Shetland Islands Council

Carbon Management Strategy
Carbon Management Plan 2015 – 2020

Lunnasting School Wind Turbine

Sandwick Allotments

Fetlar Development's Electric Minibus

Sellaness Biomass Boiler

Apr 2015 - Revision 1.4

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Foreword by Council Leader

Over the past few years the priority for Shetland Islands Council has been addressing our financial position. We've made great progress towards living within our means but to limit our thoughts to continuing business as usual will not be sufficient in the future.

Other issues are now becoming pressing; none more so than the accepted problem of climate change. Nationally and globally it is now vital to address the very real economic and social impacts of climate change on present and future generations.

As a Council these impacts will be felt in the delivery of all of our services. Increased storm events will affect our transport options and create pressure on our infrastructure and buildings. The need for reliable cost effective energy and heating will require to be balanced by a need to decrease peak demand on the Shetland grid. Our economy will be affected by freight disruptions and the changing availability and price for food and basic items nationally and internationally caused by climate disruptions in their own production areas.

To limit these effects we now need to move to a low carbon society where all our resources are used most efficiently and where we pull together to ensure community benefit.

The Carbon Management Programme is a key component of our strategy to fundamentally change the way the Council works so that it becomes an environmentally sustainable organisation, where its present needs can be met without compromising the ability of future generations to meet their needs.

To achieve this Shetland wide, carbon management must become an embedded responsibility of each and every elected member, departments, staff and service partners. It must also be linked into the wider Shetland community.

Over the past six years a low carbon transition has been slowly put in motion but despite some progress we remain in the early stages of the journey. We must now increase momentum if we are to avoid the increased costs that will result from inaction.

This Plan sets out a roadmap for the next five years. I ask you all to consider how your own area of work and life will be affected by climate change and to help plan for how we can all become more efficient in our use of resources to deliver a better future for all.

Councillor Gary Robinson
Council Leader

Executive Summary

This is Shetland Islands Council's first formal Carbon Management Plan (CMP). The plan aims to reduce emissions from our fleet, buildings, street lighting and other facilities. It prioritises actions that reduce our carbon footprint with the added benefit of cutting costs in most cases.

The actions that form the backbone of the plan seek to deliver carbon and financial efficiencies without reducing the quality of service delivery. The main purpose of the CMP is to:

- Define our carbon emissions baseline and provide detailed projections for future emissions
- Provide a 5 year implementation plan for achieving the desired reduction target
- Confirm funding, ownership and responsibility for delivery
- Outline project governance requirements
- Plan stakeholder management and communications to continue to secure support and encourage culture change.

The main project themes (which are subject to mandatory reporting) that will deliver the greatest carbon savings are:

- Transport and fleet operations in all services
- Energy and water use in all Council buildings
- Business/staff travel within and outwith Shetland
- Waste disposal and minimisation
- Energy efficient housing
- Sustainable procurement and resource use
- Staff and community awareness raising
- Street lighting
- ICT Services

In this time of limited resources, both financial and human, we will target our efforts to where we can have the greatest impact and will maximise the leverage of additional external funding into Shetland, from a variety of sources, to assist us on our journey to a low carbon economy.

1. **Introduction**

    1.1. Carbon Management Plans are required under the Climate Change (Scotland) Act 2009 as a key tool in tackling climate change by reducing carbon emissions from our operations and estate.

    1.2. Within Shetland it is becoming clear that the potential impact of climate change on our islands will be considerable. Increased sea levels and storm intensity resulting from a changing climate will have a considerable effect on how we live and work.   Already harbours have been damaged and shipping and transport has been disrupted by the increased frequency and severity of storms. This pattern is set to escalate. The current costs of energy and materials, combined with the certainty of future increased costs in these areas, means that all services and organisations have much to gain in seeking to reduce their energy and procurement costs and in working in a more resource efficient way in everything they do.

    1.3. Shetland Islands Council aims to reduce carbon emissions by 42% by 2020 (the national target) over the baseline of 2007/8. This would have equated to an annual reduction of 3.23% from 2007/8.

    1.4. Our current position relative to the 2007/8 baseline shows an actual carbon reduction of approximately 2.68% per year from 2007/8 to date.   We are therefore left with a 31.73% savings target to achieve over the next 6 years. This now equates to an annual reduction of 4.53% over the next 6 years. This will be challenging in the current financial climate. This is summarised below in Figure 1.
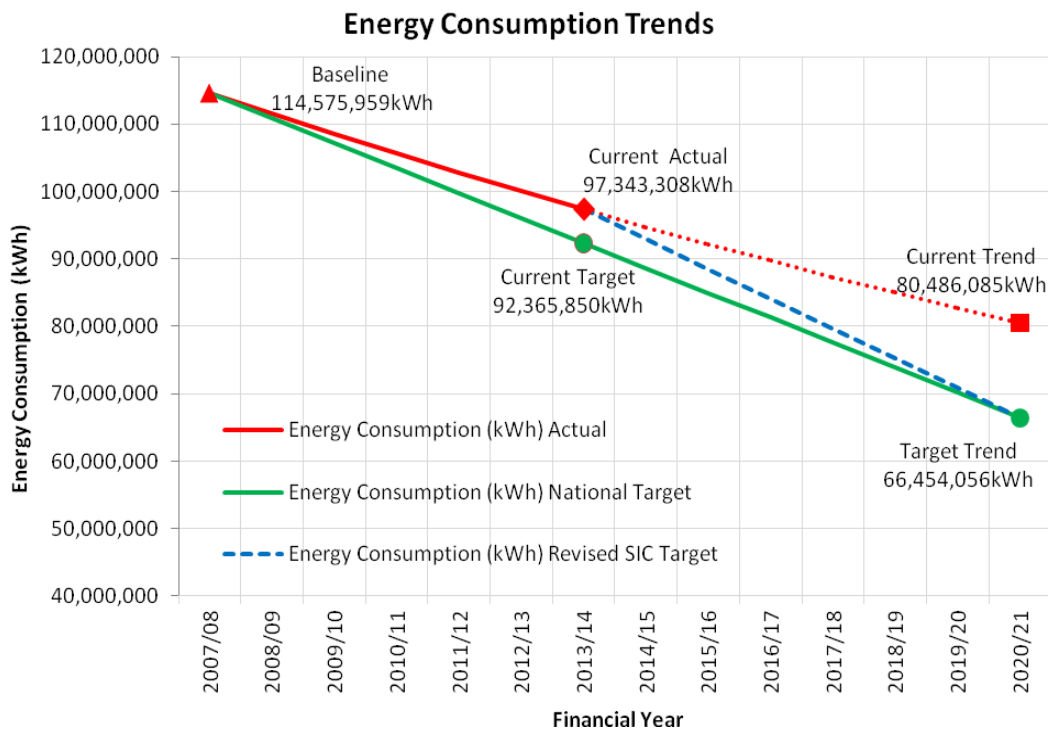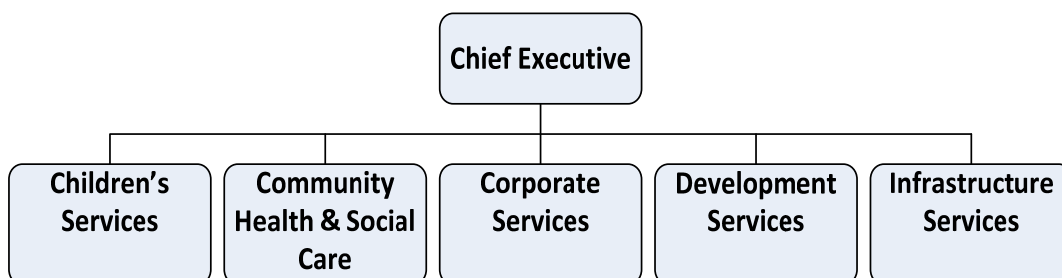

Figure 1: Energy Consumption Trends

1.5. Shetland Islands Council is an all purpose island authority consisting of an Executive Service supplying Member support and five Directorates as shown below:

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                        ┌──────────────────┐
                        │  Chief Executive │
                        └──────────────────┘
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│ Services  ││Health &  ││ Services ││ Services ││  Services  │
│           ││Social    ││          ││          ││            │
│           ││Care      ││          ││          ││            │
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Figure 2: Shetland Islands Council – Overview Structure

1.6. The overall Council structure is given in Appendix 4.

1.7. Each of the areas highlighted impacts on carbon emissions through its operations and can make a positive contribution to Council costs savings and emission reduction by delivering the projects proposed in our Carbon Project Register. Each Directorate will have an implementation portfolio to deliver in order to reduce the Council and community's overall spend and carbon emissions. This will move us to a position of sustainable and efficient resource use.

2. Carbon Management Strategy

2.1. By delivering our Carbon Management Plan we will seek to reduce emissions from our estate and its operations. This can only be achieved with the full support of other services and by the levering in of external finance. How and why this must be achieved is detailed in the following Sections.

Context and Drivers

2.2. The climate change and energy landscape in Scotland pulls together a range of actions, regulation, targets and drivers. As well as an ambitious emissions reduction targets, we also have a range of renewable energy targets that seek to deliver at least 50% renewable electricity, 11% renewable heat, and 10% renewable transport fuels by 2020.

2.3. The UK and Scottish Governments have placed an emphasis on local authorities setting a leading example on Climate Change. Action by local authorities will be critical to achieving the Government's climate change objectives, such as the long term goal to reduce CO_2 emissions by 80% by 2050 as set out in the Climate Change (Scotland) Act 2009 and the UK Climate Change Act 2008.

2.4. Scottish Government's target for carbon is a reduction of 80% on our 2008 baseline by 2050 with a midpoint of a 42% reduction on the same baseline by 2020.

2.5.   Shetland Islands Council (along with all other Scottish local authorities) was a signatory to the Scottish Climate Change Declaration in 2008 accepting this duty and agreeing to respond.

2.6.   These have created a number of external drivers for local authorities such as:

.1   **Energy Performance Certificates**: Since 4 January 2009 there is a legal requirement for all public sector buildings where the public has access, with a total useful floor area of over $1,000m^2$, to display an Energy Performance Certificate (EPC) in a prominent place, clearly visible to the public. This shows the building's energy efficiency rating on a scale from A – G, much like the rating system of electrical appliances. This requirement now covers all buildings of $500m^2$ and is about to encompass all buildings of $250 \ m^2$. This brings in almost all of the Council Estate.

.2   **Carbon Reduction Commitment**: Is a mandatory "cap & trade" emissions trading scheme for organisations whose total electricity consumption is greater than 6,000MWh or approximately £500k. If an organisation falls within the CRC scheme all electricity and fuel emissions are covered except emissions from domestic buildings and street lighting.

.3   **Rising Energy Prices**: The Council has experienced continued fuel and energy increases of around 107% since 2004/5. In 2008/09 Shetland Islands Council spent around £2.75 million on energy (electricity, gas and heating oil) in non-domestic properties and over £3.25 million on fuel oil. This is only set to rise in future as demand for fossil fuel surpasses supply.

2.7.   Further drivers for change arise from the UK Climate Change Act 2008 and the Climate Change Public Bodies Duties Guidance issued in 2011; The Low Carbon Scotland: Meeting the Emissions Reductions Targets 2010-2022 Report on Proposals and Policies (RPP2); the Low Carbon Scotland Public Engagement Strategy; the Scottish Climate Change Adaptation Framework and the Adaptation Scotland Climate Change Adaptation Workbook. All of the above – especially RPP2 – have produced various topic specific Plans for action.

2.8.   The Council is a large employer with approximately 2,277 FTE employees. As a community leader the Council should lead by example, setting the standard for other local organisations to follow.

2.9.   More emphasis is also nationally being placed on delivering accurate and consistent measurement of greenhouse gas emissions by the use of the internationally recognised Greenhouse Gas Protocol and by an evolving suite of local authority climate change datasets and indicators published by the Department of Energy and Climate Change (DECC) and others.

Low Carbon Vision

2.10. Shetland Islands Council, along with its Community Planning partners, is committed to achieve sustainable development for our islands and their

communities based on recognition of the need to protect and enhance our unique environment whilst making the most effective use of our resources.

2.11. Working in partnership we will strive to reduce our carbon emissions and deliver a low carbon future by embedding carbon reduction and sustainable resource use into all our processes and into how we manage our day to day operations.

Strategic Themes Supported

2.12. The CMP sets out Shetland Islands Council's intention to reduce carbon emissions. Many of the actions to be implemented will potentially produce financial savings as well as carbon savings.

2.13. These savings will support our goal of being "a well managed Council, dealing with the challenges of the present and of the future, and doing that within our means" (Corporate Plan 2013 -17). Indeed, the CMP supports many of the strategic priorities identified in the Corporate Plan.

2.14. In delivering carbon savings we are conscious of the need to provide vital services cost effectively. This may mean we may have to change the way we do things to make the delivery more efficient.

2.15. We are also mindful of how change could affect vulnerable and disadvantaged people. By making best use of renewable technologies to lever in external funding we hope to support our local communities to achieve a sustainable future in a low carbon economy.

Targets and Objectives

2.16. One of the main aims of undertaking this project is to identify an accurate, up to date picture of the Council's carbon emissions and from that develop a detailed **Action Plan** which builds upon what we've already done and which allows the Council to continually reduce its CO_2 emissions in forthcoming years.

2.17. A "Top Down" management approach is required to drive forward the CMP to give the operations the best possible chance of being implemented successfully. **Without a firm commitment from Members and key decision makers within Directorates, the CMP will lack focus and credibility.** The reporting structure set out in this Plan seeks to engage the existing management structure in supporting, funding, delivering and reviewing the effectiveness of the CMP.

2.18. In establishing a Carbon Management programme the Council has set the following targets and objectives:

.1 To reduce Shetland Island Council's CO_2 emissions by 42% by 2020, using the average for financial years 2005/06, 2006/07 and 2007/2008 as a baseline. Thereafter, reduce the Council's CO_2 emissions year on year in line with national legislation. See Figure 9: Business as Usual – Carbon Emissions.

.2 Particularly to continue to reduce energy consumption in Council owned public buildings year on year;

.3 To encourage workforce involvement in the identification of opportunities and the implementation of actions;

.4 To continue to lead by example and encourage our partners and the community to make changes to reduce carbon emissions;

.5

2.19. The Plan requires the support and commitment from elected Members, Managers and staff across the Council. It is designed to deliver these aims and targets through:

.1 A revision of **policies and processes** to embed carbon reduction in Shetland Islands Council.

.2 A programme of **projects** that help us to deliver carbon reductions.

.3 The identification of **resources** to implement these changes.

.4 Systems of performance monitoring.

3. Emissions Baseline and Projections

Scope

3.1. We have measured the emissions from our operations for the years 2007/08 to 2013/14. Figures for 2014/15 won't be available until 30 Apr 2015. This information – our baseline - can then be used as a basis to compare our progress year on year.

3.2. Activities creating emissions are diverse and cross cutting. These include all heating, lighting, water supply and all energy use in and in relation to all Council buildings. It also includes all movement of goods and people from, to and within all Council buildings and assets. In a Shetland context this includes movement by car, ferry, airline or by public transport including all fleet operations and staff travel within and out with Shetland.

What Is Included?

3.3. Due to the wide scope of carbon generation there are many possible data sources to be considered and included. However, following recent investigation, it has been shown that current methods of data collection are very varied in both quantity and quality.

3.4. Council assets (buildings, properties and vehicles) are recorded but not in a manner which entirely supports the analysis and monitoring of their role in creating carbon emissions. This needs to be achieved.

3.5. We have incorporated data from the Council's "Energy Manager" software and "Triscan" fuel management software systems.

3.6. Details of member/officer mileage is retained (both essential and casual) and is included.

3.7. Street lighting data is currently being revised and improved.

3.8. Procurement information will also need development so that it can demonstrate carbon considerations. All materials purchased should be able to demonstrate that they have been bought under policy guidelines that meet our low carbon agenda over their service life.

What Is Not Included?

3.9. We have not included any data on landfill/recycling within this CMP. This data is widely reported by Scottish Local Authorities and is available at: http://www.sepa.org.uk/waste/waste_data/lacw.aspx

3.10. Employee commuting or business travel off island is not included in the baseline at present.

3.11. While the Council cannot control how people travel to and from work, and commuting is also difficult to measure on a consistent basis, we will support and suggest a car share scheme and hope to include this and business travel in future revisions of this plan.

3.12. The baseline also excludes Council housing energy use as it was felt that whilst we can try to influence tenants, we cannot directly control their energy use. It is hoped that issues such as emissions from Council owned housing may be included in future versions of this document.

3.13. Fuel poverty is not specifically covered within this plan but is designated as a high priority issue with Shetland Islands Council. Across Shetland fuel poverty is an all tenure issue that is not restricted to social housing. Social housing has very clear energy efficiency targets to achieve in terms of the Scottish Housing Quality Standard (SHQS) and the Energy Efficiency Standard in Social Housing (EESSH).

3.14. The Council's Housing Service has rolled out programmes that have improved the building fabric, insulation and heating systems of Council housing stock across Shetland.

3.15. For private sector housing, the Council administers the Scottish Government's "Home Energy Efficiency Programme for Scotland: Area Based Scheme", which is commonly known as "HEEPS:ABS". This initiative is designed to tackle fuel poverty and increase energy efficiency in homes.

3.16. Formerly known as the National Retrofit Programme, ABS follows an area-based approach with initial focus on the most deprived areas. Schemes draw on a range of data including indices of multiple deprivation, child poverty, the Scottish House Condition Survey and heat mapping. ABS is intended to cover all homes in Scotland in 10 years from 2013.

Baseline

3.17. The Carbon emissions baseline has been calculated using a variety of data sources from within Shetland Island City Council. The baseline is the average of the 3 financial years 2005/06, 2006/07 and 2007/08. The total baseline energy consumption is 114,575,959kWh with the area breakdown shown in Figure 3.

Baseline Energy Consumption by Area 2007/08

Tugs 15,142,329kWh 13%
Bulk Gas Oil 7,129,592kWh 6%
Diesel 7,273,649kWh 6%
Schools 15,772,175kWh 14%
Care Homes 4,863,025kWh 4%
Offices 5,229,210kWh 5%
Waste 3,987,194kWh 4%
Other 7,404,423kWh 6%
Ferries 47,774,362kWh 42%
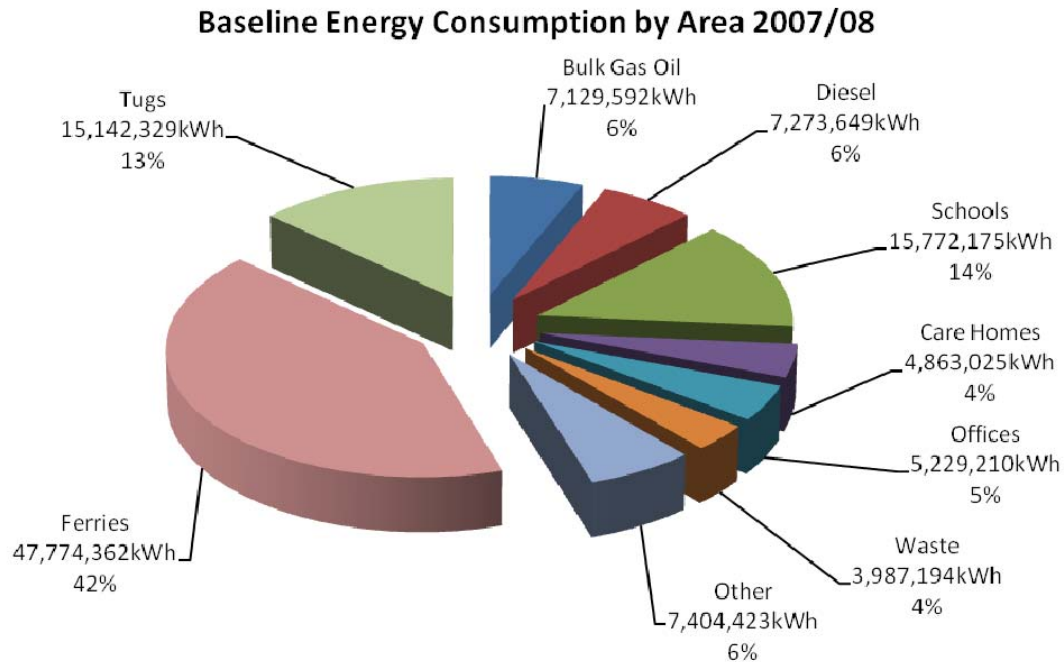
Figure 3: Baseline Energy Consumption by Area 2007/2008

3.18. What is clearly evident is that fuel for ferries, tugs and vehicles constitutes well over half of our total energy consumption. These figures are even more compelling when we examine the spilt by fuel type as shown in Figure 4.

Baseline Energy Consumption by Fuel Type 2007/08

Gas Oil 84,579,546kWh 74%
Diesel 7,273,649kWh 6%
District Heating 4,976,021kWh 4%
Electricity 17,746,744kWh 16%

Figure 4: Baseline Consumption - Split by Fuel Type 2007/2008

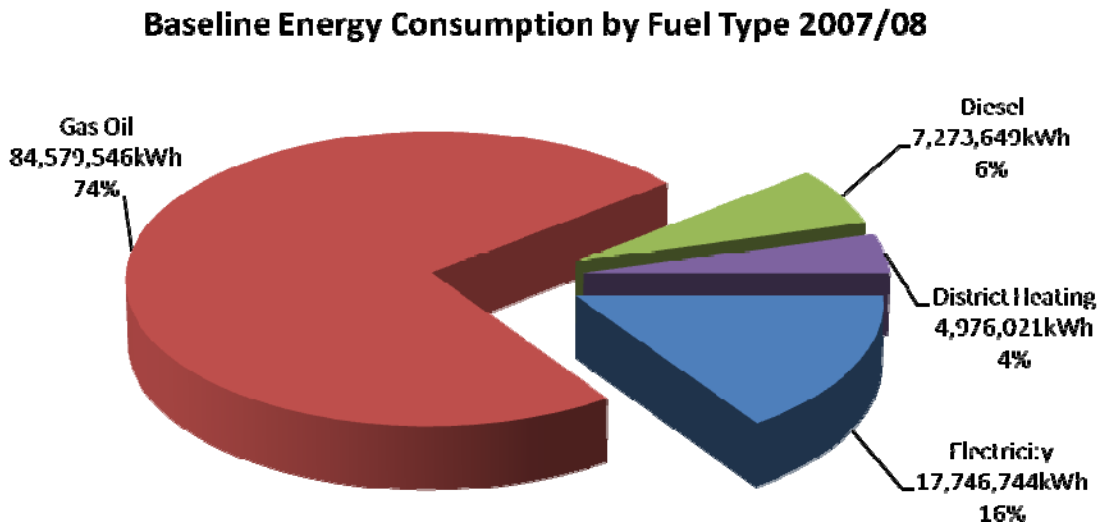**Current Consumption**

3.19. The total energy consumption for 2013/14 is 97,366,754kWh with the area breakdown shown in Figure 5. This is an improvement in most areas, particularly given that the Council's built estate has grown since 2007/08.

Energy Consumption by Area 2013/14

Bulk Gas Oil
3,791,512kWh
4%

Diesel
6,055,696kWh
6%

Tugs
8,558,737kWh
9%

Schools
12,492,517kWh
13%

Care Homes
4,986,410kWh
5%

Offices
4,436,205kWh
5%

Waste
4,161,930kWh
4%

Ferries
45,597,547kWh
47%

Other
7,286,200kWh
7%
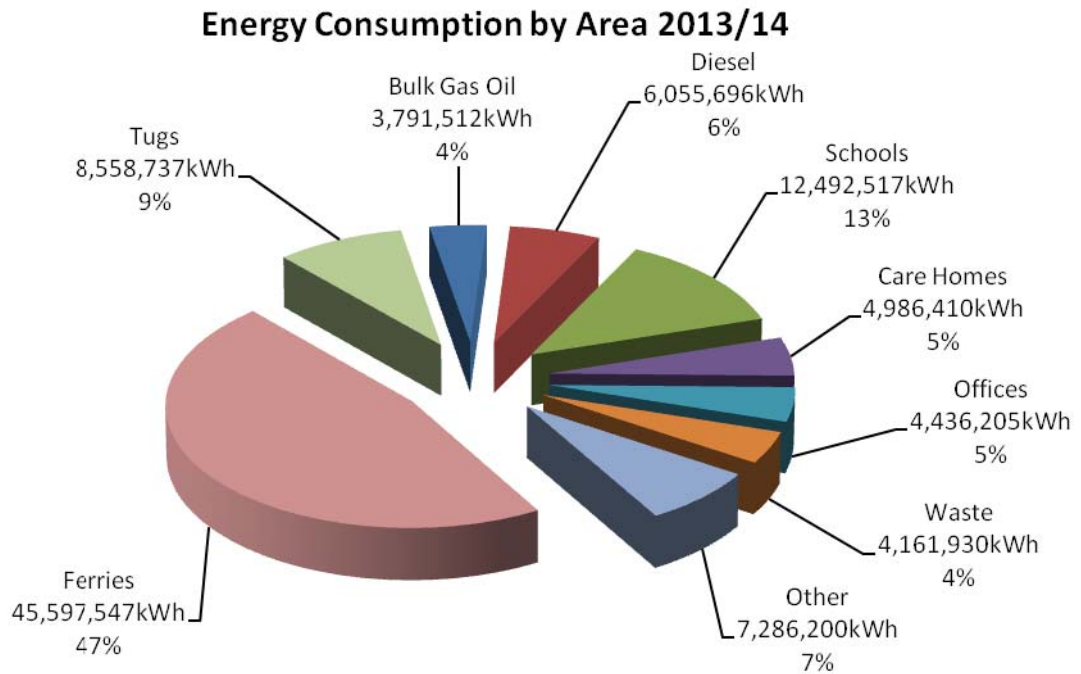
Figure 5: Energy Consumption by Area 2013/2014

Energy Consumption by Fuel Type 2013/14

Gas Oil
66,924,107KWh
69%

Diesel
6,055,696KWh
6%

District Heating
6,059,745KWh
6%

Biomass
410,069KWh
1%

Electricity
17,917,137KWh
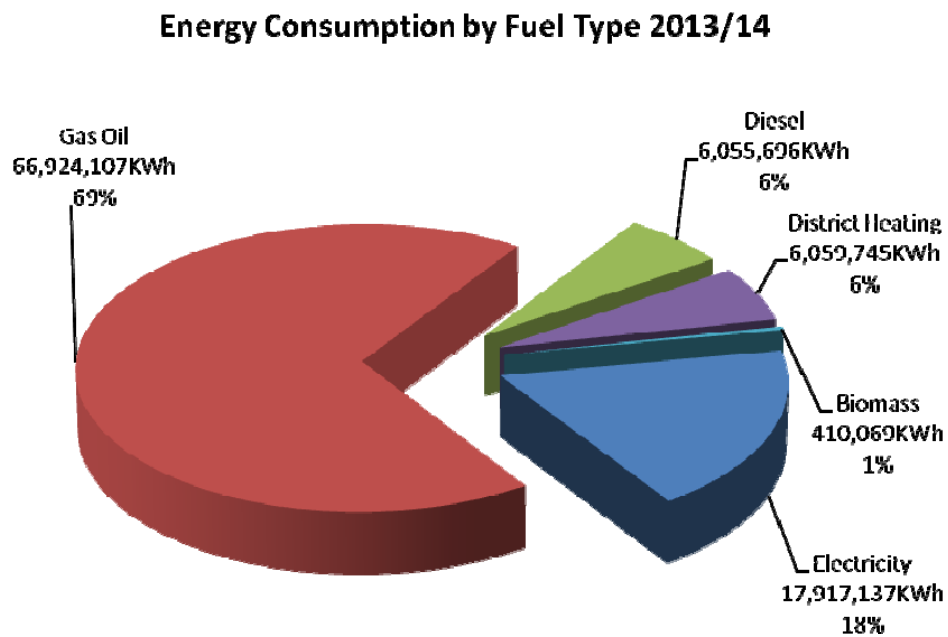18%

Figure 6: Baseline Consumption - Split by Fuel Type 2013/2014

Carbon Management Performance to Date

3.20. Since the Climate Change Act came in to effect in 2009 various disparate energy savings projects have taken place within the Council. There have also been some Council downsizing of both staffing levels and accommodation requirements and various resource efficiency projects have been undertaken as part of the recent Council refocusing. These include the delivery of service reviews and cost saving programmes. In most cases these activities will have reduced our carbon emissions.

3.21. One of the first actions required in implementing this Plan will be to create and monitor clear, accurate and diverse data flows.

3.22. The following graph shows that the Council has reduced its carbon emissions by approximately 15% since 2007/8 with an average annual reduction of 2.68%. To reach the national target saving of 42% by 2020 we would have had to save around 3.23% year on year.
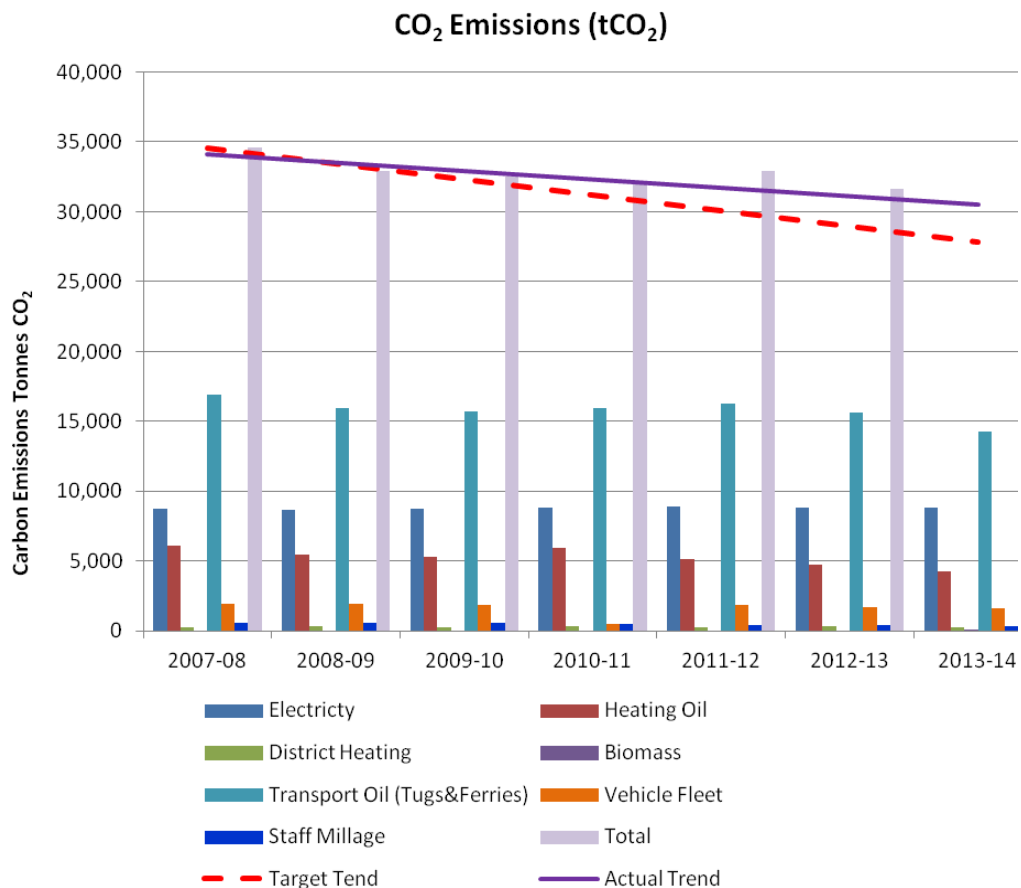

Figure 7: Tracked CO_2 Emissions 2007/08 to 2013/14

Energy Consumption By Sector

Figure 8: Energy Consumption by Sector 2007/08 to 2013/14
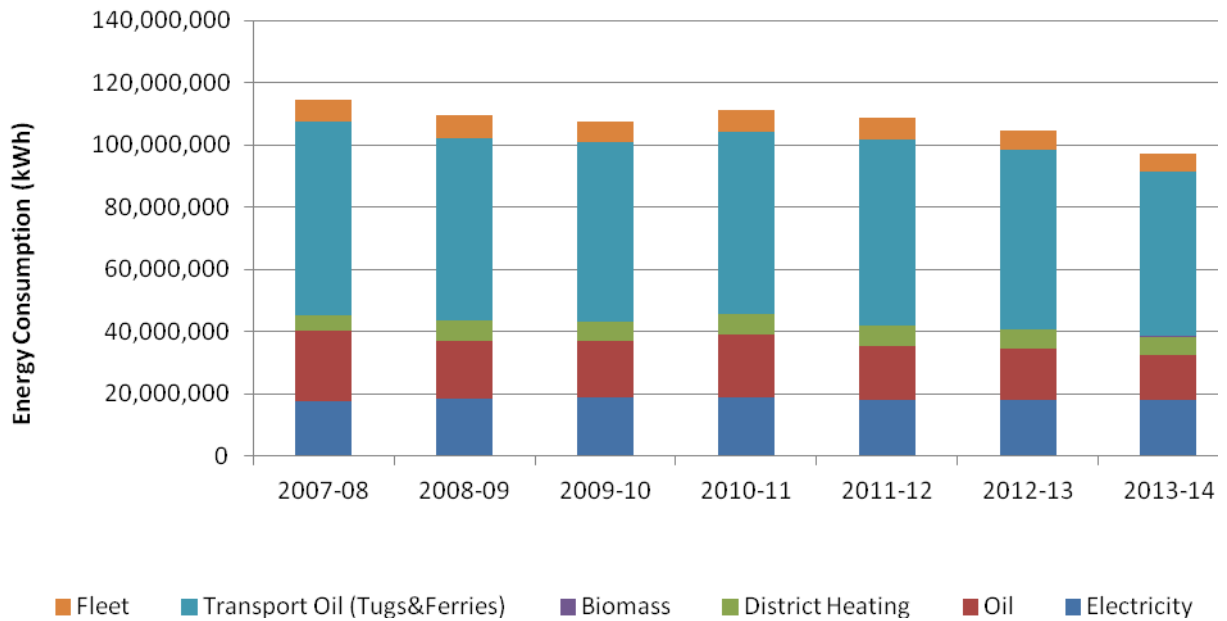
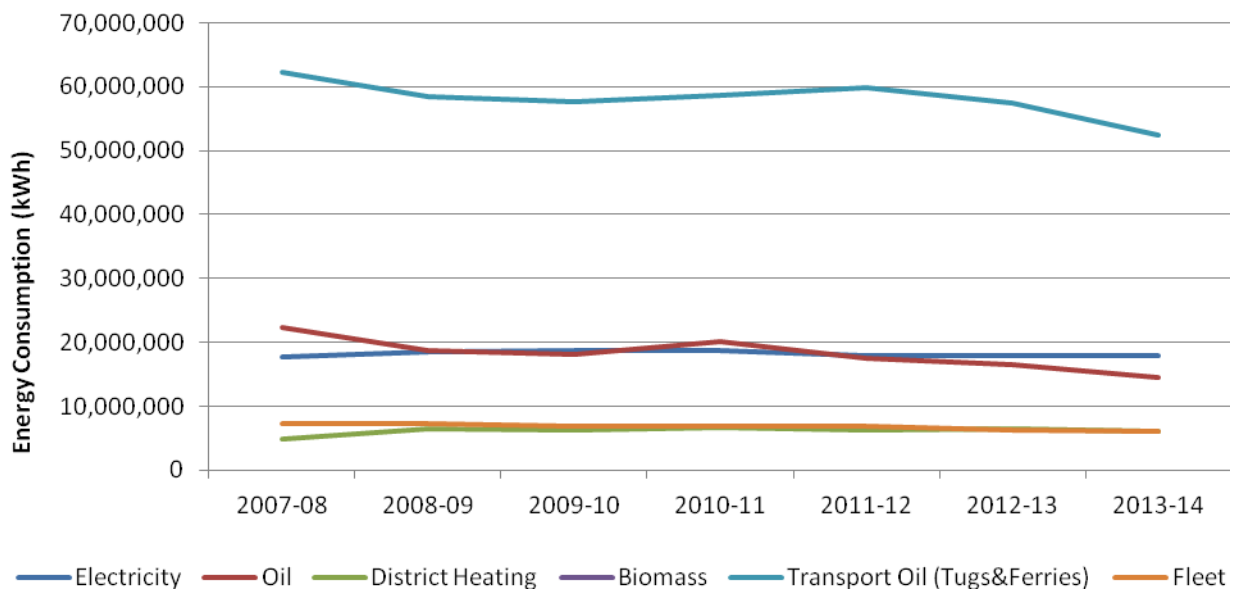## Energy Consumption by Energy Type

Figure 9: Energy Consumption by Energy Type 2007/08 to 2013/14

3.23. Figure 8 sets out energy consumption by sector while Figure 9 shows the energy consumption tracked by type over the same period. Common to our carbon emissions it can be seen that Transport Oil is by far the greatest single consumption across the Council.

3.24. The aspirational programme of works proposed at "Appendix 2 – Example Project Framework" should build on this annual saving and increase our output to deliver further sustainable reductions towards our 2020 target of 42%.

3.25. However, to fully meet the target an annual reduction of 4.53% would be needed from 2014 – 2020, and to do so will require some **radical thinking**.

Projections and Value at Stake

3.26. We have projected our carbon emissions forward to see how we will perform in the period 2015/16 to 2020/15. This is so that we can calculate our 'Value at Stake' – the difference between putting carbon reduction measures in place and carrying on with our 'business as usual'. These results are shown in Figure 10.
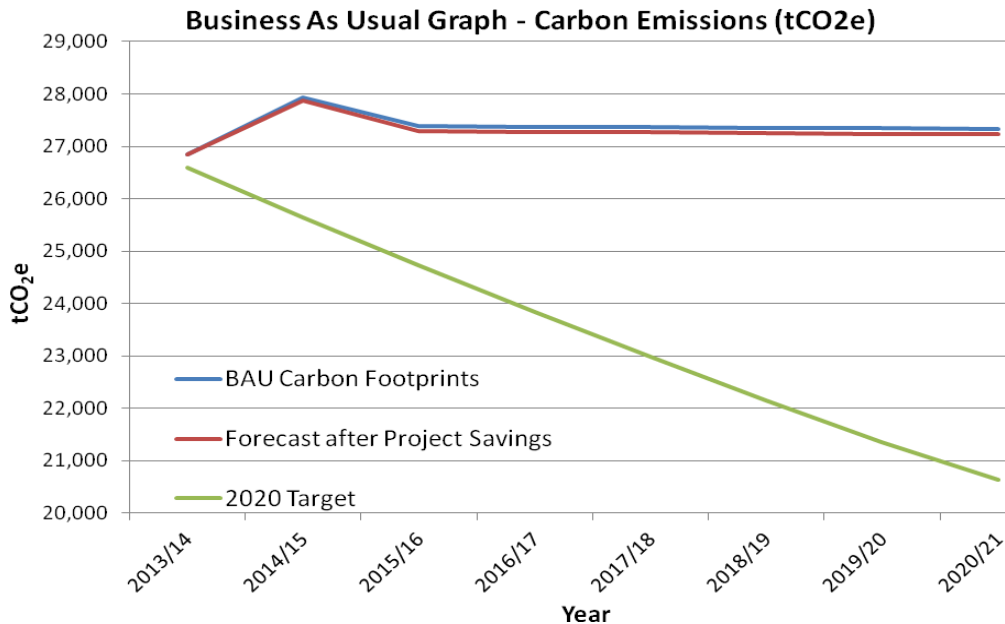
Figure 10: Business as Usual – Carbon Emissions (tCO2e)

3.27. Using this data it is also possible to calculate the rising energy and fuel costs over the next 5 years if the Council continues to operate as it currently does as shown in Figure 11 below. Despite any potential CO_2 savings arising from Council efficiency initiatives, the expected energy cost increase will negate any savings and will actually lead to overall cost increases.

Figure 11: Financial Projections

Robust Data and Comparisons

3.28. Robust accountability and monitoring mechanisms are essential aspects of any low carbon management system. Scotland's annual climate change targets are explicit in the rate of g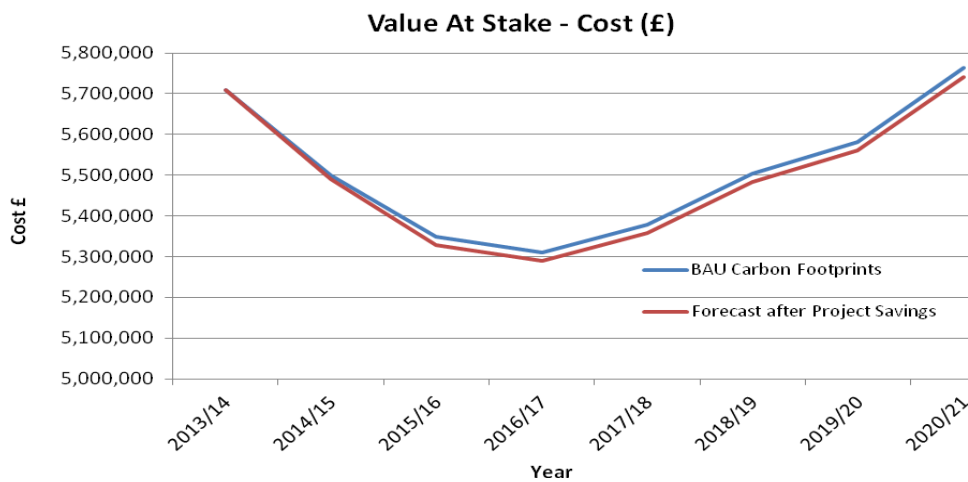reenhouse gas emissions (GHG) reduction required each year and the target level of annual emissions that is permitted under the Climate Change (Scotland) Act 2009 over the period 2010 to 2027.

3.29. A robust evidence base is vital in ensuring that appropriate decisions can be made on the most effective means of meeting carbon reduction targets. These figures will also provide the basis on which the estimates of the required financial investments to deliver the policies and proposals have been derived.

3.30. In order to assist local authorities in demonstrating their accountability Government is developing a standard tool to be rolled out to all local authorities in 2015. This tool will assist in consolidating data and will ensure that the annual mandatory reporting mechanism is operated on a common baseline across all Authorities. Shetland Islands Council will adopt and adapt this tool to suit local conditions when we receive it.

3.31. The Carbon footprint tool will allow for the forecasting of project performance. Demonstrated below is a typical BAU graph for the hypothetical savings available on the proposed "Hydrogen Ferries" project.

3.32. This method will allow us to evaluate the potential savings of each proposed project and demonstrate whether it would deliver the required savings. These figures can then be used in spend-to-save bids and/or for external funding bids.

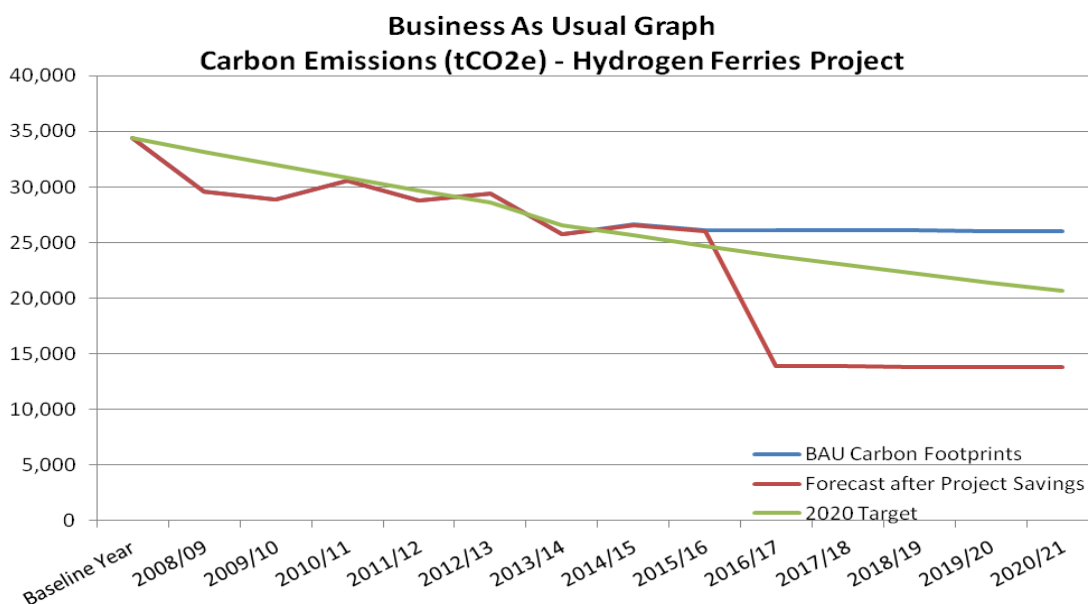3.33. It will also provide a template data standard which would need to be implemented across all Council services.

Figure 12: Business As Usual – Hypothetical Hydrogen Ferries Project

4.   Carbon Management Projects

4.1.   Shetland Islands Council has been working for a number of years on identifying, funding and implementing projects that have increased energy efficiency and reduced carbon emissions. Thus far our primary focus has been revenue cost savings in line with the targets contained within medium term financial plan. A selection of these is given in the **CMP Project Register**.

4.2.   It's anticipated that the CMP Project Register will be the primary means of capturing this Council's carbon savings regardless of how or why the project is initiated. Many projects won't fall under the direct umbrella of carbon reduction but will, nonetheless, realise carbon savings. For example, the replacement of ageing built assets, plant or vehicles will undoubtedly include energy efficiency as a basic design and procurement standard.

4.3.   From a Council perspective, it therefore makes sense for us to capture and report all savings under the carbon reduction agenda. So, as projects are developed they should be added to the CMP Project Register.

4.4.   To facilitate changes and upgrades to the register without affecting the entire plan we have included it as a separate document. It will be centrally held on the Council network as a share point document. This simplifies version control and means that services can easily update their own project information.

4.5.   The CMP Project Register will include timelines for implementation and also projected savings figures both for carbon and for costs (where known). This will ensure an ongoing tally can be made of achievement towards our 2020 targets, and will be reported quarterly to the CMP Project Board and annually to the Council.

4.6.   At present the proposed projects do not meet our targets but this plan is a working document and will be reviewed and updated on an annual basis. It is expected that further projects will be included over the lifetime of the Plan.

Reduction Themes and Objectives

4.7.   Projects that will deliver ongoing reductions are detailed in Appendix 3 - Carbon Project Register.

4.8.   Appendix 2 – Example Project Framework sets out a variety of carbon reduction projects that can be delivered Council wide by all services. These examples are common to all local authorities and are based on the national policy and project requirements outlined in RPP2.

4.9.   The Scottish Government published "Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027: The Draft Second Report on Proposals and Policies" on 29 January 2013. The document is often referred to as RPP2.

4.10. It sets out areas of work which we should be addressing in order to reduce our carbon emissions and meet national targets by 2020. How these will be achieved, and the extent of any long term savings will depend upon levels of upfront funding to develop and deliver each project.

4.11. The aim of this list is to demonstrate the breadth of work being carried out nationally by local authorities and to act as an aide memoire for Council services in identifying potential works. However, the list is neither exhaustive nor exclusive and it will change and develop during the life of the Carbon Reduction Programme.

5. Carbon Management Plan Finance

Background

5.1. The potential financial benefits to be gained by the Council from undertaking the Carbon Management Programme are significant.

5.2. We can safely assume that all types of energy and fuel costs will rise significantly above inflation over the lifetime of this Plan. It is also likely that procurement and maintenance costs will similarly rise above the rate of inflation. The projected rate of real time operational costs should we carry on Business as Usual is therefore considerably higher than current operational costs.

5.3. Financial constraints placed upon the Council are significant and are likely to continue. Investing in resource efficiency and energy saving measures can result in some "quick wins" and other more gradual savings. By acting now and using the maximum amount of Government and other funding available we will be:-

.1 Saving ourselves capital outlay by using grants and 0 % loans available now and probably not later.

.2 Avoiding long term cost rises in having to do the work eventually when these funds are closed.

.3 Placing ourselves in a position to make ongoing savings at a time of financial restraint.

.4 Potentially avoiding any legal penalties which will flow from failure to meet targets.

5.4. There is also the possibility of income generation through developing renewable installations and the conversion of excess wind generation to chemical storage. However, if we are to make meaningful and sustainable savings we need to look at **radical** and **innovative** approaches to our local problems.

5.5. Examples of this are the conversion of life expired and inefficient heating systems (predominantly oil fired) to renewables such as biomass, thermal storage or

hydrogen fired combined heat and power plants or the decarbonisation of the Council's Transport Fleet.

Funding Sources

5.6. The increasing significance of carbon reduction both nationally and internationally means there are an increasing number of funding schemes on offer for specific works e.g. electric vehicle charge point installations, electric vehicle grant schemes and European development funds.

5.7. Reduced energy and fuel costs resulting from this Plan will contribute in the medium and long term to our financial planning and will help protect front line service delivery across the Council against cutbacks arising from increased budgetary pressures.

5.8. **Existing Budgets** - some projects are being driven by other Council priorities but also have carbon savings associated with them e.g. the replacement of old boiler systems with biomass or the refurbishment of schools which includes insulation upgrades. As a result, they are already funded by other non carbon budgets.

5.9. **Central Energy Efficiency Fund (CEEF)** - we have secured external funding from the Scottish Government's CEEF fund. This Council successfully created a ring-fenced CEEF Fund, to increase capital investment in energy efficient and low carbon technologies. This fund is used to finance energy efficiency and renewable energy projects within the Council. Projects must demonstrate a payback period of 7 years or less and funds have been used on a rotating basis.

5.10. **Grant Funding** - we may be able to support this programme through various tranches of external grant funding and bid for specific funding for individual projects. We need to take advantage of external funding available from central government and other sources, to enable us to take forward the carbon reduction agenda. These funding sources are likely to require match funding from the Council.

5.11. **Low Cost Loans** - A number of external funders are in the market e.g. Salix Funding and the Green Investment Bank. These offer low cost loans payable over 5 to 8 years – generally paid for by the savings generated after installation. Using these funders would give Council a stand still position at worst for 5 to 8 years during which time the savings generated will have paid back the loan. There after there would ongoing revenue savings.

5.12. **Spend to Save Budget** – where projects have a payback period of 3 years or less (this restrictive period is under review) it may be possible to make a "spend to save" funding bid. The rationalisation of building use, fleet driver training and awareness raising projects are prime examples of projects that may fit the criteria and may have clear CO_2 benefits.

5.13. **Income from Renewables** – this will become an increasingly attractive and important option in the short term as the UK Government attempts to encourage

greater uptake of renewable energy through financial incentives. Excess wind capacity could be converted to chemical storage and used as a viable alternative to fuel oil or diesel. Other options under consideration include biomass heating systems, solar water heating and photo voltaic arrays.

5.14. It should also be noted that a number of the carbon reduction technologies coming onto the market could create employment and economic opportunities for our islands – e.g. in the renewable field or alternative fuel production. Developing these now will be advantageous to both Shetland and its communities.

Resource Implications

5.15. The downside to any initiatives we undertake are that staff will be required to develop and implement funding bids and project plans to a tight and often short deadline. The Carbon Management Team will actively support funding bids with all services to ensure that external funding is maximised and the Councils budgets receive the benefits of any external money which may be available.

6. Actions to Embed Carbon Management

6.1. Shetland Islands Council is committed to reducing its carbon emissions. The Carbon Management Programme Board, with the support of the Environment & Transport Committee, will take responsibility for ensuring that the Carbon Management Plan is delivered.

6.2. Carbon emissions and energy efficiency are currently one of the Corporate Plan's Critical Success Factors and are reported as a key performance indicator under the Infrastructure Directorate's performance review monitoring.

6.3. In order to strengthen our corporate aims and encourage commitment to the Carbon Management Programme it is planned to incorporate the Councils CO_2 reduction targets into the Corporate Business Plan.

6.4. The Carbon Management Plan should also support the Council's Environmental strategies which aim to promote efficient use of resources.

6.5. The Council's should be developing sustainable Building Standards for Council Buildings to ensure that all Council projects meet sustainable development principles early in the development and design process.

6.6. These organisational targets should also align with the Community Plan and the carbon reducing targets within the Single Outcome Agreement (SOA).

Policy Alignment – Saving CO_2 across Council Operations

6.7. Shetland Islands Council should develop a Responsible and Sustainable Procurement Strategy in line with work carried out by other local authorities. This work would be undertaken by the Procurement Section.

6.8.   To ensure accurate reporting of carbon, and in tandem with this programme we should plan to account for carbon impacts within all Capital Bids and Service Need Case reports. This will also be used as one of the measures to gauge the merit of Business Cases.

6.9.   In addition it is recommended that all works carried out under Planned Maintenance budgets are evaluated for carbon and/or energy savings at the planning and evaluation stage. This will ensure the optimum solution is agreed rather than continuing to replace like for like.

Data Management – Measuring the Difference, Measuring the Benefit

6.10. Energy consumption data is input into the "Energy Manager" data monitoring system and extracted by the Carbon Management Team on a monthly basis. The Energy Management Team uses this information to measure performance and consider how energy may be reduced through technical or technology improvements. This will also assist with items 6.8 and 6.9 noted above.

6.11. In order to actively manage the Council's carbon footprint, emissions will be recorded and updated annually. This data will be used to track progress and inform future project initiation.

Responsibility – Saving CO2 is Everyone's Job

6.12. The Carbon Management Plan will be most successful if everyone is involved with the process. In order to ensure that all staff can fully participate, an Awareness Programme is being designed to directly engage with staff. Carbon Management will be a core value that is established as part of all staff induction and reinforced through corporate and service specific training and programmes. We aim to ensure that staff will bring their home energy efficiency good habits to work.

6.13. As part of this programme, Energy Champions as a senior level will be established across services to ensure that local services meet corporate targets. This is a way to measure the effectiveness of corporate campaigns.

6.14. In terms of carbon management planning and our actions to embed this within the Council, the following matrix sets out our current position (red line) against our aspirational mid-term target for 2017 (blue line) and our goal for 2020 (green line).

Carbon Management Matrix - Embedding

	CORPORATE STRATEGY	PROGRAMME MANAGEMENT	RESPONSIBILITY	DATA MANAGEMENT	COMMUNICATION & TRAINING	FINANCE & INVESTMENT	POLICY ALIGNMENT
BEST							
5	• Top level target allocated across the Council • CO_2 reduction targets in Directorate Plans	• Council/Committee/CMT review progress against targets on quarterly basis • Quarterly diagnostic reports provided to Directorates • Progress against target published externally	• CM integrated in responsibilities of Senior Managers • CM part of all job descriptions • Central CO_2 reduction advice available • Green Champions leading local action groups	• Quarterly collation of CO_2 emissions for all sources • Data externally verified • Monitoring in place for: – buildings – street lighting – waste – transport	• All staff given formalised CO_2 reduction: – induction and training – communications • Joint CM communications with key partners • Staff awareness tested through surveys	• Finance committed for 2+yrs of Programme • External funding being routinely obtained • Ring-fenced fund for carbon reduction initiatives	• CO_2 friendly operating procedure in place • Central team provide advice and review, when requested • Barriers to CO_2 reduction routinely considered and removed
4	• CO_2 reduction commitment in Corporate Strategy • Top level targets set for CO_2 reduction • Climate Change Strategy reviewed annually	• Sponsor reviews progress and removes blockages through regular Programme Boards • Progress against targets routinely reported to Corporate/Directorate Management Teams	• CM integrated into responsibilities of Directors • Council/Committee/CMT regularly updated • Staff engaged though Green Champion network	• Annual collation of CO_2 emissions for: – buildings – street lighting – transport – waste • Data internally reviewed	• All staff given CO_2 reduction: – induction – communications – CM matters communicated to external community	• Coordinated financing for CO_2 reduction projects via Programme Board • Finances committed 1yr ahead • Some external financing	• Comprehensive review of policies complete • Lower level policies reviewed locally • Unpopular changes being considered
3	• CO_2 reduction vision clearly stated and published • Climate Change Strategy endorsed by Members and publicised with staff	• Core team regularly review CM progress: – actions – profile & targets – new opportunities	• An individual provides full time focus for CO_2 reduction and coordination across the organisation • Senior Sponsor actively engaged	• Collation of CO_2 emissions for limited scope i.e. buildings only	• Environmental / energy group(s) given ad hoc: – training – communications	• A view of the cost of CO_2 reduction is developing, but finance remains ad-hoc • Some centralised resource allocated • Finance representation on CM Team	• All high level and some mid level policies reviewed, irregularly • Substantial changes made, showing CO_2 savings
2	• Draft Climate Change Policy • Climate Change references in other strategies	• Ad hoc reviews of CM actions progress	• CO_2 reduction a part-time responsibility of a few department champions	• No CO_2 emissions data compiled • Energy data compiled on a regular basis	• Regular awareness campaigns • Staff given CM information on ad-hoc basis	• Ad hoc financing for CO_2 reduction projects	• Partial review of key, high level policies • Some financial quick wins made
1	• No policy • No Climate Change reference	• No CM monitoring	• No recognised CO_2 reduction responsibility	• No CO_2 emissions data compiled • Estimated billing	• No communication or training	• No specific funding for CO_2 reduction projects	• No alignment of policies for CO_2 reduction
WORST							

Figure 13: Actions to Embed Carbon Management

7. Programme Management of the Carbon Management Plan

7.1. It is important that the Carbon Management Plan's performance is reviewed regularly to ensure that action is being taken to reduce the Council's own emissions.

7.2. The baseline and target should be incorporated across all Service Plans and reported as part of the standard performance reporting cycle to the relevant Committees.

Governance, Ownership and Management

7.3. All local authorities in Scotland have developed and are delivering carbon management plans and projects. Based upon their experience, it is now a mandatory requirement that a formal structure be established and retained throughout the life of the programme and beyond to ensure that projects are implemented, results monitored and quantified effectively when compared against the individual project goals.

7.4. Strategic links are important to ensure continuity of the decision making process and integration into the Council's long term goals and those of its community planning partners.

7.5. These links are also vital to ensure that high level support is retained for the programme. The process used in managing our CMP is to predict and identify risks and issues at a programme level, identify the means of managing and resolving these, ensure that actions are taken and regularly review their status. This section will reinforce the need for good programme governance by outlining:

.1 The senior and strategic ownership of the carbon reduction target

.2 The ongoing development and implementation of carbon saving projects identified within the CMP

.3 The project board and team who will ensure coherence and coordination of the plan and the projects.

The Carbon Management Programme Board – Strategic Ownership & Oversight

7.6. This group's role is to coordinate and ensure delivery of the CMP. Each board member will have a responsibility to be their service's Champion and to report the progress made on the Carbon Management Plan.

7.7. The team's membership will be reviewed annually to ensure all key services are represented. The role of the team will also be reviewed regularly.

7.8. The Carbon Management Programme Board will meet quarterly to monitor progress in delivery and to address any barriers to implementation. An annual report will be placed before Council showing the progress made in that year and detailing any difficulties in delivery.
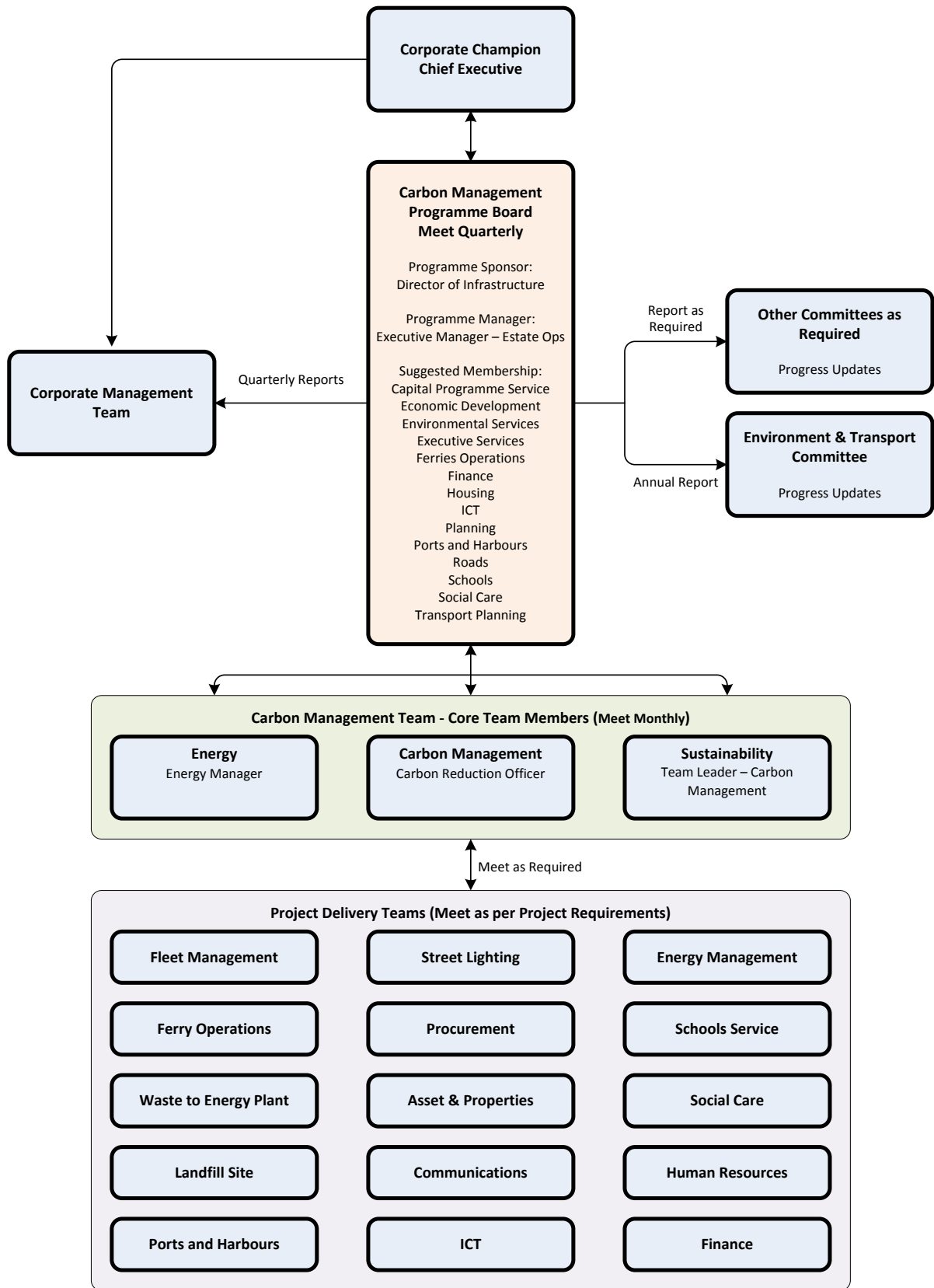
Carbon Management Governance Structure

Figure 14: Carbon Management Structure

The Carbon Management Programme Board - Terms of Reference

7.9.   The Board will:

.1   Champion and provide leadership on carbon management

.2   Set and review strategic direction and targets

.3   Own the scope of the carbon management plan and prioritise carbon reduction projects

.4   Monitor progress towards objectives and targets

.5   Remove obstacles to the successful completion of carbon management projects not just to be a committee but a driver for change

.6   Report quarterly to the Corporate Management Team and annually to the Environment & Transport Committee

.7   Share best practice with community planning partners, public bodies, businesses, voluntary and community groups

7.10. Where aberrations are noted during the standard monitoring process an Exception Report may be needed and any action required to remedy the matter will be subsequently reported.

7.11. The Board will be asked to approve a set of key milestones set out in the **Action Plan** at an early meeting. These milestones will be used to gauge progress and delivery success. While the nature of the milestones may vary they will be used to signify the completion of a significant deliverable e.g. a key decision, an element of new infrastructure or the securing of finance. These milestones will provide the Board with an early warning system to identify where delivery is not as originally envisaged.

The Carbon Project Team – Delivering the Projects

7.12. The Carbon Project Team is the group that has identified and is tasked with delivering the projects that make up the CMP. It is anticipated that each project will be managed under the Council's standard Prince 2 Project Management format. Regular reviews and reporting are an integral part of the process.

7.13. This group will meet on a monthly basis to report on progress. It is recognised that as projects will commence at different times, officers will not be expected to attend every meeting, instead focussing on those most relevant to them.

7.14. The group will be co-ordinated and jointly chaired by the Team Leader – Carbon Management, Carbon Reduction Officer and Energy Manager. They will manage and co-ordinate the group's progress as part of the wider carbon reduction and energy efficiency agendas.

7.15. The role of each individual on the group is to represent their service, provide expertise and lead on progressing the plan's work within their area. This will also

involve feeding back information to colleagues, being an advocate for the principles of sustainability and acting as a point of contact.

Annual Review Process

7.16. To ensure successful delivery and implementation of the programme, an annual progress review will be crucial. The aim of the review will be to:

.1   Review the cost and all benefits from the programme

.2   Capture the financial savings delivered

.3   Review CO_2 savings achieved against the target

.4   Utilisation of the Central Energy Efficiency Fund

.5   Utilisation of SALIX funding

.6   Progress made by the projects being implemented

.7   Qualitative benefits e.g. engaging the community

Risks and Management Issues

7.17. At project level, the individual lead project officers will manage risks and issues arising, and if required, escalate issues to the Carbon Project Board or Corporate Management Teams.

7.18. Other more general risks are associated with the established project review process and via JCAD Risk. The key here is to maintain links between the project team members and the Carbon Management Programme Board to strengthen all aspects of the Carbon Management Plan delivery.

7.19. Current issues that may impact upon the Carbon Management Plan include the impact of budget cuts on proposed projects.

Benefits Realisation

7.20. Where possible, quantifiable benefits accruing from individual actions will be measured using energy consumption data. In cases where this is difficult a "before and after" monitoring of energy consumption will be undertaken. Actions have been identified within the Carbon Management Plan to improve data collection and availability.

7.21. Not every action developed as part of this plan will be quantifiable i.e. increased local food production and use for school dinners; training courses and the "Eco Schools" programme. Where this is the case the completion of these tasks will be noted against the action plan and project register.

7.22. A revised CO_2 emissions value will be calculated and published each year from automatic meter readings and, where these are lacking, billing information. This will enable progress against the targets in the CMP to be reported.

7.23. The Carbon Management Team will periodically review benefits and disseminate them to the Programme Board and various stakeholders.

Reporting and Evaluation

7.24. Targets will be reviewed annually in consultation with the Carbon Management Programme Board and the Carbon Management Team(s). Further actions identified throughout the period of the Carbon Management Plan will be considered for inclusion at this annual review. It seems appropriate to conduct this review roughly a month after the end of the financial year to enable end of year data collection.

7.25. As noted above, the review will include an updated calculation of CO_2 emissions and our progress against CO_2 reduction targets. It is the responsibility of each Project Leader to measure and report the progress against targets. The review will record financial savings, payback on investment, and CO_2 savings compared to the target. It should be noted that specific monitoring systems may have to be devised and that each project will require a clear and robust monitoring methodology in place so progress can be recognised.

7.26. Reporting on the progress of the Carbon Management Plan will be made by the Programme Manager to the Carbon Management Programme Board which in turn will report to the Corporate Management Team and ultimately to the Environment and Transport Committee and full Council as necessary.

7.27. As a result of the review, the Carbon Management Plan may require updating if, for example, the availability of funding changes or changes in priority in project delivery occurs.

7.28. The Carbon Management Plan is a dynamic and flexible working document, which will change over time. This will not only allow the Plan to reflect the ever-changing environmental and economic climate but also allow us to keep abreast of advances in technology to deliver more carbon reduction projects as new initiatives emerge.

Government Reporting and Performance Monitoring

7.29. The Climate Change (Scotland) Act 2009 requires all local authorities to submit an annual report to Government detailing works carried out to deliver the targets defined therein. Since 2014 this has become a mandatory requirement with a specific format in which Councils must detail all works carried out within the current financial year in all areas to deliver the national carbon reduction targets.

7.30. These reports are submitted to Government through the Sustainable Scotland Network office where they are reviewed and audited. Government then produces an Annual Report detailing the national picture.

7.31. It has been made clear by Government that if improvement in voluntary delivery of projects is not achieved within the next two years local authorities are likely to

face **mandatory** targets. The new 2014 format of reporting will demonstrate whether the required uplift in action is being achieved by all local authorities.

8. Appendix 1 – The Carbon Management Action Plan

Ref.	CMP Aim	Action	Owner	Priority	Timing
1	Adopt a strategic approach to managing the CMP.	Implement the CMP reporting structure to inform & engage Members and Senior Management.	CMT CMB E&T	High	Q2 2015
2	Set a corporate goal to enable the SIC to continue the reduction of its Estate footprint and emissions to support climate change targets.	Include the implementation of CMP as an objective in the annual Corporate, Directorate and Service Plans.	CMT CMB E&T	High	Annual
3	Investigate all potential internal and external funding support for CMP activities.	Put in place regular meetings with key Finance and Development staff to discuss joint funding options.	CMB CMPT	High	Ongoing
4	Secure year on year funding to implement CMP projects. (secure, allocate & approve)	Develop a 7 year funding strategy to Implement the CMP measures.	CMB CMPT	High	Annual
5	Put in place mechanisms which allow us to monitor the Council's carbon footprint against emission reduction targets	Review Council wide data collection procedures and undertake a data mapping exercise and develop a data handling strategy	CMPT	High	Now
		Adopt data standards and modelling tools to inform quarterly updates and annual reduction target forecasts.	CMPT	High	Now
		Standardise carbon emissions data to align with Scottish Government reporting obligations	CMPT	Medium	Q2 2015
6	Track CMP progress and footprint performance.	Update the CMP Register to record project outcomes and BAU changes. (actual carbon/cost/implement date)	CMPT	High	Quarterly
7	Update and replenish the CMP register with new carbon reduction policies and measures.	Invite Council staff, Consultants, Contractors and the public to identify further carbon reduction measures.	CMPT	High	Quarterly
8	Optimise carbon reductions by reviewing CMP travel and transport policy/strategy.	Liaise with Transport Planning and HR to consider adopting further sustainable business travel and transport policies.	CMPT/TP/HR	High	Bi-Annual
9	Engage all Directorates to deliver carbon reductions through behaviour change.	Work collaboratively with Communications to develop an effective staff awareness campaign.	CMT CMB Comms	High	Q1 2015
10	Establish bespoke CMP training for Technical staff.	Connect to the Resource Efficiency Scotland support programme.	CMPT HR	High	Q3 2015
11	Enable the best projects to be selected for CMP deployment.	Develop a project priority system using carbon analysis and business case tools to select the best VFM projects for deployment.	CMPT CPS	Medium	Q3 2015

Ref.	CMP Aim	Action	Owner	Priority	Timing
12	Ensure cross-policy working with other Directorates to develop and introduce low carbon policies and measures.	Encourage members of the Project Board and Teams to identify, support and implement wider corporate carbon reductions.	CMB CMPT	Medium	Q1 2016
13	Embed low carbon/sustainable policy into future Council contracts to deliver corporate benefits.	Liaise with Procurement staff to review tender specifications and assessment criteria to deliver improved carbon performance.	CMPT CPS	Medium	Q1 2016
14	Agree the CMP Waste & Water reduction targets for the built Estate and Council operations	Consider baseline data and adopt new reduction targets in line with new waste recycling and water conservation practices.	CMPT ES	Medium	Now
15	Review high Council fuel use for our Ferry Fleet	Work with Ferries to consider fleet fuel usage, specification options and future footprint reductions	CMPT F TP	Medium	On-going
16	Develop Case Studies from successful pilot projects.	Use Case Studies to engage staff and replicate best practice projects across the estate	CMB CMPT	Low	Bi-Annual
17	Improve the resilience of CMP operations and management	Develop and implement Standard Operating Procedures for CMP tasks	CMPT	Low	On-going
18	Review the Shetland Islands Council 2015 CMP	Refresh the CMP to take account of BAU policy & footprint changes.	CMT CMB E&T	Low	Mar 2016

9.   Appendix 2 - Methods of Energy and Carbon Measurement

9.1.   Throughout this plan we make several references to the commonly used units of measure for energy, energy use and for assessing our carbon footprint in kilograms or tonnes of carbon. Many people will have some difficulty visualising what these are. What is the difference between a kW and a kWh?

9.2.   A **kWh** is a unit of energy. Energy is a measure of how much fuel is contained within something, or used by something over a specific period of time. The **kW** is a unit of power. Power is the rate at which energy is generated or used. So, a kWh is 1 kilowatt of power used in 1 hour. A kilowatt hour (kWh) will give:

9 uses of a kettle   **4 hours** of watching TV   **31 hours** on a laptop

9.3.   Many documents and websites also refer to tonnes of CO_2 without much effort to explain what that actually is. Most people can't imagine what a kilogram or tonne of CO_2 looks like, so to make it more meaningful we would note:

.1   1 kg of CO_2 = 100 party balloons

.2   1 tonne of CO_2 = 100,000 party balloons

.3   1 tonne of CO_2 is equivalent to 1 hot air balloon measuring 10 m wide

.4   The Town Hall's Council Chamber has a volume of 260m^3. It could hold almost half a tonne of CO_2 (or 0.48 tonnes to be more precise).

9.4.   One tonne of CO_2 is emitted when you:

.1   Burn 319 litres of diesel

.2   Use 300kg of standard office paper

.3   Breath 500 days

9.5.   What does tCO_2e refer to? It's defined as tonnes of carbon dioxide equivalent, which is a measure that allows you to compare the emissions of other greenhouse gases relative to one unit of CO_2. It is calculated by multiplying the greenhouse gas emissions by its 100-year global warming potential.

10. Appendix 3 – Example Project Framework

10.1. The undernoted list of possible actions to reduce our carbon emissions is gathered from the Government's RPP2. These are the areas proposed by Government that local authorities should develop projects from in order to deliver their Public Bodies Duties under the Climate Change (Scotland) Act 2009.

10.2. As projects in these areas are developed within Shetland they will transfer to Appendix 3 - Project Register.

Water

Monitor	• Install water meters in all properties and include in Energy Manager checks to identify leakage detection • Limit vehicle and other washing/cleaning schedules • Repair leaks/dripping taps/ running overflows
Reduction	• Install water usage reduction measures in all buildings; timers in urinals, cistern blocks and pressure controls
Procurement	• Purchase only water efficient equipment – washers, toilet fitments • Install where appropriate PV/solar water heating

Travel

Develop	• Travel Hierarchy rules for all staff/Members • Workplace Travel Plans • Data recording mechanism showing bus miles, lease miles, training miles, car hire miles, member miles, home care miles, support worker miles and business mileage per service to be reported annually
Promote	• Park and Ride options rurally • Active travel rurally by having bike lockers/stores at junctions linking to public transport options • Dial a Bus • Home Working Strategy and flexible and mobile working
Implement	• Cycle paths and Open Space strategy • Re-launch of car share scheme/car club (possibly involving Community Planning partners) • Employee travel survey
Support	• Bike maintenance training for staff
Design	• Lighting improvements, better surfaces, crossings and signage to support active travel

Vehicles/Fleet

Procure	• Electric pool car fleet for major offices to reduce small distance mileage • Electric street cleaning and vans
Implement	• Euro 5 validation for fleet (engine validation) • Telematics applied to all journey management and installed in all vehicles to identify poorly performing vehicles and bad practice. Assists maximising of usage and rationalisation of fleet asset, stops wasteful driver vehicle idling • Upgrade all fleet management software to monitor usage • Regular fleet maintenance schedule to reduce emissions • Reduction in age profile of fleet
Deliver	• Eco driving/fuel efficiency driver classes and monitor thereafter (10% reduction in fuel expected) • 25 hours annual training to all HGV drivers with refresher every 5 years • Train staff on driving Electric vehicles to encourage EV pool use • Campaigns with bus operators to encourage more usage of public transport
Review	• Grey fleet rules and payments
Investigate	• New technologies – hydrogen/plug in hybrids/low carbon buses • Working with Transport Scotland to fund and assist in fleet review and specific campaigning

Energy

Implement	• Programme to replace all inefficient heating plant, insulate and upgrade all buildings • Energy audits of all buildings (EPC's) • Energy monitoring programme using new software to detect aberrations • Use of thermal imaging to detect problem areas • Street lighting programme across whole estate including ferry terminals and traffic lights for LEDs • Voltage optimisation • Seven day timers on all large electrical – cookers, fridges, white boards etc • Programme of boiler time check optimisation • Sub meter floor on floor if needed • Biomass/renewable projects including non domestic RHI • Low energy efficient street/external lighting • Upgrade of Energy pages on Council website • Home Energy Scotland Area based Scheme

Develop	• Heat mapping
	• Programme of public roadshows
	• CRC and externally funded efficiency projects
	• E learning pack on energy use and carbon
	• School energy plans
	• Energy Policy and Implementation Plan for Council buildings
	• Training programme for all buildings
	• Senior manager /main contacts group
Audit	• Regular check of all units and fast report faults
	• Building champion regularly monitors how staff use energy
	• Renewables installed – capacity table
	• Smart meter utilities
	• Room temperatures
	• Each service given energy target (including reduction target) and carbon responsibility for it in each service plan

Awareness Raising

Implement	• Energy saving Advice on intranet/internet
	• Training for all outreach staff to recognise fuel poverty in clients and refer for support
	• Programme of lending energy monitors to staff for checking home wastage
	• Online hub for reduction ideas
	• Carbon campaign eg "Counting the Cost"/ "Tread Lightly"
	• Schools Global Foot Printing
	• ECO schools programme for nursery, primary and secondary schools
	• Public information leaflet on adapting to climate change
Support	• Earth Hour
	• Green Office Week
	• Climate Week, Bike Week
	• European Waste Aware Week
	• Eco driving training for householders
	• Climate Change teaching in schools and linked to youth groups

Local Food Production

Support	• Local food outlets
	• Local food production projects
	• Scottish farming innovation projects
	• Low emission agriculture projects
	• Livestock management measures
	• Funding for peatland restoration projects
	• Future proofing Scotland farming - adapt to and mitigate against climate change
Implement	• Food for Life Catering Mark in schools
	• Peat free horticulture in own estate
	• Optimisation of use of fertilisers and manures on own estate land
Develop	• Allotment Strategy
	• Fair Trade strategy

Contracts/Procurement

Review	• All contracts to ensure carbon considerations
Develop	• Sustainable Procurement strategy
	• E learning course on sustainable procurement
	• Links to Sustainable Procurement Working Group (SSN)
Implement	• Sustainable Procurement Action Plan
	• Revised contract documents to consider community benefits and sustainability at contract planning stage
	• E-tendering process
Enforce	• All staff developing contracts to have carried out sustainable procurement training
	• Proof of life cycle analysis process carried out before anything is procured
	• Stricter contract monitoring
	• Use of carbon metric in procurement
	• Production of environmental policy at tender stage for all contractors and ensure they provide information on vehicle and other impacts during the project tendered for

ICT

Promote	• Smart Working/corporate move to virtual desktop environment (applications stored remotely) • Remote Working • Screensavers with "Switch off" message
Implement	• Remote shut down and timed power down of PC's across estate • Server virtualisation/redesign • Green ICT procurement, particularly energy efficient units
Deliver	• Training in use of VC for all staff for use within Shetland as well as external • Train in use of webinars
Enforce	• Printer rationalisation • Standardisation of equipment and accessories

Community

Support	• Climate Challenge Fund bids from community groups • Bids for "Dark Skies" accreditation to enhance tourism • Electric vehicle network installation and communication
Campaign	• Carbon and Your Money Classes • Climate Change effect classes • Use of local produce/cookery classes

Political

Develop	• System of Carbon Champions and clear corporate senior leadership • Resilience Planning for climate change effects – community and in house • Carbon section in all induction training Council wide • Environmental strategy for Council and Community Planning projects • Programme for delivering improved Northlink and internal ferry carbon efficient engines (funded by Government)
Implement	• Carbon and climate change section in Corporate Risk Register • Change Spend to save to ensure longer payback for carbon projects • BV 2 carbon target • Embed emission reduction actions and sustainable development considerations in all major plans • Audit of posts holding essential car user payment and reduce same
Enforce	• Carbon targets in performance measurement agenda • Tighter monitoring of travel booking • Section in all reports on sustainability/carbon/environmental is "real" • All services to carry out self assessment questionnaire on carbon, climate change and sustainable development as part of service planning exercise

Train	• Members, senior managers and community planning partners trained in carbon and climate change • Carbon Impact Assessment • General carbon and energy saving training for all staff with carbon guidance manuals on the intranet • All senior managers to calculate BAU cost for service at 8% per year increase

Built Assets

Implement	• "A" band ISBEM rating for buildings • BREEAM standard for refurbishment/new build at "Excellent" • Rationalisation of property portfolio
Develop	• "Halfing Waste to Landfill" in construction • Sustainable timber procurement policy – WWF pledge and award system and CPET timber pledge and Forest Stewardship Council for all contractors • Functional Asset Management Plans for every asset • Carbon Footprint report annually as part of Asset Improvement Plan reporting
Enforce	• Building shut down and closure rules to limit energy use • Maximum office temperature at 21 • Ban on portable heaters
Advise	• Low carbon construction and land use technologies for assets

Marine

Develop	• Marine planning – for wave, tidal and offshore renewable including strategic cable installation • Strategy on mitigation and adaption of coastal erosion/flooding
Implement	• Draft national Marine Plan 2013 • Marine protected areas (including blue carbon seabed areas)

Waste

Implement	• WARPIT programme to recycle goods within the Council (reduces procurement spend and disposal costs for services) • Recycling facilities for businesses and households
Review/audit	• Waste vehicle routes • Waste audit all services
Support	• Community Recycling ventures eg Bike Project/Charity Shops • Business to reduce their waste and to see waste as a resource • Reuse of materials locally by internet market development
Enforce	• Recycled Content policy Council wide
Campaign	• Increase recycling community wide • Food Waste reduction (domestic and commercial)

Develop	• Internal Council Waste Minimisation Policy and Plan • Shetland Waste Strategy/Implementation Plan encouraging recycling
Partner	• Zero Waste (Scotland) on new Waste Strategy and increased recycling • Resource Efficient Scotland on campaigns

Transport

Lobby	• Government for carbon efficient external route operations (ferry and flight)
Implement	• Integrated transport timetables to encourage use of public transport • "Walk to School" paths and "Cycle Friendly Routes" • Journey share schemes • Purchase of subsidised bike programme as part of Cycle to Work • Cycle maintenance classes for staff
Develop	• School Travel Plans which deliver active travel
Advise & Campaign	• "Give Me Cycle Space" campaign • Bike Week/Shetland Walking Routes

Data

Lobby	• Both Governments (especially DECC) to consider more appropriate data sources for islands carbon calculations • ICARB to work with us on developing these appropriate statistics
Train	• All managers on carbon accounting for their operations • Appropriate staff in Carbon Masters Tool (Carbon Trust) • All staff to use Carbon metric Tools in procuring all materials

Economic Development

Develop	• Renewable Energy Strategy for Shetland (including tidal and hydrogen)
Support/Advise	• SME's to reduce their energy usage • Businesses on resource efficiency and development of products for the low carbon economy

Planning

Develop	• Local Development Plan and supporting Guidance documents • Access Strategy and supporting materials/booklets • Open Space Strategy • Allotment Strategy
Implement	• Access Strategy to support active travel • Local Development Plan criteria
Advise	• Building Control/Planning Officers advise on low carbon behaviour • Design guidance on use of low energy and sustainable materials eg wood instead of steel

Housing

Develop	• Energy surgeries for all social tenants
Implement	• EESSH (Energy efficiency standard in social housing) - 2020
Create	• Reduced need for travel by use of community hubs

Biodiversity

Develop Plans & Strategies	• Local Biodiversity Action Plans; Land Use Strategy; Peatland Plan
Implement	• Above Plans in Council owned estates
Encourage	• Precision agricultural techniques and use of new methods

Finance

Use of External Finance	• Salix, Green Investment Bank and commercial Green Deal loans; CEEF and Government grant funding (all sectors)
Reform of	• Spend to Save criteria for longer payback
• Use of External Finance	• Salix, Green Investment Bank and commercial Green Deal loans; CEEF and Government grant funding (all sectors)
• Reform	• Spend to Save criteria for longer payback

11. Appendix 4 – Carbon Project Register

Project Reference	Project Description	Capital Cost (£)	Project Status	Type of Emission Saving	Estimated Annual Savings			Completion Year
					(kWh)	(t CO$_2$e)	O&M (£)	
Aith JHS	Replacement Lighting	3,028	Complete	Grid Electricity	2,464	1.22	318	2014/15
Sandwick JHS	Replacement Lighting	27,870	Complete	Grid Electricity	29,000	14.41	3,373	2014/15
Overtonlea	Replacement Lighting	6,434	Complete	Grid Electricity	7,142	3.55	846	2014/15
North Haven	Replacement Lighting	6,434	Complete	Grid Electricity	7,142	3.55	848	2014/15
ET House	Replacement Lighting	6,504	Complete	Grid Electricity	7,044	3.50	814	2014/15
Waste Landfill	Replacement Lighting	18,899	Complete	Grid Electricity	24,339	11.77	2,499	2014/15
Aith JHS	Loft Insulation	20,713	Complete	Gas Oil	69,860	18.99	4,192	2014/15
Tingwall Airport	Radiant Heating Trial	6,080	Complete	Grid Electricity	14,071	6.99	1,687	2014/15
Fetlar Community Project	Heat and Electricity Supply to School		In Progress	Grid Electricity/Gas Oil	-	7.69	282	2015/16
ICT	Server Virtualisation		In Progress	Grid Electricity	90,682	45.07	9,490	Ongoing
Scalloway JHS	Biomass ESCO	35000	In Progress	Gas Oil	66,797	124.19	9,054	2015/16
Street Lighting	LED Conversions	38,305	Complete	Grid Electricity	61,333	30.49	6,826	2014/15
Blackness Pier	Replacement Lighting	20,800	In Progress	Grid Electricity	16,066	7.99	1,872	2015/16
Sound Primary	Replacement Lighting		In Progress	Grid Electricity				2015/16
Sound Primary	Re-roofing		In Progress	District Heating				2015/16
Bells Brae Primary	Heating/Lighting/Insulation		Planning Phase	District Heat./Electricity				2015 - 2017

11.1. **Historic Projects** - The following projects have been started in other services and should be added to this project list once full details are available:

- BMS systems installed in most larger properties
- Water meters fitted in some (but not all) buildings and some water reducing measures installed e.g. timers, pressure controls etc
- Car share scheme – needs to be re-launched
- Local Development Plan and associated projects
- Renewable Energy strategy (being revisited by Development)
- Access strategy and associated works
- New Waste Strategy (under review)
- Integrated transport timetables
- Subsidised bike scheme (Transport Planning)
- Cycle training in schools
- Marine planning – marine protected areas (blue carbon)
- Rationalise the property portfolio
- Reduce age profile of fleet – ongoing
- Environmental & Carbon section in every Council report
- Some server virtualisation and printer rationalisation
- Some shutdown ICT protocols
- Some green procurement information - not monitored
- Charge points and EV vehicles
- E-tendering
- Eco schools
- HEEPS:ABS
- Earth Hour supported
- Eco driving training for some staff

- Initial Heat mapping training
- Road shows on energy, waste and climate/carbon carried out annually
- Commercial EPC's – ongoing
- Street lighting led – some installed
- Biomass Installations to Mid Yell & Sella Ness

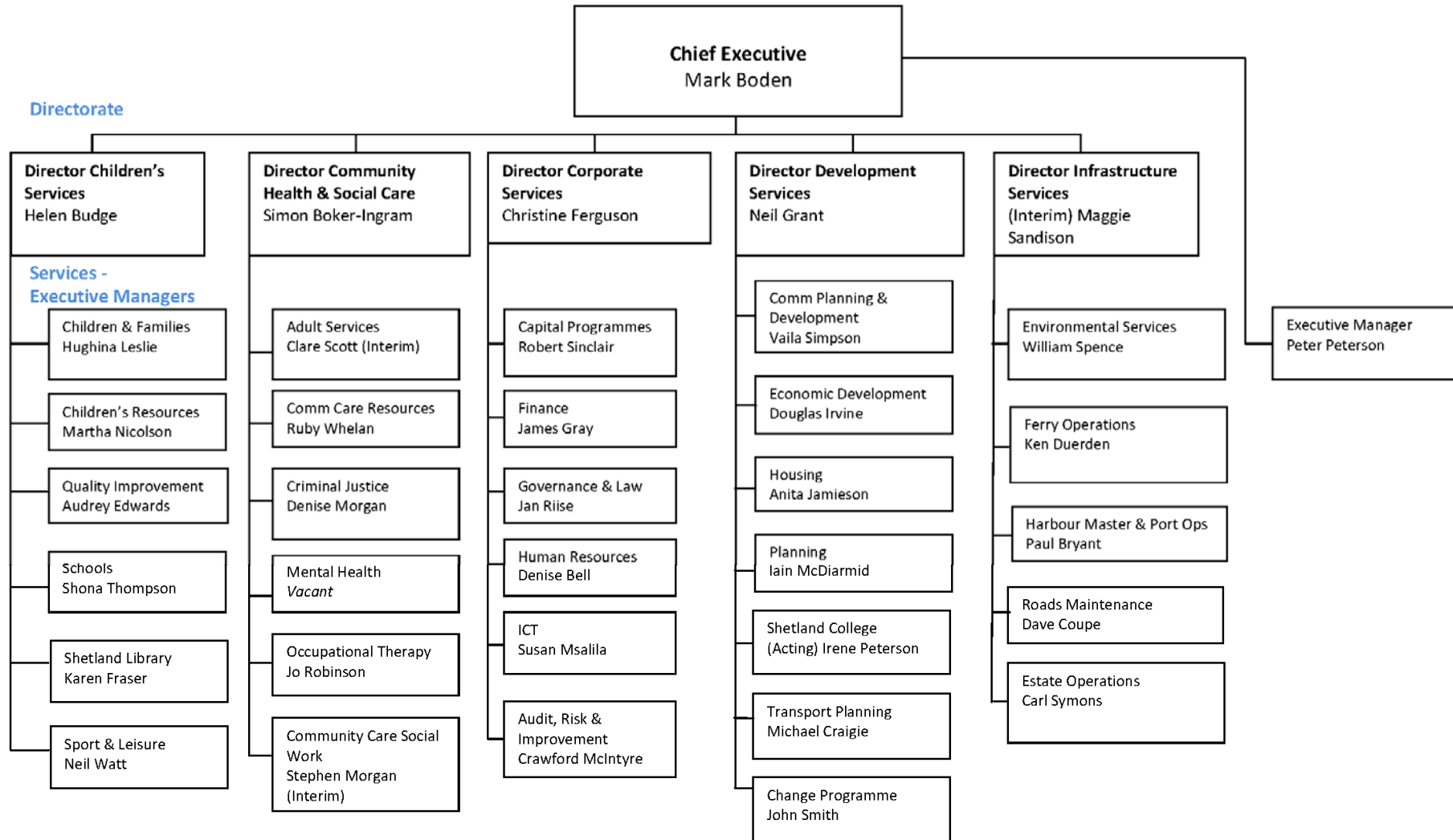## 12. Appendix 5 – Shetland Islands Council – Service Structure

Figure 15: Shetland Islands Council - Service Structure

13. Appendix 6 – Carbon Management Board & Team Composition

	Role	Job Title & Service Area	Name
Programme Management Board	Corporate Champion	Chief Executive	Mark Boden
	Project Sponsor	Director of Infrastructure Services	Maggie Sandison
	Programme Manager	Executive Manager – Estate Operations	Carl Symons
	Service Representatives	Executive Manager - Capital Programme Service	Robert Sinclair
		Executive Manager - Economic Development	Douglas Irvine
		Executive Manager - Environmental Services	William Spence
		Executive Manager - Executive Services	Peter Peterson
		Executive Manager - Ferry Operations	Jim Mouatt
		Executive Manager - Housing	Anita Jamieson
		Executive Manager - HR	Denise Bell
		Executive Manager - ICT	Susan Msalila
		Executive Manager - Planning	Iain McDiarmid
		Executive Manager - Roads	Dave Coupe
		Executive Manager - Transport Planning	Michael Craigie
		Finance	TBC
		Ports and Harbours	TBC
		Schools	TBC
		Social Care	TBC
Core Team	Carbon Management	Carbon Reduction Officer	Alan Grieve
	Energy	Energy Manager	John Simpson
	Sustainability	Team Leader - Carbon Management	Mary Lisk
Project Delivery Leads		Asset & Properties	TBC
		Building Services	Steven Goodlad
		Communications	TBC
		Ferry Operations	TBC
		Fleet Management	Ian Jeromson
		ICT	TBC
		Landfill Site	TBC
		Ports and Harbours	TBC
		Procurement	Colin Black
		Schools	TBC
		Social Care	TBC
		Street Lighting	TBC
		Waste to Energy Plant	TBC
Project Support		Administrative Support	TBC
		Management Accountancy	TBC
		Communications	TBC

14. Appendix 7 – Radical Thinking? - An Alternative Energy Model

Power Grid

Wind Turbines

Power

Power

Electric Vehicles

Hydrogen Storage

Power

Combined Heat and Power Plant

Hydrogen

Hydrogen

Heat

District Heating Scheme

Private Vehicles

House House House
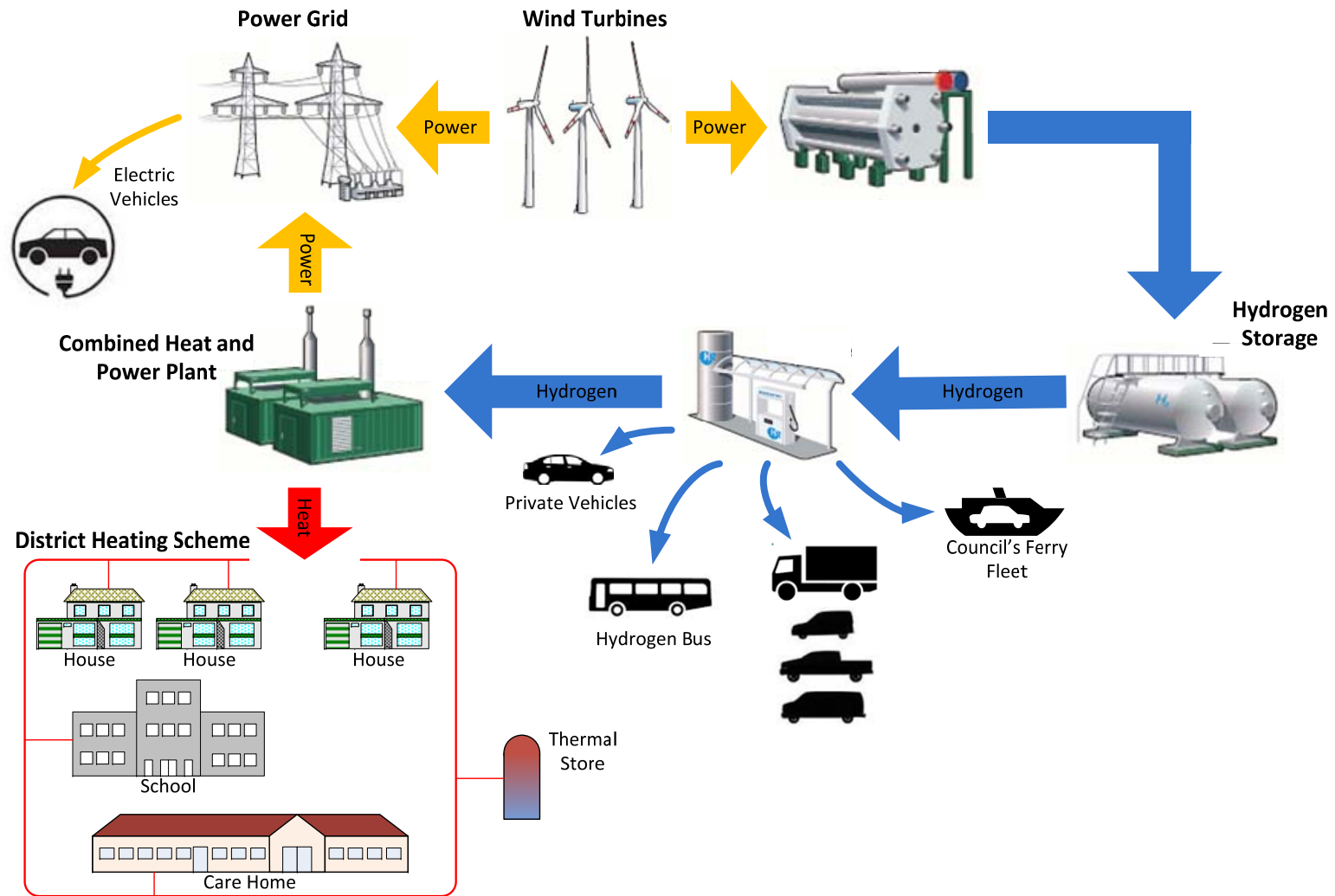
Council's Ferry Fleet

School

Hydrogen Bus

Thermal Store

Care Home

Figure 16: Hydrogen Production Life Cycle