

DRAFT

# TEES VALLEY CLIMATE CHANGE STRATEGY

## EXECUTIVE SUMMARY



# Introduction

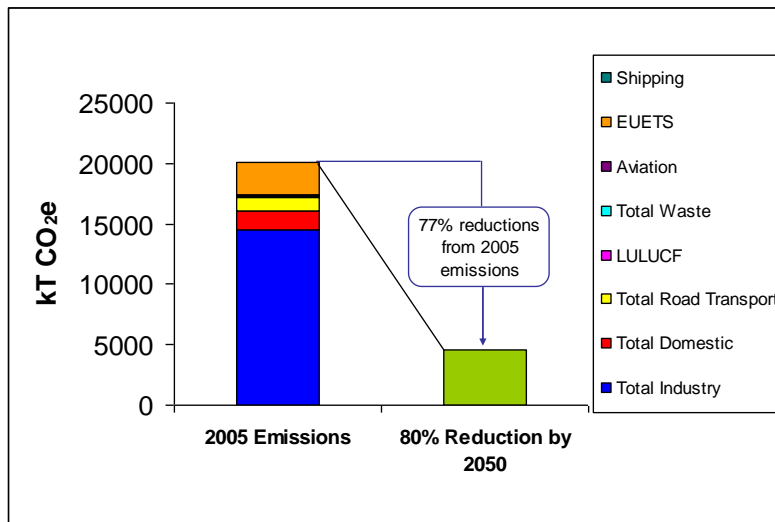
In 2006 the Stern Review concluded that preventing dangerous climate change requires that annual emissions be reduced to more than 80% below current levels, and that the costs of reducing emissions now far outweigh the costs of dealing with climate change in the future. The UK Government recently enacted legislation that commits us to legally binding carbon reduction targets of 80% by 2050. Working towards the UK Carbon Budget and the Committee on Climate Change recommendations for a 2005 baseline implies a 21% reduction in carbon emissions by 2020 and a 77% reduction by 2050.

Climate Change will affect everyone in the Tees Valley and we need to take action to reduce our emissions (mitigation) and to adapt our lifestyles and properties now (adaptation).

Therefore it is proposed that the Tees Valley Climate Change Strategy adopt a target of 21% CO<sub>2</sub> emissions reduction against the baseline year 2005 by 2020.

Since 2008, National Performance indicators have governed Local Strategic Partnership action on climate change. The 2005 Tees Valley Inventory baseline is based on the per capita CO<sub>2</sub> emissions data collected by DEFRA for National Indicator 186, and waste data from all of the Tees Valley Local Authorities. The 2005 baseline is 7435 kT CO<sub>2</sub>e, and despite the fact that this excludes emissions regulated by the European Union Emissions Trading Scheme (EU ETS), the vast majority of emissions are from industrial and commercial premises. We have chosen to use sector targets for emissions reductions in the Tees Valley - rather than an overall reduction target - in order to clearly demonstrate where we are making progress on tackling climate change. This is because the closure of industrial plants results in huge emissions savings, but these apparent reductions can disguise trends in domestic or transport emissions.

The graph shows the entire emissions from the Tees Valley in 2005, and the potential emissions reductions needed by 2020 and 2050.



Because the Tees Valley includes the largest integrated heavy industrial complex in the UK, an indicator has been developed for the Tees Valley Multi Area Agreement to measure the carbon intensity of production for the industrial emissions regulated by the EU ETS.

The economic downturn has created significant risks and challenges to businesses and the

public sector. Companies are rationalising their operations and widespread restructuring is occurring throughout all sectors. Climate change impacts and longer term rising energy prices increase the vulnerability of many organisations, unless a proactive response ensures that risks are minimised and opportunities are exploited to the full.

The Tees Valley Climate Change Partnership was formally established in 2005 and includes the five Tees Valley local authorities, the Environment Agency, RENEW, Tees and Durham Energy Advice Centre (TADEA), and the Energy Savings Trust. The partnership is expanding, and the Clean Environment Management Centre of the University of Teesside (CLEMANCE) joined in 2009.

The vision of the Tees Valley Climate Change Partnership is “*creating prosperous and resilient communities in a low carbon economy.*”

The Tees Valley Climate Change Strategy prioritises actions where immediate, substantial and measurable emissions reductions can be achieved. It details the key vulnerabilities, opportunities, mitigation and adaptation options in the following areas:

- Business support
- Housing market
- Connectivity
- Creating quality of place
- Communication and awareness raising which is vital to achieving substantial emissions reductions and adapting lifestyles and property.

The actions contained in the Tees Valley Climate Change Strategy are based on the existing action plans of the Local Authorities, and actions that are needed at sub-regional level based on the recommendations of the Committee on Climate Change and the Tees Valley Business Case for Development. The strategy harmonises existing best practise across the sub-region.

The strategy also contains actions needed to mitigate ‘hidden’ emissions associated with the consumption of goods and services (extraction, manufacture, fabrication, transport and disposal). Data taken from the Resources and Energy Analysis Programme developed by the Stockholm Environment Institute has been used to illustrate the magnitude of these ‘hidden’ emissions. Emissions associated with waste management are included in the Tees Valley Inventory Baseline.



## **Business support**

### **Background**

The chemicals and process industries are critical to the Tees Valley economy. The existing industrial and knowledge base in Tees Valley is well placed to support the development of sustainable energy and low carbon petrochemicals industries to provide low carbon electricity and heat.

### **Vulnerabilities**

Most heavy industry in the Tees Valley is subject to increasing costs associated with regulating green house gas emissions such as the EU ETS. Many businesses have difficulty in identifying vulnerabilities to climate change, which may include adapting to climate change and reducing their emissions.

### **Mitigation**

The development of a carbon capture and storage demonstration project in the Tees Valley will dramatically reduce our emissions and support investment from energy / carbon intensive industries. A significant proportion of emissions reductions from energy use in non-residential buildings and industry can be achieved through zero cost or cost saving energy efficiency improvements. Emissions associated with information communication technology (ICT) can be reduced through technology improvements and behaviour – such as turning off equipment when it is not in use.

### **Opportunities**

There are huge low-carbon commercial opportunities in the sub-region, for example the resource management companies such as Graphite Resources and PYReco who will be based at the South Tees Eco-Park, Sembcorp, North East Biofuels, and the SITA Energy from Waste Plant.

The low carbon economy will provide many opportunities for the creation of jobs, for example, the installation and maintenance of renewable energy technologies, improving the energy efficiency of buildings, and managing the business risks of climate change

## Building Resilience

Adaptation to climate change requires that businesses and the public sector:

- Recognise and act on opportunities and threats from an early stage
- Identify appropriate, proportionate responses
- Modify systems, structures, skill sets, and financing to support and embed change into company routine.

The industry located around the River Tees estuary is vulnerable to the condition of flood defences, so we must ensure they are able to withstand the increased pressures caused by climate change.



## Housing Market

### Background

Over 30 % of homes in the Northern regions fail the decent homes standard, with 16% failing on thermal comfort<sup>1</sup>. The North East Home Insulation Partnership profiled insulation potential throughout the sub-region, and estimated that homes in the Tees Valley have approximately 91,000 unfilled cavities and 145,000 lofts that have inadequate levels of loft insulation<sup>2</sup>.

### Vulnerabilities

It is important to ensure that future rising costs of energy do not result in vulnerable households being unable to sufficiently heat their homes. Despite vital and ongoing investment in tackling fuel poverty by improving the energy efficiency of homes, increasing energy use from household appliances may cancel out these emissions reductions.

Much of the Tees Valley housing stock may be adversely affected by climate change, including more extreme weather events and rising sea levels causing flooding for example. This is likely to increase damage to building fabric and structure, and transport networks; and increase the frequency of flooding.

### Mitigation

If all possible thermal efficiency measures were installed in every eligible home in the Tees Valley, this could save between 300-500 kT CO<sub>2</sub>e a year. However, engaging with communities in relation to energy consumption is essential to ensure that investing in energy efficient homes results in real emissions savings.

### Opportunities

Reducing emissions from housing is strongly linked with measures to reduce fuel poverty. Financial support is available for householders through a wide range of schemes. Developing the skills and entrepreneurship base in sustainable construction methods now will provide additional training and employment opportunities.

## Building Resilience

---

<sup>1</sup> <http://www.communities.gov.uk/documents/housing/xls/summarystats2006.xls>

<sup>2</sup> 2007 Sub regional housing strategy

A significant proportion of homes in the Tees Valley need to be retrofitted to improve their thermal efficiency, and some will need to be retrofitted to provide resilience to flooding, such as raised electrics. New developments are no longer able to automatically connect surface water drainage to the sewerage systems, so Sustainable Urban Drainage Systems (SUDS) will become an increasingly important feature of the Tees Valley environment.



## Connectivity

### Background

Tees Valley consists of 5 towns with no single dominant centre of commercial activity, so despite the fact that car ownership levels in Tees Valley are well below the national average, private vehicle use accounted for over 60% of transport emissions in 2005.

### Vulnerabilities

In the Tees Valley, there are significant pockets of deprivation, including several communities geographically isolated from towns and services where a significant proportion of households do not have access to a car. Public transport access to services is a vital component in improving the social inclusion of individuals and for maintaining the vitality and vibrancy of low-income neighbourhoods. Obesity and corresponding health problems are a growing concern nationally. The National Institute of Clinical Excellence developed evidence based recommendations on increasing physical activity in order to reduce the health impacts of a sedentary lifestyle.

### Mitigation

Emissions from cars can be reduced by technology and behaviour. There are significant opportunities to reduce emissions from transport, including; workplace travel plans, car sharing, telephone meetings, school travel plans, personalised travel planning, public transport information and marketing, travel awareness campaigns and car clubs, as well as by using sustainable biofuels, and public or zero carbon forms of transport. A shift from HGV to rail travel for the transportation of freight also has the potential to save further CO<sub>2</sub> per kilometre travelled.

### Opportunities

North East Biofuels intend to source their stock increasingly from local growers after a rapeseed crusher is built. Improvements in logistics across organisations in order to minimise the emissions (and cost) associated with increased use of the port and airport can reduce emissions. New job opportunities will be associated with adapting the transport networks to respond to climate change, for example weather strategy posts and drainage engineers as well as travel planning and fleet management.

### Building Resilience

Clear health benefits are associated with a shift away from private car use – in terms of physical fitness, and air pollution. There are also clear benefits in developing public transport schemes to reduce spatial inequalities in access to services and employment. It is important to ensure that the transport infrastructure in the Tees Valley is able to cope with a changing climate.

## Quality of Place

### Background

The Tees Valley is an area of contrasting landscapes where affluence co-exists with pockets of deprivation. Housing estates in need of regeneration, the industrial skyline and areas of vacant and derelict brownfield land sit alongside a national park, heritage coastland and mainly arable



farmland. The Green Infrastructure strategy has a key role in improving access to the countryside through a network of greenways, cycle paths and bridleways. It is crucial to maintain open space to minimise flood risk and climate change impacts on biodiversity.

## **Vulnerabilities**

The Tees Valley has one of the highest food carbon footprints of any area in the UK, indicating that a relatively high proportion of processed food is consumed. This increases the carbon footprint and significantly contributes to poor health in the Tees Valley.

## **Mitigation**

Improving local recreation and tourism opportunities and increasing the number of people who choose local holidays can reduce transport emissions as well as support the local economy. Best practice in agricultural land management can substantially reduce emissions of nitrous oxide associated with fertiliser applications. Relatively small changes in lifestyles – not quality of life - could have a large impact on the carbon footprint of an average resident.

## **Opportunities**

Increasing the number of people served by the public transport network and cycle routes will not only reduce inequalities, and increase access to services and employment, but can also provide lower cost regional tourism opportunities. There are wider benefits if local tourism is strengthened, for example, activity based tourism has strong links to the healthy living agenda and in reducing obesity in children.

## **Building Resilience**

The implementation of the Tees Valley Green Infrastructure Strategy will increase resilience to the direct impacts of climate change. It would be prudent to undertake vulnerability and adaptation planning at the sub-regional level in order to allow local authorities to take transboundary issues into account when developing local adaptation plans, for example potential flood risk, critical infrastructure and service disruption.

# **Communication and Awareness Raising**

## **Background**

A wide range of technical solutions may be applied to help reduce our carbon emissions, but changes in lifestyle and daily behaviour are also essential for achieving the vision of creating prosperous and resilient communities in a low-carbon economy. The actions we need to take to tackle climate change will improve our quality of life as well as our local environment

## **Vulnerabilities**

The Ipsos MORI 2007 UK survey “Turning Point or Tipping Point” showed that despite a high level of **knowledge** about the concept of climate change, many people are struggling to accept the fact that there is global scientific and political consensus on the causes of climate change, and most people are **not taking action** to reduce their personal carbon emissions.

## **Mitigation**

It is important to remember that most of our personal carbon emissions are a ‘hidden’ consequence of modern day living regarding the quality and quantity of consumption. It is important to show people how they can make a real difference.

## **Opportunities**

Residents of the Tees Valley have, on average, slightly smaller carbon footprints compared to other parts of the country, so there is a clear opportunity to work with communities to develop locally appropriate and healthy ways to reduce this further. It is equally important to work with communities to develop appropriate and effective means of adapting to climate change.

## **Building Resilience**

Engaging and empowering communities is an important step in tackling climate change, and vital to successful adaptation. People will increasingly be exposed to rising energy bills and insurance premiums in the future, so there is a strong case to communicate the actions that can be taken now to minimise current and future risks. It is also important for householders to be able to assess the range of risks to their properties to enable them to make informed choices relating to decisions to purchase and locate in particular areas.