

The Highland Council

Highland Council – 30th October 2014

Agenda Item	16
Report No	HC/30/14

Carbon CLEVER Programme Plan and Update

Report by Head of Policy and Reform

Summary

This paper provides Members with an update on the Carbon CLEVER Programme plan and in particular the chapter on Land Use and Resources. The paper also provides Members with an update on a number of Carbon CLEVER projects.

1. Background

- 1.1 At a meeting of the Highland Council in June 2013, Members agreed to an initiative to achieve a carbon neutral Inverness in a low carbon Highlands by 2025, Carbon CLEVER.
- 1.2 The Council has a commitment in its Programme, Working together for the Highlands, 2012-17, that it will maintain its commitment to Scotland's Climate Change Declaration and work with everyone to achieve a Carbon CLEVER Highlands by 2025 (a carbon neutral Inverness in a low carbon Highlands).
- 1.3 There are a number of projects and actions currently being developed and delivered as part of the Carbon CLEVER initiative. Along with this action, there is also a need to develop a programme plan for the initiative that sets out a strategy for achieving its ambitious targets.

2. Carbon CLEVER Programme Plan

- 2.1 At a meeting of the Highland Council in March 2014, Members agreed that Carbon CLEVER should address five key strategic themes: Economy; Energy; Land Use and Resources; Transport; and Engagement Strategy. Members further agreed that a programme plan should be drafted comprising a strategy document based on these key strategic themes.
- 2.2 As the strategy document develops, a three year action plan will also be drafted which will be updated and reviewed regularly. The final programme plan will also outline how the performance of the initiative is measured both quantitatively and qualitatively. The programme plan will be launched at the second Carbon CLEVER conference, 17th November 2014.
- 2.3 Chapters on Economy, Transport, and Energy have been presented to meetings of the Highland Council. This report presents the Land Use and Resources chapter. This has been written with input from Highland Council officers, Scottish and Highland stakeholders, and feedback from the Carbon CLEVER conference 2013 and the series of workshops that were conducted with Council Members and staff in 2013. This chapter is in a draft format and aims to highlight both the current direction of travel under the strategic themes,

and areas where additional action is required. Following Member feedback we will consult again with regional stakeholders and at the Carbon CLEVER conference. This consultation will help to revise the document and identify priorities for action over the next 3 years.

3. Land Use and Resources

- 3.1 There is a wide range of demands on land use across the Highlands for a mixture of economic, social, and environmental benefits. In achieving a low carbon Highlands, it will be vital to ensure that this balance protects, restores, and enhances the region's carbon stores in light of a range of pressures, including changes in the global climate. The chapter is structured around the ambition for Carbon CLEVER Land Use and Resources that was agreed at a meeting of the Highland Council on the 13th March 2014.
- 3.2 The draft Land Use and Resources chapter is attached at Appendix 1. It notes that land in the Highlands acts as a major carbon sink, through soils, peat lands and forestry, estimated at removing over 1.8 million tonnes of carbon dioxide equivalent from the atmosphere (2012). To put this into perspective, the annual carbon emissions from the Council's own operations (from our energy use in buildings, travel, fleet, waste, street lighting and water consumption) amount to approximately 63,400 tonnes (2013/14). Land use in the Highlands is hugely important to offsetting carbon emissions and mitigating against climate change.
- 3.3 The chapter also highlights Council commitments and Single Outcome Agreement outcomes relevant to role of Land Use and Resources to achieve a low carbon Highlands. Other key items in this chapter include:

Using Land and resources to realise economic, social and environmental benefits

- Peatland Protection and Restoration
- Cairngorms National Park
- Highland Forest and Woodland Strategy
- Scotland Rural Development Programme
- Refreshing the Highland-wide Local Development Plan

An increased amenity value of sites across the region

- Highland Council Countryside Rangers Service
- Long distance routes and core paths
- Environmental Volunteering

A resource efficient society – reduce, re-use, recycle

- Highland waste and recycling
- Social enterprise partners
- Environmental impacts of procurement
- Reducing Council paper use

More sites for allotments and community growing schemes enabling an increased production of locally sourced food.

Increased consumption of locally produced goods is an outcome of the

Economy theme of the Carbon CLEVER Programme plan. Current and future actions to increase sites for allotments and community growing schemes enabling increased production of locally sourced food are considered under this part of the plan. Key developments include the establishment of a Highland and Moray Local Food Network, and the expansion of allotments and community growing schemes.

Engagement Strategy

- Carbon CLEVER Conference and workshops
- Eco-Schools
- Citizens' Panel and Communities' Panel

4. Carbon CLEVER project updates

4.1 A number of projects are being developed and delivered to support the Carbon CLEVER initiative. An update on a number of new and emerging projects is given in the following section of this report.

4.2 Capital programme allocation

The Carbon CLEVER initiative has a capital budget of £1million p.a. from 2014/15. For 2014/15, £575,000 has been approved by the Council for:

- £250,000 Millburn Road Cycling corridor
- £50,000 LED street lighting – Inverness
- £250,000 UHI Low Carbon Institute
- £25,000 Dingwall Office Rationalisation active travel improvement.

£425,000 is yet to be allocated for spend in 2014/15.

4.3 It is proposed that £225,000 from the Carbon CLEVER capital budget is allocated to upgrading street lighting across the Highlands to LEDs (Appendix 2). The Carbon CLEVER capital budget allowance is part of the Council's agreed Capital Plan. The business case presented for LED street lighting focusses on the savings that will be made in energy bills. With this level of investment the payback period is just under 7 years, based on current energy prices. If the costs of borrowing for the investment are factored in the payback period is longer, but other savings such as the reduced maintenance costs of LED street lighting and reduced carbon tax would off-set this to some extent. LED street lighting is carbon CLEVER.

4.4 A further phase of street lighting projects is presented in Appendix 3. It is proposed that if no further capital projects under the Carbon CLEVER capital budget are identified for expenditure this year, and approved by Resources Committee by end November 2014, then this second phase of street lighting projects are undertaken. This will ensure the capital budget is fully allocated and spent within 2014/15 to reduce carbon emissions.

4.5 Carbon CLEVER Declaration

The Carbon CLEVER Declaration was launched on the 30th April 2014. This Declaration is an important way for Highland businesses and organisations to a part of, and commit to, Carbon CLEVER. The Declaration aims to streamline

and simplify support, and publicise the excellent work to reduce carbon emissions that is occurring across the region. The Carbon CLEVER Declaration has recently received its 50th signatory, Inverness Caledonian Thistle FC, and the Climate Change team are in talks with a number of other potential signatories.

4.6 Inverness Car Club

Working with CarPlus, and with funding from Transport Scotland as part of the Developing Car Clubs in Scotland programme, a feasibility study was commissioned for a car club in Inverness. The results and recommendations of this study are in draft form. The final report will be presented at a meeting of the City of Inverness Area committee, 2nd December 2014.

4.7 Local Energy Economy Consortium (LEEC)

The LEEC has the ambition to turn Scottish communities and regions into local energy economies, based on the key principles of: local generation; local demand; local supply; and local finance. Through this approach energy would be generated and used locally, bringing economic benefits to the local community and reducing energy costs.

4.8 The LEEC is being co-ordinated by Community Energy Scotland and covers the Highlands and Islands area. The Climate Change team, Chief Executive's Office is actively involved in the scheme and the Council is a key stakeholder, along with Highlands and Islands Enterprise, Western Isles Council, Argyll and Bute Council, and Orkney Islands Council.

4.9 The consortium was formed in September and following the launch of the Scottish Government's £20 million Local Energy Challenge Fund, the consortium submitted 8 applications. The success of these applications will be announced in November.

4.10 Nairn Community project

To assist Highland Council in achieving the goals of Carbon CLEVER, Resource Efficient Scotland has commissioned Synergie Environmental, through a competitive procurement process, to deliver a pilot programme of support to public sector organisations in and around Nairn to improve resource efficiency. This will include for examples resource efficiency site audit of all local public sector buildings and sites and potential projects for improvement. It will also have wider use as a report outlining the barriers to and opportunities for replication in other similar locations will be produced. Further reports will be provided for members on this project.

4.11 STEP-UP

Strategies Towards Energy Performance and Urban Planning (STEP-UP) is a European project which aims to bring together excellence on energy planning from four European cities, Glasgow, Ghent, Gothenburg and Riga, running from Autumn 2012 to Spring 2015. Following agreement by Members at the meeting of the Highland Council, 26th June, the Highlands is now a companion of the STEP-UP project. Support from the STEP-UP project is being combined with that from the Sustainable Scotland Network to develop a

Sustainable Energy Action Plan which will provide a carbon emissions baseline for the region. This is an important step in developing the evidence base of Carbon CLEVER.

4.12 Climate Change Leadership Programme

Through the Scottish Leaders Forum (SLF), the Scottish Government have developed a proposal to support and encourage Climate Change Leadership across Scotland. The Highlands have been selected as a pioneer region for this programme. This will require a multi-agency approach, and buy-in from prominent leaders in the public, private and third sector will be essential.

4.13 Members of the SLF will be present at the Carbon CLEVER conference to identify Highland leaders. An initial meeting of Highland stakeholders is expected to occur in December 2014.

5. Implications

5.1 Resource Implications: The report includes proposals to allocate £225k of the carbon clever capital allowance to LED street lighting projects, with scope to increase this to £425k for further street lighting projects if no further capital projects are recommended for approval by November 2014 for spend in 2014/15. To support the LEEC programme £10,000 revenue funding has been committed from the Climate Change team's revenue budget. Outcomes of bids made through LEEC will be known in November.

5.2 Legal Implications: The Council has a duty to assist Scotland achieve its national carbon emission reduction targets as set out by the Climate Change (Scotland) Act 2009.

5.3 Equalities Implications: Projects and actions developed as part of the Carbon CLEVER will be screened on an individual basis for equalities implications.

5.4 Climate Change/ Carbon CLEVER Implications: Projects and actions developed as part of the Carbon CLEVER initiative will lead to reductions in carbon emissions, helping the region to mitigate its impact on climate change.

5.5 Gaelic Implications: Carbon CLEVER is a Highland-wide initiative. As such promotional material and messages will be translated into Gaelic in accordance with the Council's policy.

5.6 Risk Implications: There is a reputational risk to the Council in not achieving such ambitious goals. However, this is far outweighed by the potential success of the initiative. Carbon CLEVER requires project management to be used for development and delivery, this will include risk assessments and performance will be carefully monitored through a transparent process.

5.7 Rural Implications: Climate change will provide challenges and opportunities for rural communities in Highland. It is important that the impact of these challenges is minimised, and the potential opportunities maximised.

Recommendations

Members are asked to:

1. Agree any changes to the draft Land Use and Resources chapter appended and to note that the final draft will be subject to wider consultation with relevant groups;
2. Note that the Carbon CLEVER Programme plan will be presented at the second Carbon CLEVER conference, 17th November 2014, to receive feedback and to identify priorities for the next 3 years;
3. Agree that £225k is allocated to accelerate the LED street lighting programme as set out in Appendix 2 and to agree that this allocation increases to £425k and as set out in Appendix 3 if no further capital projects are identified and approved by November 2014.

Background papers: Carbon CLEVER Programme Plan and Update – Item 17, [26th June 2014](#); Item 10, [4th September 2014](#).

Designation: Head of Policy and Reform

Date: 17th October 2014

Author: Stephen Carr, Principal Policy Officer – Climate Change

Appendix 1 – Strategic Theme 4: Land Use and Resources

1.1 The Highlands covers 26,484 km², an area equivalent to one third of the total land mass of Scotland. The region has rich and globally renowned environmental assets such as alpine mountain ranges, native and ancient forestry, large areas of peatlands, wild land, and lochs. The Highlands has globally significant carbon stores, in its soils, peat lands and its forests.

1.2 There are multiple demands on land use across the Highlands for a mixture of economic, social, and environmental benefits. In achieving a low carbon Highlands, it will be vital to ensure that this balance protects, restores, and enhances the region's carbon stores in light of a range of pressures, including changes in the global climate.

1.3 The effect of land use across the UK as either a source or sink of carbon is calculated by the Department of Energy and Climate Change (DECC) through the "Land Use and Land Use Change Factor" (LULUCF). The latest estimate for the Highlands is that the land in the region acts as a major carbon sink, removing over 1.8 million tonnes of carbon dioxide equivalent from the atmosphere in 2012¹.

1.4 Woodlands function as valuable carbon sinks by removing carbon from the atmosphere and can therefore play a key role in carbon offsetting.

- The total forest carbon stock in Scotland is estimated to be over 3,700 million tonnes carbon dioxide equivalent (MtCO₂e);
- Forestry in Scotland is estimated to sequester over 17 million tonnes of carbon dioxide annually (from woody biomass, soils and litter);
- The Scottish Forestry Strategy (SFS) aims to expand woodland cover to 25% of Scotland's land area by 2050. Woodland cover currently comprises over 18% (approx. 350,000 ha) of land in the Highlands.

1.5 Peatlands are one of Scotland's most important natural assets in terms of the services they provide and will play a significant role in mitigating climate change. Healthy peat lands act as a sink for greenhouse gases, while damaged peat lands can act as a source of carbon emissions. The carbon held in Scottish peat soils has been estimated at 1620 ± 70 Mt CO₂e.²

1.6 There are 2.17 million hectares of agricultural land in the Highlands. The majority of this is classified as Less Favourable Area and is typically used for grass and for grazing cattle and sheep and associated mostly with crofting. Crofts range in size from less than 1/2 hectare

¹ DECC (2014) Emissions within the scope of Local Authorities for 2005-12 dataset. Available at: <http://ow.ly/CQjGd>

² Smith et al. (2009) Available at: <http://ow.ly/CQjNa>

(ha) to more than 50ha but an average croft is nearer 5ha.³ There are also common grazings used by a number of crofters and others who hold shares in that land.

The exception to this is a relatively narrow area running along the East coast from Nairnshire, the Black Isle and Easter Ross and including part of the Northern coast near Thurso where the soil, topography and climate allows for more intensive arable farming.

1.7 Agriculture contributes significantly to climate change in Scotland; although less so in Highland given the relative scale of intensive farming and sustainable crofting practice. One aspect of the vision for crofting is for carbon emissions reduction through availability of local croft-grown food with short food miles, and through increased renewable energy production on crofts and common grazings.⁴

Livestock, animal waste, and improved soils are all important sources of carbon emissions. It is expected that climate change will be one of the major challenges that all types of agriculture will have to face. Changes in temperature, rainfall, and weather patterns will all bring challenges. Agriculture may also have crucial leverage in tackling climate change as improved management, new technologies and creation of woodland (in appropriate places) may increase farmland capacities to capture and store carbon.

1.8 Planning policy will play a key role in ensuring that land and resources are utilised to realise optimal economic, social, and environmental benefits. The National Planning Framework (NPF3) and Scottish Planning Policy (SPP) were published by the Scottish Government in 2014. NPF3 sets out the spatial development framework for Scotland. It outlines development priorities for the next 20-30 years. SPP provides the policy context for addressing spatial planning matters. It sets out national planning policies that reflect Scottish Government's priorities for development and land use. These are key documents to enable a planning process that supports the Scottish Government's target of at least an 80% reduction in greenhouse gas emissions by 2050.

1.9 Becoming a resource efficient society will also help to reduce the Highlands carbon footprint. This means reducing the amounts of goods we buy, selecting those with a lower associated carbon footprint, reusing them as much as possible, and then recycling them when they have no further worth. The Scottish Government have set a target to achieve a 70% recycling rate and only up to 5% to be landfilled by 2025. Increasing resource efficiency is an important step in moving towards a circular economy (paragraph 4.2).

³ Crofting Commission <http://www.crofting.scotland.gov.uk/What-is-Crofting.asp>

⁴ Crofting Commission Policy Plan, revised September 2014.

1.10 Feedback gathered from the Carbon CLEVER Conference 2013, a series of internal workshops (paragraph 6.2), and a review of other European cities approaching similar low carbon targets, have been used to determine the potential key Land Use and Resources outcomes of achieving a carbon neutral Inverness in a low carbon Highlands. These are:

1. Land and resources across the region utilised to realise economic, social and environmental benefits;
2. An increased amenity value of sites across the region;
3. A resource efficient society; and
4. More sites for allotments and community growing schemes enabling an increased production of locally sourced food.

1.11 This chapter is structured around these key outcomes and the activity that is being undertaken, or is programmed to occur across the Highlands to achieve them.

2. Land and resources across the region utilised to realise economic, social and environmental benefits

2.1 There are arguably more demands on land use in the Highlands than ever before. From renewable energy developments, to agriculture and crofting, woodland, game estates, forestry, to housing and retail developments. It is therefore important that land is used for optimal economic, social and environmental benefits. In addition to this wild land, needs to be safeguarded and carbon stores (such as peatlands and forestry) protected, restored and where appropriate expanded.

2.2 Scotland's third national planning framework (NPF3) is divided into four key themes which sets out a vision for Scotland which is a successful, sustainable place; a low carbon place; a natural, resilient place; and a connected place. NPF3 sets a clear direction of travel which is consistent with achieving the Scottish Government's climate change target of at least an 80% reduction in greenhouse gas emissions by 2050. The key priorities of NPF3 under the low carbon place theme are:

- Cities will be exemplars of low carbon living and a focus for essential energy infrastructure;
- Rural communities will benefit from well-planned renewable energy development; and
- Coastal and island communities will attract innovation and investment.

2.3 Development plans will be expected to promote a positive, planned approach to providing low carbon infrastructure across Scotland whilst protecting and enhancing environmental assets. The Crofters Commission Plan aims to guide council planning authorities when considering developments on land under crofting tenure and when writing their Local Plans and Development Plans.

2.4 Where we are now?

Commitments in the [Highland Council Programme](#) with a link to land and resources across the region utilised to realise economic, social and environmental benefits include:

- The Council will work with the Cairngorms National Park Authority to support them to develop the valuable role they play in the wider Highland environment and economy;
- The Council will maintain its commitment to land reform;
- With partners the Council will implement the changes to community planning and develop the Single Outcome Agreement in line with the Scottish Government review so that community planning is effective in the Highlands; and
- The Council will work with Highlands & Islands Enterprise, the Scottish Development International and statutory infrastructure providers to promote and develop the Highland area as one of the most attractive environments to do business in Scotland.

2.5 Single Outcome Agreement (SOA) – Environment theme

SOAs require community planning partnerships to set out how they will contribute to the delivery of the Scottish Government's national outcomes. In addition to the six outcomes prescribed, the Highland SOA⁵ contains a seventh outcome (Environmental Outcomes). This optional inclusion demonstrates the importance of the environment and land use in the Highlands to realise economic, social and environmental benefits. Outcomes to be delivered under the Environment theme of the SOA are:

- The environment will be managed sustainably in order to optimise economic, health, natural heritage and learning benefits;
- The effects of climate change in the Highlands will be minimised and managed;
- People will have greater outdoor access and volunteering opportunities across Highland

2.6 Land reform

Land reform aims to enable more people in Scotland to have a stake in the ownership, management and use of land. This will lead to a greater diversity of land ownership and ownership types in Scotland. Local land ownership and management will make communities stronger, more resilient, and independent, with an even greater stake in their own development. It will also generate, support, promote, and deliver new relationships between land, people, economy and environment in Scotland. The Scottish Government has set a target one million acres of land to be under community ownership by 2020.

2.7 "Working Together for the Highlands 2012-2017" commits the Highland Council to continue supporting the cause of land reform. Delivering this commitment includes engaging

⁵ Available at: <http://ow.ly/CQILl>

in the land reform debate in Scotland and at UK levels and the Council contributed to the Scottish Government's Land Reform Review Group enquiry. Implementation of the recommendations of this enquiry and subsequent changes to Scotland's system of land tenure is likely to enhance the rural economy and environment.

2.8 The benefits and desire of communities to own and manage land can be seen through the number of community owned woodlands in the Highlands and Scotland. There are now over 200 groups across Scotland, involved in or responsible for the management of thousands of hectares of woodland and open space. New groups continue to form, encouraged by the Land Reform Act and the National Forest Land Scheme. These communities manage the woodland and deliver a wide range of social, economic, and environmental outcomes.

2.9 Wild Land

There are large areas of Scotland, and especially in the north and west Highlands, with largely semi-natural landscapes showing minimal signs of human influence. These range from mountains to moorland, and from stretches of undeveloped coast to large areas of peat bog. These wild and remote areas have a distinct and special character. A key component of Scotland's identity, they bring significant economic benefits, attracting visitors and tourists and they provide increasingly important habitats for Scotland's wildlife. They include areas held in crofting tenure with aims of sustainable development.

2.10 In 2013, Scottish Natural Heritage (SNH) published a map of core areas of wild land in Scotland for consultation. The Highland Council acknowledged the importance of wild land and that it needs safeguarded, but raised some concerns including the extent of the wild land areas and how this would restrict development, and with the methodology used. In 2014, a revised map of wild land areas was published. There is now certainty of where the wild land areas are in the Highlands and SNH are completing wild land descriptions and guidance for assessing the impacts of development proposals.

2.11 The revised Scottish Planning Process provides a three stage methodology for siting onshore wind developments. Under this, wild lands and carbon rich soils are to be considered as areas of significant protection. This will be incorporated into Highland Council supplementary planning guidance. In a similar manner to the wild land map, SNH are currently working on a map of carbon rich soils in Scotland.

2.12 Peatland Protection and Restoration

The Flow Country in Caithness and Sutherland is the largest blanket bog in Europe (400,000 hectares) and is estimated to contain up to 400 million tonnes of carbon. In the 1970s and 1980s large areas of the Flow Country were planted with conifers damaging the bog. This

reduced its ability to act as a carbon sink and led to parts of the bog acting as a source of carbon.

2.13 Since the 1990s, work has been conducted to restore the Flow Country, with this work led by the Peatlands Partnership of which the Highland Council is a partner. Over the course of this time, large areas of bog have been restored. 15,600 hectares of bog have had drains blocked and 2,200 hectares of forestry has been removed.

2.14 Cairngorms National Park

The Cairngorms National Park (CNP) covers an area of 4,528 km² in the Highlands, Aberdeenshire, Moray, Angus, and Perth and Kinross. The park attracts 1.5 million visitors and contains important carbon stores in its soils, forests, and peat lands. The Cairngorms National Park Authority ensures that the unique aspects of the park are cared for, sustained and enhanced.

2.15 The Cairngorms National Park Partnership Plan⁶ 2012-2017 sets out how the park will be managed. This includes a commitment to become a low carbon National Park which is a key theme throughout the plan. The plan recognises that the CNP is well placed to contribute to climate change mitigation. Firstly through the significant stores of carbon contained within the peat, soils, and woodland of the park. Secondly by supporting businesses and communities to reduce emissions, generate renewable energy, and plan for a changing climate, and finally by supporting visitors to travel by sustainable modes of transport.

2.16 Highland Forest and Woodland Strategy

The Council's Highland Forest and Woodland Strategy⁷ (HFWS) recognises the importance of safeguarding and expanding our woodland resource. It aims to guide and support the sustainable management of our tree and woodland assets to benefit social, environmental and economic values. Forestry is a primary land use in the Highlands and the region has a long tradition of woodland expansion and management expertise. HFWS contains many policies with a link to climate change including:

- Sustainable forest management (e.g. long term forest planning, and the removal of woodland on deep peat sites);
- Sustainable flood management (e.g. expanding riparian woodland and river catchment management);
- Community engagement (e.g. community ownership of woodland/ partnerships);
- Renewable energy (e.g. supporting biomass energy initiatives); and

⁶ Available at: <http://ow.ly/CQYYQ>

⁷ Available at: <http://ow.ly/CR009>

- Local economy and infrastructure (e.g. encouraging local processing, and reducing timber road miles and encouraging other transport options – rail and sea).

2.17 Trees for Life

Trees for Life's vision is to restore the ancient Caledonian Forest to the Scottish Highlands. In 2008 Trees for Life purchased Dundreggan Estate, an area of 10,000 acres of land near Loch Ness to establish a major forest restoration programme. The majority of the charity's forest restoration activities are carried out by volunteers, which have planted over a million trees to date. The charity has an ambitious target to reach its second million by 2018, helping to secure the Caledonian Forest for generations to come. Re-establishing the Caledonian Forest is already making a difference to local wildlife, providing habitats for species such as the strawberry spider, osprey, and black grouse. It also has major implications for climate change, with the forestry expansion leading to an increased amount of carbon being removed from the atmosphere and becoming stored in the Highlands.

2.18 Farming for a better Climate

Three Highland farms are part of the Farming for a Better Climate Programme (Auchmore Farm, Ross-shire; Clynelish Farm, Sutherland; Corrimony Farm, Inverness-shire). Through this programme the farms are reducing their carbon footprints whilst improving productivity and profitability, and adapting to the potential impacts of climate change.

2.19 Highland Council Development Plans

The Highland Council Development Plans set out how places in the Highlands should change and what they could be like in the future⁸. The Highland-wide Local Development Plan (HwLDP) is the Council's vision for the whole of the Highlands (with the exception of the Cairngorms National Park which has its own plan). In addition, there are Area plans, Local plans, and supplementary guidance. These plans are vital to encourage development which is low carbon, ensures transport links facilitate active and public transport, and enable the development of appropriately sited renewable energy and heat.

2.20 What have we planned already?

Scotland Rural Development Programme (SRDP)

The proposed SRDP 2014-2020 was submitted to the European Commission for consideration in June 2014. The purpose of the proposed £1.2 billion programme is to help to achieve sustainable economic growth in Scotland's rural areas. The main priorities are:

- Enhancing the rural economy;
- Supporting agricultural businesses;
- Protecting and improving the natural environment;
- Addressing the impact of climate change; and

⁸ For more information, please visit: <http://ow.ly/CQtfD>

- Supporting rural communities.

2.21 Refreshing the Highland-wide Local Development Plan

In light of the new planning guidance contained within SPP and NPF3, the HwLDP and supplementary guidance needs to be revised. This process has already begun to ensure national planning guidance is delivered at a local level. This will ensure that the Highlands becomes a successful, sustainable place; a low carbon place; a natural, resilient place; and a connected place.

2.22 Landscape and visual impact of onshore renewables

An important consideration for wind energy developments is impact on landscape and on views, including cumulative impact. The HwLDP requires developers to consider these issues. The Highland Council is continuing work to develop guidance on these issues for specific areas and to update relevant supplementary guidance.

2.23 Highland Council recently commissioned a cumulative landscape and visual assessment of onshore wind developments in Caithness⁹. The report is a technical background paper; it is not the Council's policy or guidance but it will be used to inform the revision of Highland Council development policies and guidance. The Council will also refer to it, where relevant, as a material consideration in development management. The assessment is strategic; individual wind farm proposals will still require site-specific assessment in terms of any landscape and visual impact they may have, individually or cumulatively.

2.24 Highland Land Use Strategy

There are a variety of competing demands on land across the Highlands, and the region would benefit from a Highland Land Use strategy to:

- Ensure that land-based businesses work with nature to contribute to the prosperity of the Highlands.
- Ensure the responsible stewardship of natural resources in the Highlands.
- Deliver more benefits to the people of the Highlands.
- Better connect urban and rural communities to the land, with more people enjoying the land and positively influencing land use.

2.25 A Highland Land Use strategy will be put in place by 2018. This will be developed through a stakeholder process under the guidance of the Highland Environment Forum, through which the Highland Council is a key partner. This will be informed from a variety of existing strategies e.g. the Scottish Forestry Strategy; the Scottish Biodiversity Strategy; River Basin Management Plans; and the Crofting Commission Policy Plan.

⁹ Available at: <http://ow.ly/CQn0k>

2.26 Flow to the Future

Flow to the Future is a project being delivered by the Peatlands Partnership in the Flow Country. The project aims to restore 7 square miles of forested and previously forested deep peat blanket bog and to increase awareness and understanding of the Flow Country. The five year project received over £4 million in funding from the Heritage Lottery Fund in 2014 to deliver its £9.5 million programme of activity.

2.27 What more do we need to do?

There are a number of key active land use strategy documents at a national, regional, and local level. These need to be pulled together to make a coherent and structured approach through a Highland land use strategy. This strategy will be critical for ensuring that land in the Highlands is managed for optimal environmental, social, and economic outcomes.

2.28 SNH is currently developing a map of carbon rich soils. When this has been consulted upon it should be incorporated into Highland Council planning guidance to ensure that these nationally important sinks of carbon are protected.

2.29 Highland Forestry and Woodland Strategy

The Highland Forestry and Woodland Strategy⁵ will be refreshed in 2015. This will place more emphasis on climate change including longer term forest planning, enhancing woodland structure and species diversity to better withstand pests and diseases and extreme weather events, and promoting woodland expansion both of native and productive woodland. The Highlands holds considerable opportunities for woodland expansion. The key consideration with expansion will be the integration with other land uses to deliver greater local and regional benefits.

2.30 Highland Tree Strategy (HTS)

The HTS, due to be published in 2014, will aim to ensure a sustainable urban tree and woodland population under the ownership of the Council, which supports a rich and resilient environment for the benefit and enjoyment of local communities and visitors. The promotion of a structurally and species diverse population will help to adapt to climate change, mitigate against pests and diseases, and contribute to biodiversity value.

2.31 HTS will actively encourage new and replacement planting of appropriate species in suitable locations to promote healthy treescapes. New developments will be carefully considered in relation to tree and woodland impacts, within and beyond Council ownership. Through the sustainable management and enhancement of the existing tree resource, the HTS improve the quality, role and diversity of urban trees and woodland in the Highlands. HTS will contribute to Carbon CLEVER through:

- Tree management (e.g. protecting and expanding urban tree and woodland cover; improved species diversity and structure)
- Development (e.g. Safeguard healthy tree and woodland in Local Development Plans; collaborate with urban design, open space, green networks etc.) and
- Community Engagement (e.g. community woodlands; community tree planting initiatives).

3. An increased amenity value of sites across the region

3.1 Improving access to the natural environment can help to protect it, and encourage people to engage with, manage, and improve the environment they live in to deliver economic, social, and environmental outcomes. Improving access and the amenity value can also encourage more active lifestyles and a healthier population. Greater use and enjoyment of the outdoor environment in the Highlands is provided by:

- A network of core paths which cater for all users – walkers, cyclists, horse riders, canoeists, people with disabilities etc. and are a key part of outdoor access provision;
- Providing Green Networks;
- Protection of public access rights and promotion of the Scottish Outdoor Access Code;
- The Cairngorm National Park;
- Public and private outdoor education and services;
- Archaeology services and events;
- Ranger services; and
- Supporting biodiversity projects

3.2 Where we are now?

Commitments in the [Highland Council Programme](#) with a link to an increased amenity value of sites across the region include:

- The Council will ensure the provision of allotments and the maintenance of green spaces and public parks across the Highlands and encourage various schemes such as community growing.

3.3 The Highland SOA makes a clear connection between improving environmental and health outcomes. Within the SOA, outcomes to be delivered include:

- Manage sustainably the outstanding natural heritage of the Highlands to optimise the economic, health and learning benefits; and
- People will have greater outdoor access and volunteering opportunities across Highland.

3.4 These outcomes will be delivered through a range of actions all of which will include the amenity value of sites in the Highlands. These include delivering the Highland Biodiversity

Action Plan, projects to control non-native invasive species, improvements to core paths, and increasing opportunities for environmental volunteering.

3.5 Highland Council Countryside Rangers Team

The Highland Council's Countryside Rangers constitute the largest local authority Countryside Ranger team in Scotland with 25 full time and 3 seasonal Rangers spread throughout the region. The Countryside Rangers run many events and guided walks which aim to help raise awareness and encourage appreciation of the scenery, wildlife, environment and heritage of the Highlands. The range of events and activities are aimed at local communities and visitors alike. The Countryside Rangers also have responsibilities for:

- Promotion of the Scottish Outdoor Access Code;
- Contributing to the Highland Council's Biodiversity duties;
- Promoting Eco-school status for all schools in the Highland Council area;
- Management of a large number of countryside sites throughout the Highlands; and
- Ranger Service along The Great Glen Way and the West Highland Way.

3.6 Long distance routes

There are three long distance routes in the Highlands: The Great Glen Way, The Speyside Way, and The West Highland Way. These have been created by linking existing paths with the provision of new paths. These are largely off road routes for "people powered" journeys. This offers people the opportunity to explore the Scottish environment in an active manner.

3.7 Abriachan Forest Trust

An excellent example of community ownership improving the amenity value of land can be found in Abriachan. In 1998 the community purchased 534 hectares of forest and open hill ground from Forest Enterprise. Since then, as a social enterprise, the Abriachan Forest Trust has managed this land to create local employment, improve the environment and encourage its enjoyment by the public through a network of spectacular paths, family suited mountain bike trails and innovative education opportunities.

3.8 What have we planned already?

Core paths

In Scotland, Core Paths can be defined as key routes for recreation and travel. In 2013 there were approximately 2,500 km of Core Paths in Highland Council area¹⁰. The Highland Council is committed to maintaining this network and improving the quality of these paths with both revenue and capital investment. In addition to this, the Council is establishing a baseline of the length of Core paths that is signposted and will increase this by 20% by

¹⁰ For more information, please visit: <http://ow.ly/CQjYF>

2018. Core paths ensure everyday journeys can be conducted on foot or by bicycle, and enable the people to easily access the local environment.

3.9 Environmental Volunteering

Environmental volunteering enables people to improve the quality of the environment and can also have a number of additional benefits to the individual such as exercise and an improved social network. An outcome of the SOA is to increase the amount of environmental volunteering through Trees for Life (TfL), The Conservation Volunteers (TCV), and Scottish Waterways Trust (SWT). TfL and TCV created a total of 1,080 environmental volunteer opportunities in 2013 in the Highlands. In addition, 376 opportunities were created through the green gym projects in Merkinch and 120 in Newcraigs. In 2013 SWT enabled 97.5 volunteer days worked. All these organisations are aiming to increase the amount of volunteering opportunities they create and associated volunteer days.

3.10 Inverness campus

As detailed in the Economy Chapter (paragraph 4.4-4.5), the development of Inverness campus has given careful consideration to the natural environment and ensuring the site has a high amenity value. 32 acres of the site will be dedicated to parklands, recreational space, and public art will build on and enhance the natural environment.

3.11 What more do we need to do?

A greater link between the work the Highland Council Countryside Rangers do, and the Carbon CLEVER could lead to much greater awareness and engagement of the people across the Highlands with the need to reduce carbon emissions. The Highland Council Climate Change Team worked with a number of Rangers on events for Earth Hour 2014 to raise awareness of climate change. This should be built upon in 2015 and expanded to include more information on Carbon CLEVER across the Rangers programme of events.

4. A resource efficient society

4.1 Efficient and effective use of goods and services in a resource efficient society will reduce carbon emissions associated with the production, utilisation and disposal. The hierarchy for reducing waste remains true – Reduce, Reuse, and Recycle. The principal way to reduce waste is to reduce consumption. Where goods have been obtained, they should be reused, and following that when the resources have no further value they should be recycled. Homes, communities, and businesses can achieve significant savings by improving resource efficiency.

4.2 A circular economy is an alternative to the traditional linear economy of make, use and dispose. In a circular economy resources are kept in use for as long as possible, the

maximum value extracted from them whilst in use, and then the resources are recovered and regenerated, so that resources are not lost from the system. To achieve this will mean redesigning products, components, and packaging so that they can be used again or biodegraded when they are no longer of any use. It may be rethinking current conventional ownership so that products are returned to manufacturers when they are no longer of any use so that they can be renewed.

4.3 Where we are now?

Commitments in the [Highland Council Programme](#) with a link to a resource efficient society include:

- The Council will increase opportunities for recycling and achieve a 57 % rate of recycling household waste by 2017;
- We will reduce the volume of printed material produced by the Council on a current initiative for paperless Council meeting options and developing further options for members, customers and employees to conduct Council business online

4.4 Highland waste and recycling

Recyclable material sent to landfill – whether paper, cardboard, plastics, metal or glass – is a waste of valuable resources, the replacement of which causes carbon emissions. Paper and cardboard sent to landfill will also rot, decompose, releasing methane into the atmosphere. In addition to this, landfilling material is expensive. It costs approximately £140 per tonne to landfill material. Processing materials collected for recycling costs £60 per tonne in comparison.

4.5 The Highland Council has a series of requirements which it has to meet under Scotland's Zero Waste Plan (2010)¹¹ with regards to municipal and household waste collection and disposal. The Council provides services to Highland communities so that the region will contribute to the overall Scottish targets of: 50% household waste recycling by 2013, rising to 60% by 2020; with 70% of all waste to be recycled by 2025 and by then for not more than 5% of all waste to be sent to landfill.

4.6 The Highland Council has set a target to increase the proportion of household waste that is recycled to 57 % by 2017. Against this target, household recycling increased to 45.5 % in 2013/14 compared to 44 % in 2012/13. This is a significant increase over 2002/03 when the rate of recycling in the Highlands was 3%. Recycling rates continue to increase due to improved service provision, awareness raising, and behaviour change.

4.7 Business Waste

¹¹ Available at: <http://ow.ly/CRdL2>

On 1st January 2014, new regulations around recycling came into force affecting businesses. These regulations are an important step to achieving the Scottish Government target of a 70% recycling rate and only 5% landfilled by 2025. All businesses are now legally required to separate out paper, cardboard, tin cans, plastic bottles and glass for recycling. Businesses, with a few exceptions such as those based in rural locations, that consistently produce 50 kg or more of food waste per week must also collect this waste separately for recycling.

4.8 Bag Levy

The bag levy was introduced on the 20th October 2014, requiring retailers to charge 5 pence for a single use plastic bag. Scotland currently uses 750 million plastic single use bags each year, and over 7 million are littered each year. Since imposing a similar levy in April 2013, Northern Ireland has seen the number of bags handed out reduce by 71%.

4.9 Social Enterprise Partners

The Highland Council funds a number of social enterprises to re-use and recycle waste, including:

- **Blythswood Care** (Evanton) – provides practical help for those in need and collects a range of goods, including furniture, clothing and footwear, soft furnishings, CDs, DVD's, mobile phones toys and tools;
- **NewStart Highland** (Inverness) – provides a furniture reuse service and runs a bicycle re-use project as well as training programme to get long term unemployed back into the work place;
- **HomeAid** (Caithness and Sutherland) – collects surplus household goods and either passes them directly on to families on low incomes, or sells them in their charity shops to raise funds;
- **Lochaber Environmental Group** – operates 4 community composting sites dealing with green waste; and
- **Acharacle CC /Rag Tag N Textiles** – reuse textile goods and make them into fashion goods and a furniture re-use service in west Lochaber.

4.10 The Council recognises that these groups have a wide range of environmental, social, and economic benefits, and is currently carrying out an assessment to quantify the “social value” of the work carried out.

4.11 Carbon CLEVER Declaration

As detailed in the Economy Chapter (paragraph 7.5), the Carbon CLEVER Declaration encourages businesses and organisations across the Highlands to make a public commitment to Carbon CLEVER and become more resource efficient. The Declaration was launched in April 2014 and has over 50 signatories. By signing the Declaration businesses and organisations benefit from:

- Gaining public recognition and free promotion in print and social media;
- Saving money and reduce carbon emissions by becoming more efficient with appropriate and effective support;
- Accessing free and simplified support and signposting such as funding maps, case studies and business cases; and
- Being part of a Highland peer support network and use the Carbon CLEVER branding.

4.12 What have we planned already?

Procurement

Sustainable procurement will soon become a legislative requirement for all regulated procurements under The Procurement Reform (Scotland) Act 2014. Detailed guidance to embed sustainability criteria into contracts has been developed by the Highland Council. This includes integration of robust environmental sustainability criteria into procurement specification, supplier selection criteria, contract award criteria and conditions of contract.

4.13 The guidance will make it clear what different environmental impacts must be considered based on the contract type (e.g. supply, service, or works contracts). It will identify procurements which have large environmental impacts, and provide suggested methods of minimising these impacts. Use of this, along with appropriate weightings under the Most Economically Advantageous Tender model, will result in significant reductions in carbon emissions across the Council and help to promote good practice.

4.14 WARP-IT

Like other large businesses the Council procures furniture, stationery, office consumables, fixtures & fittings, peripherals, and other electrical items. While the office rationalisation project will reduce the requirement for purchasing new furniture, much of this equipment is either stored or sent to landfill when no longer wanted or required. This can lead to further unnecessary procurement and cost, increasing carbon emissions and waste.

4.15 WARP-IT¹² (Waste Action Re-use Portal) is an online redistribution network which allows employees to redistribute or loan out unwanted or surplus items to other staff, or to other public or third sector partners. The system can be used to redistribute any unwanted resource. It is designed to keep resources in circulation, and out of landfill. The Highland Council are currently investigating how it could best make use of the WARP-it software.

4.16 Collaborating on Resource Efficient Services in Nairn

Collaborating on Resource Efficient Services in Nairn is a project being developed by Resource Efficient Scotland (RES) in collaboration with public sector partners. The aim of the project is to explore the feasibility of how public sector organisations and venues can work

¹² www.warp-it.co.uk

together to realise improvements in resource efficiency, taking into consideration local circumstances and opportunities. This project will facilitate a series of workshops and resource efficiency audits to develop a resource efficiency action plan and recommendations. This approach has the benefit of directly engaging and encouraging collaboration between organisations, whilst providing an opportunity for cross-sector learning and sharing of good practice. If successful this approach could be rolled out across the Highlands, and Scotland.

4.17 Highland Council Paper Use

In conducting its business the Highland Council uses a great deal of paper. The Council needs to make a concerted effort to reduce the amount of paper it produces and become more resource efficient. As part of this, the Highland Council launched a new website in 2014 with the aim to improve service accessibility through on-line systems. The Council have also committed to paperless committees from 2014/15 onwards, and are introducing a self-service human resources system for staff which will further reduce paper use.

4.18 What more do we need to do?

We need to keep building on the principles of reduce, reuse and recycling resources and preventing the disposal and loss of resources from society with the system generating no waste. This principle needs to be developed so that the Highlands and Scotland has a circular economy.

4.19 The Highland Council and the Community Planning Partnership should lead by example and make a concerted effort to become more resource efficient. The Highland Council should continue to work with partners to expand the support available through the Declaration and encourage more signatories across the region.

4.20 Opportunities to expand what waste can be collected for recycling and processed in the Highlands needs to be continued to be explored, although these can only be implemented when they become economically viable. In light of the Scottish Government's target that not more than 5% of all waste to be sent to landfill by 2025, alternatives for disposing of waste in the Highlands need to be scoped out.

5. More sites for allotments and community growing schemes enabling an increased production of locally sourced food.

5.1 Producing and consuming food locally can have a wide range of benefits for individuals and for communities. It can reduce carbon emissions associated with the transport of food (food miles), help people to lead active lifestyles, and lead to better health through increased consumption of fruit and vegetables. Commitments in the [Highland Council Programme](#) with a link to increased consumption of locally produced goods include:

- The Council will ensure the provision of allotments and the maintenance of green spaces and public parks across the Highlands and encourage various schemes such as community growing; and
- The Council will promote and support local food production and continue our support for Fairtrade.

5.2 Increased consumption of locally produced goods is an outcome of the Economy theme of the Carbon CLEVER Programme plan. Current and future actions to increase sites for allotments and community growing schemes enabling increased production of locally sourced food are considered under this part of the plan. Key developments include the establishment of a Highland and Moray Local Food Network, and the expansion of allotments and community growing schemes. New provisions in the Community Empowerment legislation are designed to support the further development of allotments and community growing of food.

6. Engagement Strategy

To achieve the goals of Carbon CLEVER it will require engaging with, and working in partnership with a wide range of stakeholders across the public, private and third sector, as well as communities and residents. Engaging with stakeholders will facilitate the exchange of ideas and good practice. The following relates specifically to engagement around the theme of Land Use and Resources.

6.1 Where we are now?

Carbon CLEVER Conference

At the Carbon CLEVER Conference in November 2013, delegates told us that the most exciting things about Carbon CLEVER with respect to Land Use and Resources in the Highlands are:

- We have regulated and conserved peat resources and restoration of peat lands;
- An expanded and diverse forestry and woodland sector; and
- A stable and diverse agriculture sector which ensures food security and supports the consumption of locally produced.

Delegates also highlighted the importance of land use reform, especially in terms of community ownership.

6.2 Carbon CLEVER Workshops

In developing the Carbon CLEVER initiative, workshops have been conducted internally with Highland Council Services, senior management, Green Ambassadors, and Elected Members, and with Highland Youth Voice in 2013. These workshops were used to determine the main drivers, opportunities, barriers, and threats to Land Use and Resources in the Highlands in

order to achieve a carbon neutral Inverness in a low carbon Highlands. This feedback is an extremely valuable resource which has been used to inform and direct the early action taken as part of Carbon CLEVER – ensuring that drivers are understood and fully exploited, opportunities are investigated, barriers overcome, and threats acted upon and reduced.

6.3 Eco-Schools

The Eco-Schools programme is a sustainable development award scheme running across primary and secondary schools (Energy Chapter, 9.4). Eco-Schools have a wide range of aims, and can help to:

- Reduce energy and water use;
- Improve the school's environment;
- Reduce litter and waste;
- Devise sustainable ways of travelling to and from school;
- Promote healthy lifestyles;
- Encourage active citizenship;
- Build strong partnerships with a variety of community groups; and
- Develop national and international links and networks.

6.4 All schools in the Highlands are actively engaged with the Eco-Schools programme, and all schools have achieved awards. In the Highlands 152 Bronze awards, 148 Silver awards, and 100 Green Flags have been achieved. All schools have a designated countryside ranger who works to support the aims and aspirations of the school in the Eco-School programme.

6.5 Schools Global Footprint Project¹³

Schools Global Footprint helps schools explore their impact on the environment. In 2013/14 5% of schools (9) were engaged with the energy element and 8.2% (16) the waste element of the Schools Global Footprint Project. For the energy element there were 24 presentations completed with 560 pupils attending the sessions during 2013/14. For the waste element there were 27 presentations to schools covering waste awareness, littering, dog fouling and general environmental issues.

6.6 What have we planned already?

Carbon CLEVER Conference 2014

A conference will be held in November 2014. At this conference, the Carbon CLEVER Programme will be published, progress made by Carbon CLEVER in the first year of the initiative will be detailed and future projects and actions outlined. The conference will also be utilised with to engage with Highland stakeholders on the Economy, Energy, Transport, and Land Use and Resources, and to challenge each other to accelerate our collective progress towards a low carbon Highlands.

¹³ For more information please visit: <http://ow.ly/CQkd5>

6.7 What more do we need to do?

Engagement will continue to occur with partners and stakeholders through a number of avenues. This will be supported through a number of ad hoc events. Carbon CLEVER will work in close partnership with organisations with strong links to land use and resources such as Scottish Natural Heritage, Cairngorms National Park Authority, and Resource Efficient Scotland. As detailed in the Economy chapter, a survey of both the Citizens' Panel and Communities' Panel will be conducted in 2014/15 as a qualitative measure of the performance of the initiative (Economy, paragraph 9.9). These surveys will cover a range of topics related to the strategic themes and outcomes of Carbon CLEVER. They will aim to ascertain the effectiveness and public awareness of the initiative, and to identify additional support, guidance, and action that is required.

Appendix 2

Proposed LED Street Lighting upgrades (Sodium lamps to LED) - £225,000

LOCATION	Ward No.	Existing lantern (w)	Proposed lantern (w)	No. Lanterns	Annual energy saving (kWh)	Annual CO2 saving (t)	Annual saving CRC (£)	Annual saving elec. costs (£)
Castletown - Main Road	4	150	30	40	24,449	13.0	208.54	2689.39
Castle town - Bower Road	4	100	23	31	11,650	6.2	99.37	1281.5
Dornoch - Evilix Road	5	150	30	89	57,708	30.8	492.22	6347.88
Tain - Shore Road	8	150	30	43	26,283	14.0	224.18	2891.13
Tain - Shore Road	8	100	23	33	12,402	6.6	105.78	1364.22
Inverness- Carnac Crescent	15	100	35	37	12,071	6.4	102.96	1327.81
Inverness - Stadium Road	17	150	74	70	30,066	16.0	256.45	3307.26
Inverness - Boswell Road	16	100	35	50	16,313	8.7	139.14	1794.43
Grantown - Kylindra Crescent	21	100	35	14	4,567	2.4	38.95	502.37
Nethybridge - Dell Road/B970	21	100	35	29	9,461	5.0	80.70	1040.71
Achnasheen	6	150	73	40	17346	9.2	147.95	1908.06
Caol - Kilmallie Road	12	150	48	53	28,455	15.2	242.71	3130.05
Corpach - various locations	12	70	24	38	10,358	5.6	88.35	1139.38
Corpach - various locations	12	70	24	4	1,090	0.6	9.30	119.9
Contin	6	150	40	7	3,989	2.1	34.02	438.79
Dingwall - Station Road	9	150	73	21	9,106	4.9	77.67	1001.66
Garve	6	70	28	27	6,913	3.7	103.19	760.43
Strathpeffer	6	70	28	26	6,657	3.5	56.78	732.27
Tore	10	70	38	15	3,221	1.7	27.47	354.31
Total				667	292,105	155.7	£2,535.76	£32,131.55

Capital cost: £225,000.

Financial savings per annum: £34,667 (excluding savings associated with decreased maintenance/ potential rises in cost of CRC tax). CO₂ saving: 155.7 tonnes per annum. Payback period: 6.49 years (excluding the costs associated with borrowing capital).

Appendix 3

Proposed LED Street Lighting upgrades (Sodium lamps to LED) - £200,000

LOCATION	Ward No.	Existing lantern (w)	Proposed lantern (w)	No. Lanterns	Annual energy saving (kWh)	Annual CO2 saving (t)	Annual saving CRC (£)	Annual saving elec. costs (£)
Dunnet - Main Road	4	100	23	16	9,053	4.8	77.22	995.83
Bettyhill Main Road	1	150	30	20	12,225	6.5	104.27	1344.75
Bettyhill Main Road	1	100	23	30	12,275	6.5	104.70	1350.25
Mey	4	100	23	12	4,510	2.4	38.47	496.10
Saltburn	7	150	30	60	36,674	19.6	312.81	4034.14
Scourie	1	150	30	36	22,005	11.7	187.69	2420.55
Auldearn - Lethen Road	19	70	22	15	4,213	2.2	35.94	463.43
Carrbridge - Carr Road	21	100	35	18	5,873	3.1	50.09	646.03
Drumnadrochit - Lewiston Road	13	100	35	66	21,533	11.5	183.67	2368.63
Inverness - Culduthel Road	16	150	74	20	8,590	4.6	73.27	944.90
Inverness - Milton of Leys	16	150	74	38	16,321	8.7	139.21	1795.31
Nairn - Elizabeth Street	19	70	22	30	8,425	4.5	71.86	926.75
Achmore	6	70	36	12	2676	1.4	22.83	294.36
Ballachullish - Pier Road	22	70	36	26	5,798	3.1	49.45	637.78
Corpach -Drumfada Terrace	12	70	26	30	7,929	4.2	67.63	872.19
Glenelg	6	70	19	18	5,278	2.8	45.02	580.58
Kyle - varoius locations	6	70	19	46	13,488	7.2	115.047	1483.68
Muir of Ord - North Road	9	150	74	70	30,066	16.0	256.45	3307.26
Total				563	226,932	121.0	1,935.64	24,962.52

Capital cost: £200,000.

Financial savings per annum: £26,890 (excluding savings associated with decreased maintenance/ potential rises in cost of CRC tax). CO₂ saving: 121 tonnes per annum. Payback period: 7.43 years (excluding the costs associated with borrowing capital).