

Environmental Sustainability and Climate Change Strategy 2012-2015

Foreword

The role of a local authority is to enable the wellbeing and prosperity of its residents. Our success at accomplishing this will be judged by how we mitigate and prepare for future challenges, and none could be more pressing than the global threats of climate change, peak oil and the depletion of our natural resources.

A strategic approach to these challenges is vital, working with our residents and in partnership with a wide range of organisations who share our concerns. This must happen despite the need to do more with less in this time of austerity, and despite the pressures that accompany a rising and ageing population. To facilitate this, the Council has convened the Environmental Sustainability Partnership to support and deliver the ambitions laid out in this Strategy. The rewards of successful action will be significant, enabling greater health, wellbeing, resilience and prosperity within our area as we undergo the transition to a low carbon society.

(name/ date)

Background

Residents within Bath and North East Somerset benefit from an exceptional natural environment and live in a variety of settings, within 47 rural parishes, three market towns and the World Heritage City of Bath. This presents particular questions when it comes to sustainability, for example, how can we enable more than 6,000 listed buildings to adapt to future conditions? Can we make rural transport sustainable? How can people living in this variety of settings all benefit from the emerging low carbon economy? How should we avail ourselves of our area's rich renewable energy resources? How can we sustain and manage the natural environment to provide a wide range of services for the community and also enable it to respond to climate change? Fortunately, our residents are eager to answer these questions, regardless of where they live. Our residents' survey shows that over 80% of people have already taken action to save energy¹, and over twenty community groups, evenly spread throughout the area, are working on sustainability issues. Public sector and business organisations are increasingly getting involved and this Strategy contains details of some of their initiatives. Joint working is also underway with neighbouring areas, for example between the West of England local authorities and through the Local Enterprise Partnership².

The Vision

The need to move towards a sustainable future is enshrined at the highest level of local policy. The vision to inspire our area's journey to sustainability was laid out in the Sustainable Community Strategy 2009-2026 (SCS)³ and agreed by the Council and other key organisations within the district:

"By 2026...our area will be well on the way to tackling the local causes and effects of climate change, with quality of life and the quality of our natural and built environment maintained and wellbeing enhanced.

We will lead B&NES to an environmentally sustainable, low carbon future that is resilient to the expected changes to our climate. This requires changing the way we think and act now".

This aspiration is echoed in the Council's new Vision and Values (2012) which aims for the following outcome:

"Bath and North East Somerset is an area with lively, active communities that are low carbon and resource efficient⁴".

The Council's new Corporate Plan (2012) adds an element of leadership to this aim:

"We want Bath and North East Somerset to be a leader in green innovation and achievement".

The Council's key planning document, the draft Core Strategy⁵ also endorses this approach and contains strong policies on climate change and the natural environment.

To help achieve this vision, the Environmental Sustainability Partnership (ESP) was set up in 2010 to serve as a delivery and coordination body for sustainability work in the district. The ESP is convened by the Council and consists of a Board with representatives from a range of organisations, expert advisors and Councillors representing each political party. It has a number of workstreams to facilitate specific areas of action.

This Strategy serves to outline the approach that is currently being taken by the ESP, and uses examples of existing work to illustrate this.

Organisations involved in the ESP include: The Chamber of Commerce, the Local Council Group, Bath University and Bath Spa University, Avon Fire & Rescue, local schools, Curo, the Environment Agency and many Council services.

The ESP's Strategic Approach 2012-15

Below are the strategic approaches we are taking to achieve the vision outlined above:

1. Partnership Working:

Bringing together the right people to make things happen.

Tackling future challenges will require a concerted effort from all organisations within the district. No single organisation has the resources, networks or knowledge to achieve the aims, so we must work together.

Partnership Working case study: Bath & West Community Energy (BWCE): BWCE is a community enterprise that finances and installs renewable energy, offers local people the opportunity to invest and recycles a portion of its revenues into a local low carbon community fund. They aim to meet a quarter of the district's renewable energy targets through community projects. The Council has set up a "Cooperation Agreement" with BWCE which has helped enable BWCE to get started with their first solar school projects.

2. Community Enablement:

Enabling residents and community groups to achieve their sustainability aims.

Public concern about climate change and the environment continues to be very high and over 80% of our residents are already taking action to reduce their energy use⁶. The groundswell of community action includes over twenty groups that work on sustainability issues and 14 Parish Councils who have sustainability measures in their Parish Plans. These groups have ambitious aims, talented members and the ability to reach out through local networks. By supporting residents and community groups to accomplish their aims, we can create an effective, truly localised response.

Community Enablement case study:

Bath Homes Fit for the Future: This project was jointly organised by the Council, Transition Bath and the Bath Preservation Trust. They organised a programme of events in 2012 including a green open homes event which involved more than 50 volunteers and achieved over 600 home visits. Strong support for the event was gained by combining the networks, skills and resources of the three organisations.

3. Leading by example: Bold action from the Council and our partners.

Throughout our area, organisations are demonstrating strong leadership on sustainability, using their own resources and spheres of influence to drive the transition to a low carbon future.

Leading by Example case study: LED

Street Lighting: By switching to low energy LEDs, the Council will save 783 tonnes of CO₂ per year, representing a 2.9% reduction in the Council's carbon emissions

Priority for 2012-15: Reducing our impact on the climate and our dependency on fossil fuels.

The SCS raises the following concern:

"Within B&NES we have an outstanding natural environment, world renowned built heritage and generally high quality of life. This is threatened by climate change and the related issue of 'peak oil'."

We have prioritised addressing this concern because:

1. We still have the opportunity to play our part and show leadership in avoiding catastrophic climate change, which would affect every aspect of our society.
2. The increase in fossil fuel costs poses an immediate threat to health and wellbeing within our area and particularly to our most vulnerable residents.
3. Rising energy costs also threaten the prosperity of our economy. However, the transition to a low carbon economy offers strong economic opportunities.

The SCS and the Council's Corporate Plan both state the following target: *"to help people reduce carbon emissions across the area by 45% by 2026"*. This target is in line with the commitment in the national Climate Change Act to cut emissions by 80% from 1990 levels by 2050. Meeting the target of a 45% cut by 2026 will require our carbon footprint to shrink by 15,700 tonnes per year. Figure 1 shows that our area's emissions have already been falling considerably. This is a national trend that is influenced strongly by the economic downturn.

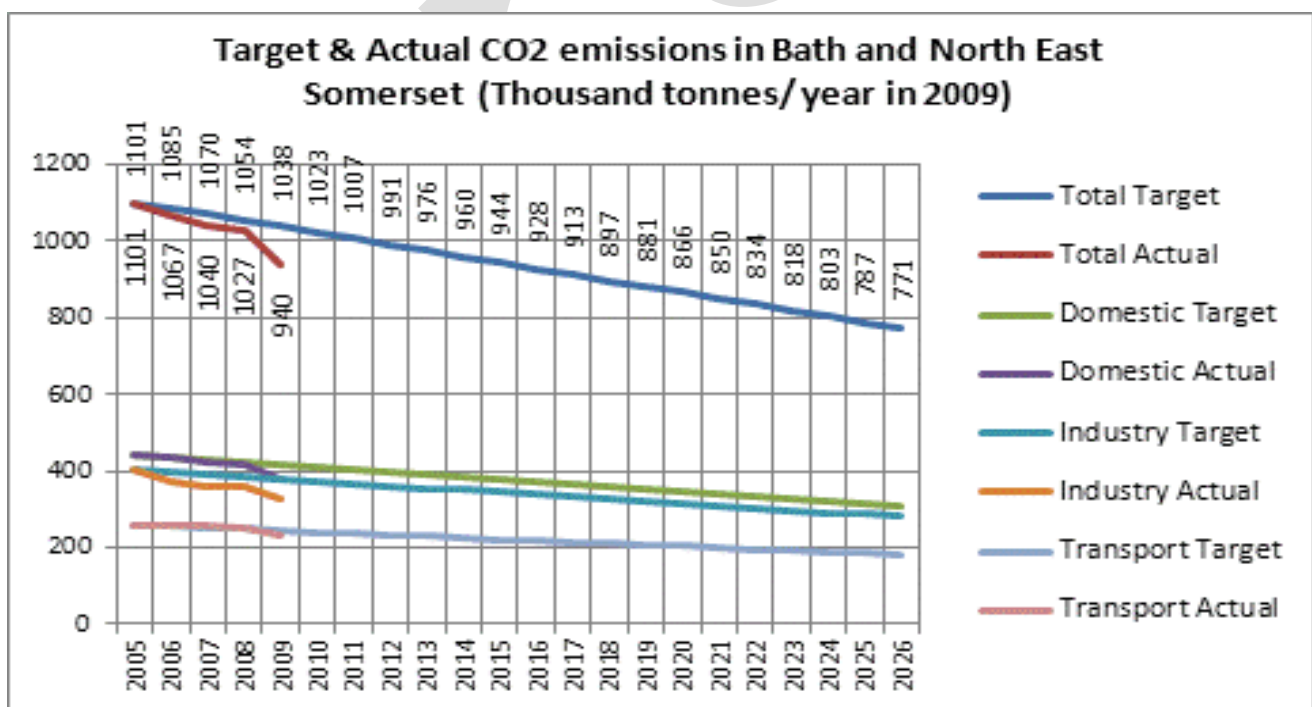


Figure 1: CO₂ Emissions Bath and North East Somerset (Department of Energy & Climate Change (DECC) 2011). It should be noted that this data only includes "direct emission" e.g. the purchase of gas, electricity and petrol. "Indirect emissions" such as those generated by the consumption of goods manufactured overseas are not included in this data, and there is evidence that these emissions are rising⁶.

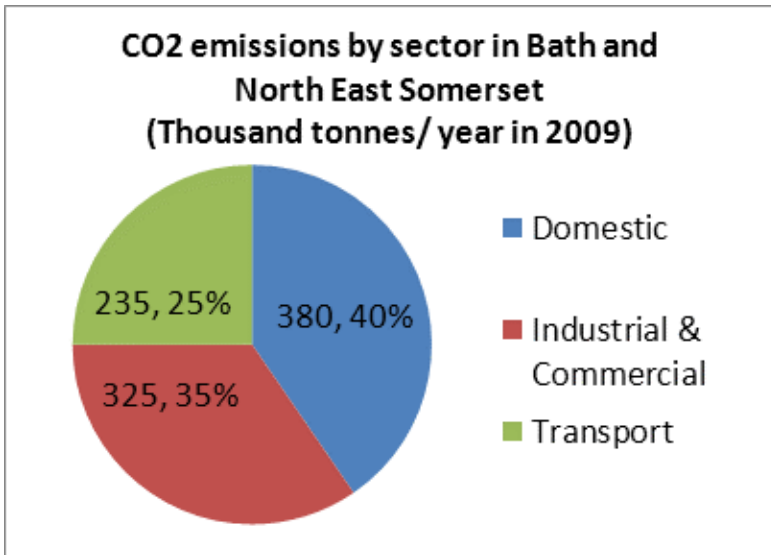


Figure 2: Breakdown of emissions by sector in Bath and North East Somerset (DECC 2011)

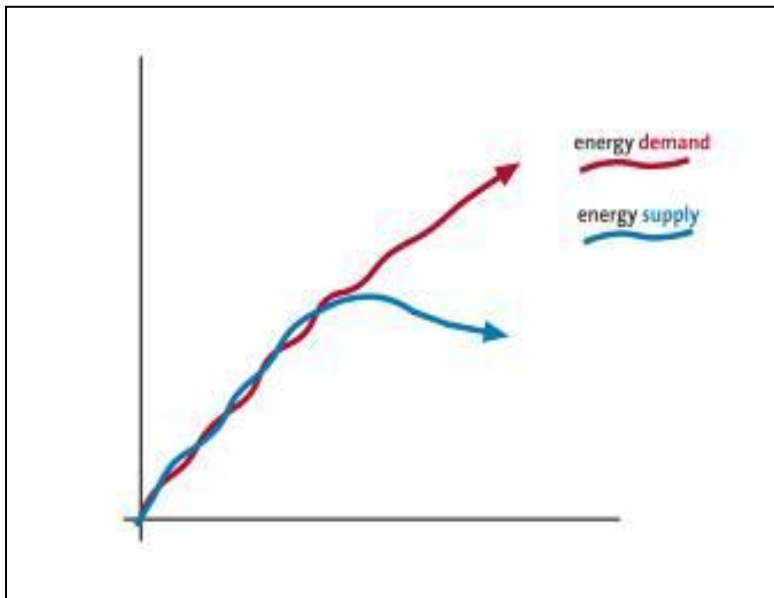


Figure 3: The concept of Peak Oil, whereby oil production starts to decline even though demand is increasing rapidly, leading to price instability (Bristol City Council 2009)

Figure 2 shows the breakdown of our carbon footprint. Note that domestic emissions are the largest portion. At present, residents are dependent on fossil fuels to power their homes. As fuel prices rise, this dependency leads to an increase in fuel poverty, which is currently defined as a household needing to spend more than ten per cent of its income on fuel to maintain an adequate level of warmth⁸.

Our dependence on fossil fuels also makes us vulnerable to declining oil reserves, or “peak oil”. Peak oil is the end of cheap oil, when the highest rate of global oil production is achieved from which future production will plateau and diminish, even as global demand rises (see Figure 3). Even with high-carbon “unconventional” oil sources such as the Canadian Tar Sands and deep water deposits, the UK Industry Taskforce on Peak Oil and Energy Security predicts that oil shortages and price volatility could start to destabilize economic and social activity as early as 2015⁹. The Bristol Partnership’s peak oil report¹⁰ reviews how this will impact our neighbouring city, and many of the findings are equally applicable to our area.

To address the twin challenges of climate change and fossil fuel dependency, the ESP will prioritise the Home Energy, Clean Energy, Low Carbon Economy and Transport workstreams for the period 2012-2015.

ESP Workstreams

The ESP has nine workstreams: Home Energy, Clean Energy, Low Carbon Economy, Transport, Public Sector, Natural Environment & Green Infrastructure, Adaptation, Waste and Good Food. Below is a description of the workstreams, their aims and some key projects to illustrate how we are following our strategic approach in each workstream. A full list of projects is contained within the more detailed and frequently updated ESP Action Plan.

Priority: Home Energy Workstream

The domestic sector constitutes the largest portion of our district CO₂ emissions and rising energy prices are pushing more people into fuel poverty. In 2012, 17% of our population was in fuel poverty. This has serious health implications; it is estimated that excess cold hazards in people's homes cost the health services in Bath and North East Somerset around £3.8 million per year (see Figure 4).

What's in the Workstream?

The workstream includes projects to encourage energy efficiency measures such as loft insulation, renewable energy that is installed on homes and projects to encourage "behaviour change" to reduce energy use e.g. by switching off lights.

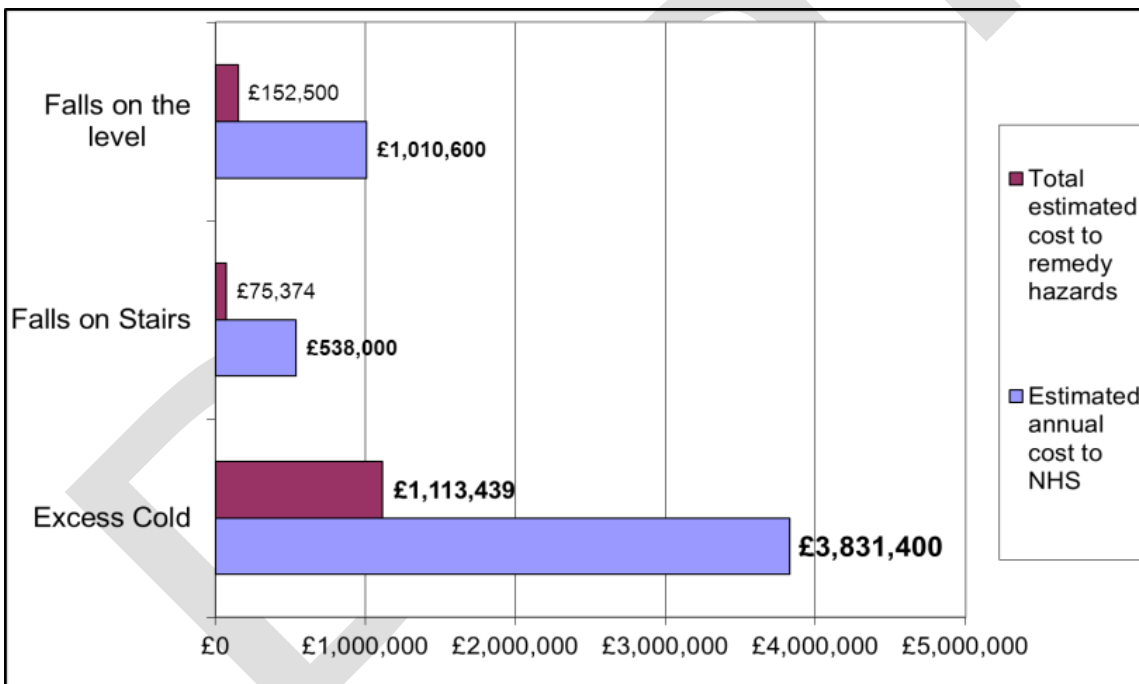


Figure 4: Estimated costs of domestic hazards to the NHS in Bath & North East Somerset and the estimated cost of remedies for the hazards, using the Housing Health & Safety Rating System developed by BRE and the Institute of Environmental Health.

Since 1995, the Council has helped to provide insulation for those most in need and this insulation now saves around 12,000 tonnes of CO₂ per year. However, to meet our targets we will need to dramatically increase the uptake of energy saving measures. Our aspiration is to become a national hub for energy retrofitting, particularly of historic buildings.

Potential CO₂ savings from the Home Energy Workstream

Figure 5 shows approximately how much CO₂ could be saved in our district if we put a concerted effort into promoting domestic measures, and shows that our target of a 45% cut in domestic emissions is within reach. The total saving possible by 2026 is around 180,000 tonnes of CO₂ per year, or 14% of the district's emissions in 2005.

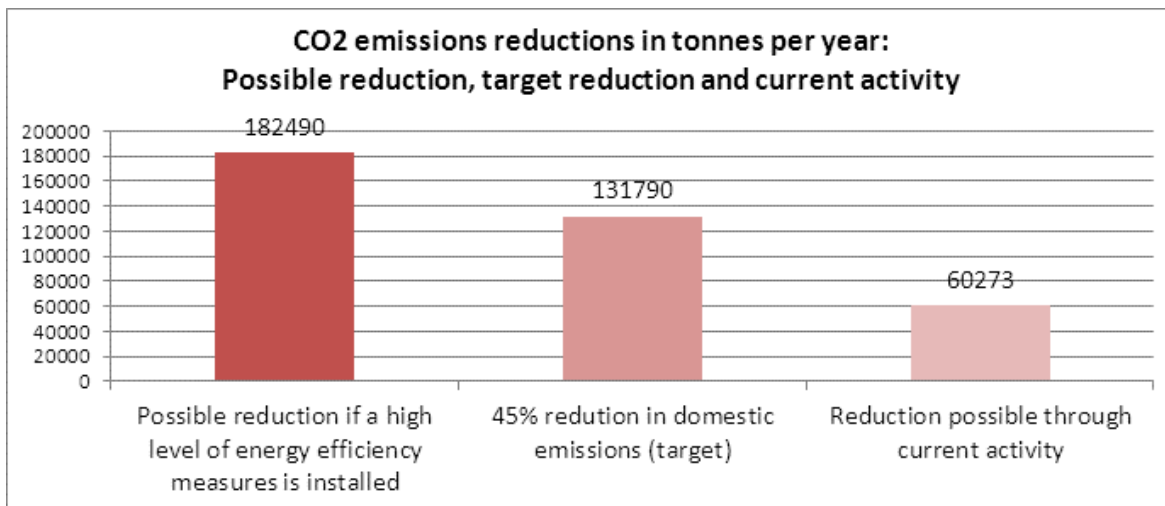


Figure 5: Possible domestic emissions savings in tonnes of CO₂ per year. The number in the first column was calculated using national data and an expert assessment of the numbers of measures that are possible and feasible within our district. (Source: Severn Wye Energy Agency (SWEA) 2011)

Achieving the possible CO₂ reductions would require around £570 million to be spent. The Government's Green Deal and other programmes aim to facilitate this expenditure and this represents a significant economic opportunity for local businesses.

Examples of Key Projects in relation to our Strategic Approach 2012-2015

Partnership Working	
Local Affordable Warmth Action Group (LAWAG)	This group is convened by the Council and contains representatives from public sector and voluntary organisations who are in contact with vulnerable people. It aims to promote energy efficiency to those most in need. For example, over 800 people responded to an insulation flyer posted with an influenza injection reminder.
Community Enablement	
Bath Homes Fit for the Future (BHFFF) ¹¹	In March 2012 the Council, Transition Bath and the Bath Preservation Trust jointly organised BHFFF, a programme of events and a green open homes weekend, involving local people, community groups and businesses. Funding has been secured to build on and develop this project in 2013.
Local Energy Champions ¹²	The Council supported eight diverse community groups in 2011 to participate in an energy-saving competition, including two community groups that were formed as a result of the project. In Autumn 2012 the Local Energy Champions Award will be launched providing a quarterly prize fund for groups wanting to further their energy saving and low carbon activities.

Leading by Example

Meeting the district's needs through the Green Deal	Working with Curo, the local social housing provider, and Bath & West Community Energy, the Council has commissioned a study to investigate how best to take a community-based, partnership approach to delivering the Green Deal in order to tackle fuel poverty, benefit the local economy and provide opportunities for social enterprise.
Sustainable Construction & Retrofitting Supplementary Planning Document (SPD)	This SPD builds upon the recommendations in the "Warmer Bath ¹³ " report produced by Bath Preservation Trust and the Centre for Sustainable Energy. It aims to clarify planning policy and give guidance on what measures are appropriate for local house types, including guidance for listed buildings. It is due to be adopted in November 2012.

Priority: Clean Energy Workstream

Studies show that our district has the potential to "home grow" a significant portion of clean energy¹⁴ and take advantage of the economic benefits this would bring.

Potential CO₂ savings from the Clean Energy Workstream

The Council's key planning document, the Draft Core Strategy¹⁵, aims to achieve a minimum of 110 megawatts (MW) of installed renewable electricity capacity, and 165MW of renewable heat by 2026. Figure 6 shows the "practical potential" for CO₂ savings from clean energy, taking into account resource, market and landscape factors.

What's in the Workstream?

The Clean Energy Workstream excludes technologies that supply individual homes and businesses, since these are accounted for in the Home Energy and Low Carbon Economy workstreams. The Clean Energy Workstream therefore includes projects relating to free-standing technologies that could supply the national grid, such as wind and hydro, shared technologies such as combined heat and power (CHP) and the stimulation of demand and supply of low carbon biomass fuels such as coppiced wood.

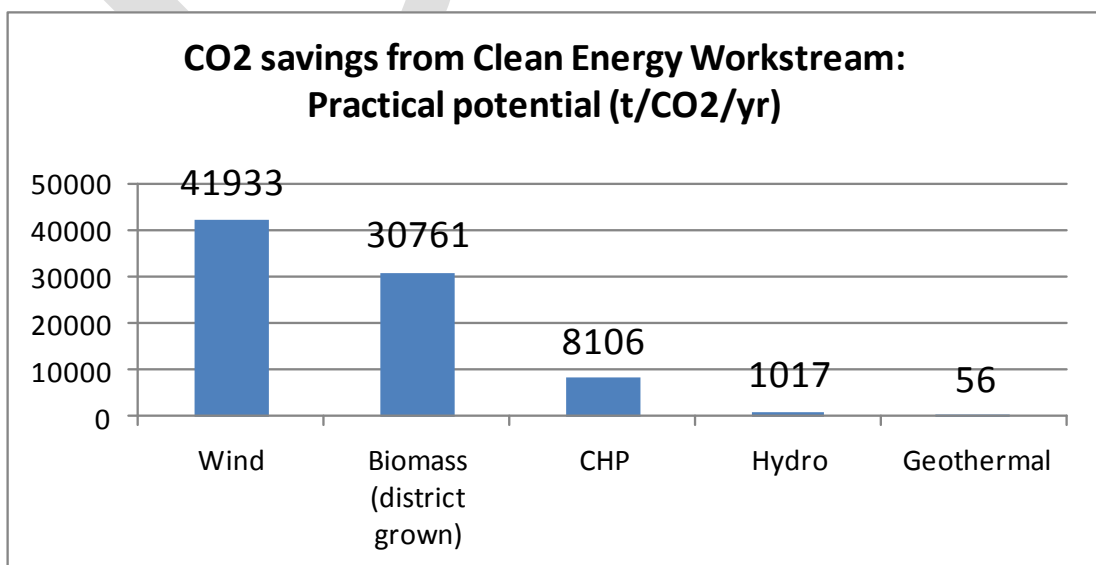


Figure 6: Practical potential for CO₂ savings from the Clean Energy Workstream (Camco 2010)

The total saving possible is over 80,000 tonnes of CO₂ per year, or over 7% of the district's emissions in 2005. Wind power has the largest potential both for energy and revenue generation. The Council's Planning Department has commissioned a Landscape Sensitivity Study¹⁶ to show where turbines could be located with the least landscape impact. Biomass also represents a big opportunity and the 2012 West of England Low Carbon Initiative study¹⁷ concluded that there is a need to increase local biomass fuel production by stimulating demand and supporting the development of a supply chain.

Examples of Key Projects in relation to our Strategic Approach 2012-2015

Partnership Working	
Bath & West Community Energy ¹⁸ Cooperation Agreement	BWCE is a local community enterprise that finances and installs renewable energy. BWCE recently raised over £750,000 in a community share offer from primarily local people; until recently this was the largest community solar share offer in the UK. Over the next few years BWCE plan to install 5-6MW of renewable energy, requiring over £10 million of capital investment from a mixture of local investment and bank debt.
Combined Heat & Power (CHP) ¹⁹	District heating is being included in the Bath Western Riverside development, and there is the option for inter-linking district heating networks throughout Bath Centre and the City of Ideas Enterprise Area ²⁰ and on other key sites in the district.
Community Enablement	
Keynsham Sustainable Energy Plan ²¹	With support from the Council and The Converging World ²² , Transition Keynsham Energy Group have developed a baseline study of the energy potential of their area. They are working with their community to develop a plan of local action including energy reduction and renewable energy.
Leading by Example	
Draft Core Strategy Climate Change Policies ²³	By setting an ambitious target for renewable energy and developing a suite of supportive policies, the Council aims to create a supportive planning framework for clean energy.

Priority: Low Carbon Economy Workstream

Commercial and industrial emissions account for around 35% of our district's CO₂. Enabling the area's businesses to reduce their energy use is important, both for tackling climate change and to ensure that local businesses can prosper in a carbon constrained future.

What's in the Workstream?

This workstream contains projects to reduce business energy and resource use, encourage renewable energy uptake by business, support local environmental businesses and facilitate the provision of the skills needed for a low carbon economy.

The SCS also contains the following vision:

"B&NES will be recognised as a place for businesses helping to create a low-carbon future"

To realise this vision, support is being provided for the low carbon and environmental goods and services sector in our area, enabling us to benefit from this growing sector. Government research puts the UK market value of the sector at £112 billion with almost 910,000 jobs and growth of around 4.7% per year²⁴ despite the economic downturn. We are building on existing assets to enable our area to be a hub for domestic energy efficiency businesses and for high-value low carbon specialist companies.

Potential CO₂ savings from the Workstream

The table below contains estimates of potential CO₂ savings simply from improving the energy efficiency of commercial buildings, based on the Severn Wye Energy Agency's²⁵ work with businesses. Data on non-domestic emissions is scarce and the figures in the table are an incomplete picture. However it is striking that office-based businesses are responsible for the largest amount of emissions, followed by retail.

Potential for energy saving in our district through energy efficiency improvements to commercial buildings.					
Business Sector	Number of businesses in district	Total Floor Area 000m ²	Total emissions per sector tCO ₂	Potential energy savings (%)	Potential-CO ₂ savings tCO ₂ /yr
Offices	2,228	486	36,499	31	11,315
Retail	1,824	310	28,148	27	7,600
Manufacturing	829	409	21,882	30	6,564
Pub, Bar	237	59	8,177	34	2,780
Warehousing	629	245	12,177	22	2,679
Hospitality	170	65	5,814	31	1,802
Cultural (museum)	172	49	3,749	42	1,574
Restaurant/catering	125	25	2,995	34	1,018
Fitness/Dry leisure	23	5	789	42	332
CO₂ Totals	6246	1654	120366		35,664

Examples of Key Projects in relation to our Strategic Approach 2012-2015

Partnership Working

Business Sign Posting

The Council's Economic Development team support a range of sectors including manufacturing, ICT, creative, environmental goods and services and retail. By developing relationships with business, the team is able to make referrals to the most relevant support agencies such as Improve Your Resource Efficiency²⁶, Manufacturing Advisory Service²⁷, Environmental I-Nets²⁸ and the National Industrial Symbiosis Programme, all of whom can help to make businesses more efficient and reduce their carbon emissions.

Community Enablement (Business community)	
Low Carbon South West ²⁹ (LCSW) business engagement	Through a contract with the Council, LCSW is holding a series of events in the district to enable businesses to access support for reducing their emissions and to take advantage of opportunities in the low carbon economy.
Leading by Example	
Low carbon skills courses	Norton Radstock College and the City of Bath College, with support from the Council, will both run additional courses on low carbon skills such as sustainable construction and renewable energy installation. This will help to provide the skills necessary for local companies to take advantage of growing business opportunities in energy efficiency and renewable energy.

Priority: Transport Workstream

The SCS sets out the aim that by 2015

"...improvements have been made to public transport and walking and cycling has become safer and more enjoyable. This has reduced congestion and improved air quality, and zero emission vehicles have been introduced".

What's in the Workstream?

This workstream contains actions to reduce CO₂ emissions from transport in Bath and North East Somerset.

Transport emissions comprise 25% of our district's carbon footprint. 54% of our workforce travels to work by car, which makes us vulnerable to the impacts of peak oil. Car dependency also causes problems with congestion, air quality and health.

Potential CO₂ savings from the Workstream

The main transport planning document is the Joint Local Transport Plan (JLTP3)³⁰, which covers the four local authority areas that make up the former Avon area (known as the West of England or WoE). The Carbon Impact Assessment for the JLTP3 suggests that the maximum reduction in transport emissions that could be achieved by implementing all the proposed major schemes, smarter choices and fleet measures in addition to national measures, is a 16% reduction. On this basis, the joint target for JLTP3 is for a 16% reduction in per capita CO₂ emissions from road transport by 2020.

Examples of Key Projects in relation to our Strategic Approach 2012-2015

Partnership Working	
JLTP3	The JLTP3 is produced in partnership with the other local authorities. It aims for a 16% reduction in transport carbon emissions in the WoE between 2006 and 2020.
Community Enablement	
School Travel Plans	42 schools in B&NES have a Council-approved School Travel Plan.

Local Sustainable Transport Fund ³¹	In 2012 the WoE local authorities secured £24 million from the Department for Transport to work with employers, school, colleges and universities to encourage people to try more sustainable ways of getting to work. With match funding from the local authorities, the total fund will be £40 million.
Leading by Example	
Bath Transport Package ³²	In 2011 the Council secured funding from Government for this bus-based travel plan and a total of £34.3 million will be invested in transport infrastructure.
Civitas Renaissance Programme ³³	The Council secured £5m of EU funding for improvements to the World Heritage City. This includes a freight consolidation centre, expansion of the City Car Club and the cycle hire scheme "Bike in Bath" ³⁴ .

Public Sector Workstream

The Council and our partner organisations are in a position to lead by example through reducing their own emissions.

Potential CO₂ savings from the Workstream

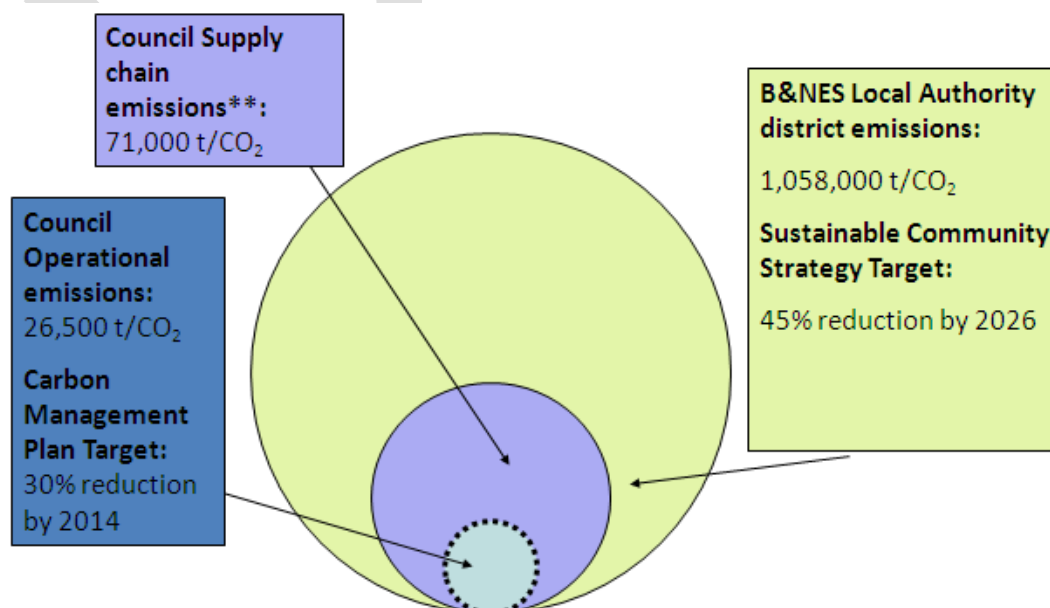
Many public sector organisations have ambitious carbon reduction targets and action plans, often in the form of three year Carbon Management Plans, and a wide variety of projects are underway to implement these plans.

However, these plans do not include the emissions generated by goods and services that are procured by the public sector. The West of England Low Carbon Initiative study showed that carbon emissions are 2-3 times larger from the supply chain than direct operations (see Figure 7), so this is an emerging area of work.

What's in the Workstream?

This workstream contains projects to reduce direct emissions e.g. from public sector buildings and fleet vehicles, and indirect emissions from procurement and the commissioning of services by public sector organisations.

Figure 7: Council CO₂ emissions in context. ** Supply chain emissions are indicative only.



Examples of Key Projects in relation to our Strategic Approach 2012-2015

Partnership Working	
Council working with BWCE to install solar PV panels on schools	As part of the Council's Cooperation Agreement with BWCE, BWCE's solar schools offer was promoted by the Council. In the first phase, over 40 schools and many community buildings were assessed. Following this, 6 schools and one community building had solar PV systems installed, amounting to over 200kW of installed capacity.
Community Enablement	
Eco Schools project	The Eco Schools project, commissioned by the Council, has registered 81% of the district's schools onto the programme. Three have been awarded the Green Flag, the highest level of achievement.
Leading by Example	
Green Impact Initiative, University of Bath	In 2012 this initiative involved 38 teams across the campus, totalling 250 staff and students with a further 1900 staff being encouraged to establish a range of environmental practices within their departments. This is just one of many initiatives over recent years that have reduced annual energy use by over £1m over the last 5 years, despite significant growth in the University.
Bath Spa University Air Conditioning	Bath Spa university have designed and installed occupancy and temperature-responsive air conditioning controls which are expected to reduce the operation of air conditioning by around 70%. They are also installing controls that include window sensors to prevent operation when the windows are opened.
Boiler Replacement and Heating Controls	Avon Fire & Rescue has replaced old inefficient boilers including some oil fired boilers with new energy efficient systems. This has also included advance controls which can be managed centrally and online. On a number of sites energy consumption has been reduced by over 50%. First year CO ₂ savings are in excess of 120 tonnes.
LED streetlamps	By switching to low energy LEDs, the Council will save 783 tonnes of CO ₂ per year, representing a 2.9% reduction in the Council's carbon emissions.

Natural Environment & Green Infrastructure Workstream

Bath & North East Somerset benefits from a rich diversity of natural habitats and features including many internationally, nationally and locally protected sites. These range from ancient woodlands, veteran and notable trees, hedgerows,

What's in the Workstream?

The workstream contains programmes within the district and adjacent areas to maintain and enhance our natural environment and wildlife, and realise the wide benefits of Green Infrastructure.

to flower-rich grasslands and important bat foraging corridors. These green assets are vital for the health and wellbeing of the community, since there are strong links between mental and physical health and access to natural open spaces. The natural environment is also crucial for our economic prosperity; the Government estimates that natural resources are worth £15bn to our national economy³⁵.

Climate change and the natural environment

There is an increasing body of research exploring the relationship between the natural environment and climate change. Proper management of the natural environment can supply local, low carbon food, clean energy and sustainable transport infrastructure in the form of pedestrian or cycle routes. The natural environment can also soak up large quantities of CO₂.

Additionally, the natural environment is vital for adapting to the climate change already in the system from current greenhouse gas emissions. For example, trees can provide urban shading, reducing the need for energy to cool buildings, and natural sustainable drainage systems are important for mitigating flood risk.

Examples of Key Projects in relation to our Strategic Approach 2012-2015

Partnership Working	
Local Nature Partnership (LNP)	The West of England local authorities and major environmental, social and economic stakeholders have made a successful bid for a Local Nature Partnership which will champion the importance of the natural environment.
River Avon Catchment pilot	Funding has been awarded by Defra to partners, including the Council, to develop a strategy for coordinated action on ecological and water related issues for the whole river Avon Catchment area from Wiltshire to the Bristol Channel.
Community Enablement	
Volunteer involvement in nature conservation	Bristol Regional Environmental Record Centre ³⁶ , Mendip Hills ³⁷ & Cotswolds ³⁸ Areas of Outstanding Natural Beauty, Kennet & Avon Canal Partnership ³⁹ and Avon Frome Partnership have worked with volunteers to deliver important environment improvements and collect key environmental data to help us better understand our environmental assets.
Leading by Example	
B&NES Green Infrastructure Strategy ⁴⁰	A cross service group of Council officers is working with key environmental stakeholders to develop a Green Infrastructure Strategy for the district which will provide a long term vision and framework to deliver a well-used, well managed, high quality, multifunctional network of green spaces and corridors.

Adaptation Workstream

The SCS states that by 2026, we should be:

"...managing the unavoidable impact of climate change and peak oil, making sure our homes, businesses, public services and the natural environment are safeguarded".

Globally, the climate is warming, even though the weather remains variable unpredictable. For example, in 2012 the UK had a cooler than average June⁴¹ whilst globally, it was the fourth warmest June on record⁴². This is causing impacts that have global consequences, such as rapidly melting Arctic ice⁴³.

What's in the Workstream?

Adapting to climate change and peak oil will require broad action, and many actions within other workstreams will also help us to adapt. As such, this workstream centres on actions relating to the prevention of impacts from severe events and emergencies deriving from climate change and peak oil.

To understand how climate change could affect our local area, we used the UK Climate Impact Programme⁴⁴ models to produce local projections. The models show a trend towards hotter, drier summers and warmer, wetter winters. These are general trends and do not mean we will not have cold snaps or extreme weather, on the contrary, extreme weather is expected to increase. Figures 8 and 9 show the model projections. The change in annual temperature is very unlikely to be below the 10% line, and very unlikely to be higher than the 90% line.

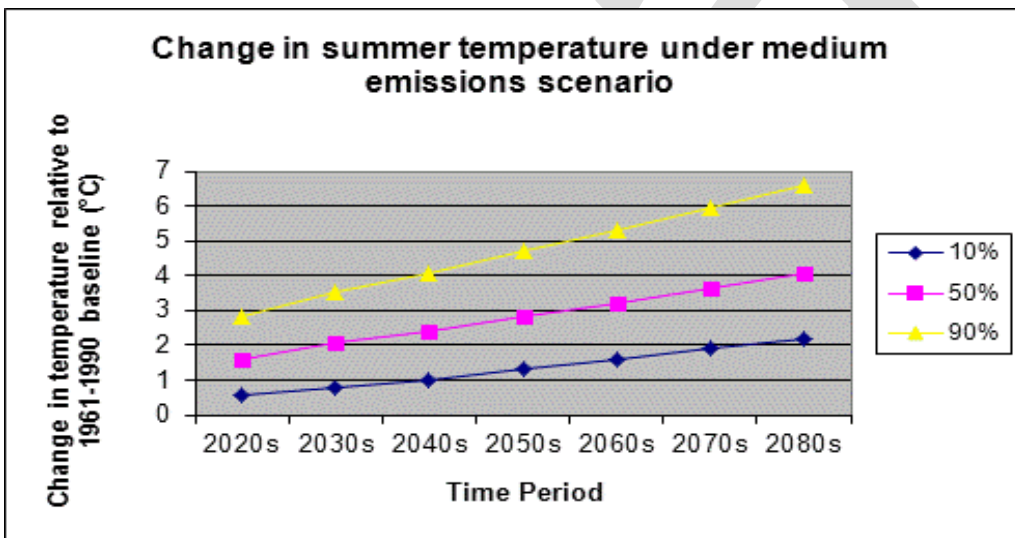


Figure 8: Summer Temperatures

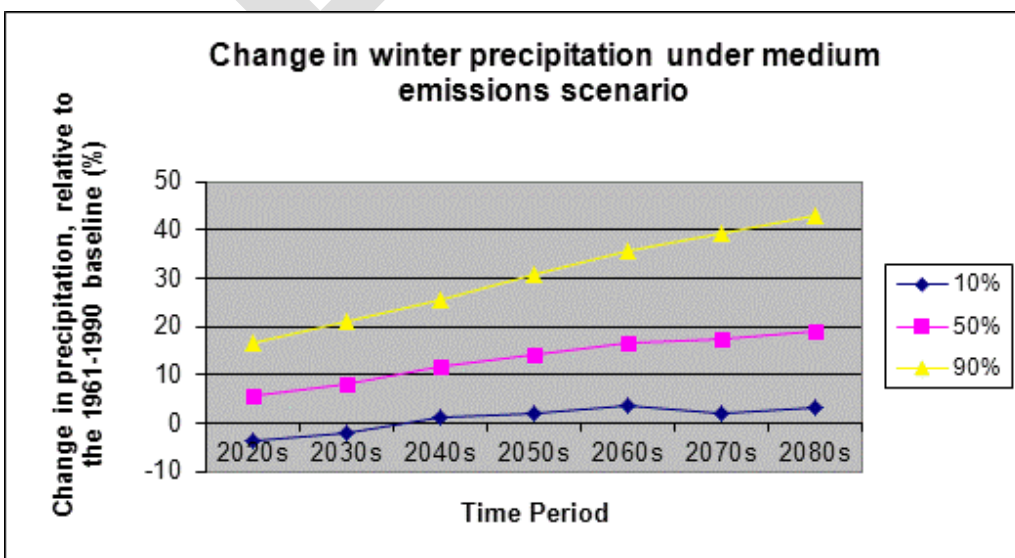


Figure 9: Winter precipitation

As well as preparing for more extreme weather and changed climatic norms, we also need to adapt to events relating to rising oil prices. At the core of our approach to adaptation is community resilience. We acknowledge that public services will struggle to cope with an increase in demand so we are aiming to help individuals, households, businesses, community groups and public organisations to take responsibility for their own resilience.

Examples of Key Projects in relation to our Strategic Approach 2012-2015

Partnership Working	
Natural Hazards Steering Group (NHSG)	The NHSG is a multi-agency group for oversight of natural hazard management, including peak oil and climate risks.
Chew Magna Flood Defences	The Winford Brook in Chew Magna is prone to flooding. The Chew Magna Parish Council, the Environment Agency and Bath & North East Somerset Council joined forces to secure funding to protect the properties most at risk. Over 50 properties now have bespoke flood protection.
Community Enablement	
Community Resilience Strategy	The Council's Business Continuity and Emergency Management team is developing a Community Resilience Strategy which will lay out how communities can be prepared for future risks and emergencies, by engaging local networks, residents and community groups.
Community Resilience Manual	10,000 copies of the Community Resilience Manual ⁴⁵ have been distributed throughout the district, informing people about how to prepare for emergencies.
Leading by Example	
Transition groups ⁴⁶	"Transition" community groups are forming worldwide with the aim of ensuring an increase in wellbeing despite the challenges of peak oil and climate change. There are Transition groups in several towns and villages within our district.

Waste Workstream

In 2005 the Council adopted an ambitious waste strategy with an overarching vision of Zero Waste.

The focus is to divert waste from landfill in accordance with the waste hierarchy of reducing, reusing, recycling and recovering value before ultimately disposing of waste. The Council manages approximately 90,000 tonnes of waste each year and there has been significant success with recycling. 52% of our waste is currently recycled, compared to a recycling rate for England in 2011 of 41.2 per cent.

What's in the Workstream?

The workstream contains work to reduce, reuse, recycle and recover value from waste within the district. This work is primarily done by the Council's Waste Services although other organisations do undertake projects to tackle waste.

The Council's Waste Services have published a Waste Strategy⁴⁷ which is subject to annual review and has a published action plan. Raising awareness of waste issues and encouraging the use of recycling services is a core element of the strategy.

Potential CO₂ savings from the Workstream

Waste activities contribute to greenhouse gas emissions, principally from landfill gas emissions but also through the transport and treatment of waste. Direct emissions from waste management in the UK accounted for 3.2% of the UK's total estimated emissions of greenhouse gases in 2009. However, different waste treatment methods can increase or decrease the impact on the climate. For example, UK recycling saves more than 18 million tonnes of carbon dioxide a year – equivalent to taking 5 million cars off the road⁴⁸.

Examples of Key Projects in relation to our Strategic Approach 2012-2015

Partnership Working	
Waste & Recycling Industry	Working with the waste and recycling industry to source the most environmentally and financially advantageous recycling, treatment and disposal facilities available to us through competitive tendering.
Local Authority partners	Working collaboratively with neighbouring local authorities to benefit from economies of scale and stimulate local industry development e.g. for waste processing or energy recovery. Also, sharing expertise and working collaboratively on waste awareness issues.
Community Enablement	
Education and Awareness raising	Door knocking, road shows, events, community talks, schools' projects, competitions, rewards and incentives. Working face to face with residents and businesses to ensure services are used to their maximum potential and people are aware of how to reduce, reuse, recycle and recover more.
Tackling local waste issues	Working with operational crews to identify where individual residents and communities need additional help to put out their waste effectively and recycle more. Door knocking and speaking to community groups in these areas to tackle issues.
Waste minimisation	Specific campaigns to encourage people to waste less food, use real nappies and compost at home. General advice on how to reduce household waste further.
Community Events	Give and take days and furniture sales organised with local community groups to raise awareness of waste issues, and to give real financial benefits to local families.
Leading by Example	
Innovation	Continuously developing waste services, bidding for grants and developing the expertise to gain maximum results.

Expanding the recycling services	<p>Now collecting food waste, all types of rigid household plastic packaging, cardboard and tetrapaks once a week at the kerbside.</p> <p>The recycling centres provide a comprehensive range of facilities for recycling more bulky waste and for reusing items such as bicycles and furniture.</p>
Pragmatic mix of service provision	Retaining flexibility, enabling costs to be kept as low as possible by providing a range of services in-house where best placed to do so. Using technology to help to optimise waste collection routes in accordance with waste tonnages collected, to ensure effective optimisation of the vehicle fleet and mileage travelled.
Diverting even more waste from landfill	A Mechanical Biological Treatment has been procured, which was built for Bath & North East Somerset and the other West of England local authorities in Avonmouth to sort and recycle more waste. It also recovers energy from some of the waste which is used in a combined heat and power plant and to produce a compost-like material which is used for land remediation within the region.

Good Food Workstream

Good food is vital to the quality of people's lives in Bath & North East Somerset. As well as being tasty, healthy and affordable, the food we eat should be good for the environment and local businesses. This new workstream aims to provide an increased focus on food, since the current food system is at risk from global changes, is causing health problems, is environmentally unsustainable, exacerbates climate change and misses local economic opportunities.

Potential CO₂ savings from the Workstream

Every aspect of food can have a greater or lesser climate impact; growing, transport, processing, consumption and disposal. Food has been estimated to account for around 18% of the UK's greenhouse gas emissions⁴⁹.

What's in the Workstream?

Work within the district to secure and promote a local, healthy, sustainable and ethical food supply. Work will contribute to other workstreams e.g. reducing food waste, procuring public sector food, the use of green infrastructure and food security.

Examples of Key Projects in relation to our Strategic Approach 2012-2015

Partnership Working	
Procuring local food with Bristol City Council	Bath & North East Somerset Council is now jointly procuring food e.g. for schools, with Bristol City Council; the joint contract was awarded in 2011 to suppliers who source fruit and vegetables from a Bristol market and meat from Wales.
Eat Well campaign / healthy convenience stores	Local partnership working to support food retailers to improve access to healthier / local options

Community Enablement	
Fairtrade	With Council support, Fairtrade status has been awarded to Bath & North East Somerset district, Bath city, Keynsham and Norton-Radstock.
Cook It Service	Sirona Care and Health ⁵⁰ are commissioned to deliver a Cook it Service which works with families to make positive changes in their diet, feed a family on a low income, understand food labels as well as building confidence and skills to prepare fresh healthy food. The service supports community groups to deliver Cook it interventions.
Support for community food projects	<p>Feel Good Foods - The Learning Disabilities service are commissioned to provide a food box scheme for their clients to support access to fresh foods and cooking skills</p> <p>Food Coop – access to affordable local fresh fruit and veg</p> <p>Use of green space - Provision of space for growing on Council land</p>
Leading by Example	
Food for Life programme in schools	The Council's work on food includes B&NES Catering Services receiving the Soil Association's Food For Life Partnership Caterer Mark Bronze Award ⁵¹ for 66 sites.

Next steps for the Strategy

This Strategy serves to communicate the ESP's current approach to environmental sustainability in Bath and North East Somerset and to illustrate this approach with some of our key projects. The Strategy will be updated as needed to reflect any changes in our strategic approach, most likely every three years.

For more information, please contact the Sustainability Team at Bath & North East Somerset Council: sustainability@bathnes.gov.uk

This Strategy will also be made available upon request in a range of languages, large print, Braille, on tape, electronic and accessible formats from Sara Grimes: Tel: 01225 395418 or sara_grimes@bathnes.gov.uk

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