

***STOCKTON ON TEES
CLIMATE CHANGE
ACTION PLAN
2007 - 2012***

DRAFT

Contents

Preface	3
Stockton Profile	4
1.0 Introduction	5
2.0 Aims and targets	7
3.0 From a Global Issue to Local Action	8
4.0 Baseline	14
5.0 Mitigation – reducing greenhouse gases	16
6.0 Adaptation	30
7.0 Raising Awareness and Communication	32
8.0 Action Plan	33
9.0 Implementation and monitoring	54
10.0 Glossary	56
11.0 Appendices	58
12.0 Partners in this Action Plan	60

Preface

The government has made it clear that action by local authorities is critical to the achievement of the Government's climate change targets. Stockton-On-Tees Borough Council's role will be in providing community leadership to focus attention on tackling climate change through local action. By setting an example, we will not only reduce carbon emissions but also influence individual behaviour as well as that of local businesses, partner organisations and suppliers.

This action plan aims to enable the community to mitigate their contribution towards, and adapt to the impacts of climate change. To make any real progress, it is essential to raise awareness of climate change issues in all sectors of our community. When people understand the link between carbon emissions and climate change they are more likely to change their lifestyle.

Everyone making a few small lifestyle changes could reduce Stockton's overall carbon emissions substantially. An action that seems insignificant on its own can combine with other actions to create a significant overall impact. If every individual, household and business in the borough made a small behaviour change towards being more environmentally friendly, we can achieve our carbon reduction target.

There is of course always going to be sceptics of the climate change issue. Climate change is a fact of life, and scientific evidence suggests that human activity is the major contributing factor. It is not too late to react to these changes and sustained, well co-ordinated action now can have a very positive effect on future global climate.

With this in mind please take this unique opportunity to work with us in partnership to secure a better future for all.

Councillor Bob Gibson
Leader of Stockton Borough Council

Jeremy Garside
Chairman of Stockton Environment Partnership

Stockton Profile

The Borough of Stockton on Tees (SBC) is the largest, in terms of population, in the Tees Valley sub-region, estimated to be 186,700 mid 2005 having grown by 4.4% since the 2001 census. It is the second largest in area of the five local authorities with 209.8sq km. The Borough straddles the river Tees and has, in effect, four centres – Billingham, Stockton, Thornaby and Yarm.

The population estimate has shown an increase of 4.4% in population since the 2001 census and a 7.8% increase in the number of households between 1991 and 2001 with a prediction of 82,300 households by 2011.

Stockton is an area of extreme socio-economic contrasts. Based on the Government's Index of Multiple Deprivation 2004, 34% of the Local Super Output Areas (LSOAs) within the Borough fall within the 20% of the most deprived nationally, conversely areas such as Ingleby Barwick are among the least deprived nationally.

Stockton is a major employment and retail centre in the Tees Valley. It contains Queen's Campus of the University of Durham and is an historic market town. Recent developments, such as Wellington Square have enhanced its retail function and the city region with financial and business services. The development of the Tees Barrage has transformed Stockton Riverside and provides a focus for attracting further office development, employment uses, housing and the expansion of the university at North Shore. There is also a major opportunity to link the town centre back into the Riverside.



1.0 Introduction

In recent years the issue of climate change has been thrust into the media spotlight. The catalyst being an unprecedented number of weather related disasters, which span the globe. From hurricane Katrina that devastated New Orleans to flash floods in Boscastle, Cornwall, the effects of climate change are easily seen. The occurrence of these events are now more frequent and the effects far more severe than ever previously recorded.

There is now strong and indisputable evidence that climate change is occurring and that man made emissions are the cause. As this problem is largely man made, it is the responsibility of us all to act now in taking preventative measures before its too late.

The Stern Review¹ 2006 examines the evidence on the economic impacts of climate change. It recommends that early actions on climate change are required as ignoring climate change will damage economic growth. The benefits of strong and early action would considerably outweigh the costs. Additionally, given that climate change is happening, the provision of measures to help people adapt to it are essential.

The Kyoto Protocol was finally adopted in February 2005 shortly after Russia's ratification of the protocol. This committed the signatories to reducing world greenhouse gas emissions to 5.2% below 1990 levels by the year 2012. The UK government signed the Kyoto protocol and set a target to cut greenhouse gas emissions by 12.5% by 2012. The Government have also have stated their aspiration to cut greenhouse gas emissions by 20% by 2010 and 60% by 2050.

This action plan seeks to make a contribution towards meeting these national and global targets. It sets a challenge for the community on what is undoubtedly the biggest issue we are facing today.

In November 2002 Stockton Council signed the Nottingham Declaration on Climate Change. In doing so we made a commitment to "prepare a plan with our local communities to address the causes and effects of climate change and to secure maximum benefit for our communities."

Stockton-On-Tees Borough Council is part of the Tees Valley Climate Change partnership, which aims to tackle climate change in the most efficient way through sharing resources and efficient sub-regional collaboration on cross-boundary issues. The emissions target set by

¹ STERN REVIEW: The Economics of Climate change, published on 31st October, 2006

the Partnership is to reduce greenhouse gases emissions by 8.75% below 2000 level by 2012, and as an active supporter of this pioneering sub-regional partnership, Stockton-On-Tees has agreed to contribute to the delivery of this target.

This action plan

- Identifies our collective responses to the threat of climate change and achieves emissions reductions.
- Raises the awareness of climate change through working with public and private sector organisations across the region.
- Involves communities to make sure that they understand what actions that they might undertake to reduce their greenhouse gases emissions.

2.0 Aims and Targets

The key aims of this action plan are:

- To reduce greenhouse gases emissions from within the Stockton Borough Council area through reducing energy use, better waste management, the use of sustainable transport and green procurement.
- To raise awareness of the factors which cause climate change.
- To involve communities and encourage them to take necessary actions to tackle climate change.
- To provide a framework to adapt to the inevitable impacts from climate change.
- To demonstrate the social, economic and environmental benefits of taking climate change actions.

In setting a target for reduction in carbon dioxide emissions it was essential to be both realistic in terms of what should be achievable as well as challenging in order to make the changes needed to secure a sustainable future.

The target is to reduce greenhouse gas emissions 8.75% below the year 2000 level by 2012. This target is being mirrored by the other Tees Valley Authorities through the Tees Valley Climate Change Partnership. The year 2000 was chosen for the baseline as it was the earliest that reliable data across all of the sectors was available.

This action plan identifies the actions that are needed to respond to the threat of climate change. To deliver the plan we will need to raise awareness of climate change through working with public and private sector organisations across the Borough. Involving communities and businesses is vital in order that they commit to actions to reduce their greenhouse gas emissions.

3.0 From a Global Issue to Local Action

What is climate change?

Through time, the earth's climate has naturally fluctuated. However in modern language, climate change is commonly associated with 'global warming' and the 'greenhouse effect'. The Third Assessment Report (TAR) of the Intergovernmental panel on Climate Change (IPCC) stated that "There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities."

Man-made greenhouse gas² emissions have noticeable effects on the earth's climate. At present, about 6.5 billion tonnes of carbon dioxide (CO₂) is emitted globally each year, mostly through burning coal, oil and gas for energy. The increasing CO₂ concentration in the atmosphere has already led the average global temperature to increase by 0.6°C in the past century due to the greenhouse effect. TAR projects that global average surface temperatures will rise by a further 1.4 to 5.8°C by the end of this century.

Fig 1a

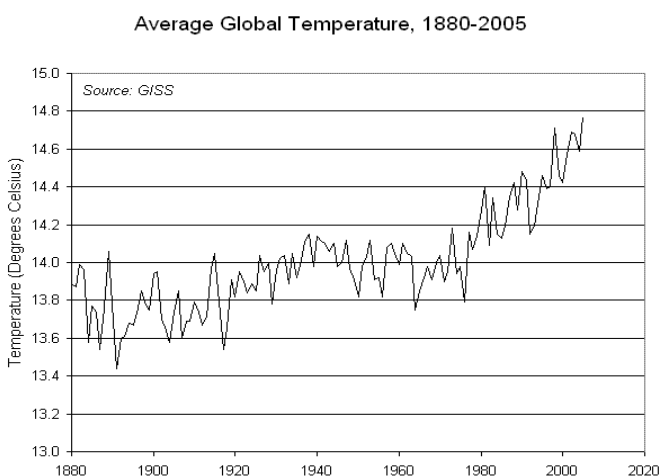


Fig 1b

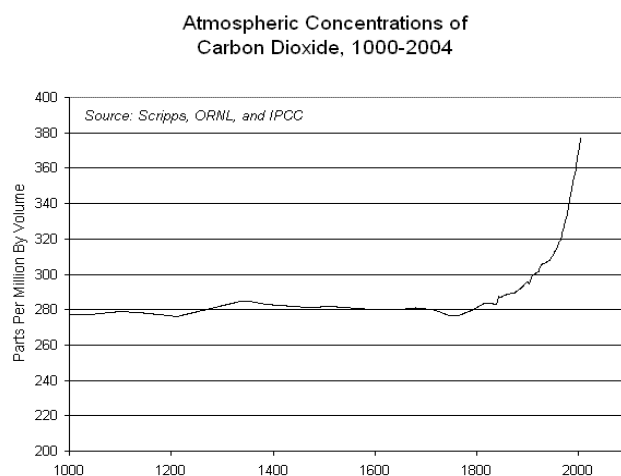


Figure 1a and 1b shows the changes of global atmospheric concentrations of CO₂ and global temperature

² The six principal greenhouse gases are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride

What are the global impacts of climate change?

Climate change is one of the most serious environmental threats facing the world today. Global temperature increase is likely to trigger serious consequences for humanity and other life forms alike. The key global impacts are shown below:

- *Rising sea levels* - It is expected to rise by over 40 centimetres by 2080 because of thermal expansion of oceans as temperatures rise and because of melting land ice.
- *Flooding* – 80 million people are projected to be at risk of flooding.
- *Food shortage and disease* – Africa, Middle East and India are expected to experience significant reductions in cereal yields, and an additional 290 million people could be exposed to malaria by the 2080s.
- *Severe water shortages* - In some areas, water resources for drinking and irrigation will be affected by reduced rainfall or by salination of ground water as sea levels rise.
- *Loss of tropical forests* – By 2070 large parts of northern Brazil and central southern Africa could lose their tropical forests because of reduced rainfall and increased temperatures.

The vulnerability to the impacts of climate change is different from country to country. Developing countries are believed to be more vulnerable than developed countries. Unlike industrialised countries, developing countries might not have the ability to adapt to the adverse impacts of climate change. Furthermore, evidence shows that the current CO₂ level in the atmosphere are mainly derived from the developed countries. Fig 2 shows that between 1850 and 1950, CO₂ emissions from developed countries increased dramatically whereas developing countries had little contribution to the total emissions. Developing countries' emissions only started to increase since 1950 and they are largely linked to the consumption of goods manufactured in those countries by the more affluent areas of the world. Therefore the situation that we are facing today is as the result of the historic emissions from the developed world. There is a clear moral responsibility to reduce our emissions in order to tackle climate change, at the same time support the developing countries through sharing of technologies to reduce emissions.

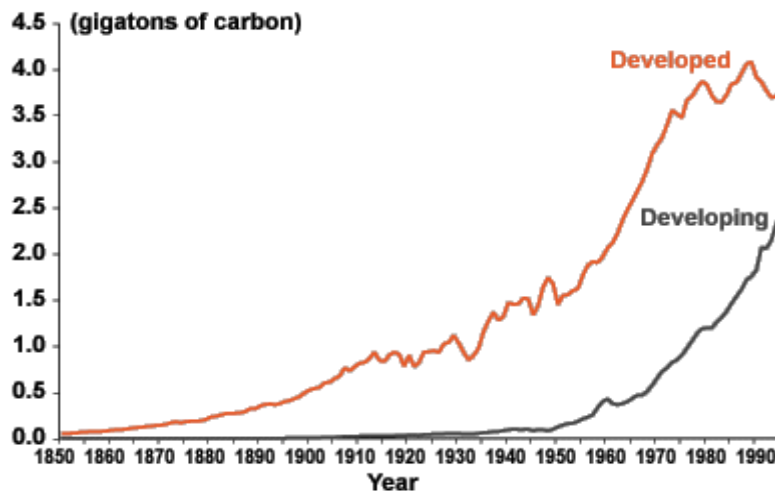


Figure 2: Annual emissions of CO₂ from industrial sources, 1859 to 1995

What are the impacts on Stockton-On-Tees Borough Council?

The UK Climate Impacts Programme (UKCIP) predicted that there will be a 0.5°C to 1°C increase in annual temperature in the North East by 2020s. The predicted impacts suggest that we will have hotter, dryer summers and wetter, milder winters. Much of the precipitation in the winters will be delivered by intense events. Flash flooding might become more frequent and flooding at the River Tees flood plain (see Appendix I) might worsen. The continuous rise in sea level will lead to higher risk of coastal erosion and flooding. By 2050s, we could experience 1.5°C to 2.5°C increase in temperature and up to 20% more winter rainfall and 30% less summer rainfall. These predictions are extracted from the UK Climate Impacts Programme based on the most likely scenarios but not the most extreme scenarios.

Agriculture and forestry

As the precipitation pattern changes, some crops and tree varieties may be less suitable to the climate and arable farming may become viable in some previously unsuitable areas. Hotter and drier summers will increase the demand for irrigation. New measures may be required to deal with water shortages. The risk of forest and moorland fires will be higher as a result of drier seasons and new methods of livestock and crop management may need to be developed.

Lifestyle and built environment

Residents and business will enjoy lower energy usage in winter for heating. However, the demand for water and air conditioning will increase during summer months. Street trees can become water stressed. Buildings, especially historic ones, may be damaged by the extreme weather events such as heavy rainfall and gale force wind. New approaches in the design of buildings will be required in order to cope with these changes, particularly in respect of the

ability of buildings to retain heat in winter and maintain a comfortable temperature in summer.

Tourism

As the temperature increases more people may be inclined to holiday at home or locally. However, the unpredictable and sometimes extreme weather may disrupt people's holiday plans not just at home but also when looking further afield. They may as a result seek alternative locations or rely on indoor activities.

Business

The area has a variety of businesses ranging from service industries such as call centres to chemical manufacturing and heavy engineering. Potentially insurance costs could rise due to the more weather related damage such as flooding and gale force wind. The indoor working climate needs to be controlled so that the workforce has a productive environment in which to work. There may be new business opportunities such as renewable energy technologies, and building design innovations.

Health

The number of injuries may increase from gale force winds, flooding and other extreme weather events. Heat related deaths could increase due to hotter summers but cold related deaths should decrease due to milder winters. Skin cancer and cataracts may increase, as people could be exposed to the sun more.

Natural environment

Climate change imposes additional stress to the wildlife habitat. This may bring damages to important habitats. As the weather becomes warmer, some species may migrate northward to find a suitable living environment. As a result, we may see new species in the North East. As the sea level rises this presents a threat to some of the sites of special scientific interest on the Tees estuary.

Transport and highways

Extreme weather has and will continue to bring disruptions to the transport system. Some infrastructures such as railway track and motorways may require additional maintenance to cope with extreme weather variations between seasons. Drainage systems may require more frequent maintenance to prevent flooding.

Energy

There may be disruption to supply through weather events bringing down cables. The demand for energy in summer to reduce temperatures at home and in the workplace will increase and the energy demand for heating should reduce.

What have we done so far?

In 2005, Stockton Borough Council joined the other Tees Valley Local Authorities, the Environment Agency, Tees and Durham Energy Advice, Renew Tees Valley and Scottish Power to resource and establish the formation of Tees Valley Climate Change Partnership (TVCCP). The main purpose of which is to catalyse climate change action in the Tees Valley. The partnership has established a baseline of emissions for the Tees Valley and has developed a sub-regional climate change strategy.

The Leader and Chief Executive of Stockton-On-Tees Borough Council signed the Nottingham Declaration on Climate Change in November 2002. By signing the declaration, we committed to reduce greenhouse gas emissions from our own authority's operations especially energy sourcing and use, travel and transport, waste production and disposal and the purchasing of goods and services.

Stockton has a reputation and a proven track record in its commitment towards tackling key environmental issues demonstrated through initiatives such as:

- *Stockton Warm Zone* – a three year project to tackle fuel poverty resulting in 15,000 properties being insulated or having new heating systems installed
- *Home Energy Conservation Strategy* – Stockton is one of the few Boroughs in the Country to have met its target in improving the energy efficiency of the housing stock, a massive 25% improvement since 1996
- *Energy Efficiency Accreditation* – Stockton Council was the first organisation to achieve accreditation with the Energy Institute and the National Energy Foundation at the first attempt, subsequent re-accreditation has put us in the top 10% of participating organisations.
- *The Northern Energy Initiative* – Stockton was awarded the National Grid Transco award for contributions to 'Developing a Culture of Energy Awareness' in December 2003
- *The CREATE* scheme – Working in partnership with British Gas Transco and the Energy Saving Trust Stockton was the most proactive local authority in the country at promoting energy efficiency in schools.
- *Building Energy Management Systems (BEMS)* – Stockton has installed sophisticated BEMS in almost 150 operational properties ranging from schools and office facilities to sheltered housing and leisure facilities.
- *Kennedy Gardens Community Heating Scheme* – together with our partners WS Atkins and with support from the Energy Savings Trust we have installed high efficiency combined heat and power boilers to serve three high-rise accommodation blocks. This together with the installation of high efficiency boilers to office and leisure facilities in

Billingham Town Centre have significantly improved heating standards whilst achieving annual savings of 100 tonnes of CO₂

- *Travel planning* – Not only does Stockton Council have it's own travel plan but nearly half of the schools in the Borough do, and all will have one in place by 2010
- *Waste management* – Stockton has an integrated approach towards waste management with less than 5% of the domestic waste produced in the Borough going to landfill, 80% incinerated with energy recovery and an increasing recycling rate

All of these initiatives are contributing to greenhouse gas emission reduction. By producing this action plan, gaps have been identified and actions developed to meet the agreed targets.

Key plans and policies that will take forward the aims of this action plan:-

Local Development Framework (LDF)

The LDF process has commenced with the drafting of the core objectives. It is a “portfolio” of local development documents that provide spatial policies to meet the community’s social, economic and environmental aims for the area. The timetable for this process is up to the end of 2010.

Local Transport Plan (LTP) 2006-2011

The Plan sets out a clear analysis of the factors influencing the Borough’s transport network, pinpoints the issues that will need to be addressed over the coming years and identifies the outcomes we need to achieve.

Environmental Policy 2007-2011

The Environmental Policy aims to improve the Council’s environmental performance. It provides a framework for action and for the setting of environmental objectives and targets.

Community Strategy 2005-2008

The Community Strategy sets out the key priorities for the Borough of Stockton-On-Tees. Five key themes are outlined, each with an ambitious programme of objectives and delivery plans through the Thematic Partnership(s).

Tees Valley Climate Change Strategy (TVCCS)

The Tees Valley Climate Change Partnership produced the TVCCS. The strategy provides a framework for Tees Valley Local Authorities to take forward the emissions reduction and adaptation plans.

4.0 Baseline

Carbon dioxide emissions baseline

To be successful in reducing greenhouse gas emissions, we need to establish the main sources of emissions and the amount of greenhouse gas that is released in the Borough. Tees Valley Climate Change Partnership has estimated Stockton-On-Tees greenhouse gas emissions for housing, industrial, commercial and transport sectors by using the emission data that is published by DTI, DEFRA and Environment Agency for all local authorities. Emission from waste was calculated from Joint Strategy Unit waste records. The sources of emissions in 2000 are shown in the table below:

Sector	Emission Source	Carbon Emissions (tonnes CO ₂ e)	Target emission by 2012 (with 8.75% reduction)
Housing	Gas	236,600	215,900
	Electricity	133,100	121,450
	Other (Coal + Oil)	16,200	14,780
Industrial & Commercial	Gas	182,000	166,080
	Electricity	349,500	318,920
	Other (Coal + Oil) *	61,300	55,940
Transport	Cars	203,700	185,880
	Other (Buses & HGVs)	116,990	106,750
Waste	Incineration	20,620	18,810
	Landfill	1,520	1,390
Total		1,321,530	1,205,900

Note:

- *Industrial & commercial emissions do not include emissions from major industry.*
- *Transport emissions do not include emissions from trains, aviation and shipping industry.*
- *Waste emissions do not include emissions from commercial waste.*
- *Waste emissions are calculated from financial year 00/01 waste data.*
- *CO₂e = Carbon Dioxide equivalent.*

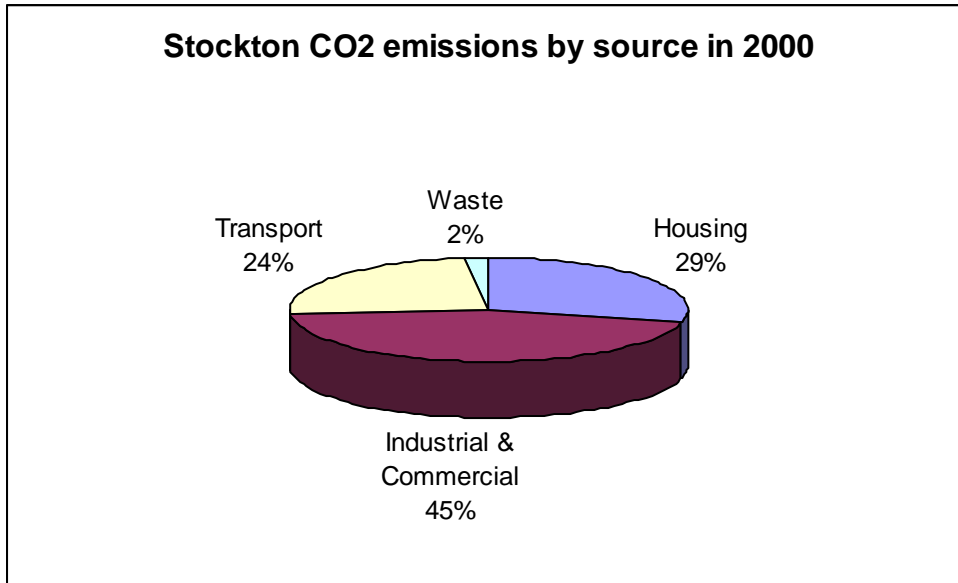


Figure 3: CO₂ emissions by source in Stockton-On-Tees Borough

In the year 2000, Stockton-On-Tees emitted roughly 1,321 kilo tonnes (kT) of carbon dioxide (or equivalent) with 629 kilo tonnes coming from household energy consumption, personal transport and household waste and 692 kilo tonnes from industrial and commercial activities. The average home in the Borough is therefore responsible for a total of 8.61 tonnes of CO₂ per year, which is equivalent to 3.52 tonnes per resident. The percentage share of industry emissions was clearly higher than domestic emissions mainly due to the significant energy users in the chemical and engineering industries.

5.0 Mitigation – reducing greenhouse gas emissions

It has been widely agreed that the most effective way to tackle climate change is to reduce greenhouse gas emissions. We need to reduce our emissions across all sectors if we are to make real progress on tackling climate change. The UK government has introduced several schemes and policies using both fiscal measures such as the Climate Change Levy and the UK Emissions Trading Scheme, as well as grant schemes such as Warm Front and the low carbon buildings programme to encourage and provide incentives to domestic and business sectors to reduce emissions.

The Stern review 2006 suggests that there are four ways to cut greenhouse gas emissions:

- Reducing demand for emissions-intensive goods and services.
- Increased efficiency, which can save both money and emissions.
- Action on non-energy emissions, and supporting land management practices that increase the amount of atmospheric carbon captured and stored in “carbon sinks” such as trees, woodlands and soils.
- Switching to lower carbon technologies for power, heat and transport.

Energy

People are used to a lifestyle of high-energy usage. We use energy to keep warm, for washing, cooking, and leisure activities such as the television, computers as well as travelling to work and foreign travel. If we want this lifestyle to continue, we need to use energy more efficiently.

In the past 50 years, we have been relying heavily on fossil fuel based energy. The main source of CO₂ emissions is derived from the combustion of fossil fuel. Therefore reducing the use of fossil fuel based energy is crucial to reducing greenhouse gas emissions. The use of renewable energy produces zero greenhouse gas emissions. This is the most environmental friendly form of energy and will help to tackle climate change.

Saving Energy

The most cost effective and logical way to reduce our greenhouse gas emissions is through reducing the amount of energy that we consume or becoming more energy efficient. The Carbon Trust has estimated that energy inefficiency accounts for nearly 1/3 of energy use. Offices could save up to 15% of their total expenditure by reducing energy wastage. This section examines the possible climate change actions in the domestic, commercial and public sectors.

Domestic Sector

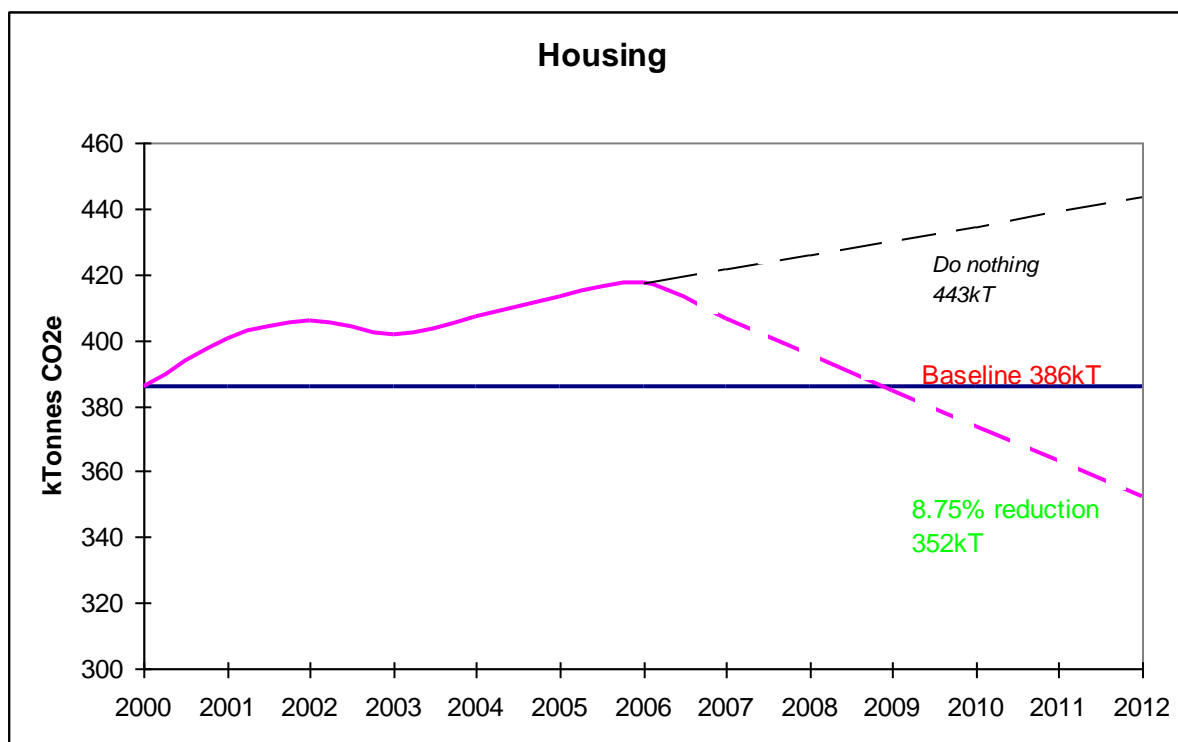


Figure 4: Housing emission trends, 2000 to 2012

The 2004 emission data shows that the second greatest source of emissions comes from residential property, accounting for 29% of greenhouse gases produced in the Borough. Energy saving measures and the use of greener fuel supplies could significantly reduce the carbon emissions from the domestic sector.

The Home Energy Conservation Act 1995 (HECA) strategy was developed in 1996 with the aim of improving the energy efficiency of the housing stock by 25% by 2006. The position in Stockton at the end of March 2005 showed a saving of 25.8%, meaning the target was not only exceeded but also achieved a year early. The Government then asked that Stockton stretch the target, which we have done, and are now aiming to achieve a 32% improvement by 2011.

Achieving improvements in energy efficiency becomes progressively more difficult. The reasons for this are that those households who are eligible for measures to be installed free of charge through grant schemes such as warm front have largely been tackled and those households who have responded to more traditional marketing tools have also taken up improvements. To achieve the goal of 32% improvement on the 1996 baseline will therefore require a comprehensive action plan that will engage those households who have either not been influenced by previous marketing campaigns or who require a different approach.

With high levels of deprivation and a substantial level of older housing stock it is no surprise that Stockton had a significant number of fuel poor households i.e. those households who need to spend more than 10% of their income on keeping warm. The warm zone initiative reduced fuel poverty in over 6000 households during its three-year life from 2001– 2004. This was followed by the Comfort Zone project, the aim of which was to put in place a mechanism to eliminate fuel poverty in vulnerable households by 2010 in line with the Government's fuel poverty strategy. This relies on a mixture of hard measures such as insulation and heating repairs to softer measures like energy and benefits advice.

From June 1 2007, homes for sale in England and Wales will have to obtain an energy performance certificate, which will rate the property from A to G for both energy efficiency and environmental impact. Houses with good energy efficiency measures have the opportunity to benefit from the new legislation, as they will stand out in the market.

Public Sector

With over 8,000 employees and a portfolio of 348 buildings that include libraries, leisure centres, offices, residential care and community centres it is not surprising that the energy consumption is significant. In 2005/06, the council used 23,292,206 kWh of electricity, 86,152,644 kWh of gas and 93,490 kWh of oil, which produced a total of 26,639 tonnes of CO₂ emissions. This accounts for approximately 2% of total emissions in the Borough.

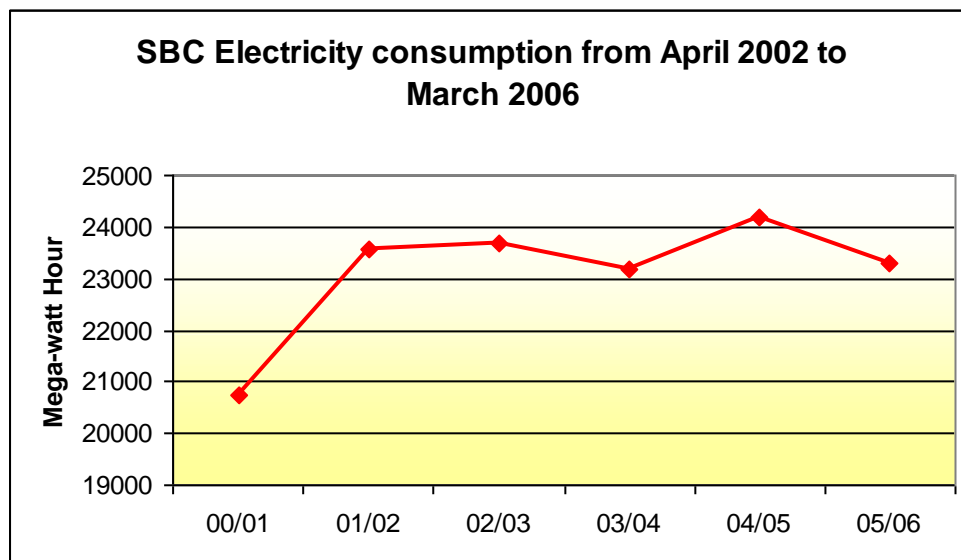


Figure 5: SBC overall electricity consumption, 2002 to 2006

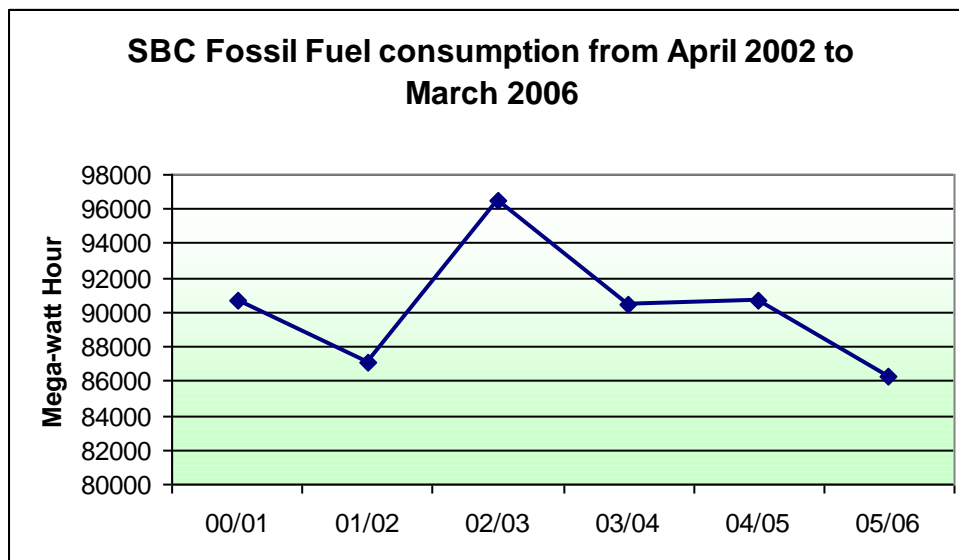


Figure 6: SBC overall fossil fuel consumption, 2002 to 2006

Figures 5 and 6 show that Stockton Borough Council fossil fuel³ and electricity consumption levels fluctuated over the years. This was mainly due to changes in building stock, installation of new technology and the replacement of heating and boiler systems. In general, there is an upward trend of electricity consumption while no clear trend can be concluded for fossil fuel consumption.

The Council is now purchasing “green energy” which is produced from Good Quality Combined Heat and Power (GQCHP). Unlike conventional forms of power generation, GQCHP generators capture heat and use it to provide steam or hot water to buildings close by that have a high requirement e.g. factories, hospitals etc, saving them from burning more fossil fuel to produce the heat they require. As a result, GQCHP reduces CO₂ emissions into the atmosphere and is more environmentally friendly than traditional generation methods. However it is not as clean as renewable energy generation such as wind turbines or solar power.

Schools have an important role to play in ensuring that children have an understanding of the impacts of their behaviour on the climate and the need to consider ways to reduce greenhouse gas emissions. One of the initiatives that supports this is the Eco-School Programme, which has three stages, the Bronze and Silver Award and finally the Green Flag. The school has to put certain environmental projects such as better waste management, reduce energy and water consumption etc. into action to achieve different awards. Stockton has 24 out of 82 (September 2006) schools participating with one school very close to getting the Green Flag award.

³ Fossil Fuel includes gas, oil and district heating

The University Hospital of North Tees is another significant user of energy. In order to achieve efficiency savings as well as reducing costs the hospital has installed a 1.5 megawatt hour Combined Heat and Power (CHP) electricity generator which provides electricity and heating for all of their buildings. The trust, who manage the hospital, have set a target to restrict the growth of their energy demand to less than 3% each year which is in line with the central government target.

The Council, working in partnership with the public and private sectors, can reduce levels of atmospheric carbon by promoting land uses which contribute towards carbon sequestration (i.e. capturing and storing atmospheric carbon in 'carbon sinks' such as trees and other green vegetation, as well as non-living 'reservoirs' such as soils and wood products). There remains some uncertainty about the effectiveness of carbon sinks in offsetting carbon emissions, but it is generally accepted that sustainable management of woodland and soil resources would make a positive contribution. For example, trees can absorb between 7.5kg and 13kg of carbon per year depending on age and species (carbon-info.org). On this basis extending tree and woodland cover within the Borough would make a modest contributing towards offsetting carbon emissions, while at the same time delivering significant benefits in terms of adaptation to climate change.

Industrial and Commercial

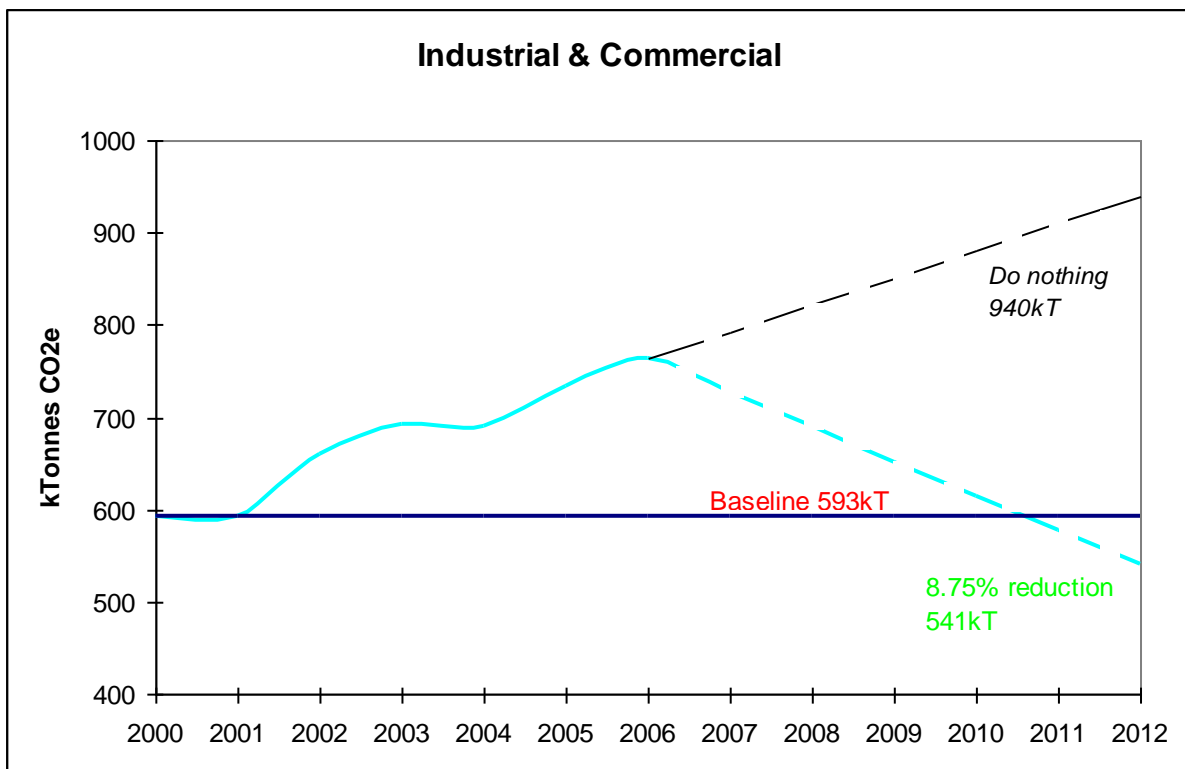


Figure 7: Industrial and commercial emission trends, 2000 - 2012

A strong economy can provide high living standards and greater prosperity for individuals. It supports businesses, which in turn generate employment and income for individuals. In Stockton borough there are a range of industrial and commercial activities that provide 80,100 jobs for the area. As a substantial proportion of the products manufactured in the area are exported to other regions within UK or other countries the associated emissions from industry and commercial activities in Stockton are not just local issues. It should be seen as part of the global problem.

As part of the commitment to the Kyoto Protocol the UK government has introduced various measures intended to address the environmental problems resulting from energy production and consumption. One of these measures is the Climate Change Levy (CCL), an additional tax on businesses added to their energy bills, although the government maintain that it entails no increase in the tax burden on industry as a whole and no net gain for the public finances. CCL is intended to promote energy efficiency, encourage employment opportunities and stimulate investment in new technologies.

The Government launched the UK Emissions Trading Scheme (UK ETS) in April 2002. Participating companies are allocated allowances; each allowance representing a tonne of the relevant emissions, in this case carbon dioxide equivalent. The scheme allows companies to emit in excess of their allocation by purchasing additional allowances from the market. Similarly, a company that emits less than its allocation can sell its surplus. By allowing participants the flexibility to trade allowances the overall emissions reductions are achieved in the most cost-effective way possible.

The industrial and commercial sector, excluding major industry, produces 45% of Stockton total carbon emissions (see figure 3). With the Climate Change Levy, UK Emissions Trading Scheme and the Integrated Pollution, Prevention and Control (IPPC) regulations, companies will have economic incentives to invest in technologies to reduce their greenhouse gas emissions. The Environment Agency will lead on the delivery of major industry reductions in emissions.

While there is a clear link between economic prosperity and energy use, businesses have the potential to be low carbon and to benefit from the financial and societal gains. To encourage organisations to commit to tackle climate change, the Tees Valley Climate Change Partnership has produced a Tees Valley Climate Change Charter (see Appendix 2). By signing up to the Charter, each organisation would commit to take specific actions to reduce their greenhouse gas emissions.

Alternative Energy

Most energy we use today comes from the burning of fossil fuels and nuclear power stations (see Figure 8). Carbon and sulphur dioxide emissions are released into the atmosphere when fossil fuels are burnt. In order to reduce CO₂ emissions, we should seek alternate methods to produce energy.

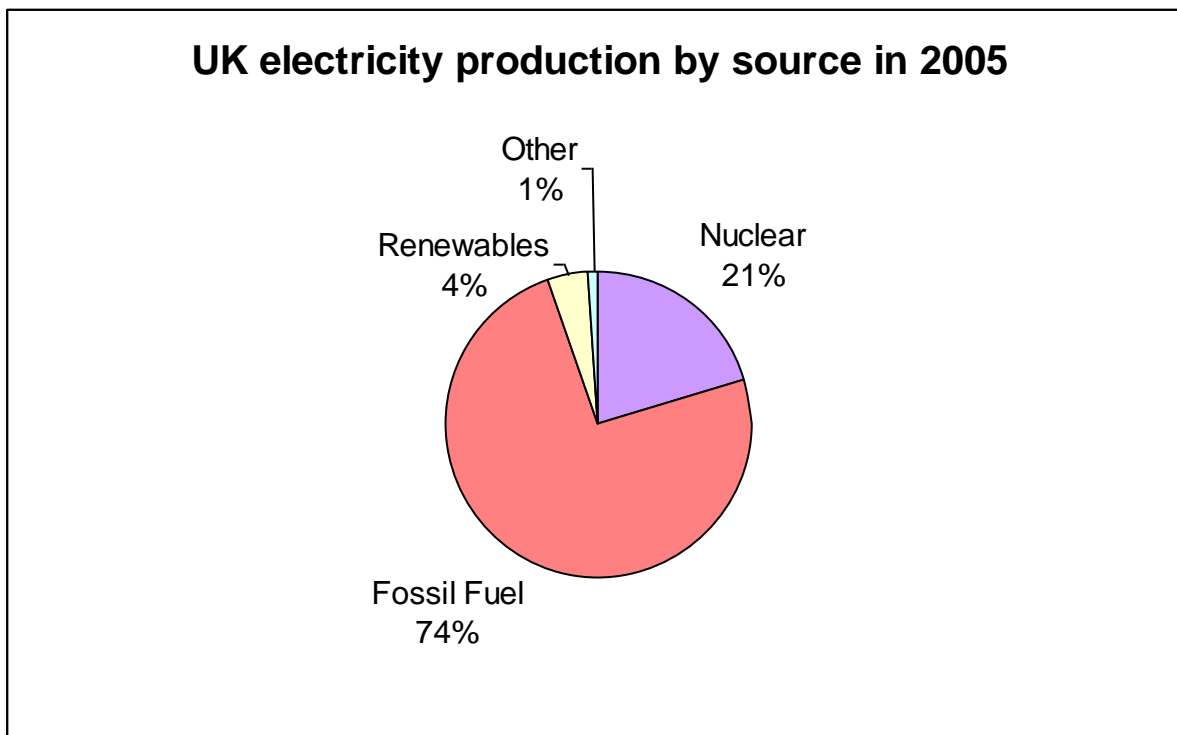


Figure 8: UK electricity production by source

The UK Government has set targets for 10% of the UK electricity to be supplied from renewable energy and at least double the capacity of combined heat and power (CHP) by 2010.

The Tees Valley currently has two major renewable energy projects:

- Three 2.75 Megawatt (MW) wind turbines at High Volts farm, Hartlepool.
- A 30 Megawatt biomass power station at Wilton which is expected to be in operation in 2007/2008.

At present, Stockton has no large-scale renewable energy projects in operation. However in 2004, The Northern Energy Initiative (TNEI) Services Ltd identified 15 potential sites for large wind turbines in the Tees Valley, three of which are located in Stockton Borough. At least one of these sites as well as some smaller potential sites are being examined.

Furthermore the development of small scale renewable energy generation such as ground source heat pumps, domestic wind turbines, solar Photovoltaic, solar water heating, micro combined heat and power units and biomass fuelled boilers are actively being supported in the Borough.

Household Waste

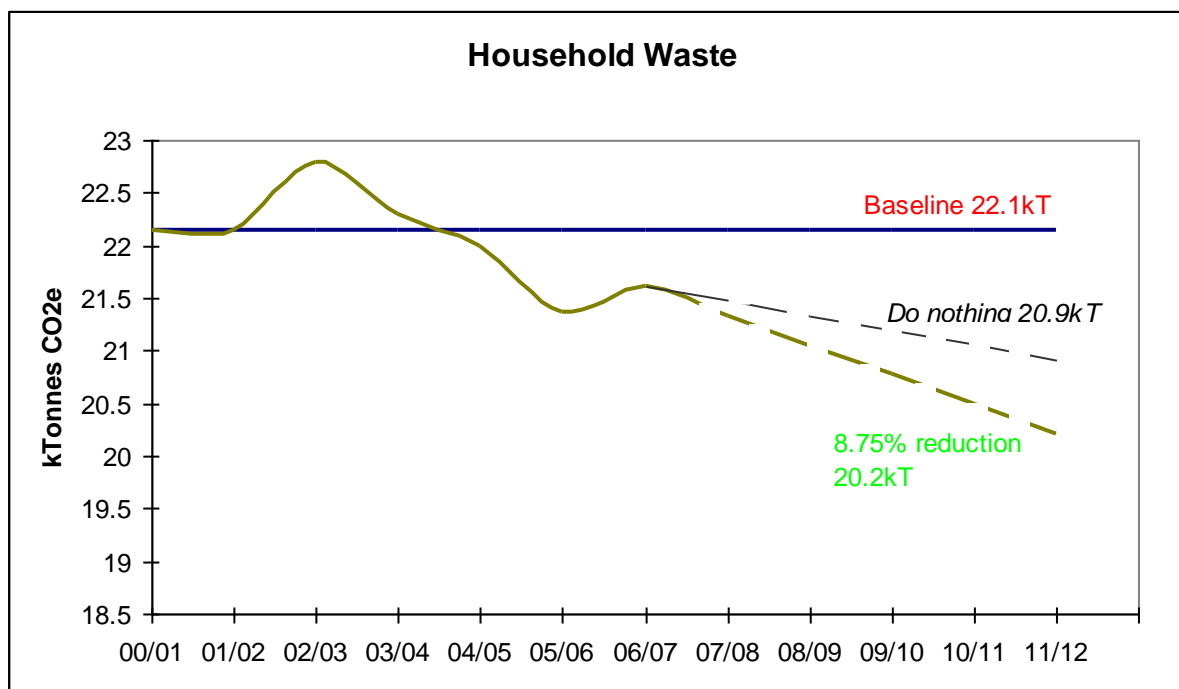


Figure 9: Household waste emission trends, 2000 - 2012

Solid waste disposal contributes to greenhouse gas emissions in a variety of ways. Waste that is collected in Stockton is mainly incinerated or recycled with the residual being land filled. Waste that is landfilled produces methane (one of the most potent greenhouse gases) when the organic elements decompose. Waste incineration can avoid potent methane emissions and in the Energy from Waste plant at Haverton Hill actually produce electricity. Recycling prevents potentially useful materials from being landfilled or incinerated and it also saves energy from processing raw materials to make new products. By far the most effective way to reduce emissions is to re-use products that are no longer wanted or needed such as furniture, clothing, toys etc.

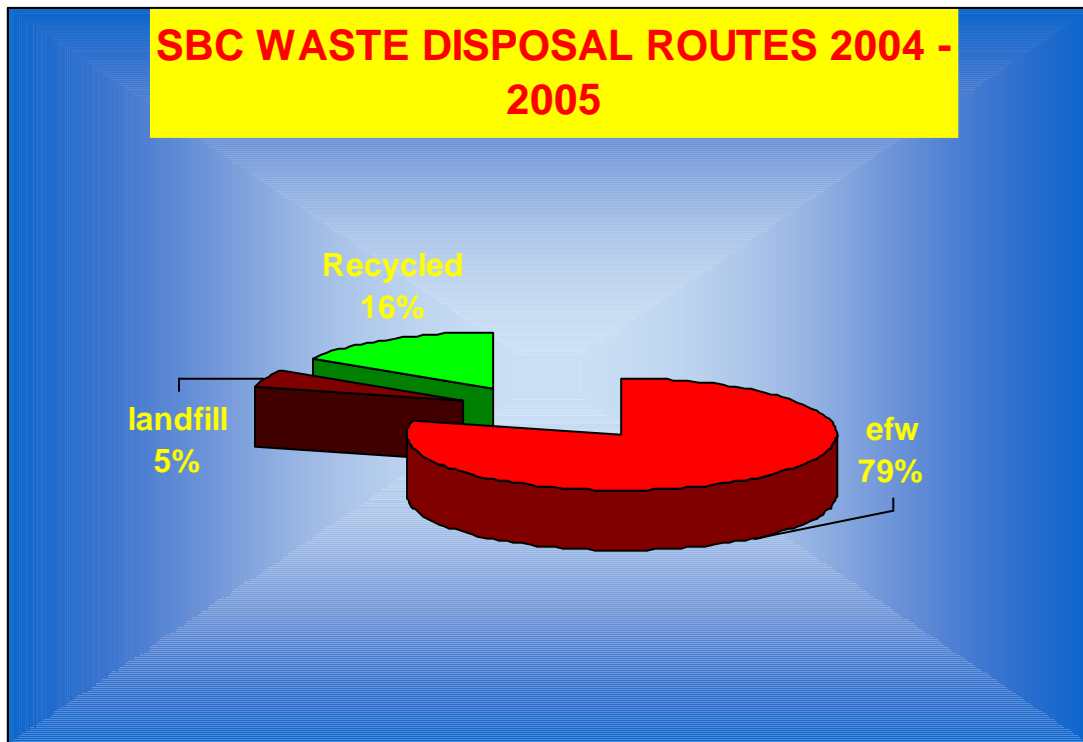


Figure 10: SBC Waste disposal 2004/05

Overall waste management accounted for around 1% of greenhouse gas emissions in Stockton. In 2005 Stockton disposed of 79% of the total household waste generated via the Energy from Waste (EfW) incinerator plant, 16% via recycling and 5% is sent to landfill (see Figure 10). To minimise the impact of our waste management practices on climate change, we should reduce the amount of waste we produce as well as maximising our recycling and home composting rates. A target has been set to achieve 30% recycling of domestic waste by 2010.

Transport

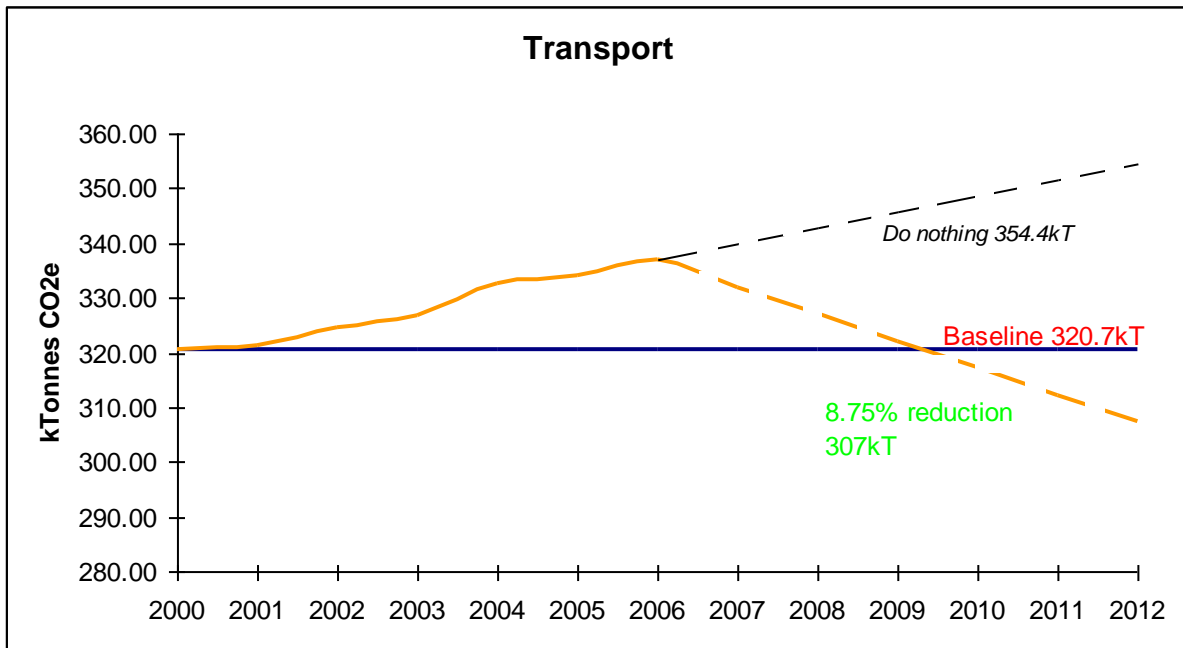


Figure 11: Transport emission trends, 2000 – 2012

Approximately 13% of total carbon dioxide emissions within Stockton-on-Tees come from transport. A number of factors, including the changing demographic composition of the Borough, increasing levels of economic activity, major new developments (including an ambitious programme of town centre renewal) and rising car ownership are putting increasing pressure on the local transport network. Transport-related emissions will continue to grow if these issues are not addressed.

Road traffic volumes have shown a steady rise in recent years. Although, as illustrated in Figure 12, traffic growth between 2000 and 2005 across the specific points monitored for the First Stockton-on-Tees Local Transport Plan (LTP1) was only 2.7%, well below the level of growth experienced across the Tees Valley sub-region. Statistics published by the Department for Transport (DfT) indicate that traffic levels across the Borough as a whole rose by 18% between 1994 and 2004, as shown in Figure 13.

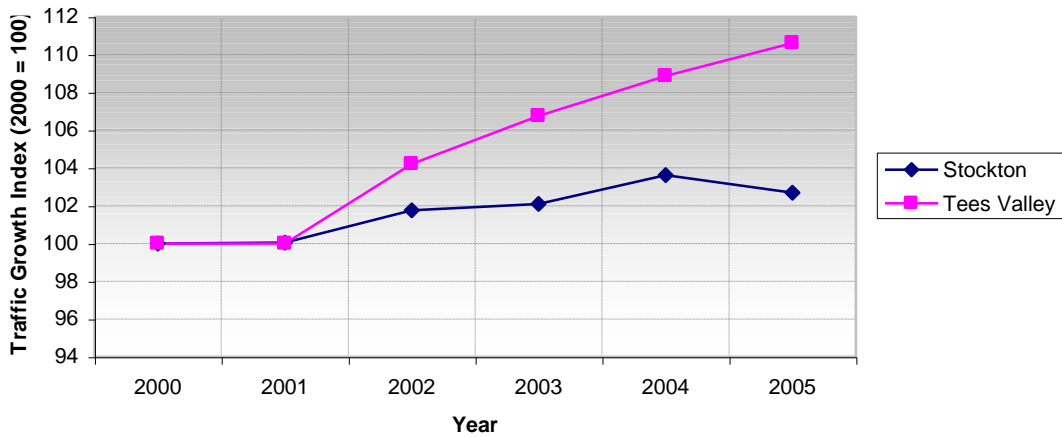


Figure 12: Overall Traffic Growth, 2000 to 2005. (Sources: Stockton-on-Tees Borough Council & the Tees Valley Joint Strategy Unit)

Comparison between Stockton-on-Tees and the Tees Valley Sub-Region

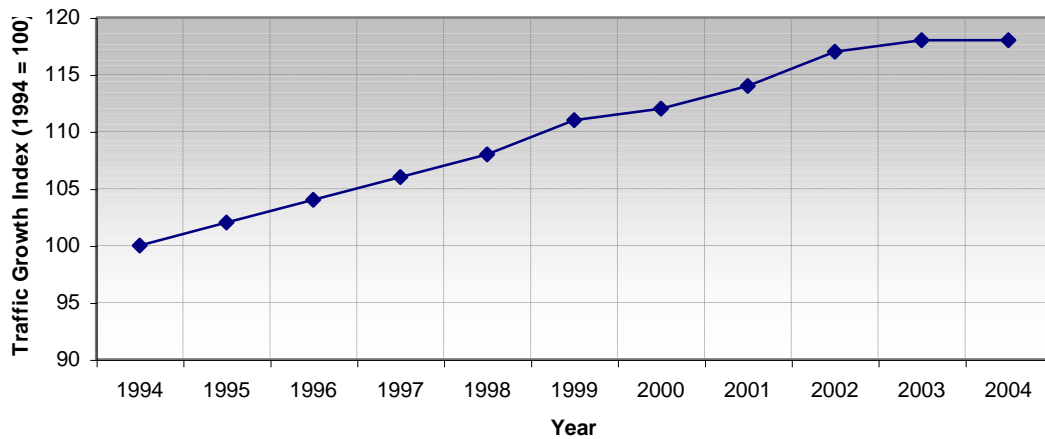


Figure 13: Overall Traffic Growth in Stockton-on-Tees Borough, 1994 to 2004 (Source: Department for Transport)

The long-term rise in road traffic levels has been mirrored by a sustained decline in bus patronage. Although accurate data at the Local Authority level is only available for the period from 2001/02 to 2005/06, patronage within the Borough fell by 9.5% over this period (as shown in Figure 14), whilst – as illustrated in Figure 15 – patronage across the North East as a whole fell by 25.7% between 1994/95 and 2004/05.

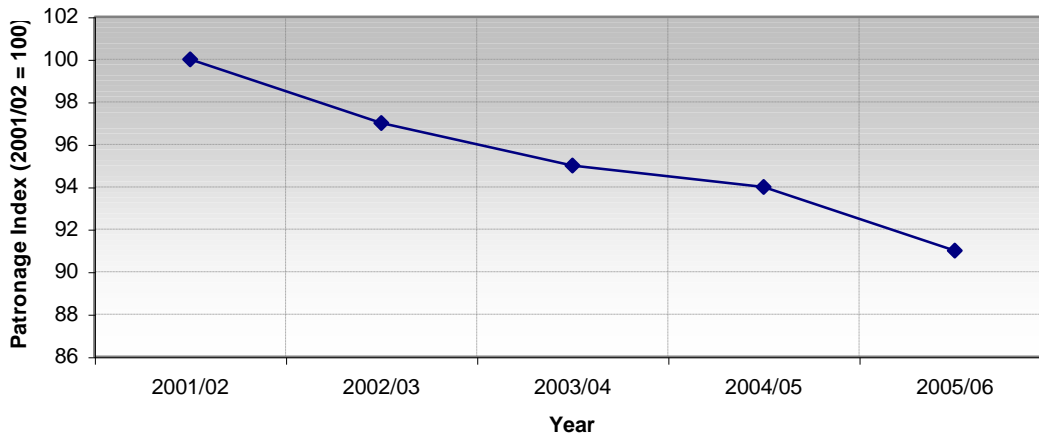


Figure 14: Bus Patronage in Stockton-on-Tees Borough, 2001/02 to 2005/06 (Source: Stockton-on-Tees Borough Council)

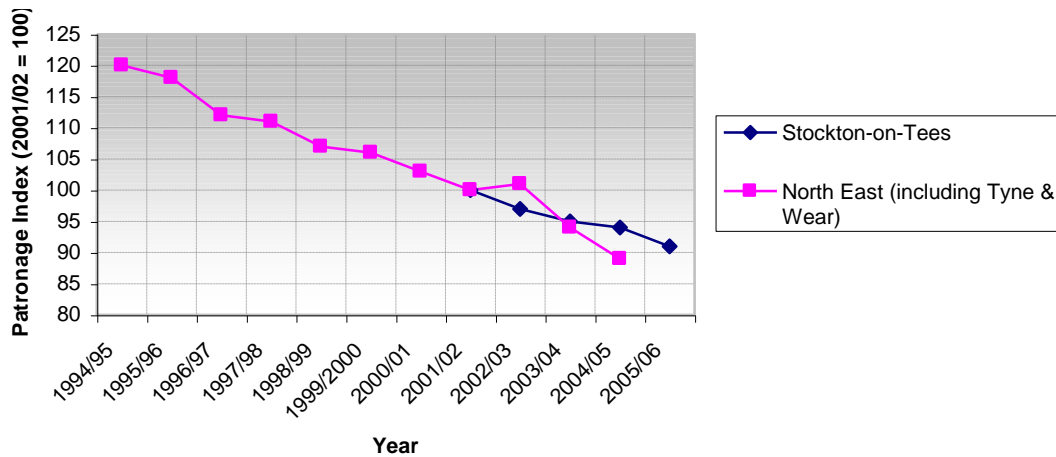


Figure 15: Bus Patronage, 1994/95 to 2005/06 (Sources: Stockton-on-Tees Borough Council and the Department for Transport)

Comparison between Stockton-on-Tees and the North East Region

There were more encouraging signs with regard to the use of other alternatives to the private car. As Figure 16 shows, passenger footfall at the Borough’s six railway stations increased by 54% between 1999/2000 and 2005/06, whilst – as illustrated in Figure 17 – the number of cycle trips recorded at automatic count sites across the Borough increased by 32.8% between 2001/02 and 2005/06.

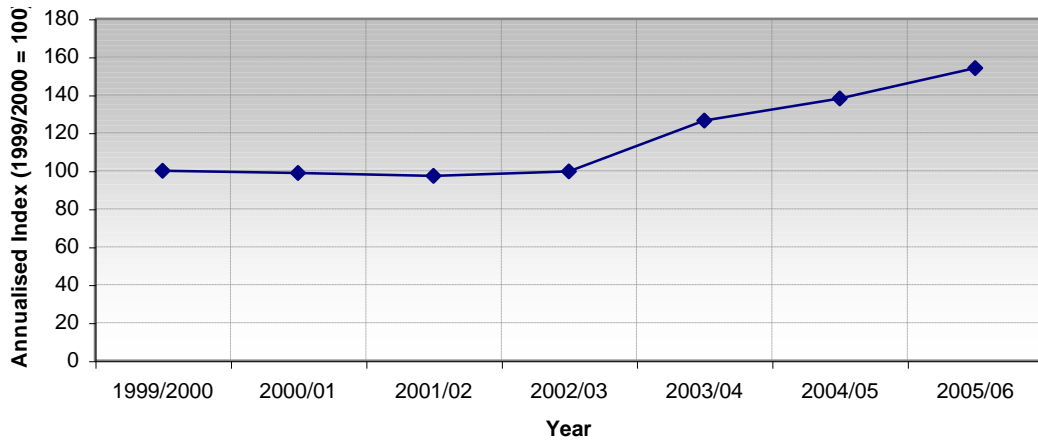


Figure 16: Passenger Footfall at Railway Stations in Stockton-on-Tees, 1999/2000 to 2005/06 (Source: Tees Valley Joint Strategy Unit)

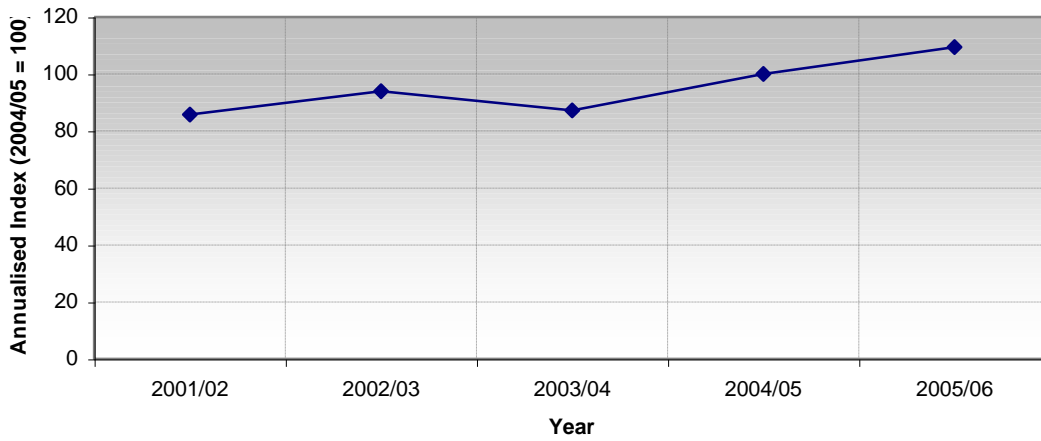


Figure 17: Cycle Trips at Automatic Count Sites in Stockton-on-Tees, 2001/02 to 2005/06 (Source: Stockton-on-Tees Borough Council)

The Second Stockton-on-Tees Local Transport Plan

The Second Stockton-on-Tees Local Transport Plan (LTP2), which covers the five years from April 2006 to March 2011, was published and submitted to the Government Office for the North East (GO-NE) and the DfT in March 2006. An LTP2 set out the Council's Long-Term Transport Strategy, and includes a five-year implementation programme identifying the measures to be introduced in order to meet the objectives set within it.

The Action Plan below is based on the objectives set within the Long-Term Transport Strategy. The targets proposed are consistent with those adopted within LTP2.

Procurement

As a local authority, we spend around £140 millions on goods, works and services each year. What we buy and how we consume our goods and deliver the services can have a significant impact on greenhouse gas emissions. For example, if we buy locally we could save a substantial amount of emissions from transport.

Simple actions such as choosing energy efficient electric appliances e.g. computers and fridges, and buying goods that are durable or even made from recycled material can reduce the amount of energy that is consumed.

As a large consumer of materials the Council can not only influence their suppliers but also act as an example of good practice to other businesses in the area and share experiences.

6.0 Adaptation

Climate change is happening. As well as reducing our greenhouse emissions, we also have to adapt to the possible effects that may be caused. Predictions from UKCIP suggest that average temperatures are going to rise and there will be changes in rainfall patterns. We need to start planning how to cope with these changes. We need to ensure that climate adaptation is built into our key plans and policies, particularly in areas such as planning and building control, building design, the infrastructure (including roads) and in the natural environment.

Well-planned and managed green infrastructure has an important role to play in flood risk management, by reducing surface run-off and providing space for water storage.

Water Supply

Climate change will affect the stability of water supply. Therefore we need to reduce our demand for water and increase efficiency of water use in order to cope with the likelihood of a net loss of 10% in annual rainfall.

Flooding

Climate change will increase the risk of flooding. A new approach may be needed in flood defence. The design of drainage systems will need to be reviewed to tackle potential flooding of roads and highways. Future development should incorporate the impacts of climate change to reduce the possible risks to people as well as the natural environment from flooding. New building designs will be necessary to resist the potential damage from flooding in high-risk areas.

Building

The design and construction of our homes and offices will need to change to cope with the changes in the weather, such as with rainfall, wind and the frequency of storms. To cope with the increasing temperature, better cooling systems in buildings may be required. Greater use of sustainable urban drainage will reduce the demands placed upon the existing drains and sewers, while the community could help by reducing the amount of hard landscaping within the curtilage of domestic properties.

Extremes in temperature

Heat can kill. In the 2003 northwest Europe heatwave 27,000 people died. Britain has experienced its hottest July on record in 2006. Global warming experts claim that by 2050 temperatures will regularly top 40°C and warn that our health and infrastructure will be unable to cope. Precautions necessary to cope with the expected frequency of

heatwaves are outlined in the document – *Heatwave Plan for England* published in July 2004.

Even small urban green spaces can have an important cooling effect, and temperatures in wooded areas can be significantly lower than in built-up areas, also trees sited near buildings act as natural air conditioners and provide valuable shade both inside and out.

7.0 Raising Awareness and Communication

The most up-to-date national and regional research shows that few people in the UK and North East understand what is actually causing climate change. But despite this, they do believe that climate change is happening, and that it is important. Most people think that climate change:

- Is confusing – they can't see how it relates to them;
- Won't affect them personally;
- Is a problem for the future, not now; and
- Can't be affected by their individual actions, because the problem is so big.

In the North East, the climate change awareness levels are slightly below national average. Less than 4 in 5 people are familiar with the terms *carbon emissions* and *climate change* and only 50% of people are aware of the source of carbon emissions.

The need to engage communities, businesses and other organisations in efforts to address the problem of climate change is of vital importance in ensuring the successful delivery of the climate change action plan. Raising awareness and promoting and supporting action within the community regarding the threats from climate change plus the economic opportunities is extremely important. Without community support, the reduction of 8.75% in greenhouse gas emissions from the 2000 level by 2012 will be difficult to achieve.

Children are more acceptable to changes in behaviour. They are more likely to change their own and perhaps their parents' attitudes if the facts and consequences of climate change are presented to them in a way that is clear and relevant. The curriculum can include climate change through a variety of areas such as science and geography.

We aim to achieve an increase of 20% awareness and understand what practical measures people can do against a baseline to be established in 2007.

8.0 Climate Change Action Plan 2007 – 2012

Domestic Sector:

Objective: Achieve 32% improvement in energy efficiency of housing in all sectors against the 1996 baseline by 2011.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
6,000 households having insulation measures installed.	March 2011	Stockton Borough Council	TADEA EAGA	<ul style="list-style-type: none"> 28% improvement at March 2008 30% improvement at March 2009 	Availability of grant funding	3-6 Low	
4,000 'A rated' heating systems installed in Tristar homes.	March 2008	Tristar Homes	Stockton Borough Council		Programme slippages	5 Low	
Targeted energy advice delivered to 7500 households.	March 2011	Stockton Borough Council	TADEA		Priorities for TADEA	5 Low	
3,500 'A rated' heating systems installed in private homes.	March 2011	Stockton Borough Council	TADEA EAGA		Quality of data	8 Low	

Note:

TADEA = Tees and Durham Energy Advice, a service funded by the Energy Savings Trust (EST) and based in Billingham.

EAGA = Energy Action Grants Agency, the delivery mechanism for the government's warm front grants.

Planning Policies:

Objective: Incorporate sustainability principles in all new housing developments by October 2009.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Develop a Residential Design Guide to provide guidance on standards for the design and layout and sustainability of new housing schemes.	January 2009	Stockton Borough Council	Developers	<ul style="list-style-type: none"> All new developments to achieve the Eco-Homes rating of 'excellent' unless the developer can demonstrate that this would be impractical (subject to consultation) 	Legal challenges to policy. Government policies and drivers.	8-10 Low – Medium	
Adopt policies within the Core Strategy requiring new housing development to include energy efficiency measures and renewable energy generation.	October 2009	Stockton Borough Council	North East Assembly One NorthEast		Enforcement of policy.	8-10 Low – Medium	

Objective: SBC Local Development Framework to include policies to reduce energy consumption.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Set out clear vision, objectives and strategy for reducing energy consumption as part of the LDF core strategy.	October 2009	Stockton Borough Council	North East Assembly One NorthEast	<ul style="list-style-type: none"> All new developments to demonstrate that they will not add any net carbon dioxide over the lifetime of the operation (subject to consultation). 	Lead in times and delays between consent and development taking place.	8-10 Low – Medium	
Adopt policies within the Core Strategy requiring new commercial development to include energy efficiency measures and renewable energy generation.	October 2009	Stockton Borough Council	North East Assembly One NorthEast	<ul style="list-style-type: none"> All new commercial developments to achieve the BREEAM rating of 'excellent' unless the developer can demonstrate that this would be impractical – (subject to consultation) 	Legal challenges to policy. Government policies and drivers.	8-10 Low – Medium	

Objective: SBC Local Development Framework to adopt policies that require renewable energy generation.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Set out clear vision, objectives and strategy for renewable energy generation as part of the core strategy.	October 2009	Stockton Borough Council		<ul style="list-style-type: none"> All commercial development in excess of 1000 sq. m. floor space and residential developments of more than 10 dwellings to source 15% of its predicted energy consumption from on site renewables from 2009 – 2011 (subject to consultation). 	Legal challenges to policy. Government policies and drivers.	8-10 Low – Medium	
Incorporate appropriate guidance that requires the generation of renewable energy in both the Core Strategy and the Environment policy document.	October 2009 – core strategy August 2010 – Environment policy	Stockton Borough Council		<ul style="list-style-type: none"> 25% from 2012 – 2016 (subject to consultation). 	Legal challenges to policy. Government policies and drivers.	8-10 Low – Medium	

Transport:

Objective: Improve the coverage of the public transport network.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Work with the Tees Valley Joint Strategy Unit, neighbouring Local Authorities and local bus operators to prepare and submit a revised Business Case for the 'Connect Tees Valley' Major Scheme to GO-NE and the DfT.	July 2007	TVJSU	Bus operators/TVJSU/ Other Tees Valley Councils	<ul style="list-style-type: none"> No reduction in access to healthcare and education facilities within the Borough between 2005/06 and 2010/11. Restrict overall decline in bus patronage within the Borough to 10% between 2005/06 and 2010/11. Increase passenger footfall at the Boroughs railway stations by 18% between 2004/05 and 2010/11. 	Availability of resources. Commitment from all parties.	8-10 Low – Medium	
Implement 'Connect Tees Valley' Major Scheme (subject to funding being allocated)	March 2011	TVJSU	Bus operators/TVJSU/ Other Tees Valley Councils		Funding availability.	15-20 Medium – High	
Explore the potential with the train operating companies serving the Borough's stations (TransPennine Express, Northern Rail and Grand Central) to improve interchange between rail and other transport modes.	Ongoing from 2007	Stockton Borough Council	Train operating companies/Network Rail/Bus operators/TVJSU		Commitment from all parties. Available resources.	6 – 8 Low	

Objective: Restrict the long-term decline in bus patronage to 10% between 2005/06 and 2010/11.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
50 bus stops to be equipped with real time information displays.	March 2011	Stockton Borough Council	TVJSU/Bus operators	<ul style="list-style-type: none"> 82% of buses starting route on time by 2010/11 70% of passengers 'satisfied' with local bus services by 2009/10 (BVPI 104). 72% satisfaction with public transport by 2009/10 (BVPI 103) 	Commitment from all parties. Technology failure.	8 – 12 Low - Medium	
A comprehensive local travel guide to be prepared and distributed.	June 2007	Stockton Borough Council	Joint Public Transport Group/Bus operators		Available resources.	2 – 6 Low	
Review the operation of the National Concessionary Fare Scheme to ensure that it is sustainable in the longer term.	April 2007	Stockton Borough Council	Other Tees Valley Councils		Availability of resources to deliver scheme.	6 – 8 Low	

Objective: Promote Cycling as an attractive alternative to the private car for journeys made within the Borough.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
2,400 children to be given pedestrian and cycle safety training.	March 2011	Stockton Borough Council	Local schools/Sustrans	<ul style="list-style-type: none"> All schools in the Borough to have an Authorised Travel Plan in place by 2010. 50% increase in cycle trips recorded at automatic count sites located across the Borough between 2004/05 and 2010/11. 	Available resources.	6 – 8 Low	
Provide secure cycle parking in town centre locations.	Ongoing from 2007	Stockton Borough Council	Sustrans		Available resources. Suitable sites not being available.	3 – 6 Low	
Work with local schools to develop School Travel Plans.	Ongoing from 2007	Stockton Borough Council	Local schools/Sustrans		Available resources.	3 – 6 Low	

Note:

TVJSU = Tees Valley Joint Strategy Unit which supports the five Tees Valley local authorities in developing sub-regional strategies.

Green Infrastructure:

Objective: Green infrastructure managed and developed, functioning as a carbon sink and contributing towards sustainable lifestyles.							
Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Produce a Parks, Open Spaces and Countryside Strategy (2007-12) that promotes integrated planning and delivery of green infrastructure, creating a setting for sustainable living (e.g. encouraging walking/cycling and local recreation).	March 2008	Stockton Borough Council	Tees Valley Wildlife Trust, The Tees Forest, Natural England, North East Community Forests, Tees Valley Joint Strategy Unit	<ul style="list-style-type: none"> ▪ Agreed approach to green infrastructure planning within the Borough. ▪ X% increase in tree and woodland cover by 2012 	Delays resulting from lack of resources or consultation process.	6 – 8 Low	
Baseline data for woodland and tree cover within the Borough produced and targets set for increasing % cover by 2012.	Baseline by March 2008	Stockton Borough Council	The Tees Forest, Forestry Commission, Woodland Trust		Adequate resources. Suitable sites being available.	6 – 8 Low	

Renewable Energy:

Objective: Increase the use of electricity from renewable sources to 10% of total domestic electricity consumption by 2012.

Key actions	Deadline	Responsible for delivery	Partner	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Promote "green electricity tariffs" to domestic consumers to 2000 households per year.	Ongoing from 2007	TADEA	Stockton Borough Council	<ul style="list-style-type: none"> 4% of domestic electricity used from renewable sources by end 2008/09 6% by 2010/11 	Funding available. Cost differential with other sources.	6 Low	
Promote opportunities for use of renewable energy in domestic properties to 500 households per year.	Ongoing from 2007	EST	Stockton Borough Council		Lack of resources. Change in priorities.	9 Low	

Objective: Enable the installation of renewable energy technologies in 200 homes by 2012.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Work with Tristar homes to consider opportunities to install renewable energy technologies where appropriate.	Ongoing from 2007	Stockton Borough Council	Tristar homes	<ul style="list-style-type: none"> 100 homes have renewable energy installations by 2009. 	Available funding and suitable locations.	9 – 12 Low - Medium	
Advise householders on the most appropriate technology.	Ongoing from 2007	TADEA	Stockton Borough Council		Resources available and changing priorities.	4 – 6 Low	
Publicise appropriate funding opportunities to householders.	Ongoing from 2007	Stockton Borough Council	TADEA Carbon trust		Resources available and changing priorities.	4 – 6 Low	

Objective: Identify suitable sites to install community wind turbines.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Carry out detailed studies of appropriate sites identified by the 2004 TNEI study.	December 2007	Stockton Borough Council	Carbon trust	<ul style="list-style-type: none"> Three community renewable energy schemes to be installed by 2012. 	Planning process. Community reaction.	4 – 6 Low	
Establish partnerships with suitable wind turbine developers.	March 2008	Stockton Borough Council	Carbon trust		Suitability of partnering arrangements.	8 - 12 Low - Medium	

Note:

TADEA = Tees and Durham Energy Advice, a service funded by the Energy Savings Trust (EST) and based in Billingham.

Waste Management:

Objective: Achieve 30% domestic waste recycling by 2010.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Review current waste and recycling policy to ensure compatibility with the climate change targets.	August 2007	Stockton Borough Council	Ove Arup consultants	<ul style="list-style-type: none"> 16.65% recycled at March 2006 (baseline). 22% recycled by March 2007. 	Quality and availability of data.	3 – 6 Low	
Provide green waste collection to 64,000 properties.	April 2007	Stockton Borough Council			Resources available.	12 – 15 Medium	
Minerals and Waste Core Strategy and Site Allocations DPDs to provide framework to encourage re-use, recovery and recycling activities (on commercial basis) and to identify suitable sites for these activities.	April 2010	Stockton Borough Council			Suitable sites being identified and business responses.	12 – 15 Medium	
Trial kerbside collections of cardboards and plastics.	Trial complete by end of June 2007	Stockton Borough Council	J & B Recycling		Public reaction and participation.	12 – 15 Medium	

Objective: Achieve 20% of households composting at home by 2010.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Offer low cost home composting options to householders.	Ongoing from 2007	Stockton Borough Council	WRAP	<ul style="list-style-type: none"> Waste education strategy developed. 500 additional home composters in use by householders by 2010 	Saturation point reached. Funding from WRAP not available.	12 – 15 Medium	
Promote home composting through road shows and high profile events.	Ongoing from 2007	Stockton Borough Council	WRAP		Apathy, poor participation.	3 – 6 Low	
Develop waste education and communication strategy to promote recycling and encourage waste minimisation.	December 2007	Stockton Borough Council	WRAP		Sources available, changing priorities.	3 – 6 Low	

Objective: All new residential development to have access to suitable recycling facilities.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Provide refuse bin, blue recycle box and compost bin to every newly built property.	Ongoing from 2007	Stockton Borough Council	WRAP	<ul style="list-style-type: none"> All new residential developments have community-recycling facilities included in design. 	Resources available.	3 – 6 Low	
Include policy in Core Strategy Development Control policies to require developers to provide space for individual recycling bins in all residential developments and to provide community facilities in larger residential developments.	October 2010	Stockton Borough Council		<ul style="list-style-type: none"> 100% of households to have kerbside facilities (BVPI 91) 	Legal challenges to policy. Government policies and drivers.	3 – 6 Low	

Note:
 WRAP = Waste & Resources Action Programme, a not for profit government backed company leading on waste minimisation, recycling, education and tackling food waste.
 BVPI = Best Value Performance Indicator

Business Sector:

Objective: 100 local businesses to commit to action on climate change by 2012.							
Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Promote action through existing networks such as chamber of commerce, local strategic partnership and key events and activities.	March 2012	Stockton Borough Council	Renew Tees Valley TADEA	<ul style="list-style-type: none"> Ten local businesses to have a travel plan in place by 2012 Ten businesses to sign Tees Valley climate Change charter each year 	Apathy, changing priorities.	4 – 10 Low - Medium	
Provide and promote on-line travel planning software for businesses.	Ongoing from 2007	Stockton Borough Council	Tees Valley Local Authorities		Apathy, changing priorities.	4 – 10 Low - Medium	
All significant new development to provide suitable staff travel plan.	Ongoing from 2007	Stockton Borough Council			Challenges to planning conditions.	3 – 6 Low	

Note:

TADEA = Tees and Durham Energy Advice, a service funded by the Energy Savings Trust (EST) and based in Billingham

Adaptation:

Objective: Reduce the risk of flooding in high risk areas.							
Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Include sustainable urban drainage (SUD) policy to dispose of surface run-offs without enhancing the flood risk as part of Core Strategy DPD by October 2009 and the Environment DPD by August 2010.	By October 2009 and the Environment DPD by August 2010	Stockton Borough Council		<ul style="list-style-type: none"> No of development with SUDS schemes. Flood protection policy agreed. 	Legal challenges to policy. Government policies and drivers.	4 – 10 Low - Medium	
Set out clear vision, objectives and strategy for flood protection as part of the LDF Core Strategy.	October 2009	Stockton Borough Council			Legal challenges to policy. Government policies and drivers.	4 – 10 Low - Medium	
Develop and adopt appropriate planning polices within the environment policy element of the LDF process.	August 2010	Stockton Borough Council			Legal challenges to policy. Government policies and drivers.	4 – 10 Low - Medium	

Objective: Develop mechanisms to adapt to extremes in weather conditions.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Produce revised Parks, Open Spaces and Countryside Strategy (2007-12) promoting the moderating influence of trees and other green space to reduce climate change impacts on people and buildings.	March 2008	Stockton Borough Council	Environment Agency, Natural England, North East Community Forests, Tees Valley Wildlife Trust, Forestry Commission	<ul style="list-style-type: none"> Buildings achieving sustainability building design code level above minimum standards. The impacts of climate change are included within the delivery of the biodiversity action plan. Agreed approach to green infrastructure planning within the Borough. 	Availability of resources.	4 – 10 Low - Medium	
Encourage sustainable building design to maximise natural ventilation and utilise passive solar systems and thermal mass to reduce internal temperatures.	LDF core strategy October 2009 Environment DPD August 2010	Stockton Borough Council	CABE		Apathy from developers, changing priorities, perceived cost implications.	4 – 10 Low - Medium	
Work with Tees Valley Wildlife Trust to promote 'Gardening for Wildlife' to reduce the loss of biodiversity.	Ongoing from 2007	Stockton Borough Council	Tees Valley Wildlife Trust		Popularity of low maintenance gardening.	3 – 6 Low	
Produce new and revised management plans for urban parks, country parks and other green space take account of the need to adapt to climate change (e.g. to conserve biodiversity).	Ongoing from 2007	Stockton Borough Council	Natural England, Tees Valley Wildlife Trust, Environment Agency, The Tees Forest		Availability of resources.	4 – 10 Low - Medium	

Note:
LDF = Local Development Framework, a collection of documents that set out the councils policies on economic, social and environmental aims for the future.
CABE = Commission for Architecture and Built Environment, the government adviser on architecture, urban design and public space.

Stockton Council Actions:

Objective: Improve the energy efficiency of council buildings by 10% by 2012.							
Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Use the energy efficiency labelling software to produce energy efficiency rating reports for all public buildings and distribute the reports to each building.	December 2007	Stockton Borough Council		<ul style="list-style-type: none"> • Achieve 2% energy efficiency saving by 2008 • 5% by 2010 	Software availability and approval.	4 – 10 Low - Medium	
Establish and implement schedule of Energy Investment measures for main council buildings.	Establish schedule by March 2008	Stockton Borough Council	Carbon trust		Resources available.	8 – 12 Medium	
Develop strategy with IT to optimise energy consumption of IT equipment.	October 2007	Stockton Borough Council			Availability and cost of technology to implement changes.	4 – 10 Low - Medium	
Produce annual energy report, reporting progress in achieving council's 10% energy reduction target.	Annually from April 2008	Stockton Borough Council			Resources available.	3 – 6 Low	

Objective: Install renewable energy technologies in Stockton Council properties where feasible and appropriate.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Undertake a feasibility study to utilise renewable energy sources in relevant council and school buildings and identify appropriate funding to finance implementation.	March 2008	Stockton Borough Council	Carbon trust	<ul style="list-style-type: none"> Feasibility study complete. Asset management programme includes renewable energy options identified. 	Available resources. Changing priorities.	3 – 6 Low	
Incorporate the findings of the feasibility studies and review within the asset management programme	April 2008	Stockton Borough Council			Availability and cost of appropriate technologies. Grant funding eligibility.	4 – 10 Low - Medium	
Investigate the potential benefits for using on-site renewable technology for street lighting, traffic lights and bus stops.	April 2008	Stockton Borough Council			Availability and cost of appropriate technologies. Grant funding eligibility.	4 – 10 Low - Medium	

Objective: Implement Stockton Council Workplace Travel Plan.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Provide appropriate cycle storage facilities to all key Council buildings	March 2009	Stockton Borough Council		<ul style="list-style-type: none"> Increase the number of staff cycling to work at least one day per week to 4% by 2011 from 2% baseline (2006). Increase the number of staff car sharing to work at least one day per week to 10% by 2011 from a baseline of 7% (2006). 	Availability of suitable sites.	3 – 6 Low	
Conduct a comprehensive review of current Council policies in respect of travel, parking and other issue that influence travel.	September 2007	Stockton Borough Council			Staff responses and perceptions.	4 – 10 Low - Medium	

Objective: Reduce Carbon Dioxide emissions from the fleet by 8.75% against the 2000 baseline.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Establish agreement with adjacent business for the supply of bio-diesel to the council fleet.	April 2007	Stockton Borough Council	PD Logistics	<ul style="list-style-type: none"> 70% of fleet fuel consumption bio-diesel by March 2009. 	Availability and cost of fuel.	3 – 6 Low	
Implement driver-training programme.	Ongoing from 2007	Stockton Borough Council			Drivers achieving required standards.	4 – 6 low	

Objective: Reduce the authority's contribution to greenhouse gas emissions through sustainable procurement.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Develop and implement an Environmental Purchasing Policy.	March 2008	Stockton Borough Council		<ul style="list-style-type: none"> 80% of paper used by the Council to be from sustainable sources or recycled. 90% use of non-primary aggregates in highway resurfacing schemes by 2010/11. 	European and government legal restrictions.	4 – 6 low	
Adopt a timber policy and buying standards.	March 2008	Stockton Borough Council			Availability of timber from accredited sources.	4 – 10 Low - Medium	
Encourage Council suppliers to adopt environment policy.	June 2007	Stockton Borough Council			European and government legal restrictions.	4 – 6 low	

Objective: Recognise the adaptation needs and minimise the impacts of climate change on council services.

Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Identify climate risks to local authority services through a scoping review and highlight potential impacts.	January 2008	Stockton Borough Council	EST	<ul style="list-style-type: none"> 2008/09 Service plans include climate change adaptation measures. 	Available resources	4 – 6 low	
Identify and prioritise climate impacts requiring adaptation responses.	March 2008	Stockton Borough Council	EST		Quality of data on which to base predictions.	4 – 10 Low - Medium	

Note:
EST = Energy Saving Trust, an organisation funded by the government and private sector to achieve sustainable use of energy and cut carbon dioxide emissions.

Awareness & Communication:

Objective: Raise awareness within the community of how they can reduce their impacts on climate change.							
Key actions	Deadline	Responsible for delivery	Partners	Success Criteria/Milestones	Risks	Risk Rating	Progress to date
Develop a school's awareness programme	February 2008	Stockton Borough Council	TVCCP	<ul style="list-style-type: none"> 30 schools to actively participate in Eco-schools programme by 2010. Baseline of awareness established by September 2007. 	Commitment and resources available from all partners.	4 – 10 Low - Medium	
Develop a short film on climate change with the youth assembly.	December 2007	Stockton Borough Council	Youth Assembly environment group		Resources available and support form young people.	4 – 10 Low - Medium	
Raise public awareness and promote community engagement on climate change issues through the work of the urban and countryside rangers.	Ongoing from 2007	Stockton Borough Council			Community understanding of the issue.	4 – 6 low	
Work with Carbon Neutral Newcastle to organise 'Climate Dome' exhibition in Stockton Borough	October 2007	Stockton Borough Council	Carbon Neutral Newcastle		Continued grant funding.	4 – 6 low	

Note:
TVCCP = Tees Valley Climate Change Partnership, comprises the five Tees Valley local authorities, the Environment Agency and Renew Tees Valley, tasked with developing and implementing a Tees Valley Climate Change Strategy.

9.0 Implementation and monitoring

The action plan aims to reduce emissions by 8.75% by 2012 and prepare the Borough for the impacts of climate change. The plan will therefore provides actions that will be delivered over the next 5 years. It will be subject to annual review, where new data will enable trends to be further analysed and actions updated as required.

Monitoring the success of the action plan will be against achievements in reducing emissions as well as the successful implementation of individual actions and the impact that they have made where that is possible to measure.

Progress on the action plan will be reported to the environment partnership, corporate management team, cabinet and Tees Valley Climate Change Partnership (TVCCP). Reports will also be published on the Council web site.

TVCCP will publish an annual progress reports for the whole Tees Valley in March each year starting in 2008.

10.0 Glossary

Adaptation – A concept that refers to decisions to modify natural or human systems in response to actual or expected global warming that cannot be avoided by emissions reductions

Carbon dioxide (CO₂) – A naturally occurring gas: also a by-product of burning fossil fuels and biomass as well as land-use changes and other industrial processes. It is the principal human derived greenhouse gas that affects that earth's temperature.

Carbon dioxide equivalent (CO₂e) – A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

Carbon Trust – A government funded independent company, helps business and the public sector cut carbon emissions, and supports the development of low carbon technologies.

Combined Heat and Power (CHP) – a fuel-efficient energy technology that, unlike conventional forms of power generation, puts to use the by-product heat that is normally wasted to the environment.

DTI – The Depart of Trade and Industry is the government department responsible for trade and industrial matters.

EMS - A management approach which enables an organization to identify, monitor and control its environmental aspects. An EMS is part of the overall management system that includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy.

Energy Saving Trust – A non-profit organisation, funded by the government and private sector, which provides expert and impartial advice and information to encourage the more efficient use of energy in homes and vehicles across UK.

Greenhouse gases (GHGs) – Gases in the earth's atmosphere that absorb infrared radiation. These gases occur through both natural and human-influenced processes. Other primary human-produced GHGs include carbon dioxide, nitrous oxide, methane, ozone, and chlorofluorocarbons.

Kyoto Protocol – The protocol drafted during the Berlin mandate process that, on entry into force, would require countries listed in its Annex B (developed nations_ to meet differentiated reduction targets for their emissions of a basket of GHGs relative to 1990 levels by 2008-12. It was adopted by all parties to the Climate Convention in Kyoto in December 1997.

Local Development Framework – A new system of local development planning which will include several Development Plan Documents (DPDs) and a number of Supplementary Planning Documents (SPDs).

Mitigation - Actions which are adopted to reduce the effects of human activities on the global climate.

Sustainable urban drainage (SUD) - Techniques for dealing with problems of flooding and surface water quality using the best practicable environmental solution.

UK Climate Impact Programme (UKCIP) – UKCIP is funded by the Department for Environment, Food & Rural Affairs (Defra) and based at the University of Oxford. It

provides scenarios that show how our climate might change and co-ordinates research on dealing with our future climate.

11.0 Appendices

Appendix 1: Tees Valley Climate Change Charter



Working in partnership with:



The Tees Valley Climate Change Partnership coordinate the Charter.

For more information call the Tees Valley Climate Change Office on: 01642 373044



2012 Tees Valley



Riverside Darlington

Saving energy within your business will not only protect your reputation and help combat climate change.

For more information call The Carbon Trust on: 0800 085 3102



Cycling in Riverside Stockton-on-Tees



People looking at a display board

Find out more about saving energy, money and the environment in your home.

Call The Energy Saving Trust on: 0800 213 013



Castle of Walls, Middlesbrough

Tees Valley Climate Change Charter

..... supports the Tees Valley Climate Change Charter that is spearheaded by the Tees Valley Climate Change Partnership.

We acknowledge that:

- > The balance of scientific evidence demands effective steps are taken now to avert damaging changes to the Earth's climate caused by increased levels of greenhouse gases and more specifically, carbon dioxide (the main greenhouse gas) in the atmosphere.
- > Climate change will profoundly influence the environmental, social and economic conditions in the Tees Valley throughout the 21st Century.
- > We have a responsibility to lessen the destructive effects of climate change, in the interests of our own organisation and the sub-region.
- > Action needs to take place at all levels - global, international, European, national, regional and local.

We commit ourselves to:

- > The vision and milestones for tackling climate change in the Tees Valley.
- > Helping the Tees Valley to achieve a minimum annual 1.25% reduction of carbon dioxide emissions below 2000 levels until 2012 and any future reduction targets that are set by the Tees Valley Climate Change Partnership.
- > Publicly declare our commitment to achieve a significant reduction of greenhouse gas emissions from our operations, especially energy sourcing and use, travel and transport, waste production and disposal and the purchasing of goods and services.

We agree to take on the climate change challenge by:

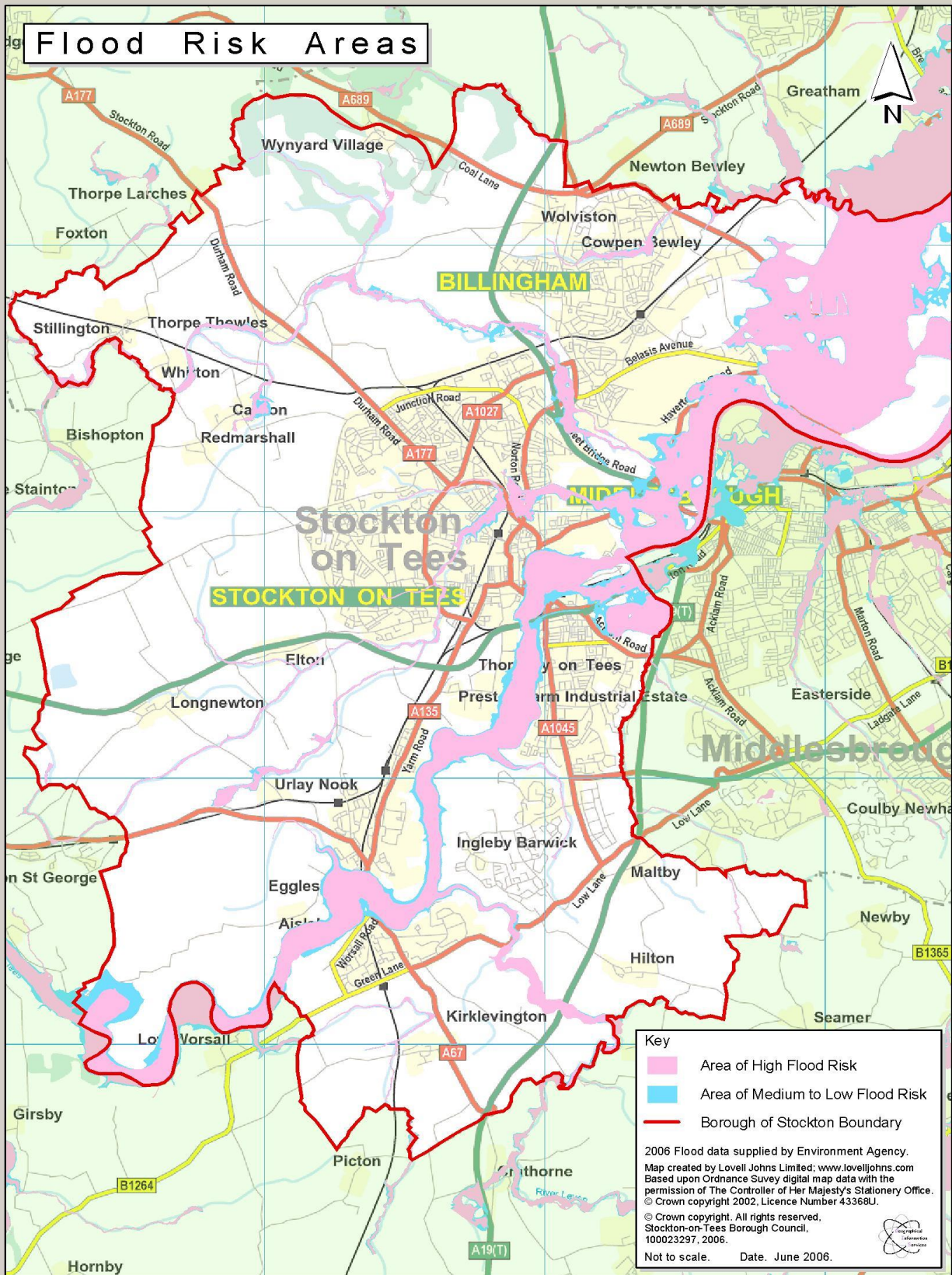
- > Putting climate change at the heart of our internal decision-making process.
- > Liaising with the Carbon Trust, Energy Saving Trust and Tees Valley Climate Change Partnership to seek all practical steps to limit carbon dioxide emissions from our organisation.
- > Responding to the challenges posed by the impacts of climate change.
- > Cooperating with the Tees Valley Climate Change Partnership to monitor our organisation's carbon dioxide emissions.
- > Encouraging others to take action to ensure that Tees Valley becomes a leader for climate change activity and a low carbon economy.
- > Monitoring the progress of our commitment against the actions needed.

As signatories to the Charter we commit to at least two of the following actions:

- | | |
|--|--|
| <input type="checkbox"/> Switch our electricity supply to a green tariff. | <input type="checkbox"/> Purchase recycled paper and recycle office paper, glass, metal and plastic where possible. |
| <input type="checkbox"/> Ensure electrical appliances are switched off standby. | <input type="checkbox"/> Install energy efficient light bulbs where possible. |
| <input type="checkbox"/> Increase participation in car-sharing, public transport use, walking and cycling to work or meetings. | <input type="checkbox"/> Encourage at least one other business to sign up to the Tees Valley Climate Change Charter. |
| <input type="checkbox"/> Conserve energy by reducing the office temperature by 1°C (reduce energy used for heating). | <input type="checkbox"/> Sign up to a new action each year. |
| <input type="checkbox"/> Install renewable energy measures where possible. | |

Signed Date

Appendix 2: Stockton Flood Plan 2006



12.0 Partners in this Action Plan

