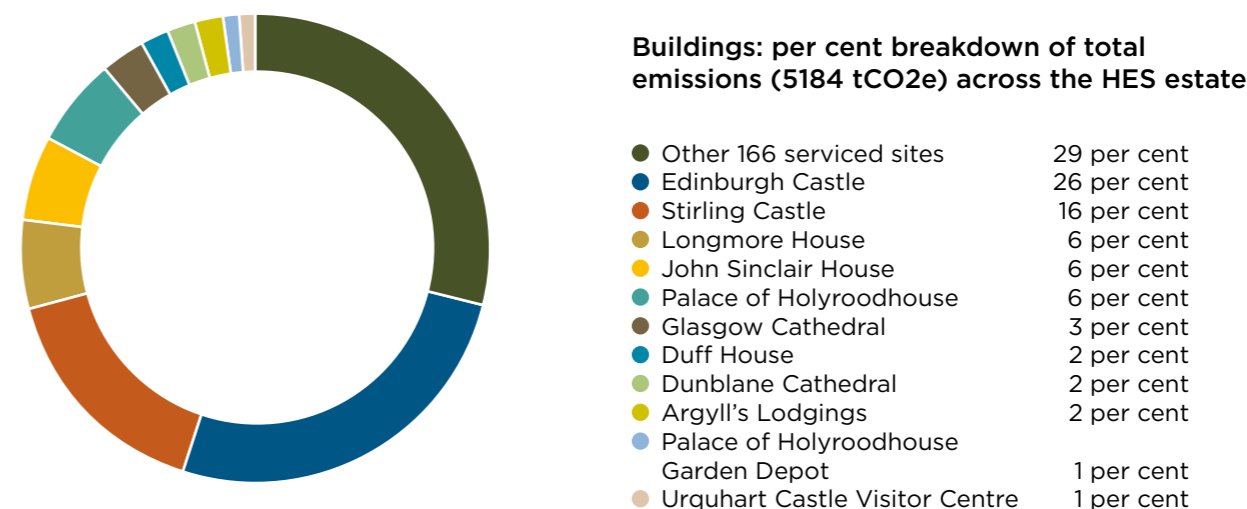


Figure 2: Breakdown of carbon emissions for the HES estate (Data from Financial year 2015-16)

3.3 BASELINE EMISSIONS BY CATEGORY

Figure 4 presents a breakdown of GHG emissions and costs by category for Financial Year 2014-15. It shows that the largest emissions are from energy in buildings and travel, while waste, water and mobile generation are <3 per cent of the total. In terms of financial cost, travel, waste and water are all relatively higher, together comprising just over 40 per cent of the total cost at c.£955,000 (Table 1).

Figure 4 illustrates a proportional comparison of GHG emissions and costs by category. The majority of HES's GHG emissions (86.4 per cent) come from energy

used in buildings (not unexpected given our function and the size of our estate). This is followed by business travel (10.9 per cent), and smaller contributions from waste (1.3 per cent), water (0.7 per cent) and mobile generation (i.e. combustion of fossil fuels in HES owned and operated plant and machinery) (0.7 per cent). In terms of cost, energy used in buildings is highest at 57.4 per cent, followed by business travel at 26.4 per cent, waste at 8.1 per cent, water at 6.9 per cent and mobile generation at 1.1 per cent. In comparing emissions with costs, there are notable relative increases in proportions for business travel, waste and water.

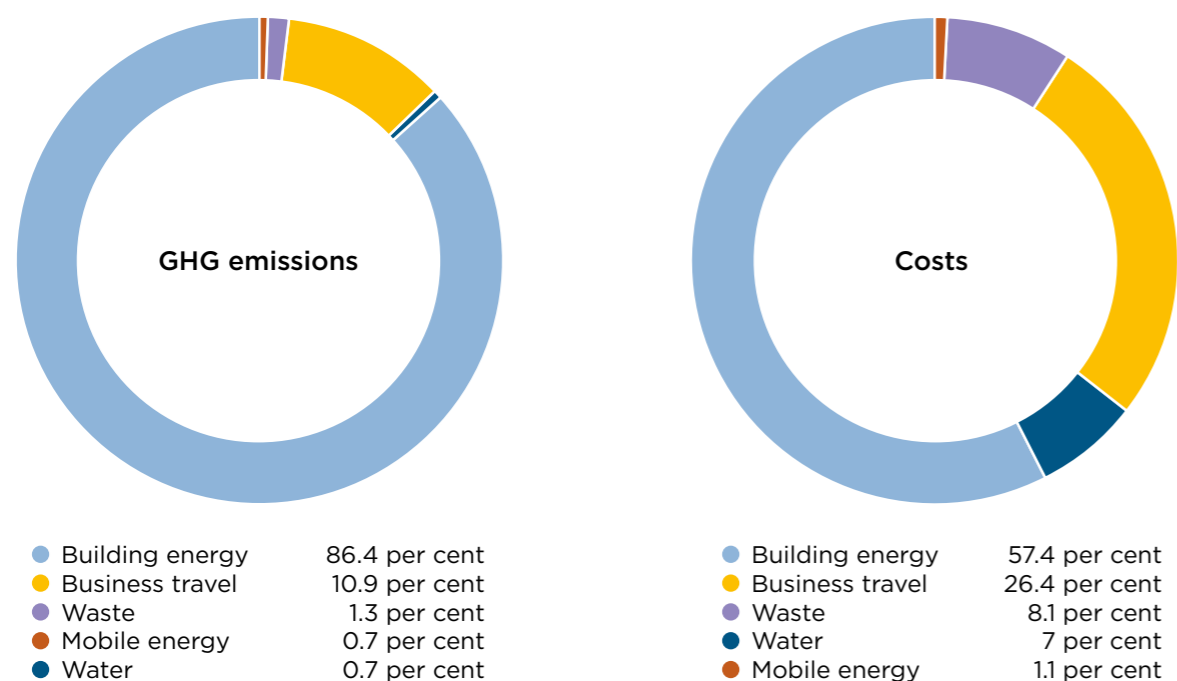


Figure 4: Comparison of GHG emissions and costs by category

Table 1: Baseline GHG emissions and costs by category (FY 2014-15)

Source	GHG emissions (tCO _{2e})	Costs (£)
Energy used in buildings	6,036.47	1,322,947
Mobile generation	46.69	25,487
Waste	90.23	186,824
Business travel	764.51	608,508
Water	48.13	160,064
Totals	6,986.02	2,303,830

3.4. BASELINE EMISSIONS BY SUB-CATEGORY

Figure 5 illustrates the composition of HES's baseline emissions by sub-category, i.e. emissions from different types of energy use, travel, waste, water consumption and mobile generation.

The figure shows energy use in buildings is the largest source of HES's GHG emissions, primarily from electricity (52.7 per cent) followed by natural gas (26.0 per cent).

Emissions from HES fleet being used for business travel comprises 6.5 per cent, and 2.4 per cent from air travel. 12.4 per cent of emissions come from the remaining operations and processes across the HES estate: staff business travel from non-HES fleet, water, waste, remaining building energy (from burning oil and gas oil) and mobile generation.

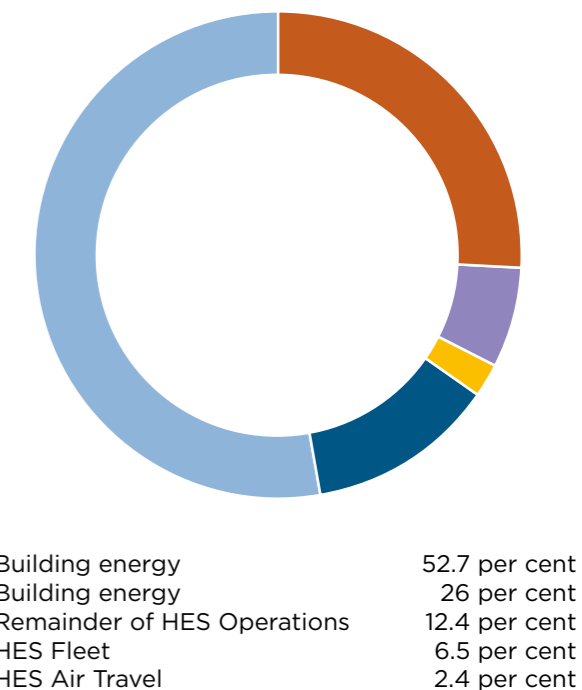


Figure 5: Proportion of GHG emissions, by source

3.5. EMISSIONS REDUCTION POTENTIAL GOING FORWARD

Energy used in buildings holds the largest share of HES's baseline GHG emissions (86.4 per cent). This comprises electricity (consumption and T&D) (66.3 per cent), natural gas (30.1 per cent) and other fuels (3.7 per cent).

Despite natural gas being the highest source of energy (in kWh), electricity represents the highest emissions. This is due to the significantly higher carbon intensity of electricity use. Energy also carries the highest baseline cost (57.4 per cent). It is therefore clear that reductions in this category hold the greatest influence over corporate GHG reductions. It is important to note, however, that this is not a 'buildings only' issue e.g. boilers, lighting, water heaters, computers, till systems, etc., but is also about how we use our buildings e.g. staff behaviour; the equipment that we purchase.

Business travel forms the second highest proportion of GHG emissions (10.9 per cent). This comprises 59.8 per cent from our fleet, 22.4 per cent from air, 9.5 per cent from hire car, 2.7 per cent from grey fleet, 2.5 per cent from rail, 2.3 per cent from our boats, 0.4 per cent from taxis and 0.4 per cent from ferries. Clear savings can be made here firstly by enabling staff to reduce business travel (e.g. through use of video-conferencing), and secondly by giving them the necessary support, through policy, guidance and infrastructure, to make more sustainable travel choices.

At 26.4 per cent, business travel represents a significant proportion of HES's baseline costs. In terms of breakdown, the proportions differ from those of emissions, and there are some minor variations in the ranking. However, the top three (fleet, air and hire car) remain the top of the table. These will be a key area of focus for reducing GHG emissions and costs from business travel.

Waste forms the third portion of our baseline GHG emissions, at 1.3 per cent. The data demonstrates a current recycle rate of 60.0 per cent and an overall landfill avoidance of 73.5 per cent. However, despite only 26.5 per cent of HES's waste being sent to landfill, this represents 85.6 per cent of total waste emissions (due to the considerably higher carbon intensity of landfill waste).

The four primary constituents of waste are refuse (a catch-all term for most office based waste e.g. general waste, plastics, etc.) (65.6 per cent), construction (29.8 per cent), paper (4.0 per cent) and other (e.g. glass, books and clothing) (0.5 per cent).

In terms of baseline costs, waste forms the third highest proportion at 8.1 per cent. Waste forms a relatively low proportion of HES's baseline emissions.

Despite this, there are still savings to be made. Firstly, applying the 'prevention/reduce/reuse/recycle/recovery' principle to avoid landfill where possible can deliver some minor savings for corporate GHG emissions and, to a greater extent, costs. Applying an effective approach to waste management can also help to ensure compliance with legislation (e.g. the Waste (Scotland) Regulations 2012, which require the segregation of all recyclables) and contribute to national GHG reduction targets. It can also contribute to achieving the Scottish Government's vision of a circular economy, as set out in *Making Things Last - the Circular Economy Strategy for Scotland* (2016), which features strongly in the Scottish Government draft Climate Change Plan (2017).



Water forms the fourth portion at just 0.7 per cent of HES baseline GHG emissions, so reductions in water use will have minimal impact in meeting our target. However, as a leading public body, we have a duty to contribute to national reductions where possible. Water consumption forms 6.9 per cent of HES's baseline costs. So, while reducing consumption will provide a low contribution in terms of GHG emissions, it will have a relatively higher benefit in reducing costs.

Mobile generation forms only 0.7 per cent of HES's baseline GHG emissions and just 1.1 per cent of baseline costs. Reductions in this area will have very little influence in meeting our targets, but by using fuels efficiently (in terms of energy, carbon and cost) it can make a small contribution.

3.6. BASELINE PROJECTIONS

Figure 6 illustrates HES's baseline cost projections, by category, to 2021-20, assuming no action is taken ('business as usual').

The projection shows a continual rise in costs from the baseline year (2014-15) to 2021-22. The final total cost of just over £3.85 million represents an overall increase of 44 per cent over 8 years from the baseline year (an average annual increase of 6.3 per cent). The most significant contribution to this is energy used in buildings, with increases in electricity and natural gas costs estimated to average 9 per cent and 7 per cent per year. Business travel is estimated to rise by 4 per cent per year, waste by 1 per cent per year and water by 3 per cent year. Costs for mobile generation are set to reduce by the middle of this period by approximately 4 per cent, but then rise again towards the end, resulting in a net change of 0 per cent.

Baseline cost projections by category (Business as usual)

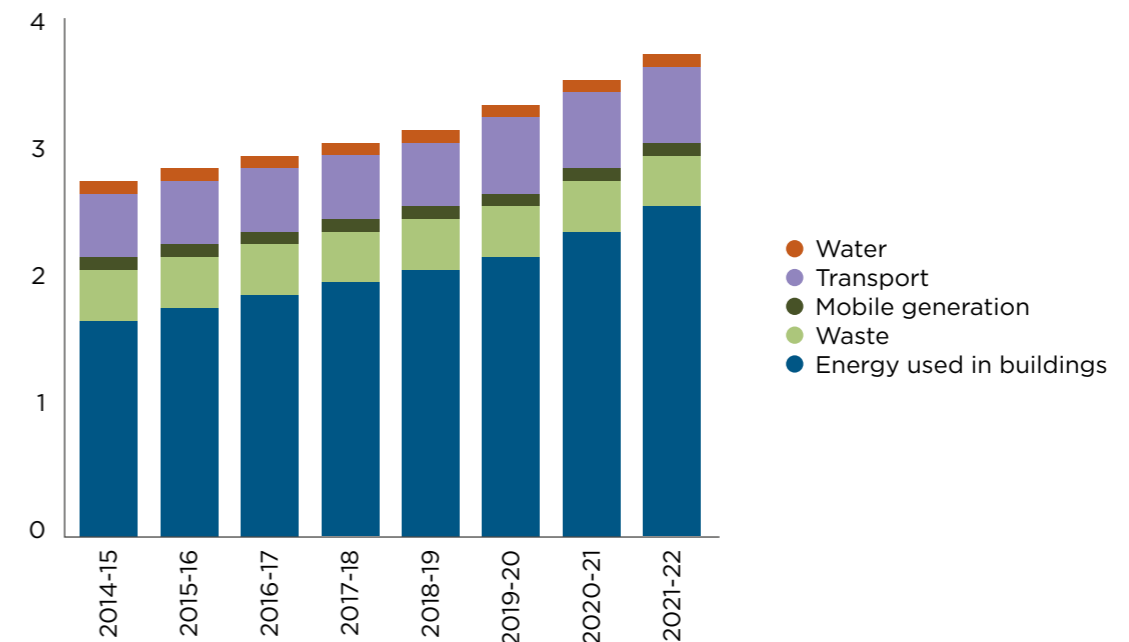


Figure 6: Baseline cost projection by category, in the event of no action taken ('business as usual'). Data calculated using Zero Waste Scotland's Carbon Footprint Forecast and Projects tool.

4.A NEW APPROACH

4.1. INTRODUCTION

The previous CMP (2010-2015) was based on comparing carbon emissions each progressive year against an earlier baseline year, resulting in a series of percentage reductions. While this was regarded as best practice at the time (Historic Scotland developed its CMP as part of the Carbon Trust's Public Sector Carbon Management Programme), this approach has a number of drawbacks, in particular it was vulnerable to annual variations in weather (e.g. the target could be missed as a result of a cold winter) and other aspects such as operational changes in a single year (e.g. acquisition or disposal of property) could impact significantly on the annual carbon reduction figure.

As a result of the dependence on single year achievements, it was hard to achieve a sense of progress across the five years and the longer term. The new CMP, therefore, takes a different approach, based on a cumulative carbon budget, amounting to a set emissions total for the period 2015-2050. This is intended to allow some flexibility for the organisation. Year-on-year carbon emission reductions will increase steadily over the period from between 2.2 per cent to 5.5 per cent as it nears the end of the overall target period.

A key element of our carbon management programme going forward is to ensure that the targets and deliverables reflect our role of an exemplar 'major player' public body towards tackling climate change, in terms of both our corporate Lead and Enable role in the historic environment sector, and the requirements set out in the Public Bodies Climate Change Duties and subsequent statutory reporting requirements. A requirement of this is to align our carbon reduction programme with the long term national targets set by the Scottish Government. This underpins our approach and defines how this plan is laid out, setting specific year-on-year targets over the five years of the plan within the context of achieving the longer term national 2050 targets.

Since the expiry of Historic Scotland's CMP in 2015, the emissions reduction programme has continued unbroken. The Sustainability Report for FY 2016-17, published alongside the HES Annual Report and Accounts was the first full year of carbon reporting for HES, and reported continued carbon savings across much of the operations, with an overall 17 per cent reduction in GHG emissions compared to Historic Scotland's baseline year of 2008-9, despite the increase in size of the new organisation following the merger of HS and RCAHMS.

4.2. BASELINE

The baseline period selected by HES is financial year 2014-15 as this represents the final year of the previous CMP and the most complete and accurate data set available at the time of writing this plan. The purpose of the baseline is to enable development of the GHG reduction target and associated carbon budgets and to provide a benchmark against which subsequent years will be compared. This baseline can be used to illustrate year-on-year changes in GHG emissions and costs if necessary, although the primary measure of performance and reporting relies on the carbon budget methodology described above.

The previous CMP used a baseline of 2008-09, which was the most complete and accurate data set available at the time (2010), although due to the difficulties at that time in establishing an accurate carbon footprint, it was acknowledged as likely to contain significant uncertainties. The decision to re-baseline was taken following the CMP review exercise with advice from supporting organisations including Resource Efficient Scotland. The new baseline is undoubtedly more accurate than that used previously, ensuring more meaningful assessments of carbon reduction going forward. Although the selected baseline year represents carbon emissions for the organisation pre-merger, accurate figures were available for both HS and RCAHMS, which were combined to give the new figure.

4.3. KEY OPERATIONAL AREAS REQUIRED TO DELIVER THE CMP

The previous CMP was largely delivered through a series of focused projects, mostly targeted towards fabric improvements at properties (e.g. insulation, lighting improvements, boiler replacement) as well as a series of wider initiatives such as fuel-efficient driver training and development of corporate policies on waste and sustainable travel. Most of the progress was delivered through the Conservation Directorate (where responsibility for property management, maintenance and construction lies), while progress across the wider organisation was more challenging.

As the number of large property-based projects diminishes over time, it will become increasingly important to achieve savings through wider corporate initiatives (e.g. behavioural change in energy use, staff travel and procurement). This will require a shift in organisational culture in which carbon reduction is a factored into daily operations and procedures, particularly in areas which have proved difficult

previously. For example, the inclusion of 'carbon criteria' in business cases for project funding will serve to raise the consciousness of emissions reduction in the organisation and ensure carbon is factored into decision making.

As a result of this, and the recommendations from the CMP review presented above, a number of key operational areas have been identified which are considered necessary for the CMP to succeed, in particular to embed good practice into the organisation in order to achieve carbon reduction over the longer term. Most of these are associated with improved working practices, accountability and governance arrangements. Adoption will require a level of buy-in from across the organisation not achieved during the previous CMP. The key operational areas are listed in Table 2 overleaf.



Table 2: Key operational areas identified from the independent review of the Historic Scotland Carbon Management Plan

Key operational area	Actions
Governance	<ul style="list-style-type: none"> Carbon reduction to be part of Directorate Plans to encourage responsibility throughout the business. Ensure progress on carbon targets is reported at Executive level. Establish high level carbon management governance structure, including project and risk management.
Business Planning	<ul style="list-style-type: none"> Carbon checklists to be included in business cases for funding/project approval. Procurement to factor carbon impact of all new goods and services (seek lower carbon alternative). Purchases in areas such as IT and vehicles to include carbon criteria.
Finance	<ul style="list-style-type: none"> Integration of financial reporting and carbon budgeting to be explored with a view to moving towards carbon management being led by Finance in future years. Carbon budgets to be developed for individual business areas to improve accountability (e.g. travel data, taxi use) and explore moving towards devolving responsibility to business areas in the future.
Monitoring and reporting	<ul style="list-style-type: none"> Continue improving data quality and acquisition to improve accuracy and speed of reporting.
Communications	<ul style="list-style-type: none"> Develop new Communications Plan to increase staff engagement across the organisation to and promote behavioural change, including increasing visibility of climate change programme and targets through appropriate channels, and support for staff campaigns (e.g. waste recycling, taxi use, cycling, switch-off campaigns).
Green Champions Network	<ul style="list-style-type: none"> Continue to develop and empower green champions across the organisation through a series of carbon reduction initiatives and training/awareness events.
Training	<ul style="list-style-type: none"> Ensure availability of training for staff in areas such as climate change awareness training, fuel efficient driver training, and specialist training for appropriate staff in areas of compliance such as waste management.
Human Resources	<ul style="list-style-type: none"> Ensure carbon reduction and sustainable practice is included in policies (e.g. Sustainable Travel Policy developed jointly by HR and Climate Change Team in 2015). Work to make carbon reduction/climate change a core part of staff objectives.
Information Systems	<ul style="list-style-type: none"> IT systems to consider carbon in terms of reducing energy consumption through procurement of energy efficient equipment; default settings for black and white duplex printing; automated equipment shutdown etc. Adoption of improved systems to help avoid staff travel (e.g. easier video conferencing); improved wireless and mobile connection to improve data transfer and monitoring at sites.

The key operational areas provide the organisational framework in which the CMP will operate. This will enable specific carbon reduction projects to take place, such as fabric improvement and energy efficiency similar to the previous CMP, but more importantly will embed inherently low carbon business practice across the operations of the organisation.

Carbon reduction projects and practices will be recorded (and where possible savings quantified), listed, and reported in the specific project lists of the annual Public Bodies Duties Climate Change Report, and in Best Value reporting. The proposed actions within each of the key operational areas will be delivered by the Climate Change Team in collaboration with the relevant business area.



5. OUR TARGET

5.1. INTRODUCTION

As a large public sector organisation and a major player under the Public Bodies Climate Change Duties, HES has a responsibility to set ambitious but achievable targets that reflect the national GHG emissions reduction targets set by the Scottish Government.

The Review carried out on Historic Scotland's previous CMP has played a key role in informing how these targets are set out and the methodology for measuring performance going forward to 2050.

This CMP adopts the approach of setting a total 'carbon budget' for the entire target period (i.e. to 2050), based on national targets, where year-on-year carbon 'overspend' or 'underspend' can be carried forward and counted in subsequent years.

This cumulative, multi-year approach will help to even out the variables (peaks and troughs) in annual GHG emissions brought on by factors beyond our control (e.g. weather), in order to highlight good (or otherwise) performance across the target period.

HES has, therefore, set a long-term GHG emissions reduction target, from April 2015 and concluding in March 2050; over a time period of 35 years.

This approach not only serves to highlight the long-term nature of climate change and the need for sustained commitment, but also sets out the longer term corporate commitment of the organisation beyond the average period of appointment of the Board, Chief Executive and Senior Management Team, thus aiming for a degree of continuity.



In addition to this, in order to provide a balance with operational focus and staff ownership necessary to maintain performance and commitment, the 2050 target is sub-divided into seven five-year blocks or periods (table 3). This approach has the advantage of placing our emissions reduction programme on a long term trajectory, while providing a number of natural breaking points for review.

For each period, HES will set a five-year carbon budget (published as a new CMP) that correlates directly with the national Scottish Government 2050 target. The total carbon budget for each period will represent a milestone in meeting the final 2050 target, and performance reported against these milestones will provide clear indication as to whether the organisation is on track to achieve this.

Period	Duration
1	April 2015-March 2020
2	April 2020-March 2025
3	April 2025-March 2030
4	April 2030-March 2035
5	April 2035-March 2040
6	April 2040-March 2045
7	April 2045-March 2050

Table 3: Long term emissions reduction programme. Periods from 2015 to 2050.

5.2. 2050: OUR LONG-TERM TARGET

The HES's emissions reduction programme is directly linked to Scottish Government national carbon reduction targets to 2050.

In order to align with these targets, HES must emit no more than a total of 156,355 tonnes of carbon (tCO₂e) through its operations between April 2015 and March 2050. This requires an annual reduction of 2.2 to 2.4 per cent in carbon emissions for each of the 5 years of this plan (2015 to 2020).

The headline principles and GHG emissions reduction target set by this CMP are given here:

HES will align its carbon management programme with national emissions reduction targets matching the framework set by the Scottish Government to 2050

In order to achieve this, over the period 2015-2050, HES will emit no more than a total of 156,355 tonnes of carbon (tCO₂e) through its operations.

This requires an annual reduction of 2.2 to 2.4 per cent in carbon emissions for each of the five years of this plan (2015 to 2020)

In order to ensure HES's carbon reduction programme is aligned with the longer-term national Scottish Government targets (specifically 2050) this CMP is established as the first of a series of five-year increments, thus allowing continual periodic review and the establishment where necessary of a new or revised CMP at each stage.

Period 1 (this CMP) covers April 2015 to March 2020 and, by alignment with national carbon reduction targets, provides the organisation with a total carbon budget of **32,620 tCO₂e over this time**. The final target figure for FY 2019-20 represents the first milestone towards the 2050 target and will provide an indication of whether HES is on track to meet its longer term objectives. Sections 6 and 7 of this plan provide more details of our baseline and target.

Table 4: HES carbon budget targets April 2015-March 2050 (35 years)

Year	Annual budget	Annual change	Change from baseline	Cumulative budget
Baseline	6,986	0.0 per cent	0.0 per cent	0
2015-16	6,832	-2.2 per cent	-2.2 per cent	6,832
2016-17	6,679	-2.2 per cent	-4.4 per cent	13,511
2017-18	6,525	-2.3 per cent	-6.6 per cent	20,036
2018-19	6,371	-2.4 per cent	-8.8 per cent	26,407
2019-20	6,218	-2.4 per cent	-11.0 per cent	32,625
2020-21	6,083	-2.2 per cent	-12.9 per cent	38,707
2021-22	5,947	-2.2 per cent	-14.9 per cent	44,655
2022-23	5,812	-2.3 per cent	-16.8 per cent	50,467
2023-24	5,677	-2.3 per cent	-18.7 per cent	56,144
2024-25	5,542	-2.4 per cent	-20.7 per cent	61,687
2025-26	5,407	-2.4 per cent	-22.6 per cent	67,094
2026-27	5,272	-2.5 per cent	-24.5 per cent	72,366
2027-28	5,137	-2.6 per cent	-26.5 per cent	77,504
2028-29	5,002	-2.6 per cent	-28.4 per cent	82,506
2029-30	4,867	-2.7 per cent	-30.3 per cent	87,373
2030-31	4,732	-2.8 per cent	-32.3 per cent	92,105
2031-32	4,597	-2.9 per cent	-34.2 per cent	96,702
2032-33	4,462	-2.9 per cent	-36.1 per cent	101,164
2033-34	4,327	-3.0 per cent	-38.1 per cent	105,491
2034-35	4,192	-3.1 per cent	-40.0 per cent	109,683
2035-36	4,057	-3.2 per cent	-41.9 per cent	113,739
2036-37	3,922	-3.3 per cent	-43.9 per cent	117,661
2037-38	3,787	-3.4 per cent	-45.8 per cent	121,448
2038-39	3,652	-3.6 per cent	-47.7 per cent	125,100
2039-40	3,517	-3.7 per cent	-49.7 per cent	128,616
2040-41	3,382	-3.8 per cent	-51.6 per cent	131,998
2041-42	3,247	-4.0 per cent	-53.5 per cent	135,245
2042-43	3,112	-4.2 per cent	-55.5 per cent	138,356
2043-44	2,976	-4.3 per cent	-57.4 per cent	141,332
2044-45	2,841	-4.5 per cent	-59.3 per cent	144,174
2045-46	2,706	-4.8 per cent	-61.3 per cent	146,880
2046-47	2,571	-5.0 per cent	-63.2 per cent	149,452
2047-48	2,436	-5.3 per cent	-65.1 per cent	151,888
2048-49	2,301	-5.5 per cent	-67.1 per cent	154,189
2049-50	2,166	-5.9 per cent	-69.0 per cent	156,355

In Table 4, years 2019-20 and 2049-50 have been highlighted in red to indicate our equivalent targets to the Scottish Government's 42 per cent (2020) and 80 per cent (2050) targets.

An annual carbon budget is set against each year, representing a guide to how much carbon may be 'spent' in each year of the plan in order to stay on track. An annual change and change from baseline (in per cent) have also been provided for reference and can be utilised to illustrate year-on-year performance as well as informing annual corporate KPI targets.

Actual performance is measured against the targets cumulative budget saved. As performance is measured cumulatively, this means that any 'under' or 'overspend' in the interim years may be carried forward. This approach ensures all years are considered in measuring performance, as well as evening out peaks and troughs in performance and reducing exposure to risk from specific events.

Figure 7 provides a graphical representation of HES's target carbon budget to 2050, both individual years and cumulative.

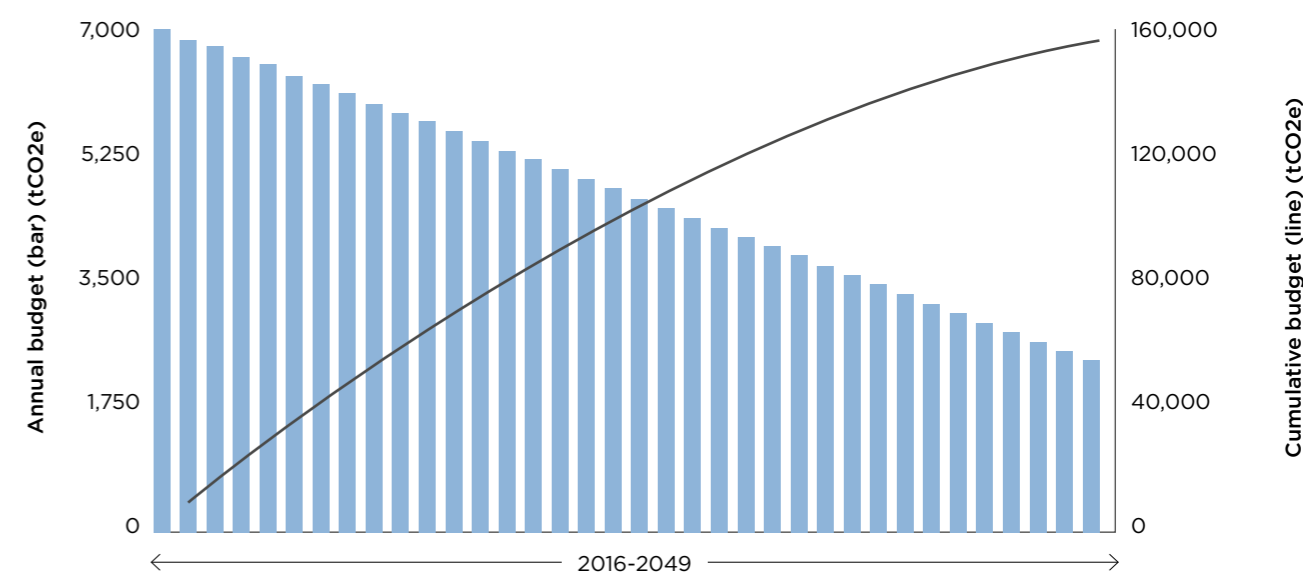


Figure 7: The annual carbon budget for HES for the period 2015-50 (35 years) shown in five-year periods (coloured bars), and cumulative carbon budget over this period (line)

**Table 5: Period 1: Carbon budget,
April 2015 to March 2020 (five years)**

Year	Annual budget	Annual change	Change from baseline	Cumulative budget
Baseline	6,986	0.0 per cent	0.0 per cent	0
2015-16	6,832	-2.2 per cent	-2.2 per cent	6,832
2016-17	6,679	-2.2 per cent	-4.4 per cent	13,511
2017-18	6,525	-2.3 per cent	-6.6 per cent	20,036
2018-19	6,371	-2.4 per cent	-8.8 per cent	26,407
2019-20	6,218	-2.4 per cent	-11.0 per cent	32,625

5.3. PERIOD 1: CARBON BUDGET 2015-20

The adoption of a long-term target can make it difficult to focus on short-term objectives. The 35-year 2050 carbon reduction programme is therefore divided into seven five-year periods.

This approach should help to make the long-term target more tangible to the organisation. It also provides natural review points at which to reassess performance, governance etc., and to produce a revised CMP if necessary.

Period 1 (this CMP) covers the period from April 2015 to end-March 2020. The total carbon budget allowed for HES operations over this period is 32,620 tCO₂e, calculated to match the Scottish Government's 42 per cent reduction target for 2020.

This requires an annual reduction of 2.2 to 2.4 per cent, and an overall reduction of 11 per cent over this period, summarised in Table 5.

In table 5, the annual budget, annual change and baseline change set the trajectory required to deliver the long-term target. The 2019-20 figure represents the first milestone towards this 2050 target and will provide an indication of whether the organisation is on track to meet it or whether revision of the carbon reduction programme is required.

5.4. HANDLING FUTURE CHANGES TO TARGETS AND BASELINE

Over the period of this plan, changes to HES's business activities or other external factors may result in variations in operational GHG emissions; for example as a result of the acquisition or disposal of properties, corporate restructuring, or political changes.

This may mean that current emissions are no longer comparable to the baseline year and/or render the final target unachievable. When such changes occur, their significance will be considered in order to determine whether they warrant a recalculation of baseline emissions and/or any alteration to our reduction target.

Significant changes could be the result of a single business change or the cumulative effect of a number of smaller changes.

6. PROJECT PRIORITISATION

6.1. FOCUS OF PROJECTS

Reducing HES's GHG emissions will require action from every business area across the organisation as well as corporate-level ownership and responsibility for the carbon reduction programme. It is recognised, however, that different business areas may not have the same level of influence or control over emissions.

The purpose of this Carbon Management Plan is not to prescribe specific projects – rather, it is to set the trajectory in line with government targets, provide a framework for transformational change and to put in place a series of actions in key operational areas that allow carbon reduction activities to occur across the organisation as a normal part of the business process.

It is an important part of the carbon reduction programme that corporate business approval systems consider the carbon impact of a new project or activity, and that carbon is a consideration in all bidding and approvals processes. The responsibility for instigating and embedding emissions reduction projects should lie with individual business areas, as they know their activities best. However, the Climate Change Team remains a key source of advice and support.

Another purpose of the CMP is to ensure the recording and analysis of carbon reduction projects to quantify the benefits and paybacks to a site or operation's energy consumption and/or carbon emissions. This also addresses the requirement to publish a list of projects (and their impacts) as part of our mandatory annual Public Bodies Climate Change Duties Report to the Scottish Government. Documentation of projects will also help inform planning of carbon reduction projects and activities in future years.

As noted earlier, much work has already been carried out to improve energy efficiency at larger, higher consumption sites where the greatest initial carbon savings are to be made.

While continued investment at larger sites will undoubtedly provide further carbon reduction (and reduction of utility costs), a more balanced distribution of carbon reduction activities across the organisation (in particular at smaller sites) will provide

benefits including opportunities in staff engagement and behavioural change, improvements in data quality and better understanding and accountability of operations through monitoring and reporting.

Importantly, broadening the reach of carbon reduction projects will help to mainstream the climate change agenda through the entire organisation (as stipulated in the PBCCD).

The following areas are identified as requiring primary focus:

- Energy used in buildings remains a priority in determining project funding. Projects will continue to be supported in areas of energy efficiency improvements, energy management and control, staff behaviour change, and the introduction of low-carbon and renewable technologies. Electricity must remain a top priority because it is unavoidably the main heating source at most properties, and has both high associated emissions and cost. This is closely followed by the use of natural gas, while other fuels forms a much lower proportion of the overall GHG emissions and are lower priority.
- Business travel is the second-highest area of emissions across HES (764.51 tCO₂e). The HES fleet is a priority for action because we have direct control of it. Reducing emissions in this area will be delivered via reduction in vehicle use through use of alternatives such as video-conferencing and more efficient use of vehicles through improved journey planning, monitoring and reporting. Further initiatives will be implemented such as supporting and implementing sustainable travel alternatives (cycling, walking, and public transport), plus fleet rationalisation and transfer to lower to zero emission vehicles. Other significant areas of business travel such as Air Travel and Hire Cars would benefit from improved management and monitoring. Taxi use, while low in terms of proportional carbon emissions, is highly visible to the public, and addressing it will signal a transformational approach to business travel. Promotion of the *Sustainable Travel Policy* (published 2015) and alternative modes for short journeys would support the above initiatives.



- As described earlier, waste is the third highest source of emissions for the organisation (90.23 tCO₂e), although financial costs are relatively higher. Despite the publication of a *Waste Prevention and Reuse Plan* for Historic Scotland in 2013, waste remains a particular challenge, in part resulting from the diversity and geographical spread of HES operations. Priority needs to be given to improving waste management and assigning total actual costs against each of our waste streams (i.e. landfill, recycling, combustion and composting). Factoring in the true cost of waste to our operations (e.g. retail, events etc.) will improve accountability and stimulate action. Other priority areas for waste are:
 - Working to improve waste segregation and avoiding contamination in order to increase recycling rates and reduce the amount of waste sent to landfill. This will significantly reduce overall waste emissions and costs.
 - Waste combustion represents approximately 9 per cent of HES's total waste tonnage, but a fairly high cost per tonne. Reducing this will help to reduce overall waste costs, though in some remote locations (e.g. Orkney) this may not be possible.
 - Waste prevention through improved procurement practice (i.e. factor waste into procurement processes) will have a fundamental impact on reducing waste.
 - Reuse and redistribution of materials and equipment within and beyond HES have significant potential to contribute to the circular economy and reduce emissions and costs through avoiding the need to purchase new products.
 - Improved communications and influencing behavioural change is a key aspect – every member of staff produces waste and can make a direct contribution.

- Water consumption and mobile generation are a relatively small proportion of overall GHG emissions and related costs (48.13 tCO₂e and 46.69 tCO₂e respectively), yet have the potential for savings through reduced and more efficient consumption. Both areas have the potential to instil good behaviour as part of daily staff operations and are valuable in this respect.

6.2. PROJECT MANAGEMENT AND MEETING THE EMISSIONS REDUCTION TARGETS

As stated in section 2.1, this plan takes a different approach to the previous Carbon Management Plan in that it does not prescribe specific projects.

Instead, it is intended to specify targets and a long-term trajectory and to create a framework in order to enable and support emissions reductions activities across the business areas of the organisation. In order to comply with the Public Bodies Climate Change Reporting Duties, an annual project register will be maintained, and updated as new opportunities are developed and projects are completed.

This will be reported annually as part of our Public Bodies Climate Change Duties Report to Scottish Government and, where possible, data will be used in order to calculate payback and savings on investment.

The aim is therefore to encourage the generation and local management of projects and activities, while ensuring these are communicated back to the Climate Change Team. This allows HES aims to be more strategic and proactive when investing in carbon reduction projects, while ensuring such activities are mainstreamed across the organisation.

7. IMPLEMENTING THIS PLAN

7.1. GOVERNANCE

The success of this plan and the overall emissions reduction programme is dependent on buy-in from across the organisation at all levels. This includes a governance structure that supports activity and monitors progress, particularly in regard to issues such as statutory duties and compliance, mandatory annual reporting and Key Performance Indicators (of which carbon reduction is one).

Much of the progress under the previous CMP was a result of activity within Conservation Directorate (since most carbon reduction activities were based around physical energy efficiency projects on our properties). However, the success of this CMP and the longer term emissions reduction programme depends on activities across the organisation as well as the implementation of operational processes and structures at corporate level that support carbon reduction.

Oversight is therefore required at high level with a corporate governance group, and with regular reporting to SMT. It is therefore proposed to set up a high-level Carbon Management Board to meet every six months, chaired by the Chief Executive with representatives at senior level from all Directorates and relevant business areas, supported by climate change team through staff time and administration. This would include representative staff from the Climate Change Team, Corporate Analysis & Performance, Finance/Business Development, Communication, and other relevant business areas.

The Carbon Management Board would consider progress to date against carbon target, approve mandatory reporting, receive updates from business areas on what low carbon initiatives/projects are proposed/under way, review Comms activities and staff engagement/behavioural change, and address issues around risk, business development and governance.

The establishment of a high-level Carbon Management Board would also address the current lack of high-level corporate governance of climate change, which is required as part of the Public Bodies Climate Change Duties.

7.2. RISK

Appendix A of Historic Scotland's CMP 2010-15 outlined a number of risks associated with the carbon management programme, largely focused around funding, resource and time constraints. However, these were only considered in terms of 'risk to project' rather than 'risk to target'.

The review of the previous CMP has identified a number of risks that can significantly impact of the ability of HES to meet its GHG reduction targets. These are detailed in the 2016 *'Review of Historic Scotland's Carbon Management Plan 2010-2015'*, and are summarised below:

- **Diminishing budget:** the CMP review quantified the relationship between financial investment in carbon reduction projects and savings (carbon and financial), and the diminishing value of future savings.
- **Change in estate:** over the period of the previous CMP, the addition of Duff House and John Sinclair House had significant impact on the overall carbon footprint.
- **Impact of weather.**
- **Changing carbon emissions conversion factors:** previous changing emissions factors for electricity and waste have had significant effect on our overall GHG reduction targets. This is linked to world markets over which we have no control.

A carbon reduction risk register will be maintained by the Climate Change Team, reporting to the Carbon Management Board. Delivery of climate change objectives currently sits in the Conservation Directorate Risk Register, and identified risks will be taken forward through the HES Corporate Risk Management Framework.

7.3 QUALITY ASSURANCE

The previous CMP was subject to both internal audit and external verification. A formal internal audit was undertaken in 2013 by Scottish Government Internal Audit Division, and a diagnostic report funded by the Carbon Trust was produced by SKM Enviros in 2012. Both of these were circulated at Director/SMT level and recommendations acted on where possible. No significant issues were identified.

In 2015, the Climate Change Team requested an external audit of the first CMP to extract key lessons and inform the carbon reduction programme going forward. The review was undertaken by Urban Foresight and funded by Resource Efficient Scotland and raised a number of areas for improvement;

mostly around corporate governance and buy-in, and improving corporate communications. This has been used to inform the current CMP.

This CMP and future plans will be subject to the internal audit process as undertaken by public bodies, and additional external audit will be sought where possible.

The audit process has proved to be a useful tool in assisting the carbon management programme to date, and it is anticipated that further audits will be undertaken periodically during the CMP and reported to the Carbon Management Board.

8. REPORTING

Regular reporting is an integral part of the carbon management programme and used to monitor progress against our targets. Reporting takes place on a number of levels:

8.1. STATUTORY AND CORPORATE REPORTING Public Bodies Climate Change Duties Reporting

Public Bodies Climate Change Duties Reporting is an annual statutory report required by Scottish Ministers from all 150 major player public bodies. HES is required by law to complete a comprehensive report, using templates provided by Scottish Ministers, by 30 November each year. The Public Bodies Climate Change Duties Report covers all aspects of climate change duties, including GHG emissions reduction, climate change adaptation, and broader issues of sustainability such as procurement. Reports are published annually and are in the public domain.

Corporate Planning, Risk and KPI reporting

Carbon reduction is a specific objective in the HES Corporate Plan and directly contributes to two corporate KPIs. It is part of the reporting mechanism through the Conservation Directorate Plan and HES Operating Plan, and sits on the Conservation Directorate Risk Register. KPI progress is reported to the HES Board and published annually as part of the HES Annual Report and Accounts.

8.2. VOLUNTARY REPORTING Sustainability Reporting

Following publication of the Scottish Government's Public Bodies Climate Change Duties in 2011, Historic Scotland published an annual Sustainability Report alongside its Annual Report and Accounts. Over a period of five years, this summarised progress on energy, travel, waste, water, and other aspects including adaptation, procurement and biodiversity. In the interests of transparency, HES is continuing to publish this information on an annual basis.

8.3. OPERATIONAL REPORTING

Quarterly Energy Reporting

Energy represents the largest source of HES's GHG emissions and has therefore required the most detailed level of reporting. Quarterly Energy Reports are distributed to key individuals across the organisation, comparing current electricity and natural gas consumption for each utility meter and comparing it with the same period the previous year. The data provides the basis for discussion at Energy Focus Groups, now established for several larger sites, and are used to inform decision-making regarding carbon reduction projects and investment.

Ongoing CMP performance reporting

To ensure that progress on CMP targets are being regularly reviewed, the Carbon Manager will produce an annual CMP Progress Report to be presented to the Carbon Management Board and distributed to relevant staff and stakeholders. Information will be used to inform monitoring of carbon reduction projects and provide data for the Public Bodies Climate Change Duties Report. These reports will be used to inform the CMP Review (below).

Five-year CMP Review

HES will conduct a detailed review following completion of each five-year CMP Period. Where possible, external audit and verification will be sought. Reviews will inform the development of the next five-year CMP, alongside recommendations for operational changes to carbon management to be considered by the Carbon Management Board.







HISTORIC
ENVIRONMENT
SCOTLAND

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