

Carbon Management Plan (CM Plan) 2017/2023

Organisation Name: Comhairle nan Eilean Siar



Growth that doesn't cost the earth

Created by: Technical Services

Prepared by: Calum Mackenzie

Date: November 2017

A programme from



natural
scotland
SCOTTISH GOVERNMENT

Contents

1	Executive Summary	3
2	Foreword from the Project Sponsor	6
3	Foreword from Resource Efficient Scotland	7
4	Introduction	8
4.1	Background to the Organisation	8
4.2	CnES's Performance on Carbon Management to date	8
5	Carbon Management Strategy	10
5.1	Context and Drivers for Carbon Management	10
6	Emissions Baseline and Projections	12
6.1	Carbon Footprint Baseline, Cost and Projections	12
6.2	Scope and Boundaries of the Carbon Footprint	12
6.3	Organisational Boundary	12
6.4	Operational Boundary	12
6.5	Data Sources	13
6.6	Carbon Footprint Baseline and Cost	13
6.7	Business As Usual (BAU)	15
7	Carbon Management Projects	16
7.1	Introduction	16
7.2	Existing Projects	16
7.3	Planned Future Projects	16
7.4	Financing Carbon Saving Projects	18
7.5	Value At Stake	20
7.6	Target Setting	21
8	Management and Delivery of the Carbon Management Plan	22
8.1	Introduction	22
8.2	The Carbon Management Team	22
8.3	Operational Roles and Responsibilities	22
8.4	Resourcing and Ownership	23
8.5	The Internal Delivery Model.	23
8.6	Data Collection and Management	23
8.7	Communication and Training	24
9	Progress Reporting	25
9.1	Yearly Updates to the Carbon Management Plan	25

Comhairle nan Eilean Siar's Carbon Management Plan (CM Plan) 2017/2023

9.2	Data Collection and Management	25
9.3	Other Reporting Requirements	25

Appendix A - Legislative Drivers for Carbon Management	26
---	-----------

Appendix B - Detail of individual consumptions and costs for each element of the 2016/21 Carbon footprint	28
--	-----------

Appendix C - Projects	29
------------------------------	-----------

Appendix D - Project Summary	51
-------------------------------------	-----------

Appendix E – Climate Change Assessment Tool Results	54
--	-----------

1 Executive Summary

In the previous Carbon Management Plan (CM Plan) published in 2013, Comhairle nan Eilean Siar stated its aspiration to achieve a reduction target of 20%, based on the 2009 carbon footprint baseline, by 2015. A number of factors have made this a challenging target including: the complexity of the carbon management process; demands for new skills within, and time from, existing staff in the identification, planning, resourcing and tracking of carbon reduction projects/initiatives; a changing legislative and policy framework, and the changing nature of estate and building use, as well as an increasing energy intensiveness of the building stock.

These factors combined to suggest that a review and revision of the original Carbon Management Plan, including reduction targets, would help Comhairle nan Eilean Siar move forward constructively.

This CM Plan sets out our ambitions for Comhairle nan Eilean Siar, and a roadmap for progress. Reducing carbon emissions is not just about our commitment to the environment. The same processes we use to identify carbon emissions reduction will also identify and realise financial savings through improved efficiency in the procurement and operation of our assets. The actions outlined within this Plan form part of our efficiency plan to reduce consumption and provide value for money.

The 2016 carbon footprint was calculated to be 17,196 tonnes of carbon dioxide equivalent (tCO₂e) and covered electricity, gas/LPG, gas oil consumption, transport (fleet), water, wastewater consumption and waste.

Comhairle nan Eilean Siar has therefore decided to reset its baseline to 2016 and target a 9.87% reduction to its total annual carbon footprint by the end of financial year 2023; this continues the aspiration of a 42% reduction but based upon the 2009 footprint and to be delivered by 2023. The 2016 baseline this time includes staff travel via mileage claims and mileage derived from the use of fleet cars.

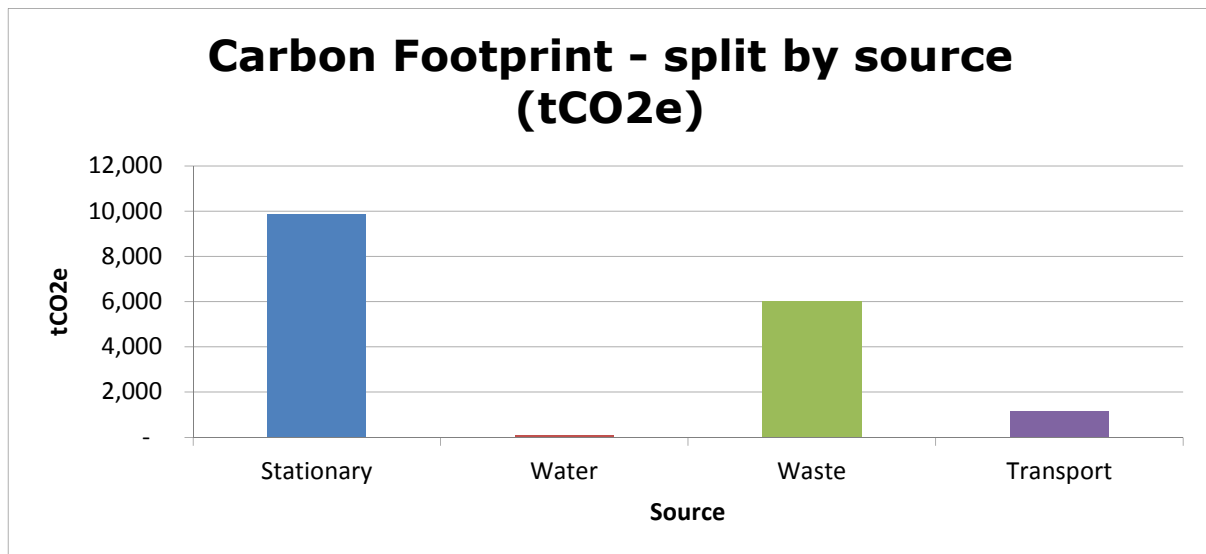
By 2023, through the introduction of carbon saving projects Comhairle nan Eilean Siar will have reduced its carbon emissions by 9.87% on a baseline of 2016. This equates to a figure of 15,499 tonnes CO₂e in 2023

Carbon saving projects are first identified, and then approved for funding, once a business case has successfully been made.

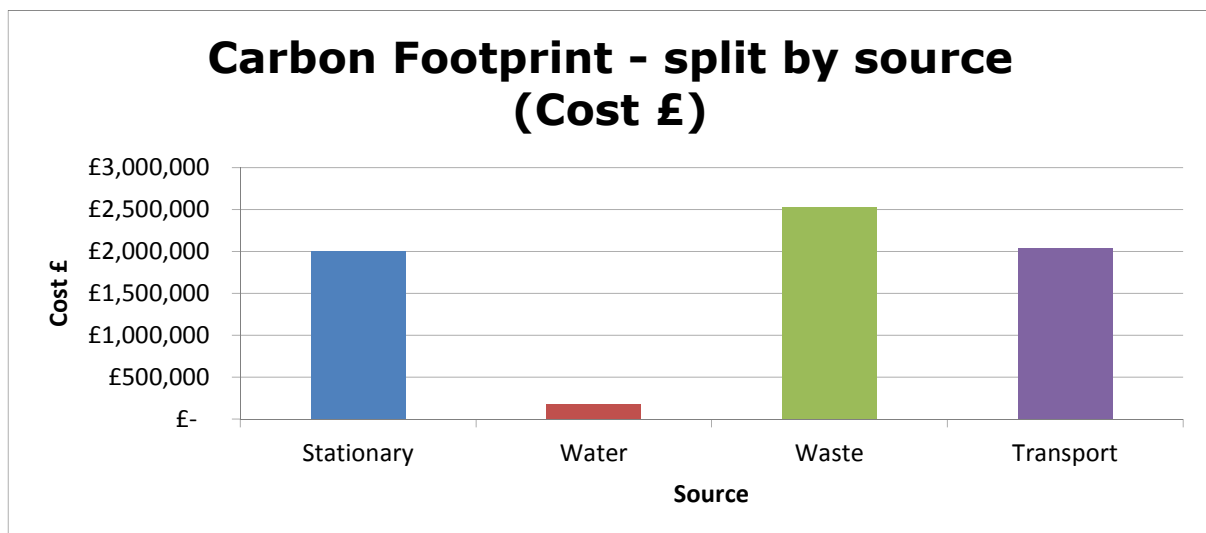
Savings in projects identified, but yet to be approved and funded are not included in graphs and charts throughout this report, future progress reports will include savings as projects are approved and fully funded.

The following graphs overleaf details Comhairle nan Eilean Siar's 2016 baseline carbon footprint and related expenditure:

Graph 1: showing 2016 baseline Carbon footprint



Graph 2: showing 2016 baseline Carbon footprint cost



Reductions will be achieved through a range of projects including energy, fleet and awareness raising initiatives. The Comhairle will fund Carbon management projects through both capital and revenue funding. These funds will be made available on completion of a detailed business case for all separate projects.

If all identifiable carbon saving projects were to be implemented, the potential project cost savings to the organisation are in the region of **£271,040** over the period 2017 to 2023.

Table 1: Value at Stake

	YEAR							
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Projects Capital Costs	506,187	468,901	709,024	456,228	130,000			
Project Cost Savings		74,676	115,172	247,256	257,570	266,869	271,040	271,040
Cumulative Cost Savings		74,676	189,848	437,103	694,673	961,542	1,232,582	1,503,622

The Project Sponsor for this CM Plan is Calum Mackenzie, Head of Assets and Infrastructure, who will be assisted in its delivery by the Carbon Management Team. Energy Champions have also been appointed to enhance communication and awareness-raising by actively promoting and monitoring environmental projects both locally and among wider stakeholders.

This CM Plan is viewed as a 'live' document and it is envisaged that there will be ongoing amendments to the document as Comhairle nan Eilean Siar's estate changes and planning assumptions become a reality. To ensure that it remains 'fit for purpose' to deliver targeted carbon savings, this document will be reviewed on an annual basis. This process will be overseen by the Carbon Management Team (CMT) and coordinated by the Head of Assets & Infrastructure.

2 Foreword from the Project Sponsor

The Outer Hebrides, in common with all Scotland, are equally exposed to the effects of climate change. The Comhairle will lead on programmes and projects to mitigate the impact on climate change through the use and development of low carbon energy and management of consumption and waste.

Partnership, leadership, corporate commitment and competent management underpin the effort to exceed a reduction of fifty percent in our 2009 carbon emissions baseline. Public sector service development and sustainability will be framed in environmental limits to demonstrate our commitment to climate change.

The Carbon Management Plan is a driver for change across all of the authorities operations and activities. Governance and performance measurement will be given a high priority to make sure that our reduction target of 1,697 tCo2e is achieved within the agreed time frame. Strategic developments in Asset, Estate, Fleet and Waste Management will make a significant contribution to reducing emissions.

The opportunities in Carbon Management to reduce costs and emission and achieve operational benefits are well understood. Comhairle nan Eilean Siar is committed to resourcing the plan and proposal through available in-house and out-sourced means and solutions.

3 Foreword from Resource Efficient Scotland

On behalf of Zero Waste Scotland, which delivers the Resource Efficient Scotland programme for the Scottish Government, I commend the commitment of the Comhairle nan Eilean Siar for their ongoing aim of improving resource efficiency throughout their operations. There are clear benefits of using fewer resources and reducing emissions to any organisations and this plan details how the Council will reduce their carbon footprint by 9.87% by 2023 based on a baseline year of 2016.

The projects detailed in this Carbon Management Plan will both improve the environmental performance of the organisation and lead to a reduction in operational carbon emissions. By implementing all of these projects, it is anticipated that cumulative CO₂e savings of at least 1,697 tonnes by 2023 can be achieved not only reducing the adverse effect on the environment but realising valuable cost savings for the Comhairle.

The Comhairle have identified that the key ways it will reduce its carbon emissions is by improving the efficiency of their lighting, improving their heating and reducing the amount of water consumed. Zero Waste Scotland is pleased to have supported Comhairle nan Eilean Siar with the development of this plan and we look forward to continuing to work with the Council to support the implementation of the planned resource efficiency measures over the coming years.

Zero Waste Scotland also looks forward to working with the Comhairle on potential low carbon heat projects and tackling food waste within the organisation and its stakeholders.

Iain Gulland, Chief Executive of Zero Waste Scotland

4 Introduction

Background to the Organisation

CnES is one of three distinct Islands authorities in Scotland. Its main offices are in Stornoway, Tarbert, Balivanich and Castlebay, providing services including education, social and community services, roads, economic development, planning, buildings standards, and waste management and other environmental services.

The Comhairle owns, maintains and manages a large asset portfolio. Their asset base comprises of the following; property, roads infrastructure, marine infrastructure, waste management infrastructure, vehicles and plant, ICT and renewable technology, all of which are used to assist deliver the Comhairle's services.

The contribution of the Outer Hebrides to the process of climate change is small, but the impact on the islands as a result of climate change is considerable. Increased sea levels and storm intensity will have a disproportionate impact on the islands environment and how we live and work. The current economic context coupled with a finite amount of fuel from traditional sources means that organisations have much to gain in seeking to reduce their energy costs and carbon footprint.

The Comhairle will give visible and positive leadership towards a low carbon economy. A governance structure has been put in place during the development of this plan, and will oversee its implementation and impact. In addition to this, the Comhairle will also engage with Community Planning Partners, particularly NHS Western Isles, to work together to become a 'carbon positive Outer Hebrides'.

CnES's Performance on Carbon Management to date

Although Comhairle nan Eilean Siar began their Carbon Management Programme in 2009, they have been implementing energy saving measures since the early 1990's. With the organisation's reporting obligations there is already a reasonably well established process for measuring and monitoring carbon emissions and project list to achieve carbon savings.

The key issues facing the organisation comprise the changes to the built estate, transportation fleet, staff/service users throughout, as well as increasing energy consuming equipment and facilities, all of which will have significant impacts on future carbon emissions. CnES's Carbon Management Team will continue to take measures to adapt the CM Plan to any potentially significant impacts on achieving CM Plan targets.

In the previous Carbon Management Plan published in 2013-15, the organisation set a reduction target of 20% based on a 2009 carbon footprint baseline of 26,831 tCO₂e; this equated to a target footprint of 21465 tCO₂e and an overall cumulative reduction of 5366 tCO₂e across the 5 year period to 2015. The above target was exceeded with the final cumulative reduction being 45.31% or 12,158 Tco2e. The 2009 footprint included emissions from: electricity, gas and oil consumption; transport; waste and water consumption.

A number of factors have made this a challenging target. In common with their peers and many other public sector organisations at that time, the complexities associated with delivering a comprehensive carbon management programme were new and not fully understood. Despite the organisation's good history of implementing energy efficiency measures, the increasing demands on staff, associated with the identification, planning, resourcing and tracking of carbon reduction projects/initiatives, have meant that they were effectively developing new skill sets and increasing their knowledge-base, whilst still continuing to perform existing duties.

Furthermore, the changing legislative and policy framework has meant that the drive to meet the stated CM Plan carbon reduction target has often been overshadowed. Finally,

energy intensiveness within buildings is increasing, estate is changing and there is a constant drive to increase service delivery.

These factors have combined to suggest that a review and revision of the original Carbon Management Plan, including targets, would help the organisation move forward constructively.

5 Carbon Management Strategy

Context and Drivers for Carbon Management

The organisation faces a complex set of drivers which set the context for carbon management. Crucially, the organisation recognises that these cannot and should not be viewed in isolation from each other or the principle goal of continuously minimising its environmental impact whilst maximising its contribution to society and the economy.

Ultimately, a strong performance with respect to carbon emission reduction should deliver financial benefits to CnES by mitigating the risks associated with e.g. increases in energy tariffs and levies such as the CRC EES.

The following represent the key carbon drivers for Comhairle nan Eilean Siar:

- Scottish Government targets;
- UK & European targets;
- Climate of reducing financial allocations;
- Rising energy costs;
- Principle that investments in carbon reduction are generally associated with commensurate reductions in future expenditure;
- The need to eliminate waste of resources and to increase efficiency;
- The organisation's own carbon management targets;
- Depletion of the world's finite resources;
- It's the right thing to do.

Legislative drivers for carbon management

Over the past 20 years there have been many pieces of legislation enacted at an increasing rate in the UK and Scottish Parliaments which aim to address the issue of climate change, carbon dioxide and greenhouse gas emissions and sustainability. Many of these stem from European Union Directives which in turn were developed in order to meet the obligations of the Kyoto Protocol, adopted in December 1997 and enforced in 2005. Under Kyoto, ratifying countries agreed to commit to reductions in their carbon emissions by, on average, 5.2% below 1990 levels by 2008-12.

The Agreement was supported in the UK by the findings of the Stern Review¹ on the Economics of Climate Change, published in October 2006, which provides compelling economic reasons to address climate change.

The UK share of the collective Kyoto target assumed by the European Union under the Protocol is a 12.5% reduction in emissions below 1990 levels by 2012. Subsequently the UK Climate Change Programme (launched in 2000) set a target of 20% reduction by 2010 and 60% reduction by 2050. The Climate Change (Scotland) Act 2009 pledges to reduce Scotland's greenhouse gas (GHG) emissions by 42% by the year 2020 and by 80% by the year 2050. Scottish Ministers are also committed to the promotion of renewable energy in Scotland. They set a target that 80% of the electricity generated in Scotland (as a

¹ Stern Review Report on the Economics of Climate Change. N Stern, 2006. HM Treasury, London.

proportion of gross consumption) should come from renewable sources by 2020, with an interim target of 31% by 2011.

The UK Government has placed an emphasis on the public sector setting a leading example. Public sector leadership will be critical to the achievement of the Government's climate change objectives.

In addition to the EU's Emissions Trading System (EU ETS), a number of legislative instruments such as the Climate Change Levy (CCL) and Carbon Reduction Commitment – Energy Efficiency Scheme (CRC EES) have been introduced by the UK Government, designed to encourage organisations to reduce emissions. The CRC EES introduces carbon trading to energy intensive organisations not part of the EU ETS. The EU Energy Performance of Buildings Directive (EPBD) was transposed into Scottish law in 2008 and has placed an obligation to evaluate energy usage, for inclusion in Energy Performance Certificates, to be displayed in all public buildings meeting certain criteria. The 2010 recast Directive also includes provisions, which include nearly zero energy requirements, for new public buildings within 8 years or less, while Scottish and UK Sustainable Construction strategies aim for zero energy buildings in the same time-frame. This, allied to recent changes in Buildings Regulations, will require the organisation to be proactive in terms of building design, construction and use.

This present strategy document will aid the delivery of key sustainability and estate management programmes in a carbon efficient and sustainable manner.

Some of the main legislative drivers affecting the organisation are set out in Appendix A; however, the list is not definitive.

Other drivers for carbon management

While reducing the financial and legal risks posed by various legislative requirements is a significant driver behind Comhairle nan Eilean Siar's carbon management programme there are other factors supporting the need for improving energy efficiency and reducing carbon emissions.

- **Cost saving:** The case for carbon reduction is strengthened by current financial constraints requiring reduced operating costs whilst maintaining effective service delivery. This provides a strong incentive to cut resource consumption to release this money for frontline services.
- **Reputational benefit:** By delivery of sustained carbon reductions, Comhairle nan Eilean Siar will be viewed as an exemplar enhancing the organisations broader sustainability credentials.
- **Improved staff satisfaction:** Studies have identified a correlation between an organisation with strong environmental performance and high staff satisfaction.
- **Improved engagement with key stakeholders:** Key stakeholders of Comhairle nan Eilean Siar, including the local community, are increasingly focusing on sustainability. Comhairle nan Eilean Siar's engagement and enhanced commitment will enhance the relationship with these stakeholders.

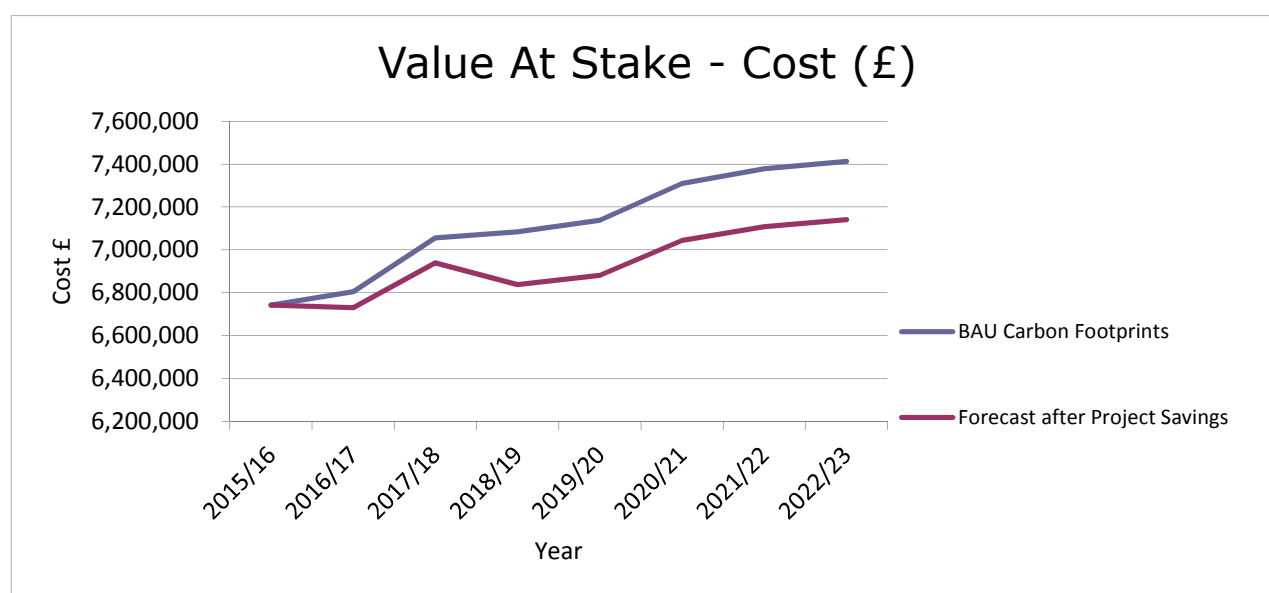
6 Emissions Baseline and Projections

Carbon Footprint Baseline, Cost and Projections

This section covers the establishment of the Comhairle nan Eilean Siar's carbon footprint, associated cost and 'Business As Usual' (BAU) cost projections.

Graph 3 below shows the Business As Usual cost (blue line) along with the future costs after all approved project savings have been made (red line). The Value At Stake (VAS) is the difference between these two lines and is £271,040 total cost savings over the plan period.

Graph 3: showing 'Business As Usual' cost projections



Scope and Boundaries of the Carbon Footprint

The resources to be included in a carbon footprint are defined in relation to two boundaries, the organisational and the operational boundary.

Definition of the boundaries is determined by the extent of the estate, goods and services over which Comhairle nan Eilean Siar has operational control, and the availability of good quality data.

Organisational Boundary

Organisation boundary: sets out which assets are to be included in the footprint and is shown in the "category" column in Table 2 overleaf.

Operational Boundary

Operational boundary: essentially sets out the emission sources included in the footprint and are shown in the "emission sources" column in Table 2 overleaf.

Table 2: CNES Carbon Footprint Boundaries

Category	Function Examples	Emissions Source
Operational Building Assets	Educational buildings, residential buildings, office accommodation, leisure facilities etc.	Electricity, gas, water, waste
Water	Supply & treatment of operational & non-operational buildings	Electricity, gas, water, waste
Waste	Black stream domestic	Waste
Fleet	Business use by Comhairle staff - Car, Bus, Lorry etc.	Fuel and Business Miles

Excluded Emission Sources include:

- Home-to-office mileage;
- Utility sources not directly billed (e.g. included within a service charge).

Data Sources

The data sources used in our CM Plan are based on robust data provided by both internal and external partners. The main streams of data (consumption and costs) input are as follows:-

i) Stationary Sources

- Electricity - TEAM Energy Management Systeem, historical AMR data, utility provider billing;
- Gas – Historical data, utility provider billing.

ii) Water

- Anglian water reports, historical data logger records.

iii) Waste

- Internal Waste Management Team.

iv) Transport

- Internal Fleet Operations Team;
- Staff mileage via fleet cars and independent business mileage.

Data was then collated and converted to a CO₂e tonnage equivalent using DEFRA factors for Company Reporting

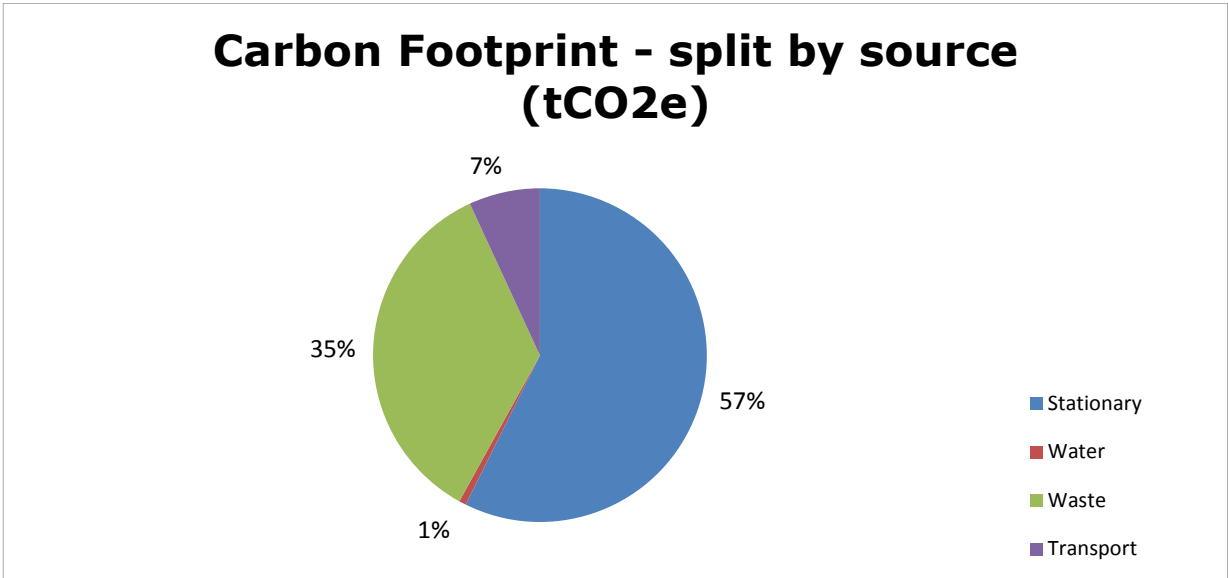
Conversion factors were taken for Scopes 1, 2 and 3 which relate to total direct emissions and are therefore in keeping with the methodology employed to determine previous Carbon footprints. As such, no 'Well to Tank' or 'Outside Scope' factors have been used.

Carbon Footprint Baseline and Cost

Comhairle nan Eilean Siar's overall Carbon Footprint for the Baseline year of 2016 was 17,196 tonnes CO₂e.

Graph 4 below shows that emissions from building and street lights constitutes 57% of the 2016 Carbon Footprint with Waste 35% and transport, including staff mileage, and water representing the two smallest contributors.

Graph 4: showing 2016 baseline Carbon footprint

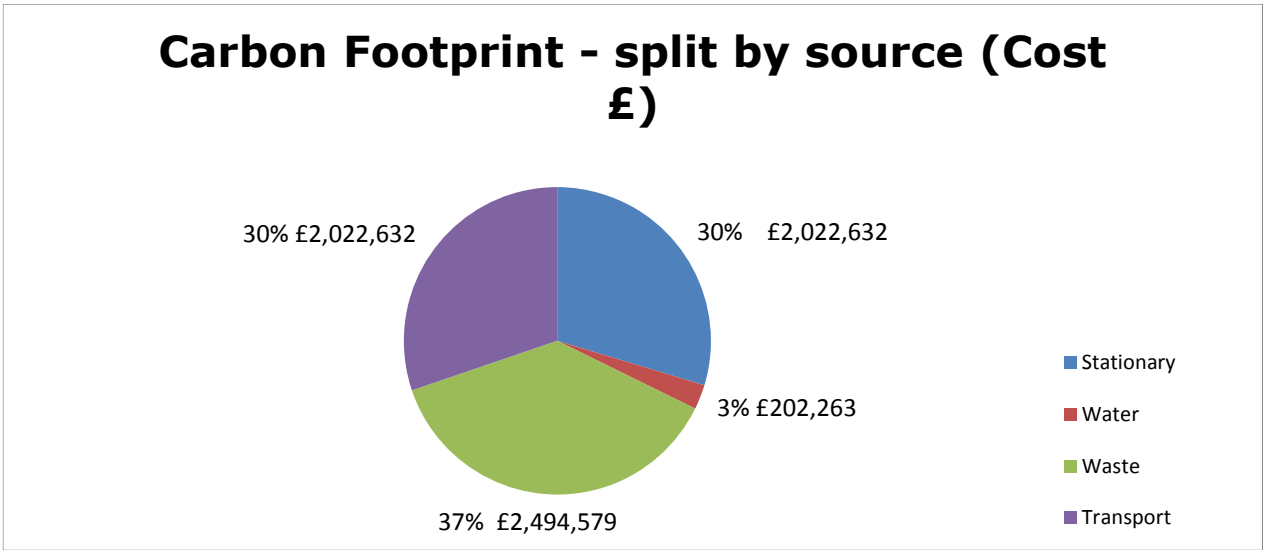


Carbon Footprint Baseline and Cost

Comhairle nan Eilean Siar’s overall cost of the Carbon Footprint for the Baseline year of 2016 was £6,742,107.

Graph 5 below shows that waste sources constitutes the largest cost of Carbon at 37% of the overall Carbon cost budget. Transport and building sources contribute 30% each of the overall Carbon cost budget whilst water is responsible for 3% of the overall Carbon cost budget.

Graph 5: showing 2016 baseline Carbon footprint cost



Appendix B provides a table detailing the individual consumptions and costs for each element of the footprint.

Graphs 6 below, shows the expected BAU carbon footprint from 2016.

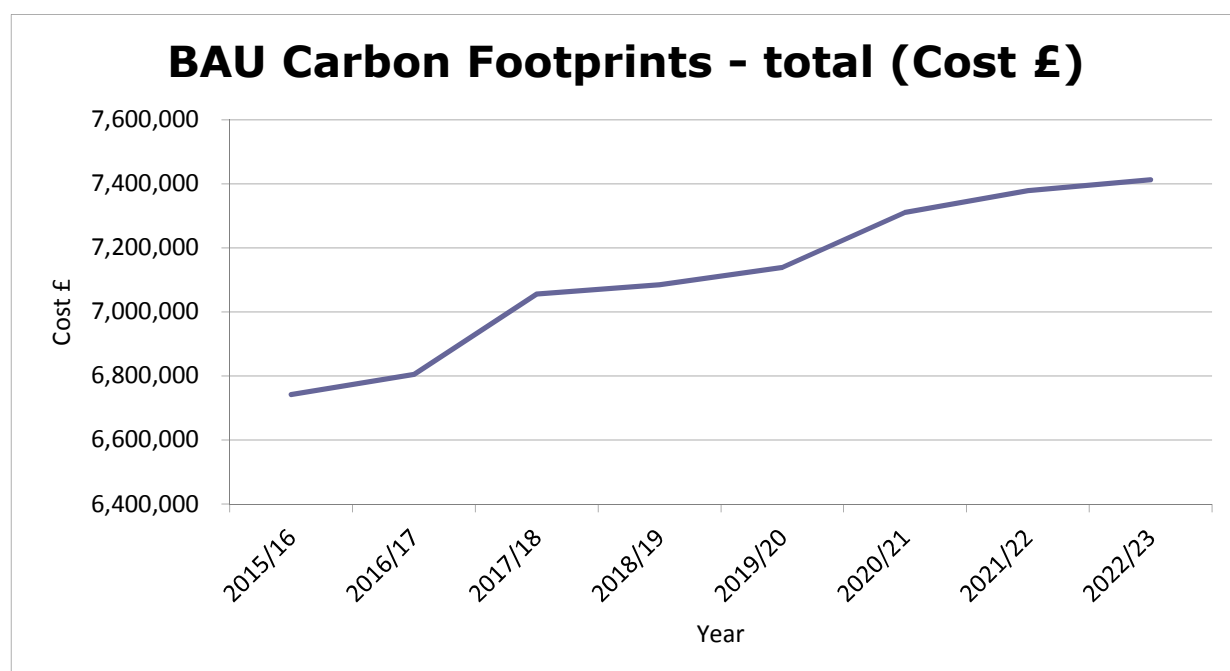
6:7 Business as Usual (BAU)

Analysis of projected emissions and the expected impact of BAU allow an evaluation of how the organisation's carbon emissions will change over time in terms of tCO₂e emitted and cost.

The results of the BAU analysis help to explain what is happening in the short and long term, what is happening to different parts of the footprint e.g. gas and electricity, and the current importance of the grid emission factor forecast, including the level of uncertainty in relation to this beyond a certain point.

Within the next 6 years, the organisation will potentially see changes in the 2017/2023 period, with the associated partial or complete closure of a number of buildings; however some of these closures will fall into the CM Plan period.

Graph 6: showing 2016 BAU projections (cost)



It can be seen that if consumption remained at 2015/16 levels, then the associated costs would increase from £6,742,107 to £7,412,552 which equates to a 9.5% increase. This is the cost to Comhairle nan Eilean Siar if no action is taken to invest in carbon saving measures.

7 Carbon Management Projects

Introduction

In order to continue achieving emissions reductions and avoiding financial exposure, Comhairle nan Eilean Siar is committed to identifying and implementing carbon saving projects.

Comhairle nan Eilean Siar recognises that successful attainment of its carbon reduction targets is contingent upon the following key elements being in place:

- An organisational framework within the organisation that is sufficiently robust to support the financing, delivery and monitoring of carbon reduction projects.
- Clearly identified responsibility and accountability for delivery against carbon reduction targets from the CM Plan outset.
- Identification of a realistic suite of carbon reduction projects across a range of areas relevant to the carbon footprint; this list must be regularly reviewed and flexible to adapt to emerging needs and opportunities for funding.
- A data collection and collation system that is integrated sufficiently to inform both an annual progress update on the CM Plan and other Government and associated returns.

Existing Projects

The following are a sample of some of the initiatives and projects which have already been completed or implemented since 2009. The carbon emission savings achieved by these schemes will therefore have already contributed towards Comhairle nan Eilean Siar's carbon reductions and corresponding savings will therefore be included in the baseline carbon footprint for 2016.

- Loft Insulation;
- Renewable Installs;
- Door and Window Replacement.
- LED Lighting

Planned Future Projects

The projects identified below are a sample of those that have been selected for implementation within the period 2016 to 2023 because they either generally provide the largest proportion of savings or were already planned for delivery as part of an ongoing programme of works. In relation to projects that have had their associated potential carbon savings quantified, the sum predicted to be saved over the five year lifespan of the CM Plan amounts to 1,697 tCO₂e.

Energy

- Lighting – Change to LED wherever suitable;
- Energy Management – Change of timings, increase of management controls;
- Renewable Technology – Installation of renewable technology where appropriate;
- Energy Efficiency – Targeted efficiency programmes;

- Roll out of efficiency measures identified through RES surveys.

Travel/Transport

- Review of staff travel arrangements, including pool cars and electric vehicles;
- Ongoing review of Fleet and efficiency measure.

Water

- Continued development of rain water harvesting at selected properties;
- Roll out of water efficiency measures identified through Anglian Water surveys.
In addition there are some "enabling" projects which while not directly leading to carbon savings, will "enable" further savings to be achieved through subsequent outcomes/actions. These will also require funding to be identified and allocated.
Carbon savings will be achieved through a range of projects, which are as summarised in Appendix C. These cover energy, vehicle fuel and water. For details of project funding, refer to the next section of this CM Plan. Table 3 on the next page shows the capital cost and savings in future years.
As explained in the executive summary only approved and fully funded projects are included.

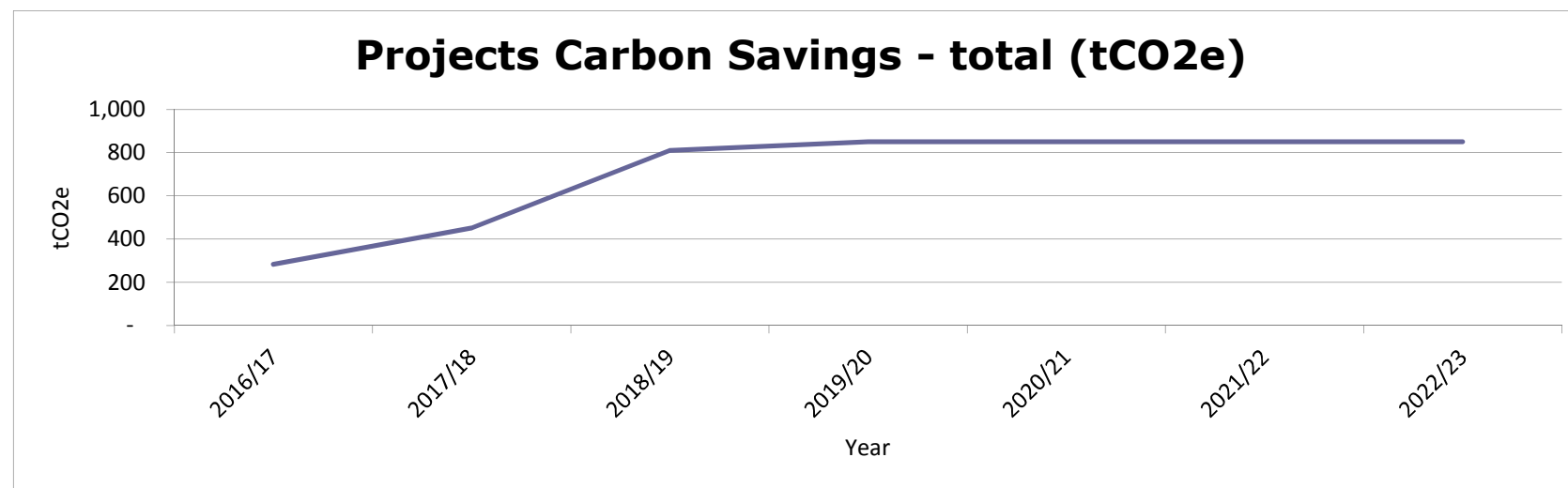
Comhairle nan Eilean Siar's Carbon Management Plan (CM Plan) 2017/2023

Financing Carbon Savings Projects

Table 3: Summary of Project capital costs and savings

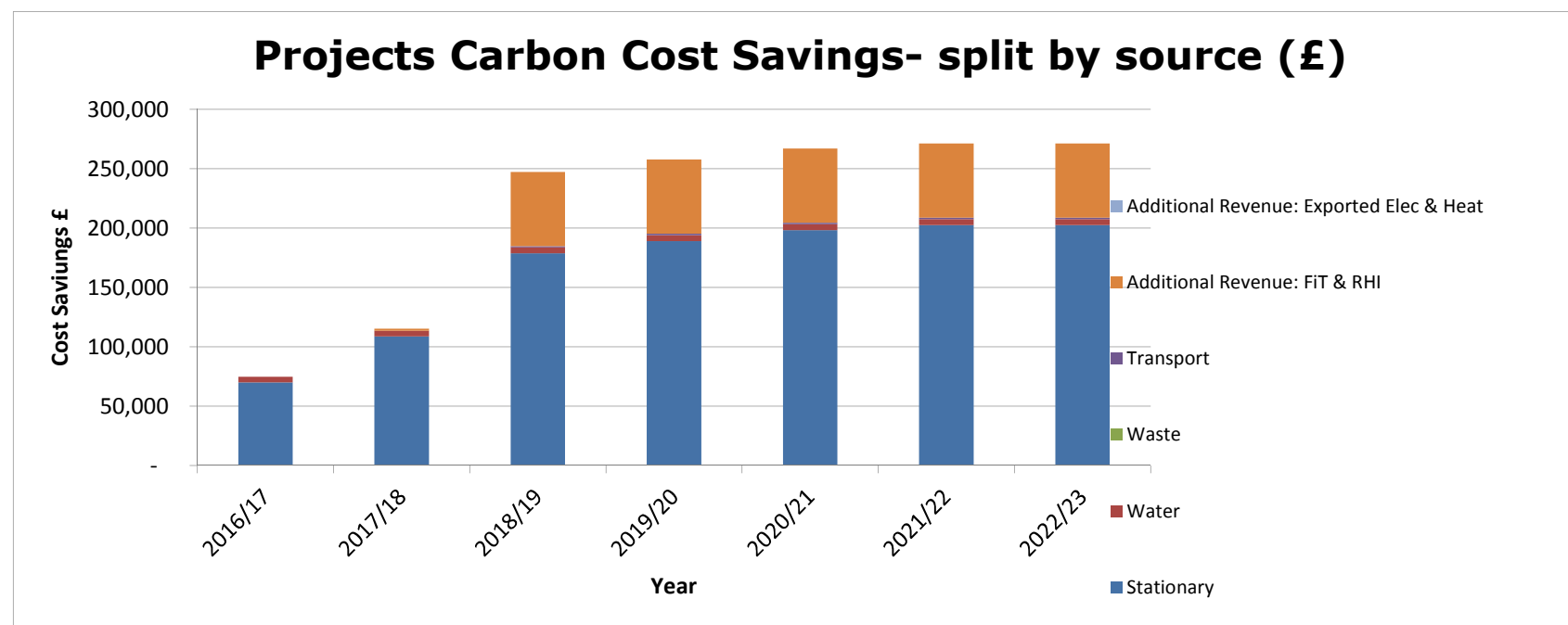
	YEAR							
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Projects Capital Costs	506,187	468,901	709,024	456,228	130,000	-	-	-
Project Cost Savings		74,676	115,172	247,256	257,570	266,869	271,040	271,040
Cumulative Cost Savings	-	74,676	189,848	437,103	694,673	961,542	1,232,582	1,503,622

Graph 7: showing 2016 Project carbon savings



Financing Carbon Savings Projects

Graph 8: showing 2016 Project cost savings



Financing Carbon Saving Projects

Provision of funding will be made available for individual programmes after a detailed business case has been developed and approved by Asset Management Senior Officers Group.

When all identifiable carbons saving projects are implemented, the project cost financial savings, avoided costs, to the organisation are in the region of £271,040 over the period 2017 to 2023.

It is assumed that similar levels of Funding will be provided from the Capital and Revenue programme in future years along with income generated from existing Renewable Technology.

Opportunities will be taken to maximise any other funding streams from the Scottish Government and other sources for Invest to Save Initiatives.

Comhairle nan Eilean Siar's Carbon Management Plan (CM Plan) 2017/2023

Value at Stake

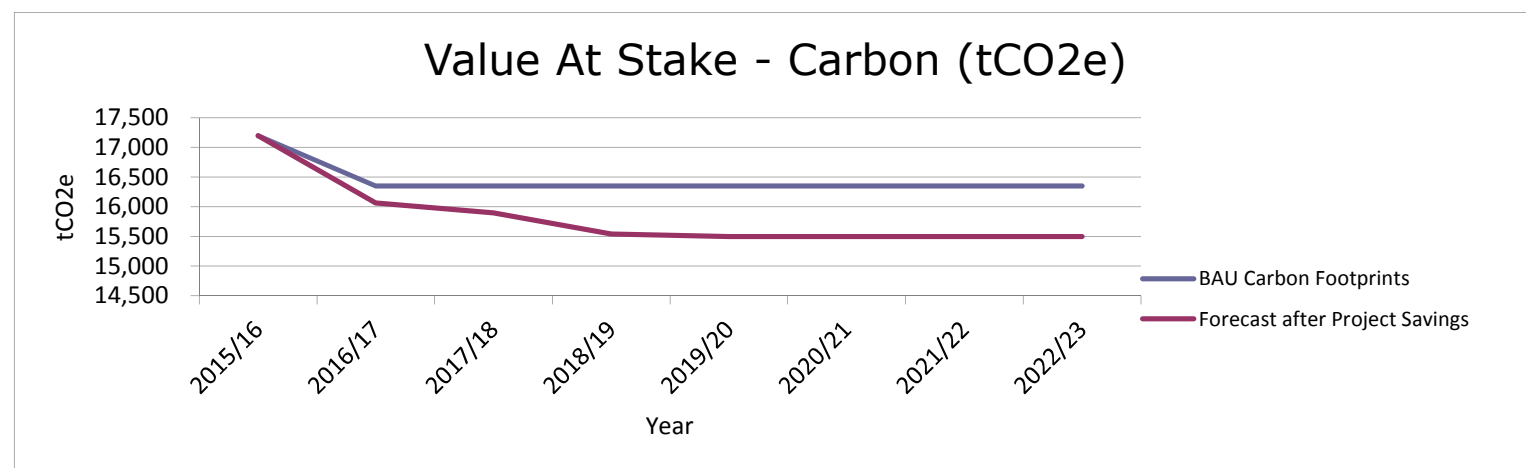
Table 4 below provides a breakdown of the Value at Stake.

Table 4: Summary of Value at Stake

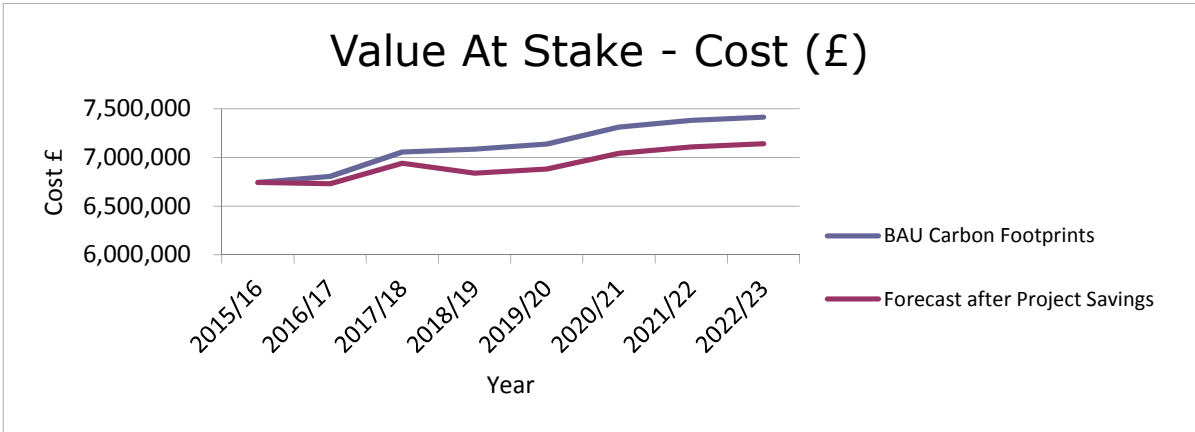
	YEAR															
	2015/16		2016/17		2017/18		2018/19		2019/20		2020/21		2021/22		2022/23	
	tCO2e	£	tCO2e	£	tCO2e	£	tCO2e	£	tCO2e	£	tCO2e	£	tCO2e	£	tCO2e	£
BAU Carbon Footprints	17,196	6,742,107	16,349	6,804,584	16,349	7,055,241	16,349	7,084,855	16,349	7,138,579	16,349	7,310,137	16,349	7,378,998	16,349	7,412,552
Project Savings	-	-	283	74,676	452	115,172	810	247,256	850	257,570	850	266,869	850	271,040	850	271,040
Forecast after Project Saving	17,196	6,742,107	16,066	6,729,908	15,897	6,940,069	15,539	6,837,599	15,499	6,881,009	15,499	7,043,268	15,499	7,107,958	15,499	7,141,512

For Comhairle nan Eilean Siar, the equivalent financial Value at Stake equates to £271,040 over the 6 year lifetime of this CM Plan (Graph 10).

Graph 9: showing 2016 Value at Stake - carbon emissions



Graph 10: showing 2015 Value at Stake - cost of carbon emissions



As explained in the executive summary only approved and fully funded projects are included to date, however as more projects are approved the further reductions/savings can be reported.

Target Setting

Based on this analysis, Comhairle nan Eilean Siar therefore commits to a target of 15,499 tCO₂e (9.87%) reduction on the 2016 carbon footprint by 2023.

By 2023, Comhairle nan Eilean Siar will have reduced its carbon emissions by 9.87% on a baseline of 2016. This equates to a figure of 15,499 tonnes CO₂e in 2023

Comhairle nan Eilean Siar would be likely to achieve their emission reduction target if all approved projects were to be implemented in accordance with the intended timescales.

There are proposed potential major estate changes that will impact on Comhairle nan Eilean Siar’s ability to achieve its carbon reduction target if, as is possible, these are brought forward to begin within the remit of this current CM Plan. However, the strategy going forward is to develop a long term plan for Comhairle nan Eilean Siar’s infrastructure, including heating, cooling, power and water, which focuses on a centralised approach; this is likely to result in rationalisation of estate which will contribute to carbon emission reductions.

Some carbon reduction projects within the Project List do not as yet have any carbon savings quantified; the majority of Comhairle nan Eilean Siar’s significant proposed projects do, however, have a quantified carbon reduction value, thus it is likely that these few projects remaining un-quantified will not significantly alter the outcomes of this CM Plan.

Although Comhairle nan Eilean Siar has no control over utility, petrol, waste and water costs (limited through procurement choices), it can control the amount of each used. In order to reduce the financial burden, Comhairle nan Eilean Siar must reduce the amount of carbon emissions.

8 Management and Delivery of the Carbon Management Plan

Introduction

In order to ensure that there is effective and ongoing ownership of the Carbon Management Plan, it is important to have a fully defined governance structure. Comhairle nan Eilean Siar will continue to adopt the following structure for management accountability.

The Carbon Management Team

The Carbon Management Team (CaMT) has responsibility for the operational direction and implementation of the CM Plan. Minutes/outcomes/recommendations of the CMT meetings are reported to the Asset Management Senior Officer Working Group which provides feedback as appropriate. The Asset Management Senior Officers Working Group subsequently reports to relevant Comhairle Committees.

The CaMT is convened by the Head of Assets & Infrastructure and meets regularly throughout the year. Meetings are scheduled to take place prior to Asset Management Senior Officer Group (AMSOG) meetings to allow the Minutes/outcomes/recommendations to be disseminated at the AMSOG meetings.

The composition of the CaMT is listed in the Table below and comprises a wide range of operational managers and senior technical staff who are committed to driving the carbon reduction agenda forward.

Name	Title	Department
Anne M Murray	Strategy Officer	Development Services
Calum Mackenzie	Head of Assets and Infrastructure	Technical Services
Robert MacIennan	Asset Manager	Technical Services
Robert Macleod	Services Engineer	Technical Services
Ruaraidh Ferguson	Energy Efficiency Officer	Technical Services
Fiona Rae (Clerk)	Operation Support Officer	Technical Services
Amanda Mackenzie	Procurement Support Officer	Finance and Corporate Services

The remit of the CaMT includes:

- developing policies for consideration by the Asset Management Senior Officers Group;
- ensuring effective communication of the organisation's policies to staff and students;
- monitoring the organisation's built environment performance against its carbon management targets; and
- raising the profile of built environment carbon management in the community and promoting environmentally sustainable behaviour by staff and visitors.

Operational Roles and Responsibilities

Carbon Management Plan/Project Sponsor

The Project Sponsor, Calum Mackenzie, Head of Assets and Infrastructure, will champion the project and have ultimate responsibility for strategic and operational direction and for agreeing budgets outside those already available to CaMT.

Head of Assets & Infrastructure

The Head of Assets & Infrastructure, Calum Mackenzie will oversee the strategic implementation plan, have strategic input into its development, and review progress.

Asset Manager

The Asset Manager, Robert MacIennan, will coordinate the implementation of the CM Plan and report on its progress to the Project Sponsor. Responsibilities of the Asset Manager will also include the incorporation of progress into the organisation's Performance Management Software Tool (Interplan).

Carbon Management Team

The Carbon Management Team will be the key to communicating within the organisation and will represent all the services that operate buildings and vehicles, as well as officers with a cross-service remit, e.g. finance, ICT, property investment and maintenance, estates management

Resourcing and Ownership

The Carbon Management Plan and carbon saving target will be approved by the Comhairle's Committee Structure, providing endorsement and a clear commitment at the highest level, reinforcing the need for action across the organisation. Committee approval will continue to provide long-term organisational momentum for embedding the CM Plan and carbon savings across the organisation. This will primarily be delivered through the governance structure for carbon management described in this Section.

Key stakeholders at all levels of management will provide overall support for promoting a culture of carbon reduction throughout all buildings.

The CM Plan will be published online, and in pdf format, with a limited number of printed copies available for key stakeholders, thus leading by example and saving paper and distribution costs.

The Internal Delivery Model

The key to success of this updated CM Plan is effective engagement with staff and the local communities. Everyone has a role to play in embedding and delivering the CM Plan and collaborative working is essential to deliver the desired carbon savings.

The key stakeholders in the organisation who will continue to shape and change culture and awareness are:

- Senior management;
- Heads of services and officers;
- All staff (key staff including technicians, administrators, grounds staff, janitors, cleaners, and security).

Data Collection and Management

Comhairle nan Eilean Siar's present data collection system affords reasonable data analyses using Energy Management Software. This is used to monitor all energy costs and consumption from invoice data and a selected number of building electricity sub meters.

Performance data will be communicated to staff to raise their awareness of the implications of their energy use to their department. This will be done regularly through energy reports. There are also plans to exploit existing facilities within the proprietary Energy Management Software to disseminate this information through web-based 'dash boards'.

Comhairle nan Eilean Siar's Carbon Management Plan (CM Plan) 2017/2023

The CFPR tool is used to monitor and report on our energy and carbon use. It also provides ongoing information regarding carbon reduction projects and renewable energy generation.

Communication and Training

Reduction of the Comhairle nan Eilean Siar's carbon footprint is a key performance indicator for the organisation.

The CaMT has developed a planned approach to raising carbon reduction awareness through the development of a robust communications and awareness strategy.

There are many avenues of communication available and these will be fully utilised in promoting the carbon reduction message to all staff and visitors. Effective communication and engagement is the key to success. It is recognised that substantial cultural change will take time to deliver.

Initiatives for building awareness include:

- Email.
- Newsletters.

The Carbon Management Team will regularly monitor progress and formally report to the AMSOG as described above ensuring that all major stakeholders are kept informed.

9 Progress Reporting

Yearly Updates to the Carbon Management Plan

The Carbon Management Plan is viewed as a 'live' document and it is envisaged this will change on an annual basis as the organisation's estate changes and planning assumptions become reality. To ensure that the CM Plan remains 'fit for purpose' to deliver targeted carbon savings, the document will be reviewed on an annual basis. This process will be overseen by the CMT and coordinated by the Asset Manager.

Specifically, the following areas of the CM Plan will be subject to annual review:

- Progress towards overall carbon reduction target including CO₂e savings against target and quantifiable benefits;
- Progress with identified carbon reduction projects;
- Financial savings achieved as a result of carbon reduction projects;
- Costs of the programme;
- Wider benefits;
- Stakeholder engagement, and

The review will be presented to the AMSOG through the CMT.

Data Collection and Management

Data measuring the progress of the CM Plan will be collected regularly and presented to the various relevant levels of governance.

The data collected will include:

- Progress on specific projects;
- Details of the performance of the variables contributing to the emissions in the quarter such as utilities, water, fuel, waste generated.

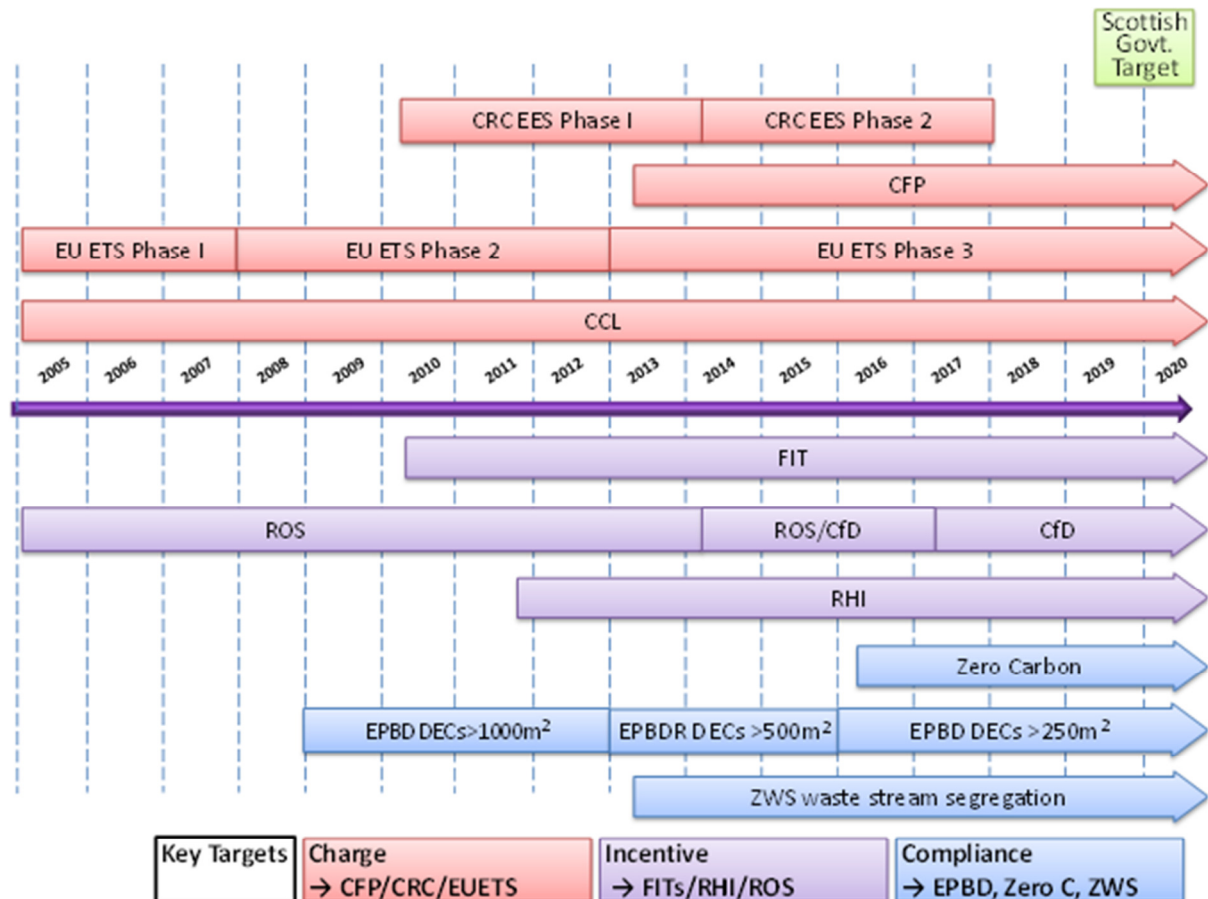
Other Reporting Requirements

Comhairle nan Eilean Siar will continue to fulfil requirements to report on environmental performance through a range of mechanisms such as the Sustainable Scotland Networks online reporting platform for Climate change.

Appendix A

Legislative Drivers for Carbon Management

The figure below provides a snapshot of the key external legislative drivers (covering compliance, incentives and charges) which may impact on CNES now and in the near future. The most significant driver, the CRC Energy Efficiency Scheme (CRC EES), may expose CNES to a charge of £16/tonneCO₂e in 2014/15, increasing with RPI thereafter.



Key:

CRC EES – Carbon Reduction Energy Efficiency Scheme (www.gov.uk/crc-energy-efficiency-scheme-qualification-and-registration)

CFP – Carbon Floor Price (www.hmrc.gov.uk/climate-change-levy/carbon-pf.htm)

EU ETS – European Union Emissions Trading Scheme (www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050/supporting-pages/eu-emissions-trading-system-eu-ets)

FiT – Feed In Tariff (www.gov.uk/feed-in-tariffs/overview)

CCL- Climate Change Levy (www.hmrc.gov.uk/climate-change-levy/)

ZWS-Zero Waste Scotland (www.zerowastescotland.org.uk/)

ROS – Renewable Obligation Scheme (www.ofgem.gov.uk/environmental-programmes/renewables-obligation-ro)

CfD – Contracts for Difference (www.gov.uk/government/publications/electricity-market-reform-contracts-for-difference)

RHI – Renewable Heat Incentive (www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/renewable-heat-incentive-rhi)

EPBDR – Energy Performance in Buildings Directive

(www.gov.uk/government/policies/improving-the-energy-efficiency-of-buildings-and-using-planning-to-protect-the-environment/supporting-pages/energy-performance-of-buildings)

Appendix B

Detail of the individual consumptions and costs for each element of the 2016/22 carbon footprint.

Category	Carbon Footprint	Cost
Grid Electricity kWh	0.5004 kgCO ₂ e	£0.12
LPG gas kWh	0.21468 kgCO ₂ e	£0.065
Gas oil kWh	0.27212 kgCO ₂ e	£0.06
Diesel (retail station biofuel blend)	2.6024 kgCO ₂ e	£1.32
Petrol (retail station biofuel blend)	2.1914 kgCO ₂ e	£1.32
Industrial mobile machinery (gas oil or 'red diesel') kWh	0.24667 kgCO ₂ e	£0.065
Average van up to 3.5 tonne km	0.2688 kgCO ₂ e	£1.00
Large diesel car, over 2.0 litre km	0.2305 kgCO ₂ e	£0.09
Medium petrol car, from 1.4 - 2.0 litres km	0.1939 kgCO ₂ e	£0.09
Waste (black stream domestic landfill) tonne	459.00 kgCO ₂ e	£143.03
Water supply (m3)	0.3441 kgCO ₂ e	£0.804
Wastewater supply (m3)	0.7085 kgCO ₂ e	£1.44

Appendix C

Summary of Projects

Project Reference	CNES001
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Loft Insulation fitted at Sgoil Na loch
Benefits	Annual saving of 25 (tCO ₂ e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project Management section to liaise with design team and department
Ensuring Success	Success can be measured through increased building user comfort and lower carbon emissions
Measuring Success	Heating oil usage at Sgoil Na Loch compared with previous years.
Timing	Completed 2015
Notes	Although the building was opened in 2001, the recommended insulation levels at that time fall far below current standards. A successful outcome to this project would provide impetus for further insulation projects throughout the estate

Project Reference	CNES002
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	New doors and windows fitted at Garrabost Care Unit
Benefits	Annual saving of 1 (tCO ₂ e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project Management section to liaise with design team and department
Ensuring Success	Success can be measured with previous years
Measuring Success	Energy costs measured with previous years
Timing	Completed 2015
Notes	The payback associated with doors and glazing units tends to be out with on-going parameters however where glazing units and doors are changed it can be cost effective to specify high efficiency units

Project Reference	CNES003
Owner	Calum Mackenzie
Department	Technical Services Roads and Street lighting
Description	LED replacement, Stornoway Street Lights
Benefits	Annual saving of 219 (tCO ₂ e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project Management section to liaise with design team and department
Ensuring Success	The success of this project will be through providing similar levels of safety whilst reducing energy consumption
Measuring Success	Success will be measured through lower utility bills
Timing	Completed 2015
Notes	A comprehensive study of cost against savings was carried out prior to the commencement of works. This also took into account the expected reduction in ongoing maintenance

Project Reference	CNES004
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	LED replacement at town hall
Benefits	Annual saving of 2 (tCO ₂ e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project Management section to liaise with design team and department
Ensuring Success	The success of the project will be through providing similar levels of light whilst reducing energy consumption
Measuring Success	Success will be measured through lower utility bills
Timing	Completed 2015
Notes	The works were carried out as part of a range of renovations to the property

Project Reference	CNES005
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Recharge of electricity
Benefits	Annual saving of 8 (tCO ₂ e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project Management section to liaise with design team and department
Ensuring Success	The success of the project is via successful billing of electricity to co-joined properties
Measuring Success	Success will be measured via income received
Timing	Completed 2015
Notes	During the building of a non Comhairle property and the refurbishment of a Comhairle property it was deemed to be jointly beneficial to share utilities and services. With the changes in utility costs and the advancement in monitoring techniques it is now beneficial to the Comhairle to recharge utility costs wherever possible

Project Reference	CNES005A
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Recharging of Oil
Benefits	Annual saving of 17 (tCO2e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project Management section to liaise with design team and department
Ensuring Success	The success of the project is via successful billing of oil to co-joined properties
Measuring Success	Success will be measured via income received
Timing	Completed 2015
Notes	During the building of a non Comhairle property and the refurbishment of a Comhairle property it was deemed to be jointly beneficial to share utilities and services. With the changes in utility costs and the advancement in monitoring techniques it is now beneficial to the Comhairle to recharge utility costs wherever possible

Project Reference	CNES006
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Window and door replacement Carloway Care Unit
Benefits	Annual saving of 1 (tCO2e)
Funding	Approved through submission of business case and submission of AMSOG
Resources	Project Management section to liaise with design team and department
Ensuring Success	Success can be measured through increased building user comfort and lower carbon emissions
Measuring Success	Energy costs measured with previous years
Timing	Completed 2016
Notes	The payback associated with doors and glazing units tends to be out with n-going parameters however where glazing units and doors are changed it can be cost effective to specify high efficiency units

Comhairle nan Eilean Siar's Carbon Management Plan (CM Plan) 2017/2023

Project Reference	CNES007
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Review of loft insulation throughout the Comhairle estate
Benefits	Annual saving of 24 (tCO2e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project management section to liaise with design team and department
Ensuring Success	Positive actions from project CNES001 to be incorporated within methodology
Measuring Success	Oil usage to be measured at improved properties
Timing	Completed 2017
Notes	Innovative insulation methods to be considered for all properties

Project Reference	CNES008
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Review of internal lighting, (LED replacement and controls)
Benefits	Annual saving of 27 (tCO2e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project management section to liaise with design team and department
Ensuring Success	Energy surveys were carried out by Resource Efficient Scotland on behalf of the Comhairle at five properties. Council HQ, Lewis Sports Centre, Creed Park, Lionacleit School and Shawbost School. One of the outcomes from the reports was a recommendation to replace existing lighting with LED units
Measuring Success	Energy costs measured with previous years
Timing	Part Complete/Identified more information required
Notes	The costs and benefits associated with the project formed part of the report by Resource Efficient Scotland on the 5 Comhairle properties

Project Reference	CNES009
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Review of heating controls
Benefits	Annual saving of 29 (tCO2e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project management section to liaise with design team and department
Ensuring Success	Energy surveys were carried out by Resource Efficient Scotland on behalf of the Comhairle at five properties. Council HQ, Lewis Sports Centre, Creed Park, Lionacleit School and Shawbost School. One of the outcomes from the reports was a recommendation to review heating controls at each property existing lighting with LED units
Measuring Success	Energy costs measured with previous years
Timing	Part Complete/Identified more information required
Notes	<p><u>Ionad Spòrs Leòdhais</u></p> <ol style="list-style-type: none"> 1. Reduction of temperature in localised areas 2. Amend timings on equipment to reduce costs 3. Supply and install heat exchanger insulation jackets 4. Switch off redundant radiators in canteen 5. Switch off 2 x 500watt heat lamps within servery when not required 6. Undertake draft proofing in highlighted areas 7. Investigate the options of cavity wall insulation <p><u>Sandwick Road Offices</u></p> <ol style="list-style-type: none"> 1. Investigate and install automatic balancing valves to heating system 2. Install aerated head water tap in suitable locations <p><u>Creed Park</u></p> <ol style="list-style-type: none"> 1. Reduce the available capacity for electricity supply 2. Automatic monitoring and targeting system 3. Lowering ceiling in the conference room 4. Loft insulation 5. Harvesting water 6. CHP control 7. Clear light panels 8. Move furniture from radiators where possible 9. Plug-in timer for the immersion tank <p><u>Shawbost School</u></p> <ol style="list-style-type: none"> 1. Improved control of space heating 2. Draught proofing

- 3. Reduce pool hall temperature*
- 4. Automatic balancing valve*
- 5. Switch off computers and printers out of working hours*
- 6. Heat recovery from backwashing*
- 7. Move furniture from radiators where possible*
- 8. Retro-fitting aerated head, push button taps*

Sgoil Lionacleit

- 1. Local control of space heating*
- 2. Cavity wall insulation*
- 3. Draught-proofing*
- 4. Reduce pool water temperature*
- 5. Automatic balancing valve*
- 6. Revised timetable of the pool air handling unit*
- 7. Pool air temperature reduced by 1°*
- 8. Domestic hot water shuts off 30 minutes earlier each day*
- 9. Move furniture from radiators where possible*
- 10. Thermostatic control of heaters*
- 11. Backwashing heat recovery*

Project Reference	CNES010
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Relocate switch for floodlights, incorporating Lux sensors at Smith avenue running track
Benefits	Annual saving of 2 (tCO2e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project management section to liaise with design team and department
Ensuring Success	The potential for saving was identified by staff within the facility. The installation then moved through the Comhairle's processes culminating in the measures being carried out based on energy efficiency criteria.
Measuring Success	Energy costs measured with previous years
Timing	Completed 2016
Notes	Project developed through staff initiative, lessons to be taken forward for other projects.

Project Reference	CNES011
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Repair of PV array at Sir E Scott School
Benefits	Annual saving of 8 (tCO2e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project management section to liaise with design team and department
Ensuring Success	Based on an average of 800 kWh generated per installed kWp this 21kWp array will generate, on average, 16,800 kWh's per annum
Measuring Success	Energy generated per annum
Timing	Completed 2017
Notes	This 21kWp array was installed in 2005 but around 2010 an inverter failed. Lack of budget provision for ongoing maintenance/repair meant that the array was not repaired. Lessons can be taken forward for any future renewable installation.

Project Reference	CNES012
Owner	Robert Emmott
Department	Finance and Corporate Services
Description	Printer Rationalisation
Benefits	Annual saving of 5 (tCO ₂ e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Finance and Corporate Services IT
Ensuring Success	Through a programme of printer rationalisation the number of printers will be reduced whilst the efficiency of the units will be increased.
Measuring Success	Energy used per annum
Timing	Completed 2017
Notes	Energy audits carried out by Resource Efficient Scotland advised action on the use and distribution of printers.

Project Reference	CNES013
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Review of water usage at Brevig pier
Benefits	Annual saving of 2 (tCO ₂ e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project management section to liaise with design team and department
Ensuring Success	Leakage at Brevig pier was identified through water surveys carried out by Anglian Water. Further inspection revealed issues with domestic properties
Measuring Success	Reduced Water Bills
Timing	Completed 2016
Notes	The methodology within the Anglian water surveys can be rolled to reduce water consumption elsewhere within the CNES estate.

Project Reference	CNES014
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Review of all external lighting at WISP schools
Benefits	Annual saving of 4 (tCO2e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project management section to liaise with design team and department
Ensuring Success	The project is at the scoping stage. No critical factors in preventing completion have been identified
Measuring Success	Reduction in electric use
Timing	Part Complete/Identified more information required
Notes	Partnership project with FES

Project Reference	CNES015
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Energy Efficiency Training
Benefits	Annual saving of 26 (tCO2e)
Funding	No Cost
Resources	Asset Management Team
Ensuring Success	Energy efficiency training was identified as lacking in the properties surveyed by Resource Efficient Scotland. Research has shown that where employees are motivated to be efficient in their use of energy then ongoing waste can be reduced. The potential for success from energy efficiency programmes depends on a holistic management approach
Measuring Success	Reduction in utility charges
Timing	In Progress
Notes	Energy efficiency practices to be embedded within business as usual practices. Four sites have been selected to pilot schemes to embed energy efficiency practices, Lionacleit school, Council Offices, Sandwich Road, Shawbost school

Project Reference CNES016	
Owner	Robert Emmott
Department	Finance and Corporate Services
Description	Review of Staff Travel
Benefits	Annual saving of 2 (tCO ₂ e)
Funding	Finance and corporate services
Resources	Finance and corporate services
Ensuring Success	Staff travel is necessary and desirable within an Island local authority however there are a number of options being reviewed which will provide carbon and/or financial savings
Measuring Success	Reduction in staff travel costs
Timing	In Progress
Notes	CNES016 will only include travel via road
Project Reference CNES017	
Owner	Robert Emmott
Department	Finance and Corporate Services
Description	Monitoring of PC's being left on overnight
Benefits	Annual saving of 2 (tCO ₂ e)
Funding	Finance and corporate services
Resources	Finance and corporate services
Ensuring Success	Regular monitoring of the status of PC's will identify the number of PC's being left on out of working hours
Measuring Success	Reduction in utility costs, particularly in baseline
Timing	In Progress
Notes	It is recognised that for operational reasons some PC's are required to be operational at all times

Project Reference	CNES018
Owner	Calum Mackenzie
Department	Technical Services Piers and Harbours
Description	Review of Pier and Harbour Lighting
Benefits	To be scoped
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project management section to liaise with design team and department
Ensuring Success	Replacement of existing lights with LED replacements,
Measuring Success	Reduction in utility costs
Timing	Identified more information required
Notes	Due to the nature of the work environment LUX levels to remain appropriate

Project Reference	CNES019
Owner	Joe MacPhee
Department	Development Department
Description	Replacement of library vans
Benefits	Annual saving of 5 (tCO ₂ e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Development department to liaise with Transport Section
Ensuring Success	New energy efficient vehicles to replace less energy efficient vehicles
Measuring Success	Reduction in fuel costs
Timing	Identified more information required
Notes	Efficiencies to be achieved if mileages remain comparable

Project Reference	CNES020
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Reduce out of hours temperatures at Westside and Point School
Benefits	Annual Saving of 0.5 (tCO ₂ e)
Funding	No Cost
Resources	WISP liaison committee to coordinate with FES
Ensuring Success	As a result of a coordinated CNES/FES energy review, potential energy savings have been identified. Ongoing energy reviews will continue to identify and recommend future potential savings
Measuring Success	Reduction in fuel costs
Timing	In Progress
Notes	Where applicable successful changes to be rolled out throughout schools estate

Project Reference	CNES021
Owner	Bernard Chisholm
Department	Education and Children's services
Description	Replace pool covers at Sgoil Lionacleit and Castlebay
Benefits	Annual Saving of 175 (tCO ₂ e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	Education and Children's services
Ensuring Success	All pools within the CNES estate use pool covers however over time the cover can degrade and for optimum efficiency covers must be replaced as per manufacturer's recommendation.
Measuring Success	Reduction in energy costs
Timing	In Progress
Notes	The benefits of the use of pool covers is well documented

Project Reference	CNES022
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Modify BMS settings to reduce boiler run time at Nicolson Institute
Benefits	Annual Saving of 0.5 (tCO ₂ e)
Funding	Approved through submission of business case and submission to AMSOG
Resources	WISP liaison committee to coordinate with FES
Ensuring Success	As a result of a coordinated CNES/FES energy review, potential energy savings have been identified. Ongoing energy reviews will continue to identify and recommend future potential savings
Measuring Success	Reduction in energy costs
Timing	Completed 2017
Notes	Where applicable successful changes to be rolled out throughout schools estate

Project Reference	CNES024
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Review corridor temperatures at Nicolson Institute
Benefits	Annual Saving of 0.5 (tCO ₂ e)
Funding	No cost
Resources	WISP liaison committee to coordinate with FES
Ensuring Success	As a result of a coordinated CnES/FES energy review, potential energy savings have been identified. Ongoing energy reviews will continue to identify and recommend future potential savings
Measuring Success	Reduction in energy costs
Timing	Completed 2017
Notes	Where applicable successful changes to be rolled out throughout schools estate

Project Reference	CNES025
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Mirror CNES street lighting policy as closely as possible at WISP schools
Benefits	Annual Saving of 1 (tCO ₂ e)
Funding	No cost
Resources	WISP liaison committee to coordinate with FES
Ensuring Success	As a result of a coordinated CNES/FES energy review, potential energy savings have been identified. Ongoing energy reviews will continue to identify and recommend future potential savings
Measuring Success	Reduction in energy costs
Timing	Identified more information required
Notes	Where applicable successful changes to be rolled out throughout schools estate

Project Reference	CNES026
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	With the exception of care homes, reduction of eco set point on BEMS
Benefits	Annual saving of 2 (tCO ₂ e)
Funding	No cost
Resources	
Ensuring Success	Reducing the eco set point will reduce the running time of boilers within the CNES estate without compromising user comfort.
Measuring Success	Reduction in energy costs
Timing	Completed 2017
Notes	Buildings will be monitored if there are any issues found to be associated with reducing the eco set point

Project Reference	CNES027
Owner	Calum Mackenzie
Department	Technical Services Property Management
Description	Creed Park water thermal store replacing kerosene
Benefits	Annual saving of 88 (tCO ₂ e)
Funding	£368,000
Resources	Technical services
Ensuring Success	The thermal store will provide hot water for heating and process work, replacing kerosene
Measuring Success	Reduction in energy costs
Timing	Completed 2017
Notes	Use of the thermal store also allows more electricity to be generated via the creed turbine.

Project Reference	CNES028
Owner	Bernard Chisholm
Department	Education and Children's Services
Description	Installation of larger heat emitters action areas at Sgoil an Taobh Siar
Benefits	Annual saving of 0.25 (tCO ₂ e)
Funding	£3428.90
Resources	WISP liaison committee to coordinate with FES
Ensuring Success	The larger radiators will more adequately heat the area reducing the need for increased heat through the ASHP
Measuring Success	Reduction Electricity costs
Timing	Completed 2017
Notes	The successful project to be rolled out throughout WISP schools

Project Reference	CNES029
Owner	Bernard Chisholm
Department	Education and Children's Services
Description	Installation of larger heat emitters action areas at Sgoil Dhalabroig
Benefits	Annual saving of 0.25 (tCO ₂ e)
Funding	£3942.45
Resources	WISP liaison committee to coordinate with FES
Ensuring Success	The larger radiators will more adequately heat the area reducing the need for increased heat through the ASHP
Measuring Success	Reduction Electricity costs
Timing	Completed 2017
Notes	The successful project to be rolled out throughout WISP schools

Project Reference	CNES030
Owner	Bernard Chisholm
Department	Education and Children's Services
Description	Installation of larger heat emitters action areas at Sir E Scott School
Benefits	Annual saving of 0.25 (tCO ₂ e)
Funding	£5347.42
Resources	WISP liaison committee to coordinate with FES
Ensuring Success	The larger radiators will more adequately heat the area reducing the need for increased heat through the ASHP
Measuring Success	Reduction Electricity costs
Timing	Identified more information required
Notes	The successful project to be rolled out throughout WISP schools

Project Reference	CNES031
Owner	Bernard Chisholm
Department	Education and Children's Services
Description	Installation of larger heat emitters action areas at Sgoil Bhaile a' Mhanaich
Benefits	Annual saving of 0.25 (tCO ₂ e)
Funding	£5000.00
Resources	WISP liaison committee to coordinate with FES
Ensuring Success	The larger radiators will more adequately heat the area reducing the need for increased heat through the ASHP
Measuring Success	Reduction Electricity costs
Timing	Identified more information required
Notes	The successful project to be rolled out throughout WISP schools

Project Reference	CNES032
Owner	Bernard Chisholm
Department	Education and Children's Services
Description	Installation of larger heat emitters action areas at Sgoil an Rubha
Benefits	Annual saving of 0.25 (tCO ₂ e)
Funding	£5000.00
Resources	WISP liaison committee to coordinate with FES
Ensuring Success	The larger radiators will more adequately heat the area reducing the need for increased heat through the ASHP
Measuring Success	Reduction Electricity costs
Timing	Identified more information required
Notes	The successful project to be rolled out throughout WISP schools

Project Reference	CNES033
Owner	Calum Mackenzie
Department	Technical Services
Description	LED Lighting at St Brendans
Benefits	Annual saving of 8 (tCO2e)
Funding	£15,000.00
Resources	Approved through submission of business case and submission to AMSOG
Ensuring Success	LED lighting to replace existing lighting
Measuring Success	Reduction Electricity costs
Timing	Identified more information required
Notes	The successful project to be rolled out throughout other CnES properties

Project Reference	CNES034
Owner	Bernard Chisholm
Department	Education and Children's Services
Description	Shawbost School replacement Pool Cover
Benefits	Annual saving of 25 (tCO2e)
Funding	£7,238.00
Resources	Approved through submission of business case and submission to AMSOG
Ensuring Success	Appropriate use of cover to reduce losses
Measuring Success	Reduction oil costs
Timing	In Progress
Notes	The successful project to be rolled out throughout other CnES properties

Project Reference	CNES035
Owner	Bernard Chisholm
Department	Education and Children's Services
Description	Lionel School replacement Pool Cover
Benefits	Annual saving of 25 (tCO2e)
Funding	£7,238.00
Resources	Approved through submission of business case and submission to AMSOG
Ensuring Success	Appropriate use of cover to reduce losses
Measuring Success	Reduction oil costs
Timing	In Progress
Notes	The successful project to be rolled out throughout other CnES properties

Project Reference	CNES036
Owner	Calum Mackenzie
Department	Technical Services
Description	Energy efficiency work at new Ardseileach
Benefits	Annual saving of 61 (tCO2e)
Funding	£100,00.00
Resources	Approved through capital programme
Ensuring Success	Appropriate training and use of new infrastructure
Measuring Success	Reduction Electricity and oil costs
Timing	Completed 2017
Notes	The successful project to be rolled out throughout other CnES properties

Project Reference	CNES R001
Owner	Iain Mackinnon
Department	Technical Services
Description	PV Installation Sites
Benefits	Project to be scoped
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project management section to liaise with design team and department
Ensuring Success	Due to changes in FiT only properties which have a baseload above 10kW's would be suitable
Measuring Success	Reduction in kWh usage
Timing	Completed/Identified, more information required
Notes	Government initiatives to be monitored for change

Project Reference	CNES R002
Owner	Iain Mackinnon
Department	Technical Services
Description	Develop scope for wind turbine at Uig school
Benefits	To be scoped
Funding	Approved through submission of business case and submission to AMSOG
Resources	Project management section to liaise with design team and department
Ensuring Success	Production of comprehensive feasibility study to take account of relationship between proposed building and existing FiT regulation
Measuring Success	Reduction in overall energy costs, income through FiT
Timing	Identified, more information required
Notes	Cognisance of changing nature of FiT and OFGEM regulations required

Project Reference	CNES R003
Owner	Iain Mackinnon
Department	Technical Services
Description	Creed turbine water thermal store
Benefits	Annual saving of 64 (tCO ₂ e)
Funding	£368,000.00
Resources	Project management section to liaise with design team and department
Ensuring Success	The thermal store will utilise energy generated from the Creed Park Wind Turbine which is unable to be exported to the grid
Measuring Success	Reduction in energy costs at Creed Park, increase in FiT
Timing	Completed 2017
Notes	The thermal store will also provide hot water to the Creed Park heating system, increasing user comfort levels.

Project Reference	CNES R007
Owner	Calum Mackenzie
Department	Technical Services
Description	Solar Thermal at Ardseileach
Benefits	4 (tCO ₂ e)
Funding	£10,000.00
Resources	Project management section to liaise with design team and department
Ensuring Success	Production of comprehensive feasibility study to take account of RHI regulation
Measuring Success	Reduction in energy costs, Carbon and RHI income at site.
Timing	Completed 2017
Notes	Cognisance of changing nature of RHI and OFGEM regulations required

Appendix D

Project List Summary and Individual Project Details

ID	Description	Status	Year	Capital	Fuel Saved	Saving kWh	Saving £
CnES001	Sgoil nan Loch - Loft Insulation	Complete	15/16	£57,539.70	Gas Oil	88,750 kWh	2,392
CnES002	Garrabost Care Unit – Window and Door Replacement	Complete	15/16	£15,472.77	Gas Oil	4,500 kWh	12,687
CnES003	Stornoway Street Lights – LED Replacement	Complete	15/16	£417,600.00	Electricity	488,268 kWh	1,709
CnES004	Town Hall – LED Replacement	Complete	15/16	£5,449.76	Electricity	4,883 kWh	2,231
CnES005	Spors Nis – Recharge of Electricity	Complete	15/16	£0.00	Electricity	16,787 kWh	2,182
CnES005a	Spors Nis – Recharge of Oil	Complete	15/16	£0.00	Gas Oil	61,253 kWh	2,505
CnES006	Carloway Care Unit – Window and Door Replacement	Complete	16/17	£15,473.00	Gas Oil	2,640 kWh	21,626
CnES007	Review of Loft Insulation	Complete	16/17	£35,000.00	Gas Oil	88,000 kWh	
CnES008	Various Properties – Review of Internal Lighting	Complete/I identified, more information required	17/18 & 18/19	£151,815.00	Electricity	552,461 kWh	3,009
CnES009	Various Properties – Heating Controls	Complete/I identified, more information required	15/16 & 16/17	£90,592.00	Electricity, LPG, Gas Oil, Natural Gas and Water	978,300 kWh 3144 m ³	797
CnES010	Smith Avenue Running Track – Relocate Switch for Floodlights	Complete	15/16	£100.00	Electricity	3,744 kWh	53
CnES011	Repair of PV at Sir E Scott School	Complete	16/17	£6500.00	Electricity	16,800 kWh	773
CnES012	Printer Rationalisation	Complete	16/17	£0.00	Electricity	11,913 kWh	1,548
CnES013	Review of water usage at Brevig Pier	Complete	15/16	£0.00	Water	7,000 kWh	5,500
CnES014	Review of all External Lighting of WISP Schools	Complete/I identified more Info Required	16/17	£13,500.00	Electricity	27,864 kWh	3,622
CnES015	Energy Awareness Training	In Progress	16/17, 17/18 & 18/19	£4,338.00	Electricity	58,055 kWh	612
CnES016	Review of Staff Travel	In Progress	17/18	£0.00	Diesel (km)		
CnES017	IT Monitoring of PCs	In Progress	16/17	£0.00	Electricity	1,000 kWh	130

Comhairle nan Eilean Siar's Carbon Management Plan (CM Plan) 2017/2023

ID	Description	Status	Year	Capital	Fuel Saved	Saving kWh	Saving £
CnES018	Review of Pier and Harbour Lighting	Identified/ More Info Required	17/18		Electricity		
CnES019	Replacement of Library Vans	Identified/ more information required	16/17 & 17/18	£25,540.00	Diesel	461 km	13,437
CnES020	Reduce Temperatures during out of hours at Point and Westside Schools	In Progress	16/17		LPG	2,000 kWh	260
CnES021	Replacement Pool Covers	In Progress	17/18	£12,000	Gas Oil & Water	632,050 kWh 134 m3	8222
CnES022	Modify BMS Setting to reduce Boiler Run Time at the Nicolson Institute	Complete	15/16	£0.00	LPG	1,000 kWh	130
CnES024	Review Corridor Temperatures at the Nicolson Institute	Complete	15/16	£0.00	LPG	500 kWh	65
CnES025	Mirror CnES Street Light Policy as Closely as Possible at WISP Schools	Identified more information required	16/17	£0.00	Electricity	1,260 kWh	164
CnES026	Reduction of Eco Set Point (with the exception of Residential Care Homes	Complete	16/17	£0.00	Gas Oil	5,500 kWh	715
CnES027	Creed Park Thermal Store	Complete	15/16	£0.00	LPG	1,000 kWh	130
CnES028	Install larger Heat emitters in action areas at Sgoil an Taobh Siar	Complete	17/18	£34289.9	Electricity	651 kWh	74
CnES029	Install larger Heat emitters in action areas at Sgoil Dhalabroig	Complete	17/18	£3942.45	Electricity	772 kWh	87
CnES030	Install larger Heat emitters in action areas at Sir E Scott School	Identified more information required	17/18	£5347.42	Electricity	1,260 kWh	118
CnES031	Install larger Heat emitters in action areas at Sgoil Bhaile a Mhanaich	Identified more information required	16/17	£5,000.00	Electricity	740 kWh	796
CnES032	Install larger Heat emitters in action areas at Sgoil an Rubha	Identified more information required	17/18	£5,000	Electricity	717	76
CnES033	LED lighting at	Identified	17/18	£15,000	Electricity	33,000	3,960

Comhairle nan Eilean Siar's Carbon Management Plan (CM Plan) 2017/2023

<u>ID</u>	<u>Description</u>	<u>Status</u>	<u>Year</u>	<u>Capital</u>	<u>Fuel Saved</u>	<u>Saving kWh</u>	<u>Saving £</u>
	St Brendan's	more information required					
CnES034	Shawbost School replacement pool cover	In Progress	17/18	£7,238	Oil	90,000	4,950
CnES035	Lionel School replacement pool cover	In Progress	17/18	£7,238	Oil	90,000	4,950
CnES036	Energy efficiency work at new Ardseileach	Complete	18/19	£100,000	Oil	220,000	11,880
CnES-R001	PV installation at various sites	Complete/Identified, more information required	18/19	£102,000	Electricity	48,000	5,760
CnES-R002	Develop scope for wind turbine at Uig school	Identified more information required	18/19	£189,600.00	Electricity	24,000	2,880
CnES-R003	Creed turbine water thermal store	Complete	17/18	£368,000.00	Oil	278041	11,122
CnES-R007	Ardseileach Facility – Solar Thermal	Complete	16/17	£10,000.00	Oil	10,000	1,130

Appendix E – Climate Change Assessment Tool Results

Overall results - Run 1				
	Organisation score	Total score available	Percentage score	Traffic light assessment
Governance	16	28	57%	57%
Emissions	23	30	77%	77%
Adaptation	5	28	18%	18%
Behaviour	9	20	45%	45%
Procurement	5	16	31%	31%
Overall	58	122	48%	48%

