

S O R C E T H I N G K

impact
challenges
issues
recommendations

13 - Meeting the Climate Change Challenge

September 08



YORKSHIRE
AND
HUMBER
ASSEMBLY

The Regional Strategic Partnership

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Foreword

Tackling the whole range of climate change issues and opportunities in relation to economic growth and other development is a massive challenge for our region.

This review, the thirteenth of its kind carried out by the Assembly, has examined a range of initiatives already underway and outlines the challenges we still face. The review has come at a poignant time - one year on from the floods which affected our region so significantly, and at the same time as Sir Michael Pitt published his recommendations to Government on flooding. Interestingly, the Pitt Review mirrors many of our own findings.

What is clear is that while there is a high degree of praise for Yorkshire Forward's Sustainable Development Team, and the projects that they have developed and funded to reduce greenhouse gas emissions in the region, still more needs to be done.

The review has developed ten recommendations for how Yorkshire Forward's activities on climate change can be improved, along with identifying a number of key messages for both the Government and the Regional Climate Change Partnership. The partnership encouragingly, has already indicated a willingness to report back on how they might resolve some of the issues highlighted in the re-development of 'Your Climate', the region's Climate Change Action Plan. Clearly, Yorkshire Forward's commitment to a Lower Carbon Economy policy is a positive step in tackling the vital issue of climate change, and I firmly believe the review has shown some key lessons for how we can tackle the issue together.

Finally, I would like to thank my Assembly Scrutiny Board colleagues, the Yorkshire Forward panel and staff, and the range of regional partners and organisations who have contributed their views and comments to the review.



Paul Jagger

*Deputy Chair of Yorkshire and Humber Assembly
Chair, Scrutiny Board*

The Assembly's Scrutiny Role

The Assembly has a statutory responsibility to scrutinise how Yorkshire Forward spends its money. Each year we undertake detailed scrutiny reviews on a specific part of the Regional Economic Strategy (RES). The purpose of these reviews is to ensure that Yorkshire Forward is accountable to the region, and that it is achieving the best possible results for the region's economy.

We have completed twelve other scrutiny reviews to date. Since July 2006, the scrutiny reviews have been undertaken by our standing Scrutiny Board. The Scrutiny Board consists of up to eight Assembly members, who are nominated by the Assembly at the Annual General Meetings. The members include the standing Chair of the Scrutiny Board, core Scrutiny Board members, a nominated representative of the Sustainable Development Board, and up to two co-opted members who can provide previous scrutiny experience or knowledge of the scrutiny topic. The core Scrutiny Board members agree to undertake a minimum of two scrutiny reviews, whilst the Sustainable Development Board representative, and co-opted Scrutiny Board members, are appointed for each individual scrutiny review. The Scrutiny Board is also able to enlist the support of specialist advisors for each review if and when required, to provide the Scrutiny Board with technical expertise.

We have used a number of methods to obtain the views and comments of partners, business representatives, the voluntary and community sector and residents across Yorkshire and Humber, on the subject of climate change. These methods have included a Public Discussion with Yorkshire Forward, a series of consultative interviews with partners and businesses, written requests for questions and comments, and a two-week consultation on the review's early findings. We also held a focus group meeting, and met with the Yorkshire and the Humber Tenants and Residents Federation.

If you would like to know more about any aspect of the process used, or would like to see the information and data gathered during this review, further detail can be found in the 'Scrutiny' section of our website, www.yhassembly.gov.uk.

The Assembly's Scrutiny Board

Paul Jagger MBE - Deputy Chair of Yorkshire and Humber Assembly & Chair of the Scrutiny Board

Paul is the Deputy Chair of the Yorkshire and Humber Assembly, and Chair of the South Yorkshire Learning and Skills Council. He was the Regional Secretary for the TUC Yorkshire and the Humber, until November 2005. Paul is Pro Chancellor and Chair of Council at Bradford University, and a representative on the Sheffield Local Strategic Partnership. Paul is the Chair of the Yorkshire and Humber Assembly Scrutiny Board.

Cllr Carl Lis - Craven District Council

Carl has been one of two councillors representing the Ingleton and Clapham ward for 19 years. Carl was Chair of the Yorkshire Dales National Park Authority and the English National Park Authorities Association until Summer 2008. He worked for 40 years in the quarrying industry before retiring in 2005. Carl chairs a number of local community bodies, and has served as a Governor of Ingleton Primary School for 12 years. Carl is a core member of the Scrutiny Board.

Michael Oughtred - Yorkshire and Humber Chambers of Commerce

Michael is currently the president of the Yorkshire and Humber Chambers of Commerce, and a past president of the Hull and Humber Chamber. He is Vice Chairman and Corporate Development Director of William Jackson and Son Ltd, a fifth generation family food business in Hull, and is Non Executive Chairman of Oughtred and Harrison limited. Michael is also Chair of the Hull Truck Theatre Company. Michael is a core member of the Scrutiny Board.

Cllr John Harris - Richmondshire District Council

John is a Liberal Democrat elected member for Richmond Town, and a former Chair of one of the Council's two scrutiny committees. He is a Board Member of the Richmond Swale Valley Community Initiative (RSVCI), which is a local economic partnership. As an appointed General Commissioner, John is a member of an arbitration panel relating to Income Tax. John is a co-opted member of the Scrutiny Board for this review.

Cllr Shelagh Marshall - North Yorkshire County Council

Shelagh is County Councillor for Mid-Craven. She is vice chair of the Yorkshire and Humber Rural Affairs Forum, a member of the Regional Health Executive Forum, and a member of the Age Concern National Council Rural Sub-group. Shelagh is Chair of the County Council's Care and Independence Overview and Scrutiny Committee and Chair of Future Years, the Regional Forum on Ageing. Shelagh is a co-opted member of the Scrutiny Board for this review.

Phil Webber - Kirklees Metropolitan Council

Phil is the Head of the Environment Unit at Kirklees Council. The Environment Unit co-ordinates and manages £6 million worth of projects and programmes across the borough, including renewable energy, wildlife protection, off-road greenways, school grounds and community allotments. Phil is responsible for co-ordinating cross-service work under the Council Improvement Plan and the Strategic Partnership's Local Area Agreement. Phil is the Sustainable Development Board's nominated representative on the Scrutiny Board for this review.

Phil Younge and Gail Hammond - Environment Agency

Phil and Gail have lead roles on climate change at the Environment Agency, and were appointed as Specialist Advisors to the Scrutiny Board to provide their technical expertise and guidance on this scrutiny review.

Background on Climate Change

The Earth's Atmosphere

As the Earth's surface is heated naturally by the sun's rays, the temperature increases and the Earth releases its own energy in the form of infrared rays. Some of the infrared heat produced is absorbed by gases in the Earth's atmosphere. Approximately 99% of the Earth's atmosphere consists of nitrogen and oxygen (around 78% and 21% respectively), both of which are essential for supporting life on Earth. The remaining 1% of the Earth's atmosphere consists of trace gases which regulate the Earth's climate by forming a layer which prevents much of the heat from escaping. These trace gases are carbon dioxide, methane, nitrous oxide, water vapour, ozone and halocarbons, and are more commonly referred to as greenhouse gases, as they trap heat in the same way that a greenhouse does. As a result of the greenhouse gases in the atmosphere, the Earth's average surface temperature is about 15 degrees Celsius, whereas without the gases, the average surface temperature would be around minus 18 degrees Celsius.

What is Climate Change?

The word 'climate' refers to the typical or average weather conditions of a particular region, such as temperature, wind and rainfall. The world's climate has always fluctuated naturally, through occurrences like volcanic eruptions or changes in the amount of energy derived from the sun. However, the term 'climate change' was created to explain the significant or highly unusual changes to the climate, based on recorded data of average weather conditions for the last 100 years. For example, considerable variations in average rainfall for a region at a set time of year, or widely differing average wind speed.

When assessing climate change, scientific and meteorological experts review recorded data on weather conditions such as rainfall, temperature, humidity, sunshine, wind speed, fog and frost. The experts consider the significant changes to the climate, and the extent to which these changes have occurred naturally or as a direct result of human behaviour, such as the use of fossil fuel. There is now broad agreement that the significant changes in the world's climate have not just been caused by natural occurrences. The extreme weather patterns seen in the recent past, and those weather patterns which are expected to occur over the next 100 years are believed to be a direct consequence of human activities.

What is the Link Between the Greenhouse Effect and Climate Change?

Any increase in the volume of greenhouse gases in the Earth's atmosphere increases the ability of the atmosphere to trap heat. The more heat trapped, the higher the surface temperature of the Earth becomes. The Earth's climate and weather patterns also begin to change unnaturally.

How is Human Behaviour Affecting the Climate?

Although the amount of trace gases in the atmosphere is quite small, human behaviour is causing the release of extra greenhouse gases, particularly carbon dioxide and methane, which are contributing to the threat of climate change. The industrial revolution led to an increase in greenhouse gases, and the desire for more energy powered machinery, vehicles and household equipment has exacerbated the issue. Since the industrial revolution, the amount of carbon dioxide in the Earth's atmosphere has increased by 35%.

Scientists have been recording data on the world's climate for the last 100 years or so, but it wasn't until the mid 1980s that the general public was alerted to the damage that man-made Chlorofluorocarbons (CFC gases) in everyday household goods were causing to the Earth's ozone layer. It was from this point that countries across the world began to seriously look at action that needed to be taken to prevent further damage, and action to phase out the use of CFC gases in everyday items such as refrigerators and aerosols was taken.

Scientists believe that humans are producing too many greenhouse gases and the Earth is heating up too quickly. It is estimated that 40% of the greenhouse gas emissions in the UK are created by humans: domestic energy use from heating, lighting and powering appliances, using cars and other vehicles that are powered with fossil fuel, and overseas travel. Scientists have reported that the burning of fossil fuel (coal, oil and gas) for energy and power, emitted 27 billion tonnes of carbon dioxide in 2005. Humans have also been responsible for cutting down trees on a large scale, particularly in the world's rainforests. As trees and plant life can absorb a certain amount of carbon dioxide through photosynthesis, de-forestation has been

blamed for causing 18% of global carbon dioxide emissions as this could have been otherwise absorbed.

What Impact Has Climate Change Already Had?

The average temperature near the Earth's surface has risen by 0.74 degrees Celsius, during the last 300 years, 0.5 degrees Celsius of which occurred during the 1900s. Eleven out of the twelve hottest years ever recorded, occurred between 1995 and 2006. In Asia and Africa, the frequency and severity of droughts has also increased since the 1980s. Before the twentieth century the number of cold days in a year, with an average temperature of below 0 degrees Celsius, ranged between 15 and 20. More recently, the average number of cold days has reduced to 10 per annum.

Over the last 100 years, sea levels have risen across the world by between 10 and 20 centimetres. The sea level in the UK has risen by an average of 10 centimetres since 1900, and this has contributed to coastal erosion. Snow cover in the Northern Hemisphere has reduced by approximately 10% during the last 45 years, mountain glaciers in non-polar areas have retreated, and sea ice is receding, adversely affecting the wildlife populations.

Whilst we cannot reverse the damage, scientists have concluded that if the amount of fuel and energy that humans consume is reduced, and if de-forestation around the world is reduced, there will by default be a reduction in the amount of greenhouse gases in the atmosphere, and the impact of climate change will be more limited.



Executive Summary

This scrutiny review has considered how Yorkshire Forward is addressing the issue of climate change in the Yorkshire and Humber region. The Scrutiny Board chose to look at three areas of climate change: Climate Change Targets and Regional Performance; Balancing Climate Change Action and Economic Growth; and Adapting to Climate Change.

Climate Change Targets and Regional Performance

The Scrutiny Board looked at UK and European legislation, to identify how it had led to national statutory targets on climate change issues. The Scrutiny Board also considered Yorkshire Forward's responsibilities on climate change, how the national targets relate to the voluntary targets set by Yorkshire Forward, and how progress against the targets is measured, recorded and communicated.

Wide-ranging UK and European legislation on environmental issues provides the backdrop to European, national and regional policies on climate change, and the statutory and voluntary targets for the UK and the region. The first worldwide legally binding agreement to address greenhouse gas emissions was the Kyoto Protocol. The Protocol came into force in 2005, and it outlined targets for industrialized countries to reduce their emissions by an average of 5% between 2008 and 2012, from the level they were at in 1990. As an initial signatory to the Protocol, the UK is required to meet this target. In March 2007, the Council of the European Union requested all developed countries, including the UK, to commit to a reduction in emissions by 30% between 1990 and 2020, with a view to reducing emissions by 60% - 80% between 1990 and 2050. In the UK, Parliament has implemented legislation to address climate change issues, such as the promotion of renewable energy and annual reporting on greenhouse gas emissions reduction, through the Sustainable Energy Act of 2003, and the Climate Change and Sustainable Energy Act of 2006. At the time of writing this report, there are two Bills which are currently being progressed through Parliament: the Energy Bill which strengthens the obligations on renewable and affordable energy, and the Climate Change Bill, which sets ambitious targets for improving the UK's response to climate change. Under the Climate Change Bill, the proposed target is a carbon emissions reduction of between 26% and 32% between 1990 and 2020, and a 60% reduction by 2050. In addition to UK legislation, the Council of the European Union has outlined a large number of legislative Directives,

particularly on pollution, waste disposal and waste treatment. In terms of setting targets for Member States to achieve, the most relevant to this review is the Integrated Pollution Prevention and Control (IPCC) Directive of 1996, which set two targets: by 2020 a minimum of 10% of petrol and diesel in each Member State should come from biofuels, and 20% of energy consumption across the European Union should come from renewable energy. Due to the fact that the UK is lagging behind the rest of Europe on renewable energy, the UK is only required to meet a target of 15%.

There are a large number of organisations that have a key role in tackling climate change. Key national agencies include the Environment Agency and Natural England, Energy Savings Trust and Carbon Trust. Although the respondents to this review are clear that it is not just Yorkshire Forward's responsibility to tackle climate change, the Scrutiny Board has identified a high degree of confusion over which organisation is responsible for which aspect. Yorkshire Forward's role is principally economic development, although they also have a statutory responsibility for sustainable development, and can strongly influence the strategies and policies of Government, regional, sub-regional and local bodies. The respondents believe however, that Yorkshire Forward should put more equal emphasis on economic, social and environmental factors, as these are key contributors to sustainable economic development and 'well-being' in the region.

Yorkshire Forward's annual budget is just over £300 million. The Sustainable Development Team does not have a set budget allocation. Instead, sufficient funding is allocated to support qualitative project applications which meet both the Regional Economic Strategy (RES) and Corporate Plan objectives. The forecast spend for the Sustainable Development Team in the 2008/09 financial year is £27.7 million. The comments received during this review are complimentary about Yorkshire Forward's commitment to sustainable development. The activities and forward thinking of Yorkshire Forward's Sustainable Development Team has been particularly praised. The respondents have identified several positive examples where Yorkshire Forward has provided support to reduce carbon emissions. However, the respondents have criticised Yorkshire Forward for focusing their investment on fewer and bigger projects, and for a lack of a strategic approach on the types of projects that they will support. Yorkshire Forward believes that the new Lower Carbon Policy Product will resolve this, by providing a strategic



steer and a clearer indication of the types of activities that will be funded.

The Government's Sub-national Review of Economic Development and Regeneration (SNR) has identified a number of new responsibilities for the Regional Development Agencies (RDAs), namely planning, transport and housing. The Regional Development Agencies will be responsible for developing the Single Regional Strategy, which will bring the individual regional strategies for economic development, spatial planning, housing and transport together. The respondents to this review have commented that the Single Regional Strategy will help to join-up strategic approaches, and they recognise its potential to reconcile conflicting priorities on transport and the environment in the existing strategies. It is clear that the SNR will fundamentally change the role of Yorkshire Forward, and it has been suggested that Yorkshire Forward should provide more information on how they will use their new responsibilities to drive change. Whilst the Scrutiny Board accepts that it is difficult for Yorkshire Forward to provide this information at this time, they suggest that Yorkshire Forward communicates how they will deliver their new responsibilities as soon as the SNR process is concluded.

The Scrutiny Board has detected a degree of frustration with the Government's approach to climate change. The comments made by the respondents include the need for the Government to more effectively join-up national

economic and environmental policies, to send out a single and consistent message on climate change, and to provide increased national leadership on climate change. The vast array of organisations responsible for tackling climate change has prompted some to suggest that one regional organisation should assume the lead on climate change. Although the Scrutiny Board accepts that there is a leadership vacuum on climate change, they recognise that the fragmentation of responsibility by Government makes it difficult to identify a single regional lead. It has been suggested that Yorkshire Forward should take the lead, particularly in light of their future powers and responsibilities. However, Yorkshire Forward is cautious about assuming a regional lead role on climate change. As there has been little visible leadership from any of the organisations responsible for tackling climate change issues, the Scrutiny Board agrees with the majority of respondents that a stronger and more co-ordinated partnership approach would make a bigger difference to tackling climate change than a single regional lead.

In 2005, the region's Climate Change Action Plan, 'Your Climate', was published, which identifies a number of actions for named partners to deliver. The Regional Climate Change Partnership is responsible for implementing the plan, and monitoring its delivery. Yorkshire Forward regards the Climate Change Action Plan as a valuable document, and whilst the Scrutiny Board agrees that it is useful and informative, the respondents to this review have highlighted a lack of information on which

actions have been completed to date, and how they have reduced carbon emissions. Information on the progress made against the actions is collated by the Government Office for Yorkshire and the Humber, and annual progress reports are available on the website www.yourclimate.org. However, the Scrutiny Board recognises that the website is difficult to navigate. Yorkshire Forward has confirmed to the Scrutiny Board that they have made progress on all of the actions assigned to them, and the Scrutiny Board also understands that other members of the group have also made significant progress. The Scrutiny Board believes that there is a need for the Regional Climate Change Partnership to more clearly define and communicate the roles of each member on the group, and to promote more widely the achievements that have been made so far against the Action Plan, particularly to those organisations who are not members of the group. The Scrutiny Board therefore welcomes the proposed appointment of a full time resource to drive the implementation of the Action Plan and to facilitate collaborative working. The Scrutiny Board also welcomes the fact that the Action Plan is to be redeveloped and re-launched in Autumn 2008.

The comments that the respondents have provided through this review have confirmed a key finding in the 2007 report by Arup on regional strategies and climate change, that the regional strategies are not joined-up and are fragmented. To some extent, this should be resolved by the new Single Regional Strategy. Yorkshire Forward has confirmed to the Scrutiny Board that the Government will work with the RDAs and others to develop a single national core sustainability framework, with which to appraise the strategies. However, the Scrutiny Board recommends that Yorkshire Forward ensures that the Single Regional Strategy better aligns, and clearly embeds, climate change action and the development of a lower carbon economy as a crosscutting theme.

Yorkshire Forward was the first RDA to voluntarily develop a greenhouse gas emissions target, and this has been praised by the respondents. The majority of respondents have indicated that it is essential to ensure that regional strategies inform solutions to climate change issues, and that these ultimately allow greenhouse gas emissions in the region to be reduced. This has led to the suggestion that Yorkshire Forward should develop a communication tool to promote how they are addressing climate change. The Scrutiny Board agrees that a delivery plan on climate change could usefully outline the issues and actions emerging from the Regional Energy Strategy, Climate Change Action Plan and the Vision for Biomass report. The Scrutiny Board therefore recommends that Yorkshire Forward develops their own dedicated Climate

Change Delivery Plan to identify and communicate the climate change issues and actions that they will specifically deliver in the region, and how they will develop a lower carbon economy in Yorkshire and Humber.

There is significant confusion over the differing European, national and regional targets on climate change. The current RES target is to reduce consumption based emissions by 20% - 25% between 1990 and 2016. The Scrutiny Board has identified some confusion over which organisation 'owns' the RES target, with many mistakenly believing that it is owned by Yorkshire Forward. Yorkshire Forward also has an internal target for the amount of emissions that can be 'saved' from their funded projects. The Corporate Plan target is to reduce carbon dioxide equivalent emissions by 500,000 tonnes per year between April 2008 and March 2011. Whilst the Scrutiny Board commends Yorkshire Forward for developing an internal target, they are concerned by the confusion over how it is calculated. Yorkshire Forward has confirmed to the Scrutiny Board that the internal target of 500,000 tonnes was determined on the proportion of Yorkshire Forward's annual budget in relation to the annual value of the regional economy. There is a major concern that the current RES target will not be met unless current activity is increased. Although, the Scrutiny Board accepts that the target is ambitious and may be difficult to achieve, the Scrutiny Board agrees with the respondents that missing the targets is not an option.

Yorkshire Forward measures progress against the Corporate Plan target by predicting the impact that projects will have on reducing emissions. Yorkshire Forward has developed a Greenhouse Gas Forecasting and Inventory Tool, or calculator, to identify the carbon 'savings' made by a project, from incorporating sustainable development methods. Yorkshire Forward is confident that the tool can reliably estimate the tonnes of carbon emissions that will have been reduced. It is estimated that between April 2003 and March 2006, Yorkshire Forward achieved a 1.87 million tonnes reduction in carbon emissions. Yorkshire Forward has projected that carbon emissions in the region will reduce by 0.5 million tonnes per year between April 2006 and March 2010. If the projected estimated figures are reached, Yorkshire Forward will have reduced carbon emissions by an estimated 2.87 million tonnes by March 2008. The Scrutiny Board believes however, that there is a need for the region to co-ordinate the overall progress made against reducing consumption and production based emissions. The Scrutiny Board suggests that the annual Progress in the Region reports could include an expanded section on climate change to highlight whether the gap between the 1990 baseline emissions and the 2016

emissions target is closing or increasing. Those consulted through this review unanimously agree that remedial action by all partners on reducing carbon emissions must accelerate, to ensure that the region reaches the target set. The Scrutiny Board therefore recognises a need for strong measures to be identified and implemented with immediate effect, with clear indications of the effort that will be made by partners to reach the RES target in 2016.

Balancing Climate Change Action and Economic Growth

The Scrutiny Board looked at how Yorkshire Forward is discharging its responsibilities for furthering economic development and sustainable development, and considered the extent to which Yorkshire Forward's interventions can reduce carbon emissions, whilst businesses grow, and physical infrastructure expands.

Despite lobbying from Yorkshire Forward, the Government has changed the Public Service Agreement (PSA) targets and will now judge the performance of the RDAs solely on the value of Gross Value Added (GVA) in the regions. The Scrutiny Board has identified grave concerns about this decision, as the respondents believe that GVA is too narrowly defined, and reduces the significance of social and environmental improvement. Some respondents are also concerned that this could compel the RDAs to achieve growth at all costs. Yorkshire Forward has assured the Scrutiny Board they will continue to assess their performance against their core values. However, the Scrutiny Board recommends that Yorkshire Forward develops their own set of output targets for their funding, against which they will measure changes in GVA, the region's economic performance, social well-being and quality of life, environmental progress and protection, and carbon emissions reduction.

The Scrutiny Board has been alerted to several examples where regional and national policies on economic development conflict with those on sustainable development and the environment. The Northern Way Growth Strategy and City Region Development Plans have been highlighted as examples where a greater emphasis is placed on economic growth, with insufficient recognition of the impact of this growth on carbon emissions and the environment. Many respondents have also identified transport as a key area where approaches to economic development are in conflict with sustainable development strategies. The main example that has been quoted is the expansion of Robin Hood Airport, due to the impact on natural habitats and carbon emissions from increased air flight. Whilst aviation policy and planning is not within the influence of the region, and does not fall under their remit,

Yorkshire Forward has assured the Scrutiny Board they will undertake an environmental assessment of any funding requests related to the region's airports. It has been suggested that regional transport policy should be focused on developing less carbon intensive public transport and safe cycle routes. The Scrutiny Board therefore recommends that Yorkshire Forward should help tackle under-investment in sustainable transport options in the region by strategically influencing Government in partnership with relevant organisations and agencies, to increase the level of national investment in transport.

It is clear that there needs to be an identified way of de-coupling economic growth from carbon emissions. The respondents have suggested that this could be achieved by reducing energy consumption in the region and offsetting carbon emissions through environmental projects. Whilst the Scrutiny Board acknowledges that de-coupling economic growth may be difficult to achieve, they believe that Yorkshire Forward needs to develop a strategic approach that clearly outlines how policy conflicts will be resolved, and how emissions related to economic growth will be offset. Yorkshire Forward regards resource efficiency as a key way of de-coupling economic growth from carbon emissions, and they are also embedding sustainable development principles into their activities through a Sustainable Development Assessment of all project applications. Yorkshire Forward's Sustainability Development Assessment has been praised by the respondents, and the Scrutiny Board recognises that the assessment tool should be more widely shared as a way of informing investment decisions. Subsequently, the Scrutiny Board recommends that Yorkshire Forward promotes the use of sustainable development assessments in project development with other public agencies in the region, in order to develop best practice.

The Scrutiny Board has received a high volume of comments calling for greater investment in domestic and commercial insulation of the region's housing and buildings to drastically reduce carbon emissions. The respondents have criticised the Government for restricting the measures in the Code for Sustainable Homes to new housing, and for not tackling the region's existing housing stock. There is a statutory delivery role for local authorities in insulating existing homes, however, the Scrutiny Board accepts that a lack of funding at local authority level means that some local authorities are unable to fund significant proportions of the cost, whilst others can provide it free of charge to the resident. With domestic housing emitting some of the highest amounts of carbon, the Scrutiny Board agrees that mass insulation schemes could have a big impact on carbon emissions reduction, although they acknowledge that Yorkshire Forward's role in this is limited.

Yorkshire Forward recognises that they need to increase their support of environmental technology in the region. The Sustainable Futures Company (SFCo) is a not-for-profit wholly owned subsidiary of Yorkshire Forward, and is the main delivery organisation for sustainable development. A key feature of SFCo's delivery is low carbon technology work with businesses in the environmental technology sector. Yorkshire Forward is also supporting Community Energy Solutions (CES), which provides renewable energy solutions to low-income households in deprived areas. The Scrutiny Board believes that there is merit in Yorkshire Forward kick-starting the market for technologies like ground source heat pumps. This will encourage demand from customers, and ultimately drive down the cost of the technology, whilst providing opportunities for new environmental technology businesses to be created. Yorkshire Forward is already addressing this in part through CES, however, the Scrutiny Board recommends that Yorkshire Forward continues to adopt a strategic approach to support the development and deployment of renewable energy in a manner that benefits businesses and communities and results in best practice.

The region is keen for Yorkshire Forward to concentrate their funding on newer and bigger environmental technologies, and strongly support energy generation from the region's woodlands. The Scrutiny Board appreciates that Drax and other power stations will need to import biomass from overseas due to the fact that the amount of biomass required exceeds the amount that the UK can supply. The Scrutiny Board agrees with the respondents that Yorkshire Forward should consider how several local biomass production plants could be created across the region, rather than one central plant, to minimise carbon emissions from transporting biomass on long journeys. The Scrutiny Board has also identified broad support for Yorkshire Forward's intended investment in the region's peat uplands and wetlands as effective carbon sinks and valuable habitats for the region's biodiversity.

The comments received by the Scrutiny Board on waste fall into two categories: using the region's waste as a source of energy, and increased business and residential recycling. Whilst anaerobic digestion is still a fairly new technology in the UK, it requires lower capital investment and has lower operational costs. Yorkshire Forward recognises the significant potential that anaerobic digestion could offer, and the Scrutiny Board has identified strong support for investment in anaerobic digestion technology. The Scrutiny Board welcomes the fact that Yorkshire Forward has already commenced some anaerobic digestion activities through the Future Energy Yorkshire (FEY) Programme and the private sector. The Scrutiny

Board has detected little appetite from those consulted through the review for traditional forms of incineration, with the respondents citing that it generates insufficient energy, the infrastructure is not available to support it, and it emits more carbon dioxide per unit of energy than coal-firing. The provision of business advice on climate change issues has mainly been delivered through the national Business Resource Efficiency and Waste (BREW) programme, and Yorkshire Forward is proposing a further multi-million pound investment under the programme. Yorkshire Forward is also seeking to influence local authority waste and investment strategies through Recycling Action Yorkshire (RAY), which encourages businesses to minimise their waste, and stimulates the market for recycled materials. Yorkshire Forward is concerned about the availability of collection and recycling facilities for commercial and industrial waste. Thus, the Scrutiny Board recommends that Yorkshire Forward works in partnership with local authorities to establish a pilot anaerobic digestion facility in the Yorkshire and Humber region as an alternative to waste incineration. The Scrutiny Board also recommends that Yorkshire Forward considers ways in which the region's businesses can be supported on dealing with commercial and industrial waste, and in becoming more resource efficient.

Adapting to Climate Change

The Scrutiny Board looked at the interventions that Yorkshire Forward and their partners are currently undertaking, or are planning to undertake, which will prepare the region for a changing global climate.

The Environment Agency has the lead role on several aspects of climate change adaptation, most notably in respect to their responsibilities for flood risk management, flood warnings, licensing water use and the provision of advice to planners and construction firms on new developments. However, there is broad agreement from the respondents that Yorkshire Forward has a supporting role to play, due to their responsibility for ensuring the economic viability of the region. Yorkshire Forward is already embracing this supporting role, and the Scrutiny Board acknowledges that a good relationship is developing between Yorkshire Forward and the Environment Agency. This co-operative working has already resulted in a series of studies on adaptation, and a research project on the region's economic assets that are most at risk from flooding. Yorkshire Forward is also working in partnership with other regional bodies on the Regional Adaptation Study, which will inform approaches and action in the region. The Scrutiny Board recommends that Yorkshire Forward uses the outcomes of the Regional Adaptation Study to identify a programme of activities that are

focused on adapting to the economic risks and opportunities presented by climate change.

Yorkshire Forward regards flooding as the largest climate change adaptation challenge facing the region. Yorkshire Forward is also concerned about coastal erosion on the East coast, and the risks that erosion and sea level rise pose to businesses and communities on the Humber estuary. The Scrutiny Board understands that flooding has a knock-on effect on several aspects of the region's economy, and they believe that Yorkshire Forward should financially contribute to flood alleviation, alongside the Environment Agency and local authorities, to protect the local, sub-regional, city-regional and regional economies from the environmental shock of extreme rainfall and storms. The Scrutiny Board especially welcomes the potential development of a carbon off-setting scheme which Yorkshire Forward is embarking on with the Forestry Commission that will see the restoration of the peat uplands to alleviate flooding.

The region's large urban towns and cities are more likely to experience the impact of climate change on temperature, because of the 'heat island effect', where buildings absorb solar power and radiate heat. A lack of green spaces or plantlife results in insufficient shading from the sun's rays in urban areas, and transport infrastructure is also vulnerable to extremes of heat. Fluctuations in temperature present two challenges for the region; how best to capture and store the solar energy absorbed by buildings for use in colder periods, and how to sufficiently cool the buildings in summer without using energy powered air conditioning. The Scrutiny Board believes that there is a lack of activity in addressing the risk and impact of temperature fluctuations. The respondents to this review have therefore suggested that Yorkshire Forward and the local authorities need to give greater consideration to managing extremes of temperature, due to their respective responsibilities on quality of place and urban planning. The Scrutiny Board also believes that Yorkshire Forward should increase their investment in environmental technologies to deal with extreme heat.

Climate change also poses threats to land-based industries and public health. Some infectious diseases are known to spread more easily in certain types of weather conditions, and the respondents to this review have highlighted increased insect migration into the UK that can infect livestock, and higher risks of viral and bacterial infection in livestock from extreme weather patterns. The quantity and quality of food crops can also be affected by weather fluctuations, increasing the risk of certain food shortages, higher food prices, and risks to human health. If carbon emissions are not reduced, temperatures could rise

further, thereby increasing the risk of heat waves. Other human health impacts from extreme weather include increased respiratory disease and a higher risk of food poisoning. The Scrutiny Board believes that Yorkshire Forward has a key role in tackling economic and social inequalities that make poorer residents more susceptible to the impacts of climate change, and the Scrutiny Board welcomes the work that Yorkshire Forward is undertaking with CES to address fuel poverty in particular.

The development of 'green infrastructure' has been suggested as a solution to the climate change issues of extreme water and temperature levels. The Scrutiny Board welcomes the fact that Yorkshire Forward is working with the Forestry Commission to consider ways in which the region's woodlands can be used to manage flood risk. Several respondents have indicated that if the region's woodlands are to be used effectively, far greater investment is needed to restore woodland in the region. The Scrutiny Board has also been alerted to the need for green infrastructure to be sited in urban areas to reduce the 'heat island effect', to provide shading for buildings, to absorb rainfall, and to improve air quality. Whilst the inclusion of green infrastructure is a matter for local authorities to consider when granting planning permission, the Scrutiny Board believes that Yorkshire Forward should also consider it as part of their urban renaissance policy, and in their impending responsibilities for housing and planning. Yorkshire Forward has assured the Scrutiny Board that their approach to urban renaissance will be informed by a pilot programme on green infrastructure in West Yorkshire, and by the Regional Spatial Strategy.

The Building Research Establishment (BRE) created the Environmental Assessment Method, BREEAM, to determine the sustainability and environmental performance of new or existing buildings. Yorkshire Forward encourages buildings to achieve either a Very Good or Excellent BREEAM rating, and they have already invested in buildings which are of the highest BREEAM rating. Yorkshire Forward has also informed the Scrutiny Board that sustainable technologies are included in the majority of the buildings which they fund. The respondents to this review have suggested that Yorkshire Forward should further encourage the use of sustainable building materials, such as timber framing and compressed straw bales, and the incorporation of renewable technologies. The Scrutiny Board has identified a lack of promotion from Yorkshire Forward on the sustainable construction methods they have funded. The Scrutiny Board therefore welcomes Yorkshire Forward's intention to produce a publication in 2008 which highlights their interventions, and promotes best practice in building structure and materials. However, the Scrutiny Board recommends that

Yorkshire Forward clearly explains in the best practice publication how new technologies have been used, the costs involved, the impact that the technology has had on carbon emissions, and how these projects can be replicated in other regions.

The Scrutiny Board has been informed by Yorkshire Forward that a potential carbon capture project includes capturing the carbon from the region's power stations, and transporting it to a redundant gas field through underground pipes. The respondents believe that carbon capture and storage should be investigated further, however, the Scrutiny Board is concerned about the potential cost of developing the underground infrastructure required. Yorkshire Forward has informed the Scrutiny Board that the intention is to bid for international funds to finance the project. Yorkshire Forward is also keen to develop the challenging concept of carbon budgeting and carbon currency at the regional level. If progressed, the Yorkshire Forward carbon budget scheme will create a currency from captured carbon which organisations can trade with, and the respondents applaud Yorkshire Forward for this idea. The Scrutiny Board therefore recommends that Yorkshire Forward formally investigates the costs and practicalities involved in developing a regional carbon budget and carbon currency. The Scrutiny Board also recommends that Yorkshire Forward considers how the region's business community can be advised and supported to make a Carbon Reduction Commitment.

The two largest emitters of carbon into the atmosphere are housing and transport, and the biggest impact on carbon emissions reduction will therefore come from changing the behaviour of the region's businesses and residents. Climate change is not an easily understood subject, and the Scrutiny Board believes that it needs to be more clearly communicated so that everyone understands how their behaviour affects the climate. There is a clear role for Yorkshire Forward in changing the behaviour of businesses due to their responsibility for business support services. Yorkshire Forward is already providing environmental business support, through resource efficiency programmes and business advice on climate change. Changing the behaviour of the region's residents is perhaps a bigger challenge that other agencies in the region need to address. The Waste and Resources Action Programme (WRAP) assists residents, businesses and local authorities, to recycle and minimise waste. However, the Scrutiny Board believes that if there was greater collaboration by agencies such as local authorities, the Environment Agency, the Energy Savings Trust, the Carbon Trust, WRAP and the region's media, communication on climate change and its importance could be vastly improved, and could encourage more of the region's residents to become more energy and resource efficient.

The Scrutiny Board has made ten recommendations on how activities to address climate change in the Yorkshire and Humber region should be developed.



Introduction

This scrutiny review has considered how Yorkshire Forward is addressing the issue of climate change in the Yorkshire and Humber region.

Climate change features several times throughout the Regional Economic Strategy (RES), and is identified as a regional priority. The creation of a lower carbon economy is also highlighted as a key element of the sustainable development crosscutting theme. The vast majority of references to specific climate change activity in the RES appear under Objective 5: Transport, Infrastructure and Environment. This objective is concerned with ensuring Government commitment to long-term transport priorities, delivering initial transport schemes of economic priority, ensuring effective investment in energy and utilities, and protecting, enhancing and utilising the environment and natural resources. Climate change also features under Objective 2: Competitive Businesses which details the promotion of environmental good practice to businesses, including a focus on low carbon, energy and resource efficiency.

The RES lists a number of activities that Yorkshire Forward will deliver with partners, in addition to its Public Service Agreement (PSA) targets for creating and assisting businesses to improve their performance, investment in regeneration, and the reclamation and redevelopment of brownfield land. The activities related to climate change include promoting energy security and reducing fossil fuel dependency, delivering projects that reduce and mitigate greenhouse gas emissions, and incorporating environmental resource efficiency goals into all key clusters. The RES also has a key target of reducing the greenhouse gas emissions (carbon dioxide equivalent) recorded in 1990 for the region, by 20% - 25% by 2016.

The Scrutiny Board chose to look at three themes on climate change:

- **Climate Change Targets and Regional Performance** - the climate change targets which emerge from European and UK legislation and regional strategies, and how well the region is performing against these targets
- **Balancing Climate Change Action and Economic Growth** - how effectively Yorkshire Forward is able to decouple economic growth from greenhouse gas emissions, and how environmental technology can be used to reduce emissions from energy consumption and waste
- **Adapting to Climate Change** - the impact of increased rainfall, flooding and temperature fluctuations on the region's businesses and residents, and how the region is preparing to deal with these changes.

The next three sections of this report look at each of these themes in turn, and the emerging findings and recommendations are discussed in each section. The Scrutiny Board has also highlighted some key messages for other regional agencies, the region's Climate Change Executive Group, and the Government, on how they can help to address the climate change challenge in the Yorkshire and Humber region. These key messages can be found towards the back of this report.

Climate Change Targets and Regional Performance

Within the last twenty years, Governments across the world have formulated and implemented legislation and targets to drive action against the threat of global warming and climate change. The Scrutiny Board wanted to understand the raft of UK and European legislation, and how this has led to the development of national statutory targets to address climate change issues. The Scrutiny Board also wanted to ascertain the responsibilities that Yorkshire Forward has been given by the Government on the issue of climate change, how the national targets relate to the targets which Yorkshire Forward has voluntarily set, and how progress against the targets is measured, recorded and communicated.

Legislation on Climate Change

Whilst undertaking this scrutiny review on climate change, the Scrutiny Board's attention has been drawn to wide-ranging UK and European legislation on environmental issues such as pollution, waste, and more specifically, greenhouse gas emissions. This legislation provides the backdrop to European, national and regional policies on climate change, and the statutory and voluntary targets which the UK and Yorkshire and Humber region have been set.

The first worldwide legally binding agreement to address greenhouse gas emissions was the Kyoto Protocol. In March 1994 a total of 51 countries across the world joined the United Nations Framework Convention on Climate Change (UNFCCC), to respond to the threat of global warming. The aim of the UNFCCC was to encourage industrialised countries to stabilise greenhouse gas emissions at a level that would prevent dangerous human interference with the global climate. The Governments from each of the participating countries agreed three key actions: to share information on greenhouse gas emissions and best practice; to launch national strategies which outlined how climate change and emissions would be tackled in each country and how the world's developing countries would be supported; and to collectively prepare for a changing climate. The UNFCCC agreed that there was a need for binding targets to be set on reducing greenhouse gas emissions, and in December 1997, an international protocol was reached in Kyoto, Japan to this effect. The Kyoto Protocol came into force in February 2005, and has since been signed by 180 countries. The Protocol outlines legally binding targets for industrialised countries to reduce their greenhouse gas emissions by an

average of 5% between 2008 and 2012 from the level they were at in 1990. The UK was both an initial signatory to the UNFCCC and the Kyoto Protocol, and is therefore required to meet this target. In March 2007, the Council of the EU also set a target of limiting the global temperature increase to no more than two degrees above pre-industrial levels on average. Developed countries, including the UK, were asked to commit to collectively reducing their greenhouse gas emissions by 30% between 1990 and 2020, with a view to reducing emissions by 60% - 80% overall between 1990 and 2050.

In regards to legislation that has been specifically set by Parliament in the UK to address climate change issues, an act that paved the way for developing and promoting sustainable energy policy and energy efficiency was the Sustainable Energy Act of 2003. The Climate Change and Sustainable Energy Act which came into force in 2006 went much further and was much more specific about how sustainable energy relates to greenhouse gas emissions reduction. Apart from amending details of the Sustainable Energy Act of 2003, the 2006 Act outlines the requirements for annual reporting on greenhouse gas emissions reduction in the UK, alleviating fuel poverty, and the promotion of renewable energy.

At the time of writing this report, there are two Bills which are currently being progressed through the UK parliamentary procedures in order to make them law. The first of these is the Energy Bill, which seeks to strengthen the obligations in the above two Acts on renewable energy, affordable energy and reducing carbon emissions. The second Bill, which is scheduled to receive Royal Assent in summer 2008, is the Climate Change Bill. The UK is the first nation to develop legislation of this type, and its purpose is to set ambitious targets, and improve the UK's ability to manage and respond to climate change. Under the Climate Change Bill, it is proposed that the UK's carbon emissions will need to reduce by 26% - 32% between 1990 and 2020, and by at least 60% overall, by 2050. The Bill aims to ensure progress against these targets through the establishment of five-year carbon budgets, which will set the amount that carbon emissions must decrease by each year (it should be noted that there is a possibility that these targets will be increased before the Bill becomes law). The Bill includes new carbon trading schemes including a Carbon Reduction Commitment to encourage large companies to reduce their emissions. The Government also intends to use the

Bill to enhance the operation of the Renewable Transport Fuels Obligation (RTFO), which increases the proportion of biofuels in petrol and diesel. Whilst the Climate Change Bill, once it becomes law, will only set an overall statutory target for the UK, all regions will need to contribute to that target by reducing their carbon emissions to ensure that the target is met.

In addition to UK legislation, there are a large number of European legislative requirements on climate change issues which have been agreed and set by the Council of the European Union, and these are outlined in a series of Directives. The first of the most relevant Directives to this scrutiny review is the Integrated Pollution Prevention and Control (IPCC) Directive. The IPCC Directive came into effect in 1996 and it considered energy consumption and greenhouse gas emissions from fossil fuels. The IPCC Directive set two key targets. The first of these targets was that by 2020 a minimum of 10% of petrol and diesel consumption in each of the European Union (EU) Member States should come from biofuels, and should be introduced in a cost-efficient way. Although this was a binding target, the Council of the EU provided a degree of flexibility by stating that the target was subject to the production of biofuels being sustainable, with second-generation biofuels becoming commercially available. The second target set by the IPCC Directive was that by 2020 20% of energy consumption across the EU should come from renewable energy. Due to the fact that the UK is lagging behind the rest of Europe on renewable energy, the UK is only required to meet a target of 15% by 2020.

Landfill waste emits methane, a greenhouse gas, into the atmosphere and in an effort to reduce global greenhouse gas emissions, there are several European Directives on waste management which have also led to UK legislation. The first of these was the Waste Framework Directive of 1975, which addresses waste management, waste recovery and waste disposal. This Directive resulted in the UK's Environmental Protection Act 1990, which outlined improvements to the control of pollution to safeguard the environment and introduced a 'duty of care' for all producers of waste. It also led to the development of the Waste Management Licensing Regulations of 1994 in the UK, covering landfill and waste treatment, and the UK's Hazardous Waste Regulations of 2005 which determined how hazardous waste should be dealt with. The Hazardous Waste Directive 1991 redefined waste classifications in Europe and waste products have been subsequently classified as hazardous and non-hazardous in accordance with the European Waste Catalogue of 2002 (waste items classed as hazardous include fridges, fluorescent tubes and computer monitors because of the gases contained within them which can leak into the atmosphere). The Landfill Directive of 1999 went on to

ban the co-disposal of hazardous and non-hazardous waste from July 2004, meaning that hazardous waste had to go to a specially designated site after this date. The Directive also included a new regulatory regime for landfill sites in Europe, and set a target for biodegradable landfill waste to be reduced by 65% by 2020. Tyres, liquid waste and clinical waste were also banned from landfill, and any waste for landfill now has to be pre-treated. The Landfill Directive was implemented in the UK as part of the Landfill Regulations of 2002.

The Directive on the Prevention of Waste Electrical and Electronic Equipment is known as the WEEE Directive. The purpose of this Directive is to reduce the disposal of electrical waste through re-use, recycling or recovery schemes, particularly domestic waste. The Directive covers the collection, treatment and recovery of electrical waste, and specifies that the manufacturer of the electrical product must provide detailed information on the material content of the equipment and any potentially dangerous substances that the product contains. Under the Directive, the manufacturer is responsible for collecting, treating and disposing of the product if they are also directly supplying the product to the end-user or consumer. However, as manufactured products are normally sold to the consumer through supply companies or retailers, the responsibility for dealing with the waste passes to the supplier or retailer. In the UK, the WEEE Directive, the Directive on Packaging and Packaging Waste and the Directive on End of Life Vehicles, are being implemented through Producer Responsibility Legislation. This legislation requires the businesses that produce the goods for sale to take responsibility for disposing once the product has reached the end of its life, under the 'polluter pays' principle. There will be increasing EU regulations on waste.

In 2003, the Council of the EU set a Directive on the Emission Trading Scheme (ETS). This Directive established a community scheme for greenhouse gas emissions trading across the EU Member States. The purpose of the scheme is to promote greenhouse gas emissions reduction. The Directive is particularly focused on reducing carbon dioxide emissions and tackling the threat of climate change. The scheme has been operational since 2005 and it basically determines a price or cost of carbon which businesses across Europe can trade with, and mirrors a UK carbon emission trading scheme trial, and a sulphur emissions trading scheme that has operated in the United States of America for the last 25 years. Yorkshire Forward is currently investigating the application of carbon budgeting, and this is discussed later in the report. There is a significant impact of this legislation on the Yorkshire and Humber business community, and the BEST

Report highlighted the need to make this legislation easier for businesses to implement. The European Directives are now issued with guidance notes for businesses to translate the legal terms of the Directives into a more comprehensible language. However, the Scrutiny Board acknowledges the responsibility that Yorkshire Forward has in ensuring that business support services include information and guidance to businesses to advise them on which legislation they need to comply with. Yorkshire Forward has reiterated to the Scrutiny Board that whilst they accept the responsibility for business advice and support, other agencies can advise businesses on legislation. Yorkshire Forward has also confirmed that they cannot use their funding to support businesses to comply with legislation, as the businesses are statutorily obliged to fund compliance activities themselves. In addition, Yorkshire Forward has stated that it is important to recognise the opportunities that these legislative drivers present for business development and business growth.

Yorkshire Forward's Commitment to Addressing Climate Change

There is a large number of organisations, particularly at a national and regional level, that have a key role in tackling climate change and its causes. Key national agencies that have a responsibility for addressing aspects of climate change include the Environment Agency and Natural England, Energy Savings Trust and Carbon Trust. However, the Scrutiny Board has identified a high degree of confusion over which organisation is responsible for which aspect. It is clear to all of the individuals and organisations consulted during this review that it is not Yorkshire Forward's responsibility alone to tackle climate change, although they are regarded as one of the key regional agencies who are undertaking activities to minimise the impact of climate change, and to adapt to a changing climate. The respondents to this review have suggested that this fragmentation of responsibility has been caused by national Government. Yorkshire Forward has confirmed to the Scrutiny Board that the Department for the Environment, Food and Rural Affairs (DEFRA) is currently reviewing how business support is delivered by the various agencies, and considering how it should be delivered in the future. The aim of that review is to streamline support in line with the principle that the Department for Business, Enterprise and Regulatory Reform (DBERR) is advocating on Business Support Simplification, and evaluate if there is any duplication of activity.

In terms of Yorkshire Forward's responsibility for aspects of climate change, Yorkshire Forward's role is principally economic development. However, they also have a

statutory responsibility for sustainable development, which considers economic, as well as social and environmental factors. In addition, Yorkshire Forward has a strong influencing role where they can heavily influence the strategies and policies of other regional, sub-regional and local bodies, as well as influence national policy and strategy through their links with Government departments. The respondents believe that Yorkshire Forward as an agency should put equal emphasis on economic, social and environmental factors, as these are key contributors to sustainable economic development and 'well-being' in the region. In response to this, Yorkshire Forward has stated that they have to have regard to their primary function as an economic development agency.

Yorkshire Forward has an annual budget of just over £300 million, which they invest in economic development and regeneration activities across the region. Their activities on climate change issues mainly sit with the Sustainable Development Team. The Sustainable Development Team does not have a set annual budget. Instead, funding is allocated based on the amount needed to support those project applications which meet both the RES and Corporate Plan objectives, and which are of substantial quality, over a three-year programme. As a guide, the forecast spend for the Sustainable Development Team in the 2008/09 financial year is £27.7 million, although the Scrutiny Board acknowledges that other teams in Yorkshire Forward will also be funding activity related to climate change and the development of a lower carbon economy. Yorkshire Forward understands that the money which is available to them is small in comparison to other Government bodies. Despite this, the comments received during this review are generally complimentary about Yorkshire Forward's commitment to sustainable development, and the activities and forward thinking of Yorkshire Forward's Sustainable Development Team has been particularly praised. The respondents to this review have identified several positive examples where Yorkshire Forward has provided support to reduce carbon emissions, such as rail improvement, train leasing and the development of highly energy efficient commercial and industrial buildings. However, Yorkshire Forward has been criticised for focusing their investment on fewer and bigger projects. Whilst it is thought that Yorkshire Forward should get involved in large strategic projects, such as schemes to transfer road freight to rail or waterways, their approach to climate change related projects was seen as 'scattergun' by the respondents, due to a perceived lack of a strategic approach on the types of projects that they will support. Yorkshire Forward believes that this issue will be resolved through their new Lower Carbon Policy Product, as it will provide a strategic steer and will give a clearer

indication of the types of activities that Yorkshire Forward will fund. The Scrutiny Board agrees, but also recognises that there is a need for increased resource on sustainable development to support additional work with local authorities and the business community on climate change.

Although Yorkshire Forward's Chief Executive and Chair are considered as strong advocates of climate change action in the region, the respondents to the review have indicated to the Scrutiny Board that this commitment to tackling climate change, and broader sustainable development principles, does not extend across the directorates at Yorkshire Forward. It has been suggested that this inconsistency centres on Yorkshire Forward's primary responsibility for furthering economic growth in the region, and this is discussed in more detail in the next section of this report. Whilst every new employee at Yorkshire Forward receives an induction on the agency's sustainable development role and activities, and whilst it also features in the Corporate Management Development Programme, Yorkshire Forward accepts that there is a need for more awareness raising and training with staff and partner organisations.

Impending Changes to Yorkshire Forward's Role

The Government's Sub-national Review of Economic Development and Regeneration (SNR) was published in Summer 2007, and it identified a number of changes and new responsibilities for the Regional Development Agencies (RDAs), namely planning, transport and housing. Transport and housing in particular contribute a significant proportion of the region's carbon emissions. Some of these changes to the role of Regional Development Agencies were featured in a three-month Government consultation between April and June 2008. The SNR consultation document specified that the strategy should support the move to a lower carbon economy, should deliver the objectives outlined on the Climate Change Bill and Energy Bill, and should be in line with the Planning Policy Statement on Climate Change.

Although Yorkshire Forward's new responsibilities under SNR are still partly unclear, it has already been confirmed that the Regional Development Agencies will be responsible for developing the Single Regional Strategy. The Single Regional Strategy will bring the individual regional strategies for economic development, spatial planning, housing and transport together, and their respective objectives for sustainable development and climate change. Yorkshire Forward welcomes the opportunity to work with local authorities and other partners on the development of the strategy. This view is

shared by the respondents to this review, who believe that it will help to join-up and co-ordinate regional strategies, policies and approaches, and may potentially reconcile conflicting priorities on transport and the environment in the various strategies. The Scrutiny Board supports the view that Yorkshire Forward should consult all appropriate key agencies about the Single Regional Strategy with immediate effect. Yorkshire Forward has confirmed to the Scrutiny Board that they have already begun to liaise with key partners at a national, regional and local level, and will continue to do so to ensure that the implementation of the SNR benefits the region. Yorkshire Forward has also stated that the social, economic and environmental partners will be integral in this consultation.

It is clear that the SNR will fundamentally change the role and responsibilities of Yorkshire Forward, particularly in regards to planning, and Yorkshire Forward is hopeful that the new planning responsibilities will provide a stronger focus on sustainable economic growth. The respondents to this review fully understand and appreciate the opportunity that the SNR presents in terms of Yorkshire Forward's ability and power to integrate housing and planning with economic development, and to achieve climate change mitigation and adaptation through spatial planning and other measures. However, it has been suggested by several respondents that Yorkshire Forward should provide more information on how they will progress the outcomes of the SNR, and how they will use their new responsibilities to drive change. The Scrutiny Board accepts that it is difficult for Yorkshire Forward to provide this information at present, as the Government needs to consider the outcome of the SNR consultation, but ask Yorkshire Forward to communicate how they will deliver their new responsibilities as soon as the SNR process concludes.

Leadership

During this review, the Scrutiny Board has detected a degree of frustration with the Government's inconsistent approach to climate change, as some departments are committed to tackling climate change whilst others appear not to be. The comments from individuals and organisations have included a need for the Government to more effectively join-up national economic and environmental policies, to send out a single and consistent message on climate change, and to provide increased national leadership on climate change.

The vast array of organisations that are dealing with aspects of climate change in the Yorkshire and Humber region, has prompted some respondents to suggest that one regional organisation should assume the regional lead

for climate change and the climate change targets. The Scrutiny Board acknowledges that the splitting of responsibilities for climate change at a national level presents a problem in identifying a single regional lead. However, the Scrutiny Board, Yorkshire Forward and the individuals and organisations consulted through this review, believe that there is a leadership vacuum on climate change which needs to be rectified, so that climate change action can be more effectively delivered and monitored.

The respondents to this review have reported that Yorkshire Forward has demonstrated more commitment to reducing carbon emissions from activities which they fund than most other organisations in the region. It is clear that Yorkshire Forward has shown some public leadership on climate change, such as the 'Cooling the Planet' event in Sheffield with Al Gore in February 2007, and Yorkshire Forward is also taking an active lead on the development of environmental technologies in the region. Yorkshire Forward is undoubtedly a regional leader, and with climate change being widely acknowledged as an economic, environmental and social issue, it has been suggested that Yorkshire Forward should take a stronger leadership role on climate change, particularly in light of the future powers and responsibilities as a result of the SNR.

Yorkshire Forward is cautious about assuming a regional lead role on climate change, stating that whilst they do have a key role in increasing economic growth through innovation and technology, they have no direct influence over domestic and transport emissions, which are two of the largest emitters of carbon in the region. This view is supported by the majority of the respondents who suggest that tackling climate change requires a greater partnership approach. As there has been little visible leadership from any of the organisations responsible for tackling climate change issues, the Scrutiny Board believes that a stronger and more co-ordinated partnership approach could make a bigger difference to tackling climate change than a single regional lead. In order for this to happen effectively, the Scrutiny Board believes that the roles and responsibilities of all partners on climate change must be more clearly defined and communicated, with each organisation being assigned a clear and distinct lead for each climate change issue, with one partner being given the overall responsibility for recording region-wide activities, and tracking progress against climate change targets.

Climate Change Action Plan

In 2005, 'Your Climate', the region's Climate Change Action Plan, was published. 'Your Climate' identifies a number of actions for named partners such as Yorkshire

Forward, the Yorkshire and Humber Assembly and the Environment Agency, to deliver. The three key signatories to the plan were Yorkshire Forward, the Yorkshire and Humber Assembly and the Government Office for Yorkshire and the Humber. The collective organisations involved in the development of the Action Plan went on to form the Climate Change Executive Group to implement the plan, and monitor its delivery. The group is now known as the Regional Climate Change Partnership.

Yorkshire Forward regards the Climate Change Action Plan as a valuable document in assisting partners to incorporate climate change mitigation and adaptation measures into their organisational strategies and activities. The Scrutiny Board agrees that the Climate Change Action Plan is a useful and informative document. However, the respondents to this review have highlighted a lack of forthcoming information from the partnership on which actions in the plan have been completed to date, confirmation of what each partner has delivered in relation to those actions assigned to them, and the impact that the actions have had in reducing carbon emissions over the last two years. This has led some respondents to believe that delivery activity against the actions may have been delayed, although they are also mindful that insufficient financial resources may have constrained activity.

In terms of reporting delivery against the Action Plan, Yorkshire Forward has informed the Scrutiny Board that the Government Office for Yorkshire and the Humber, as the secretariat for the partnership, collates information from each partner on the actions delivered in annual progress reports, and that these are available on the 'Your Climate' website, www.yourclimate.org. However, the Scrutiny Board is aware that documents cannot be easily located on the website, as it is difficult to navigate. Yorkshire Forward has confirmed to the Scrutiny Board that they have made progress on all of the actions assigned to them in the Climate Change Action Plan. The Scrutiny Board understands that the other members of the partnership who had actions assigned to them in the plan, have also made significant progress.

Yorkshire Forward acknowledges that 'Your Climate' has not had the expected wider impact on those agencies and organisations that are not members of the partnership. The Scrutiny Board believes that this could be resolved by the Regional Climate Change Partnership communicating and promoting more widely the roles of each member on the partnership and the achievements that the Action Plan has produced so far. As key members of the partnership, the Scrutiny Board believes that Yorkshire Forward and the Assembly should influence the way in which the partnership's work is communicated and promoted to

those organisations and partners who are not members. The Regional Climate Change Partnership has informed the Scrutiny Board that a lack of direct funding to date has prevented the partnership from taking a more joined-up role. Following the recent confirmation of funding from DEFRA and regional partners, the Regional Climate Change Partnership is now able to take on this role. The Scrutiny Board welcomes the fact that the partnership has recognised the need for a full time resource to drive the implementation of the Action Plan, and improve communication with other partners and agencies.

The Scrutiny Board appreciates that the Action Plan is currently being reviewed by the partnership, and is scheduled for a re-launch in Autumn 2008. Whilst the Scrutiny Board is confident that the issues raised by the respondents will be resolved by the partnership's plans for revising the Action Plan, the Scrutiny Board is keen for the Regional Climate Change Partnership to engage other partners and agencies in consultation on the re-development of the Action Plan. The Scrutiny Board would also like the partnership to ensure that the findings of the two regional Resource and Energy Analysis Programme (REAP) reports are progressed. The Scrutiny Board suggests that progress against the actions in the Climate Change Action Plan by individual members is regularly monitored, with progress reported to the Regional Executive Board and made available to non-members of the partnership. As the Climate Change Action Plan is due to be re-launched, the Scrutiny Board has outlined several key messages for the Regional Climate Change Partnership to help inform the development of the Action Plan, and these are detailed at the back of this report.

Regional Strategies in Relation to Climate Change

In May 2007, Arup produced a report for the Yorkshire and Humber Assembly, in conjunction with the Stockholm Environment Institute and Cambridge Econometrics, on the contribution that key regional strategies make towards addressing climate change. This scrutiny review builds on the conclusions and recommendations in the Arup report, and does not therefore re-examine the effectiveness of the regional strategies in addressing climate change issues.

The comments that the respondents have provided through this review further confirm one of the key findings in the Arup report; that the regional strategies are not joined-up and are fragmented. To some extent, this should be resolved by the new Single Regional Strategy. However, it has also been suggested that the regional strategies should look at short, medium and long-term strategic priorities, as far ahead as 2050. The Scrutiny Board also stresses the need for any consultation on the Single Regional Strategy to include all partners with an interest in climate change and sustainable development. Yorkshire Forward has reiterated their commitment to consulting with these specific partners amongst others, and believes that as a sustainability appraisal and strategic environmental assessment will be needed on the strategy. This will support and complement Yorkshire Forward's approach to sustainable economic development. Yorkshire Forward has also confirmed to the Scrutiny Board that the Government will work with RDAs and others to develop a single national core sustainability framework, which will be used to appraise all regional strategies.

Although the Scrutiny Board did not envisage covering transport specifically in this review, the vast majority of comments that the Scrutiny Board has received on regional strategies are in regards to transport infrastructure. It has been highlighted that many of the regional and sub-regional strategies are heavily



Recommendation 1

Yorkshire Forward should ensure that the Single Regional Strategy better aligns and clearly embeds climate change action and the development of a lower carbon economy as a crosscutting theme.



transport focused, and there is a genuine concern over whether the aim of reducing emissions and moving to a lower carbon economy is achievable, with the increase in emissions that improved transport infrastructure produces. These comments are specifically in regards to aviation expansion in the region, and the location of new business parks which are only accessible by car. A recent report by the Stockholm Environment Institute has more clearly identified the contribution that transport in the region makes to carbon emissions, especially those from aviation growth, which will affect the region's ability to reduce emissions overall. The recently launched Low Carbon Transport Study was commissioned as a follow-up to the Arup report, and it examines and evaluates measures to reduce carbon emissions from transport. The study concentrates on what can practically be delivered, and by whom, through transport interventions in the region. The Scrutiny Board acknowledges that it is the Assembly which is currently responsible for spatial and transport planning, as opposed to Yorkshire Forward, and that this is something that that the Assembly should consider.

The East of England Regional Development Agency has the RDA lead for sustainable development and climate change, but despite this, Yorkshire Forward is regarded by many as one of the leading RDAs in this field. Yorkshire Forward was the first RDA to voluntarily develop a greenhouse gas emissions target, and this has been commended by the respondents. Yorkshire Forward is also one of four RDAs to focus on the development of a lower carbon economy, and they have developed a lower carbon economy policy as one of ten new policy products in their draft Corporate Plan. Whilst the respondents have praised the fact that Yorkshire Forward has considered it important to have a lower carbon economy policy, the respondents have also commented that the broad range of initiatives featured in the draft policy are not new or innovative, and will not tackle some of the hardest problems in developing a lower carbon economy. For example, the respondents expressed disappointment that the draft policy did not go far enough in addressing the difficult challenge of carbon emissions from the region's coal-fired power stations, or give sufficient focus to the development of new fuel technologies. Yorkshire Forward has assured the Scrutiny Board that the policy featured in the draft Corporate Plan was a shorter, condensed version and that the finalised Lower Carbon Policy Product is much more detailed, and incorporates the feedback that has been received through the scrutiny review. Yorkshire Forward has also stressed that that project delivery partners need to have the capacity to innovate in order to deliver the Lower Carbon Policy Product. In response to comments about the extent to which the Lower Carbon Policy Product will be able to address some of the hardest problems in the region, Yorkshire Forward understands that these include transport and domestic emissions, but has reiterated to the Scrutiny Board that these lie outside of their current remit.

Recommendation 2

Yorkshire Forward should develop their own dedicated Climate Change Delivery Plan to identify and communicate the climate change issues and actions that they will specifically deliver in the region, how they will develop a lower carbon economy in Yorkshire and Humber, and their priority innovation and business support activities that will address climate change issues.

The majority of respondents to this review have indicated that it is essential to ensure that regional strategies inform solutions to climate change issues, and that these ultimately allow greenhouse gas emissions in the region to be reduced. This has led some respondents to suggest that Yorkshire Forward should develop their own dedicated Climate Change Strategy or Delivery Plan, which could also act as a communication tool to promote exactly how Yorkshire Forward is addressing climate change. The Scrutiny Board agrees that a Yorkshire Forward Delivery Plan on climate change could usefully outline the issues and actions emerging from the Regional Energy Strategy, Climate Change Action Plan and the Vision for Biomass report that Yorkshire Forward will specifically deliver. The Delivery Plan could also highlight how Yorkshire Forward will administer their

lead role on developing a lower carbon economy, and delivering their priority innovation and business support activities that will address climate change.

Climate Change Targets in the Region

As previously identified in the Arup report on regional strategies, the comments that have been received through this scrutiny review confirm that there is significant confusion over the differing targets on climate change, specifically in regards to the target in the Regional Economic Strategy (RES), Yorkshire Forward's own internal target for reducing greenhouse gas emissions from their funded activities, the targets that DEFRA has introduced for local authority districts, and the EU targets. This confusion is further exacerbated by the suggested targets in the Stern Review, and the proposed targets in the Climate Change Bill.

Yorkshire Forward was the first RDA to commit to a greenhouse gas emissions reduction target in their RES, and up until April 2008, they were still the only RDA to have such a target. Following the Energy White Paper, all RDAs will need to set carbon reduction targets. Yorkshire Forward is applauded for being the leading RDA on voluntarily setting an output target of this nature. The current RES target is to reduce consumption based carbon equivalent greenhouse gas emissions by 20% - 25% between 1990 and 2016. Although some respondents have assumed that the targets were set in line with the region's proportion of the national target, the Scrutiny Board has learnt that the target was actually based on regional trends in consumption based emissions since 1990. Yorkshire Futures monitors the regional trends on consumption-based emissions and also measures and promotes progress against the RES target in the annual Progress in the Region reports.

The recently published Regional Spatial Strategy identifies the same greenhouse gas emissions reduction target as the one that is in the RES, so there is consistency between the two strategies. The Scrutiny Board has however, identified some confusion over which organisation 'owns' the RES target, and individuals and organisations have mistakenly believed that it is owned by Yorkshire Forward. The Scrutiny Board is clear that the RES target is a regional target which any organisation can contribute to. The Scrutiny Board therefore believes that the RES target should be fully incorporated into the revised Climate Change Action Plan so that a collective of organisations can take ownership of the target under the Climate Change Executive Group, and report the progress made against the target.

Although some respondents to this review were not aware of its existence, Yorkshire Forward has an internal target for the amount of carbon emissions that they can 'save' from the projects and initiatives which they directly fund. They previously aimed for a reduction of carbon equivalent emissions by 5 million tonnes between 2003 and 2006, based on a research report by Cambridge Econometrics on the then current and predicted emissions. Yorkshire Forward is currently working towards a revised internal target of reducing carbon dioxide equivalent emissions by 500,000 tonnes per year between April 2008 and March 2011, as outlined in their Corporate Plan.

Whilst the Scrutiny Board commends Yorkshire Forward for developing an internal target, they are concerned by the confusion over how it is calculated. Yorkshire Forward has confirmed to the Scrutiny Board that the internal target of 500,000 tonnes has been determined on the basis of the proportion that Yorkshire Forward's annual budget represents in relation to the annual value of the regional economy. The Scrutiny Board was unclear about whether the internal target is based on consumption or production based emissions, however, Yorkshire Forward has also clarified that although the majority of their projects reduce consumption-based emissions, the internal target incorporates both production and consumption based emissions.

On a district level, local authorities are currently expected to meet a target of a 60% reduction in carbon emissions by 2050. It is widely anticipated that the target in the Climate Change Bill will increase to an 80% reduction for the UK overall in carbon emissions by 2050, and there is a possibility that this target could be passed onto local authorities. The respondents to this review have indicated that a national target of 80% equates to a reduction in carbon emissions of 3.75% per year, meaning that the regional target in the RES would subsequently have to increase. This is a major concern for the respondents, as the Arup report has highlighted that the current RES target of a 25% reduction in greenhouse gas emissions by 2016 will not be met unless current activity is increased. In addition, the Arup report and the respondents to this review indicate that it is unlikely that the region will be able to make a sufficient contribution to the UK target of 15% of all energy produced to come from renewable sources.

Yorkshire Forward has confirmed that they deliberately set stretching and ambitious greenhouse gas emissions reduction targets in the RES and Corporate Plan, and they acknowledge the risk involved in failing to achieve the targets. Although the Scrutiny Board accepts that the

target may be difficult to achieve, they firmly believe that if the region has a target, every effort must be made to ensure that it is reached. The respondents to this review agree that missing the regional carbon reduction targets is not an option, and that Yorkshire Forward must be more clear on how the RES and Corporate Plan targets will be met.

Performance Against the Target

Since the greenhouse gas emissions reduction targets were set, Yorkshire Forward has revised the way in which progress against the targets is measured and recorded. The method that Yorkshire Forward has used since March 2006 to measure progress against the Corporate Plan target is based on predicting the impact that new projects will have on reducing emissions. Yorkshire Forward has identified six project types that have a significant or regular impact on greenhouse gas emissions, and these have been incorporated into a Greenhouse Gas Forecasting and Inventory Tool, or calculator, for Project Managers to use when developing new projects. The six project types are electricity generation (including Combined Heat and Power), energy efficiency, fuel switching (including solar water heating), new buildings or building refurbishment, waste recycling and utilisation, and transport. The tool is used in conjunction with a Sustainable Development Assessment, and it uses the guidelines that DEFRA issues on greenhouse gas conversion factors for company reporting. The emissions reductions for a capital based project are normally calculated over a project life-cycle of ten years, so if the project funded a new energy efficient building, the estimated emissions saved by the building each year would be multiplied by ten. For revenue-based projects, the emissions savings are calculated on the duration of Yorkshire Forward's funding for the project. Yorkshire Forward counts the total carbon emissions from each project as achieved, as soon as the project is approved and contracted. Yorkshire Forward was the first RDA to develop such a tool and the DBERR has subsequently recommended to other RDAs that they use a similar tool. Although Yorkshire Forward acknowledges that the tool needs to be developed further in order to make it easier to use, they are confident that the tool can reliably estimate the tonnes of carbon emissions that will have been reduced. The outputs recorded against Yorkshire Forward's internal target are externally crosschecked and verified at the end of each financial year to produce a final year-end output.

Using the Greenhouse Gas Forecasting and Inventory Tool, it is retrospectively estimated that between April 2003 and March 2006, Yorkshire Forward achieved a 1.87 million tonnes reduction in carbon emissions. On this basis,

Yorkshire Forward has projected that carbon emissions in the region will reduce by 0.5 million tonnes per year between April 2006 and March 2010, which is in line with the internal target. Yorkshire Forward is currently reviewing the emissions reduced for the 2007/08 financial year, but if the projected estimated figures are reached, Yorkshire Forward will have reduced carbon emissions by an estimated 2.87 million tonnes by March 2008.

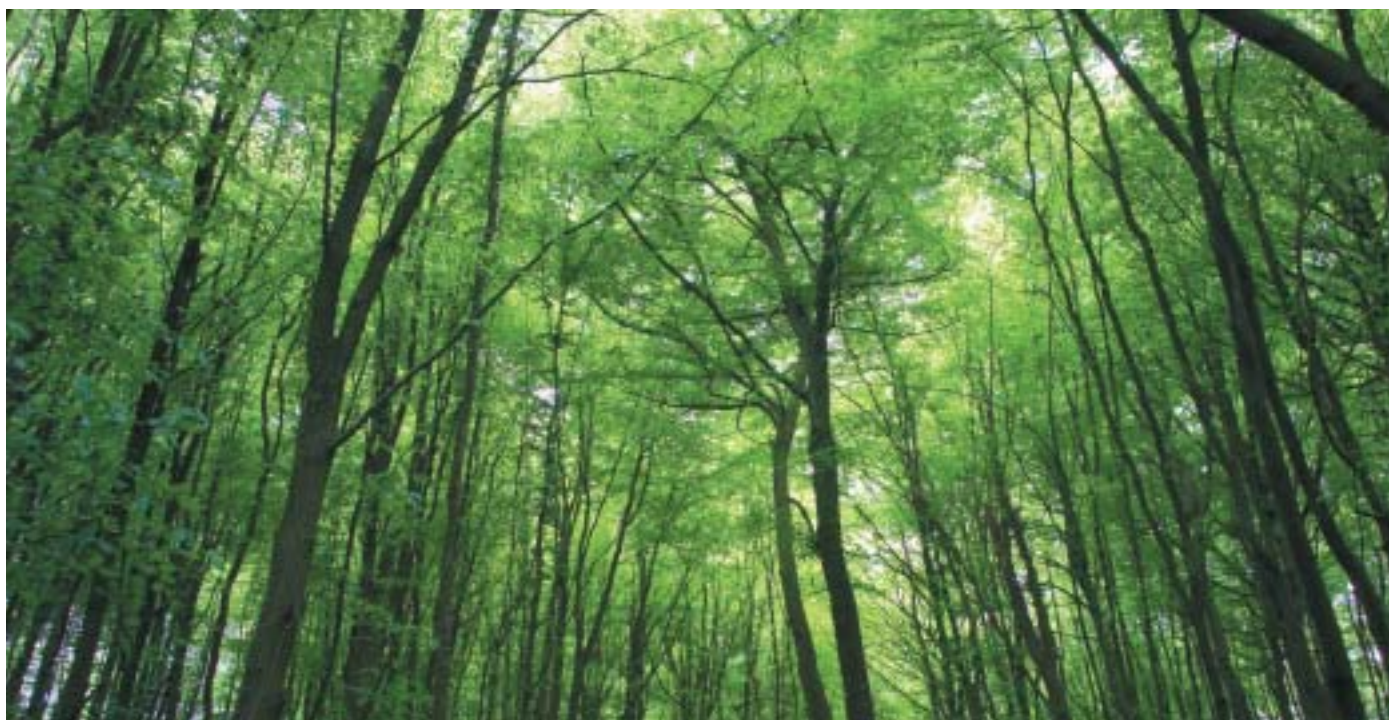
Yorkshire Forward publishes their achievements against the internal target in their Corporate Plan in the Annual Progress Reports which they submit to the DBERR. DEFRA also publishes annual data on national and regional greenhouse gas emissions, which can be used to track performance on carbon emissions reduction, although the DEFRA data does not directly reflect RES or Yorkshire Forward activity. Some respondents to this review have questioned the reported performance figures believing them to be too high. One respondent highlighted the example of Community Energy Solutions (CES), which has estimated a reduction of 200,000 tonnes for 4,000 homes, which equates to reductions of 50 tonnes per household. Yorkshire Forward has reported to the Scrutiny Board that the figure is realistic as it involves some of the worst housing stock in the region and the 50 tonnes per household will be obtained over a ten-year period. The individuals and organisations consulted through this review requested clarity on whether the performance figures are purely based on consumption, and whether emissions from aviation and other key industries are included. Yorkshire Forward has confirmed to the Scrutiny Board that the figures are both consumption and production based, but only include emissions from transport on some projects where there is sufficient comparative data to establish the emissions produced from transport prior to Yorkshire Forward's intervention and the emissions produced now. Yorkshire Forward has also confirmed that they are unlikely to become directly involved in influencing emissions from aviation, as this is a national issue.

Yorkshire Forward has stressed to the Scrutiny Board that the method for calculating carbon emissions reduction is continually developing, and that it is currently being reviewed in consultation with DEFRA and other RDAs. The Scrutiny Board welcomes this unified approach, particularly if it results in a much-needed consistent method for measuring progress against carbon emissions reduction targets, not just in the region, but across the UK as a whole. The Scrutiny Board accepts that Yorkshire Forward has limited influence on the international power stations that are based in the region, however the Scrutiny Board recognises that the recorded data on carbon emissions from the region's power plants needs to be particularly improved. Whilst the Environment Agency is

currently charged with administering the data on emissions from power plants under the UK National Allocation Plan of the EU ETS Directive, the Scrutiny Board believes that there is a need for the region to co-ordinate the overall progress that is being made against reducing both consumption and production based emissions. The Scrutiny Board also feels that there needs to be a much clearer and consistent monitoring framework which can not only record Yorkshire Forward's progress towards the regional targets, but also the contribution of other partners and agencies in the region in reducing emissions against the RES target.

In order to improve reporting on progress towards the climate change targets, the Scrutiny Board proposes that the annual Progress in the Region reports should include an expanded section on climate change issues, with additional and more detailed data on greenhouse gas emissions reduction, energy production and energy consumption in the region. This additional data could be used to highlight to the region whether the gap between the 1990 baseline emissions and the 2016 emissions target is closing or increasing, as the summary table on High Quality Environments in Progress in the Region 2007 does not currently illustrate this. The Scrutiny Board also suggests that Yorkshire Forward considers breaking the long-term RES target down into a series of annual targets to drive step change in regional carbon reduction. However, Yorkshire Forward has suggested that the development of five-year targets in line with the Climate change Bill would be more appropriate.

Based on estimated performance statistics to date, Progress in the Region 2007 supports the view in the Arup report that there is a strong likelihood that the regional targets will not be met unless current greenhouse gas emission reduction activities are accelerated. Progress in the Region also highlights the fact that emissions from the region's power plants have been increasing overall, and suggests that they may increase further as consumers demand more energy. Yorkshire Forward's activities under the Regional Energy Infrastructure Strategy and Action Plan will help to maximise low carbon energy generation and increase the efficiency of energy supply to try and reverse this trend. However, the trend for increasing energy demand also indicates that the best course of remedial action is to look at reducing energy consumption overall, and this means changing the behaviour of businesses and other consumers, and this is discussed later in this report. The individuals and organisations who have commented during this review unanimously agree that remedial action by all partners on reducing carbon emissions, and generating greater proportions of renewable energy, must accelerate, to ensure that the region actually reaches the target set. The respondents to this review have called for strong measures to be identified and implemented to reduce carbon emissions with immediate effect. As the organisation responsible for developing the RES, the Scrutiny Board also recognises a need for Yorkshire Forward to confirm which partners they will work with in particular, with clear indications of the effort that will be made by the partnership to reach the RES target by 2016.



Balancing Climate Change Action and Economic Growth

The Stern Review identifies climate change as the largest market failure ever, and states that tackling climate change is the pro-growth strategy for the longer-term. It also highlights the economic opportunities from tackling climate change, such as the creation of new businesses and new markets in low carbon technologies, and the provision of low carbon goods and services. The Stern Review concluded that if no action is taken, the overall costs and risks of climate change to the economy will equate to a loss of at least 5% of global Gross Domestic Product (GDP) each year, which could rise to over 20%. Stern advised that by acting on climate change the economic impact would be limited to around 1% of global GDP each year.

The Scrutiny Board wanted to explore how Yorkshire Forward is discharging its responsibilities for furthering economic development and sustainable development. The Scrutiny Board also wanted to assess the range of initiatives that Yorkshire Forward is involved in, which seek to alleviate the impact of climate change on the Yorkshire and Humber region. The Scrutiny Board was particularly interested in ascertaining the extent to which Yorkshire Forward's interventions can reduce carbon emissions, whilst businesses are encouraged to grow, and physical infrastructure is improved and expanded.

Measuring Economic Growth

Since the Regional Development Agencies (RDAs) were created in 1999, they have been required to deliver several Public Service Agreement (PSA) targets, including the number of businesses created, the number of hectares of brownfield land developed, and the amount of private sector funds invested in the region. These targets have been used to assess the impact of the RDAs projects and activities on their respective regional economies.

The RDAs have always used the region's Gross Value Added (GVA) rate to assess how well the economy is progressing as a result of the economic development activities of public, private and voluntary and community sector organisations. In conjunction with the changing role and responsibilities of the RDAs, and despite lobbying from Yorkshire Forward, the Government has changed the PSA targets and decided to judge the performance of the RDAs solely on the value of GVA in the regions. The Scrutiny Board has received a high volume of comments expressing grave concerns about this decision, particularly in light of the RDAs widening remit in producing a Single Regional Strategy. The concerns are that GVA is too narrowly defined, and that it will reduce the effectiveness of integrated economic, social and environmental policies, whilst also reducing the significance of social and environmental improvement. Some respondents to this review have also stated that this could compel the RDAs to achieve growth at all costs.

Yorkshire Forward has assured the Scrutiny Board that they will continue to assess their performance as an agency against their core values, and will persist in using the existing PSA output targets until new output targets can be developed with partners in the region which appropriately reflect Yorkshire Forward's policy

Recommendation

3

Yorkshire Forward should develop their own set of output targets for their funding, against which they will measure changes in GVA, the region's economic performance, social well being and quality of life, environmental progress and protection, and carbon emissions reduction.

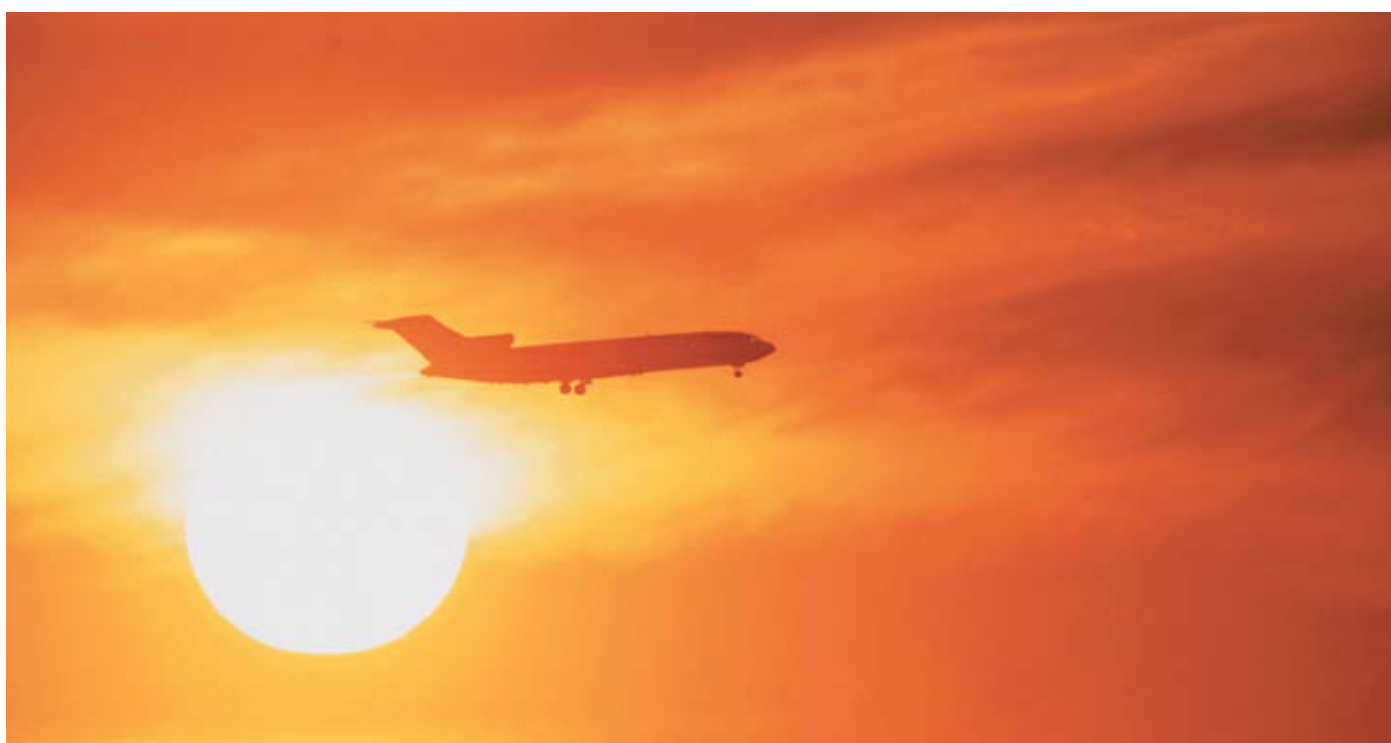
priorities. However, the Scrutiny Board strongly advises Yorkshire Forward to ensure that a new set of targets are designed to measure the economic, social and environmental outcomes of their financial contribution in the region.

Conflicting Policy

Although Yorkshire Forward regards economic development as integral to sustainable development, the Scrutiny Board has been alerted to several examples where regional and national policies on economic development conflict with those on sustainable development and the environment. The Northern Way Growth Strategy has been referenced by several respondents as an example of national economic and sustainable development approaches being unco-ordinated and in conflict with one another. These respondents have enquired as to whether a sustainability appraisal was conducted on the Northern Way, citing that it emphasises carbon intensive development in the North of England. Although the focus and emphasis of the Northern Way strategy has reduced in the last year, by limiting the original ten investment priorities to three, the respondents to this review have also indicated concerns over the City Region Development Plans, which are linked to the Northern Way. It has been suggested to the Scrutiny Board that these also place far more emphasis on economic growth, whilst giving insufficient recognition to the impact of this growth on carbon emissions and the environment in general.

As highlighted earlier in this report, there appears to be a discrepancy at national level in relation to the views of individual Government departments on climate change and how seriously the UK needs to treat carbon emissions. The respondents to this review suggest that this inconsistency also presents itself in national policy which is then handed down to the regions to deliver. The vast majority of individuals and organisations consulted for their views on climate change, believe that the Government has not yet managed to set clear policy and guidelines on the need to de-couple economic growth from carbon emissions. The Scrutiny Board sees a clear role for Government Office for Yorkshire and the Humber in response to this, as they can usefully provide the steer for the region on articulating national policy on economic growth and climate change and explaining what it means for the region.

Many respondents have identified transport as a key area where approaches to economic development are in direct conflict with sustainable development and environment related strategies. The main example that has been quoted to the Scrutiny Board is the investment in the regeneration of the area surrounding Robin Hood Airport, near Doncaster. Several respondents have highlighted the impact that aviation expansion has on natural habitats and carbon emissions, both in terms of increased air flight, and the new road infrastructure that will connect the airport to the South Yorkshire road network and beyond. Whilst the respondents understand that Yorkshire Forward's investment in the airport is based on the economic factors





of job creation and skills development, some have suggested that over the medium and long-term, the economic benefits will be far outweighed by the increase in carbon emissions, thereby delaying a shift to a lower carbon economy. The comments expressed by individuals during this review advise Yorkshire Forward to critically examine proposals for further airport expansion in the region, such as Leeds-Bradford International for reasons of safety, the effects on the surrounding environment, the social and environmental effects on areas within the flight paths, the adequacy of local transport and the potential increased contribution to regional carbon emissions. The likely increase in aviation emissions was recently confirmed in the 'Stepping Off the Gas' report' on low carbon and sustainable transport systems in the region. This study concluded that between 2001 and 2021, the carbon emissions from aviation would double as a direct result of aviation growth. Yorkshire Forward believes that the scale of aviation emissions is relatively small at present, although they accept the potential for these emissions to increase. Whilst aviation policy and planning is not within the influence of the region, and does not fall under their remit, Yorkshire Forward has assured the Scrutiny Board that they will undertake an environmental assessment of any funding requests related to the region's airports. Yorkshire Forward has also given their commitment to encouraging the airports to reduce the impact of their activities.

It has been suggested to the Scrutiny Board by the respondents to this review that regional transport policy should be more directed at developing less carbon intensive public transport and safe cycle routes as an alternative to car use, as this is a highly recognised area in need of greater national, regional and local investment. Examples that have been suggested include increased transport interchanges combining bus and rail terminals, increased evening bus services, electrification of all major railway lines in the region and a metro scheme based on the Tyne and Wear Metro to utilise existing railway lines whilst reopening stations en route. The Scrutiny Board feels that this is an issue which the Regional Transport Board needs to consider for the Regional Transport Strategy, although the Scrutiny Board also acknowledges and supports the need for increased national investment in regional transport improvement.

De-coupling Economic Growth from Emissions Reduction

There appears to be a level of acceptance that if the number of businesses and jobs increase in the region, and the region's infrastructure is improved, there will by default be an increase in carbon emissions. There is broad agreement however, that there needs to be an identified way of reconciling or de-coupling economic growth from carbon emissions.

The way in which most respondents believe this to be achievable is through the drastic reduction of energy consumption in the region, whilst offsetting carbon emissions through a series of environmental projects. However, it has also been highlighted to the Scrutiny Board that the region needs to fundamentally address the way in which infrastructure is built, by using more sustainable materials to reduce the amount of carbon emitted during the construction phase, and installing renewable technologies in buildings that will reduce emissions over the lifetime of the building. There is a clear lead role that Yorkshire Forward can undertake in relation to how infrastructure is built through their statutory role on sustainable development. The Scrutiny Board understands that Yorkshire Forward is in a position to ensure that economic growth is achieved through sustainable development principles, so that economic benefits are harmonised with improved

Recommendation 4

Yorkshire Forward should help to tackle the long-term under-investment in sustainable transport options in the region by strategically influencing Government in partnership with relevant organisations and agencies, to increase the level of national investment in transport, with additional spending ring-fenced for public transport and cycling improvements where there is an evidenced need.

social well being and the enhancement of the natural environment. To this end, Yorkshire Forward is already supporting sustainable construction methods and renewable technologies, and these are discussed in further detail later in this report.

Whilst the Scrutiny Board acknowledges that de-coupling economic growth may be difficult to achieve, they believe that Yorkshire Forward needs to develop a strategic approach to de-coupling economic growth from emissions. The Scrutiny Board suggests that this strategic approach should clearly outline how policy conflicts will be resolved and how emissions related to economic growth will be offset by sustainable and environmental project activities. The Scrutiny Board also believes that Yorkshire Forward should advocate a principle of reducing carbon emissions from economic development overall. Yorkshire Forward regards resource efficiency as a key way of de-coupling economic growth from carbon emissions, and they have been actively engaged in developing the recycling sector in the region as one example of this work.

In terms of achieving economic growth whilst meeting the climate change reduction target, it has been suggested that Yorkshire Forward needs to embed sustainable development principles into all of their activities. To some extent, Yorkshire Forward is already doing this on the projects they fund, through a Sustainable Development Assessment for all projects at the initial application stage. The Sustainable Development Assessment is an interactive tool which all Project Managers at Yorkshire Forward use to answer a series of questions about the project's impact. It is based on the indicators outlined in the Regional Sustainable Development Framework, Integrated Regional Framework and UK Sustainable Development Strategy. The questions include whether the project can promote sustainable travel, whether the project includes habitat management, whether it uses or promotes technologies that can reduce environmental impacts, and whether it promotes or uses energy or resource efficient systems. In addition, the Sustainable Development Team uses the aforementioned Greenhouse Gas Forecasting and Inventory Tool alongside the assessment, to estimate the emissions that will be 'saved' from the project's approach. Yorkshire Forward's Sustainability Development Assessment has received praise from the individuals and organisations that know about it. However, they have highlighted that the system could be further strengthened by ensuring that the appraisal is the key decision-maker of whether a project progresses through the application process, or not. The Scrutiny Board agrees that this would allow any project applications which had a considerable negative impact on emissions to be blocked, and only progressed through the Single Pot funding application process if the environmental impact of the project could be sufficiently reduced by incorporating carbon reduction measures.

It appears that the majority of the individuals and organisations consulted through this review are generally unclear about how Yorkshire Forward's policy on sustainable development is incorporated into investment planning decisions. The Scrutiny Board therefore believes that this demonstrates a need for Yorkshire Forward's Sustainable Development Assessment to be more widely shared and promoted as good practice, in addition to the information which they make publicly available through their annual Environmental Statement.



Recommendation 5

Yorkshire Forward should promote the use of sustainable development assessments in project development with other public agencies in the region, in order to develop best practice.

Becoming More Energy Efficient

The global demands for energy have significantly increased during the last century, and a key message for the region's businesses and residents that has emerged from this scrutiny review, is that the overall consumption of energy must reduce.

The Scrutiny Board has received an overwhelming response from individuals and organisations calling for greater investment in improving the insulation of the region's business and residential properties, in order to drastically reduce carbon emissions. Whilst the Government has applied energy efficiency measures in the Code for Sustainable Homes, the respondents have criticised the Government for restricting the measures to new housing, and for not tackling the region's existing housing stock where some of it is insufficiently insulated. Under the Home Energy Conservation Act, there is a statutory delivery role for local authorities in insulating existing homes in their districts, in an effort to cut emissions from domestic housing. However, the Scrutiny Board accepts that a lack of funding at local authority level, means that some local authorities are unable to fund a significant proportion of the cost of insulation, whilst others are able to provide free insulation in their district. The lack of public finance has been further exacerbated by national funding cuts to the Warm Front Campaign, which provided heating and insulation improvement to those in receipt of state benefits. It has been suggested by many respondents that Yorkshire Forward could obtain a high return of carbon emission savings to record against the RES target, for relatively low levels of investment in subsidising mass insulation schemes across local authority districts with funding gaps. The views of climate change experts suggest that if every home in the UK were properly insulated, carbon emissions would be dramatically reduced. North Yorkshire County Council recently passed a motion to this effect citing the added benefit of reducing fuel poverty through domestic insulation. The Local Government Association Climate Change Commission's recent report also highlights a need for local authorities to mobilise resources through energy efficiency measures.

With performance against the RES target currently lagging, and with domestic housing emitting some of the highest amounts of carbon, the Scrutiny Board agrees that mass insulation schemes could have a big impact on carbon emissions reduction in the region. However, the Scrutiny Board acknowledges that at this time Yorkshire Forward does not have the responsibility for housing, and that they therefore have a limited role. Whilst Yorkshire Forward recognises that they could use their expertise and influence to encourage other partners to tackle the energy

efficiency of existing housing stock to reduce domestic carbon emissions, Yorkshire Forward believes that any funding subsidies needed for domestic insulation should be met by the Regional Housing Board. Yorkshire Forward has also alerted the Scrutiny Board to the possibility that residents may spend any saved money on energy bills on other activities that emit just as much carbon. However, Yorkshire Forward supports improved energy efficiency in businesses through their partnership with the Carbon Trust and Envirowise.

Investment in Environmental Technologies

Yorkshire and Humber is one of the largest producers of energy in the UK and another key message emerging from this review is that a larger proportion of the energy that is produced in the region must come from renewable sources, in order to drastically cut the emissions from the region's energy producers.

Yorkshire Forward acknowledges that there is still more that they can do to support the development of environmental technology in the region, and this was one of the reasons behind the creation of the Sustainable Futures Company (SFCo). SFCo is a not-for-profit wholly owned subsidiary of Yorkshire Forward and is their main delivery organisation for sustainable development activities. SFCo is presently working with over 300 companies through the Recycling Action Yorkshire (RAY) programme alone, and a key feature of SFCo's delivery is low carbon technology work with businesses in the environmental technology sector. Yorkshire Forward is also expanding their Environmental Technologies Sector team to provide more support to the sector.

Several individuals and organisations expressed disappointment that Yorkshire Forward's financial support for Microgeneration Yorkshire ended in March 2008. Microgeneration Yorkshire supported small-scale renewable energy technology that could be installed in individual business premises and households, such as photovoltaic panels and micro wind turbines. It was also regarded as having provided highly rated training and support on energy efficiency. Yorkshire Forward is now funding other alternative initiatives, and believes that the Energy Savings Trust and local authorities should be driving microgeneration activity. This view is supported by the Local Government Association Climate Change Commission who believes that local authorities are best placed to act on climate change at a community level. Yorkshire Forward is currently supporting Community Energy Solutions (CES), which provides renewable energy solutions to low-income households in deprived areas, including ground source heat pumps. There is a general

belief amongst the respondents that community wide renewable energy systems could have a big impact on reducing emissions from energy consumption, if for example, whole communities received some of their energy from communal ground source heat pumps or several wind turbines, or if every house in the community had photovoltaic panels installed. It has been widely suggested by the respondents that Yorkshire Forward could explore the possibility of feed-in tariffs from these community approaches to renewable energy systems.

The Scrutiny Board believes that there is merit in Yorkshire Forward kick-starting the market for technologies like ground source heat pumps, to encourage demand from customers, and ultimately drive down the cost of the pumps for business and residential consumers, whilst also providing opportunities for new environmental technology businesses to be created. This would also have the added benefit of creating new jobs in the manufacture, production and installation of the technology. Yorkshire Forward is already beginning to address this through CES, by developing offers that substantially reduce the cost of the technology, and they are also offering manufacturers volume contracts. The Scrutiny Board is encouraged to hear that the region's universities are already considering a low carbon future, and are investigating innovative technologies that can help realise Yorkshire Forward's ambition for a lower carbon economy. However, the Scrutiny Board is particularly keen to see further development and application of renewable energy technologies across the region.

Rather than funding smaller technologies, there appears to be a desire for Yorkshire Forward to concentrate their funding on the investigation and implementation of newer and bigger environmental technologies. Although the investigation of hydro and nuclear power has been suggested by some respondents, neither of these have been deemed a priority for the region, and the majority of comments that have been submitted to the Scrutiny Board strongly support energy generation from the region's woodlands in particular. The Yorkshire and Humber Vision for Biomass summary report was recently launched by the Regional Energy Forum, and was part-funded by Yorkshire Forward in conjunction with other key regional partners. The report considers the future of biomass technologies in the region, and identifies opportunities in business and job creation to support the uptake of the technology.

By the end of 2009, approximately 10% of the fuel that the Drax Power Plant co-fires in the region is expected to come from biomass, amounting to an estimated 1.5 million tonnes of biomass each year. However, the Scrutiny Board recognises that Drax and other power stations will need to import biomass from overseas due to the fact that the amount of biomass required would always exceed the amount that can be supplied from the UK. This therefore negates the emissions saved from co-firing biomass because of the transport emissions associated with importing goods. The respondents have suggested that Yorkshire Forward should be investing in several local biomass production mills across the region rather than one central plant, to ensure that biomass can be locally sourced and co-fired without incurring additional carbon emissions from transporting biomass on long journeys. The Scrutiny Board agrees that Yorkshire Forward should consider how five or six biomass production plants could be created across the region to process biomass locally, and to establish an active biomass sector in Yorkshire and Humber that can provide local employment opportunities. In contrast, although there is widespread support for biomass, the Scrutiny Board has been made aware of some reservations about biomass being used as an alternative energy to fossil fuel. Some individuals have commented that if large acres of the region's



Recommendation 6

Yorkshire Forward should continue to adopt a strategic approach to support the development and deployment of renewable energy in a manner that benefits businesses and communities and results in best practice. Yorkshire Forward should ensure that this best practice is disseminated region wide so that it may be replicated.

woodland are turned over to biomass production, this might have an adverse effect on biodiversity unless the biomass was only supplied by sustainable forests. Yorkshire Forward is committed to making the best use of the wetlands, woodlands and peat uplands, believing that they have the potential to bring considerable wealth into the region's economy. The Scrutiny Board has identified broad support for Yorkshire Forward's intention to consider investment in the region's peat uplands and wetlands. Some of the respondents have commented that financial support for the protection and enhancement of these areas is long overdue. It is widely believed that the peat uplands and wetlands are natural assets which are there to be used and enjoyed, as they are effective carbon sinks and provide valuable habitats for the region's biodiversity. The Scrutiny Board acknowledges that further investment in these areas will help to soak up some carbon emissions, whilst developing new business opportunities in environmental technologies and improving the habitats as a conservation measure. However, as the respondents have identified increased competition for lowland and wetland areas to be used for food crops and the production of biofuels as well as natural habitats, the Scrutiny Board is keen for Yorkshire Forward, Natural England and the Environment Agency to progress the development of a joined-up strategic approach to wetland investment. This will enable their respective roles and funding streams to be co-ordinated, and will also allow the agencies to adhere to legal frameworks, particularly in relation to the status of some of these areas as Sites of Special Scientific Interest (SSSI).

Managing Waste

The comments received from the respondents to this review about waste management fall into two categories: using the region's waste as a source of energy, and support for increased business and residential recycling.

The Government's Waste Strategy of 2007, suggests that anaerobic digestion of waste requires lower capital investment, lower operational costs and is both economically and environmentally viable. Anaerobic digestion is a natural biological process which can be utilised to turn landfill waste into energy. By sealing the waste in a storage facility and removing the oxygen, the natural bacteria composts the waste down and transforms it into a bio gas that can be used as a source of lower carbon fuel for use in domestic and commercial heating and vehicles. Whilst this technology is still relatively new in the UK, Yorkshire Forward recognises the significant potential that anaerobic digestion could offer. The Scrutiny Board has identified strong support for investment in anaerobic digestion technology in the region, and

welcomes the fact that Yorkshire Forward has already commenced activities on this through the Future Energy Yorkshire (FEY) Programme, and Rural Development Programme for England 2007-2013. FEY has been established and directed by Yorkshire Forward to help develop business opportunities in new and renewable energy technologies. FEY is currently working with the commercial sector, and has begun to work with local authorities on the treatment of waste for energy recovery. FEY has particularly worked with the private sector on the development of anaerobic digestion technology in Emley and Selby.

In terms of other methods for dealing with landfill waste, Yorkshire Forward has part-funded one of DEFRA's New Technology Demonstrator Projects on advanced thermal treatment technology with Scarborough Power in Seamer Carr. The project will take 18,000 tonnes of municipal solid waste each year and use pyrolysis to heat the waste at a high temperature in the absence of air, and break-it down into ash, gas and oil, which can then be converted into energy. Pyrolysis uses less oxygen than traditional incineration, and should therefore release fewer emissions. However, as it is a new technology its advantages are yet to be evaluated. The Scrutiny Board has detected little appetite from the individuals and organisations consulted on the review for traditional forms of incineration. The vast majority of comments received, state that mass burn incineration is neither an economically, social or environmentally viable solution to reducing waste. The respondents believe that incineration does not generate sufficient energy in comparison to other power plants, the infrastructure is not available to support the energy that is produced and it emits more carbon dioxide per unit of energy than a coal-fired power station. Yorkshire Forward acknowledges that mass burn incinerators do not generate sufficient energy in all cases, but believe that there is merit in the technology if the heat can be recovered from incineration and used as a form of energy. Incidentally, the local authorities in the Yorkshire and Humber region are currently considering whole waste systems for dealing with landfill rather than concentrating solely on incineration or anaerobic digestion.

Yorkshire Forward is currently investing in several services that deal with waste from a broad range of businesses and industrial sectors under its Resource Efficiency Programmes. The provision of business advice on climate change issues has mainly been delivered through the national Business Resource Efficiency and Waste (BREW) programme, which has invested £2 million in environmental related business support in the Yorkshire and Humber region. Examples of activities supported under the BREW programme include Green Business



Clubs for SMEs, and the Green Business Support Organisations (GBSO) network, which provides training, capacity building and networking opportunities to environmental business support providers to help them to provide improved advice and support to businesses on environmental issues, such as legislation on waste and pollution, and becoming more resource efficient. Yorkshire Forward has reported to the Scrutiny Board that a further multi-million pound investment is proposed under the Resource Efficiency programme to increase the support available to businesses on resource efficiency measures and recycling, and increased support for the environmental sector.

Despite that fact that Yorkshire Forward does not have a formal role on waste, it is a member of the regional Waste Recycling Advisory Group (WRAG), which is led by Government Office for Yorkshire and the Humber. Yorkshire Forward is also seeking to influence local authority waste and investment strategies through RAY. RAY is a key Yorkshire Forward initiative on waste, and it operates in partnership with Envirowise and the Waste and Resources Action Programme (WRAP) amongst others, to offer practical solutions to businesses across the region to encourage them to minimise their waste, and stimulate the market for recycled materials. RAY is part of SFCo and it represents a £3 million investment from Yorkshire Forward. RAY assists the development of joint

ventures and provides other business support such as specialist advice, demonstration projects, technical consultancy and market research, to support businesses which demonstrate the potential to increase the tonnage of waste that they recycle. RAY is the first recycling market development programme to have greenhouse gas emissions reduction as its primary driver, and the programme is clearly focused on areas which will result in the greatest benefit to the region such as jobs, private sector investment and business creation. Current priority areas are plastics and glass recycling, increased processing of organic materials, use of organic composts in new markets including brown field land regeneration and increased procurement of recycled content products.

Yorkshire Forward also supports a website called Whywaste, which provides a free waste exchange service, where companies and communities can market their waste to other businesses and groups who are able to re-use or recycle it. Yorkshire Forward is keen to ensure that Whywaste continues to work closely with the community sector, as a way of supporting local, social enterprises. Other initiatives, which Yorkshire Forward has supported over the last few years, include supply chain programmes, the provision of small-scale capital and consultancy support to enable businesses to implement changes in their resource efficiency, and pilot collection services for recycling.



Many respondents to this review have highlighted a need for consistent approaches to domestic recycling, which clearly falls under the responsibilities of local authorities and not Yorkshire Forward. The key issues that the respondents have cited include insufficient community recycling facilities, and discrepancies between local authority districts on what materials can and cannot be recycled. Some individual respondents have also specified a need for clear instructions on recycling, to make it easier for households to recycle their waste and reduce landfill. The issue of a lack of recycling facilities mainly refers to tower and apartment blocks, where residents have indicated to the Scrutiny Board that although they want to recycle paper, bottles, tins and plastic bottles, they have communal skips instead that contribute to landfill. The Scrutiny Board is therefore keen to see practical steps taken to support the region's residential communities in recycling their waste, so that all households in the region can play their part in reducing their carbon footprint. Yorkshire Forward is particularly concerned about the availability of collection and recycling facilities for commercial and industrial waste, and has funded pilot projects with local authorities to address this.

Recommendation 7

Yorkshire Forward should work in partnership with local authorities to establish a pilot anaerobic digestion facility in the Yorkshire and Humber region as an alternative to waste incineration. Yorkshire Forward should also consider ways in which the region's businesses can be supported on dealing with commercial and industrial waste and in becoming more resource efficient.

Adapting to Climate Change

Climate change presents both threats and opportunities to the Yorkshire and Humber region's businesses, communities and residents in terms of extremes of temperature and rainfall patterns: hotter and drier in the summer, milder and wetter in the winter, increased storms and higher intensity of rainfall. As Yorkshire Forward has a current role on urban and rural renaissance, and with their future responsibilities for planning, the Scrutiny Board wanted to examine the interventions that Yorkshire Forward and their partners are currently undertaking, or are planning to undertake, which will prepare the region for a changing global climate.

Policy Behind Climate Change Adaptation

Whilst it is vitally important to implement mitigation measures that will reduce the amount of carbon being emitted into the atmosphere, the Stern Review identifies adaptation measures as essential to economic, social and environmental well being. The recently published Pitt Review on the floods of summer 2007 has also recommended that the Government prioritises climate change adaptation and mitigation activities in response to predicted extreme weather patterns.

The Environment Agency clearly has a lead responsibility for several aspects of climate change adaptation, including flood prevention, the licensing of water usage, human health protection and environmental improvement. However, the Scrutiny Board acknowledges that the Environment Agency also works in partnership with a



range of organisations across the region on adaptation measures. There is broad agreement from all of the individuals and organisations consulted through this scrutiny review that Yorkshire Forward in particular has a supporting role to play on adaptation, due to their responsibility for ensuring the economic viability of the region's cities, towns and communities. Yorkshire Forward is already embracing their supporting role on climate change adaptation, and it is evident that a good relationship is developing between Yorkshire Forward and the Environment Agency. This co-operative working between the two agencies has so far resulted in a series of studies on adaptation, and a research project that considers the economic assets in the region that are most at risk from flooding.



Yorkshire Forward is also working in collaboration with other key regional bodies on the development of the Regional Adaptation Study. This will respond to the challenge set by the Stern Review and inform adaptation approaches and action in Yorkshire and Humber. The Regional Adaptation Study will also support the development of the Single Regional Strategy. Although Yorkshire Forward's collaboration with the Environment Agency has been praised, the respondents to this review have also indicated to the Scrutiny Board that more adaptation measures are needed. In addition, the Scrutiny Board recognises a need for key regional agencies to improve the communication on climate change adaptation activities, and the Board therefore welcomes the Regional Adaptation Study as one way in which communication can be increased.



Dealing with Changing Rainfall Patterns

The Yorkshire and Humber region is acutely aware of the cost that extreme rainfall can inflict on the economy and the lives of the region's workers and residents. The floods of 2007 caused considerable damage to businesses, residencies and transport infrastructure in communities across the region. Scientists are predicting increased rainfall and storms and higher sea levels as a direct result of climate change, and Yorkshire Forward regards flooding as the largest climate change adaptation challenge facing the region. Yorkshire Forward is also concerned about coastal erosion on the east coast which may be exacerbated by erratic weather conditions, and the risks that erosion and sea level rise pose to businesses and communities located around the Humber estuary. The key lesson learnt from the summer floods of 2007 is that the region must act now to reduce the risk of future inland and coastal flooding, and this view is supported by the 92 recommendations in the Pitt Review.

The respondents to this review have considered the strategic measures that can be put in place to reduce the impact of any future flooding. The suggestions have included the restoration of natural flood barriers, such as green spaces and planting in urban developments, and more effective woodland and forest management in rural areas. However, several individuals and organisations have also questioned the reasoning behind building houses and new business premises on floodplains and riverbanks, believing that this has increased the risk of flooding for the poorer households who are most likely to live downstream. The Government's 25th Planning Policy Statement on Development and Flood Risk (PPS25) advises Regional Planning Bodies and Local Planning Authorities to direct development away from high-risk areas. The Pitt Review endorses this advice, and recommends that developers should take on the responsibility of funding the building of flood defences and maintaining them. The Pitt Review also recommends that the Environment Agency's powers should be reviewed and strengthened where necessary to ensure that the advice in PPS25 is applied and allow them to challenge developers.

Although the Environment Agency has the lead role for dealing with flooding, including servicing the Yorkshire Regional Flood Defence Committee, there is a general view that Yorkshire Forward and the region's local authorities should also undertake activities to reduce the impact of flooding for economic reasons. The Government has tasked Yorkshire Forward, and the UK's other Regional Development Agencies (RDAs), with handling economic shocks that will affect the viability of the region's businesses. The economic argument for Yorkshire Forward to invest in flood alleviation activities alongside those activities of the Environment Agency is therefore strong. The information gathered by the Scrutiny Board during this review shows that flooding has a knock-on effect on several aspects of the region's economy; it affects the ability of public transport operators to run normal services, it damages road and drainage facilities, it affects the viability of land based and agricultural industries in terms of the growing of crops and the health of livestock, and approximately 20 - 25% of people may be unable to get to work because of flooding. One example of flood alleviation that Yorkshire Forward could assist with is the development and installation of Sustainable Urban Drainage Systems (SUDS), particularly in capital based regeneration projects. This technology has been known to reduce flooding when other RDAs have funded its inclusion in new developments such as business parks.

Recommendation 8

Yorkshire Forward should actively contribute to the Regional Adaptation Study and use the outcomes of the study to identify a programme of activities that are focused on adapting to the economic risks and opportunities presented by climate change.

The Scrutiny Board believes that Yorkshire Forward should financially contribute to flood alleviation, alongside the funding provided by the Environment Agency and local authorities, to protect the local, sub-regional, city-regional and regional economies from the environmental shock of extreme rainfall and storms. The Scrutiny Board acknowledges the research that Yorkshire Forward is undertaking to inform their climate change adaptation activities. The Scrutiny Board also welcomes the potential development of a carbon off-setting scheme which Yorkshire Forward is embarking on with the Forestry Commission, that will see the restoration of the peat uplands to alleviate flooding and act as a carbon sink. However, the comments received during this review suggest that Yorkshire Forward should continue to influence any new residential or commercial developments in the region, to ensure that they do not increase flood risk and that they can cope with extremes of rainfall patterns. The Scrutiny Board acknowledges however, that this is currently difficult, as Yorkshire Forward is not yet consulted on all planning applications in the region.

Dealing with Fluctuations in Temperature

The parts of the region that are more likely to experience the impact of climate change on temperature are large urban towns and particularly cities. Urban centres are usually several degrees higher in temperature than rural areas because of the 'heat island effect'. Buildings absorb solar power and in high temperatures, they radiate more heat. Urban road and rail transport systems also emit heat, and a lack of green spaces or trees results in insufficient shading from the sun's rays. Transport infrastructure is also vulnerable to extremes of heat in regards to the increased risks of roads melting and rails buckling.

As the summers in the UK are expected to become warmer and drier, demands for air conditioning will increase, which will in turn release more carbon emissions into the atmosphere from energy powered air conditioning systems. The individuals and organisations who have contributed to this scrutiny review state that fluctuations in temperature present two challenges for the region; how best to capture the solar energy that buildings will absorb and store it for heating and power in colder periods, and how to sufficiently cool the buildings in summer without using traditional air conditioning systems, such as passive air conditioning which is not reliant on energy to power it and instead pulls cool air into the building.

It has been highlighted to the Scrutiny Board that although Yorkshire Forward and other key agencies are fully aware of the risk and impact of flooding, at present there is a lack of activity in addressing the risk and impact of temperature

fluctuations, particularly, the ability and comfort of people to live and work in the region's towns and cities. The respondents to this review have suggested that Yorkshire Forward and the local authorities should give greater consideration to managing extremes of temperature, because of their respective responsibilities for quality of place and urban planning. As indicated in the previous section of this scrutiny report, the Scrutiny Board also believes that Yorkshire Forward should increase their investment in environmental technologies that can be readily and more cost effectively installed in buildings, including supporting new businesses in the manufacture, installation and maintenance of new environmental technology systems. In terms of managing extremes of temperature, this could include technologies which capture and use natural sources of heat for power such as solar or ground and air source heat pumps, and the use of building materials such as reflective glass and cool and green roofing materials. The Scrutiny Board welcomes the fact that Yorkshire Forward has agreed to look at improvements to the urban climate following the work of Professor John Handley at Manchester University on changing the design and construction of urban conurbation to deal with extreme weather patterns. Yorkshire Forward has also informed the Scrutiny Board that they will use the findings of the Regional Adaptation Study to inform their activities on climate change adaptation.

Other Impacts of Climate Change

Apart from extremes of temperature and rainfall, climate change will have other economic, social and environmental impacts on the Yorkshire and Humber region. The first of these is on the region's land based industries. Some respondents have suggested that Blue Tongue and other animal disease outbreaks are a result of climate change. There is a recognised link that some infectious diseases spread more easily in certain types of weather conditions, and the respondents to this review have highlighted the impact of global temperature changes on insect migration into the UK that could infect livestock. The same respondents have also indicated that some livestock may be more susceptible to viral and bacterial infection in extreme weather patterns, citing the spread of infectious diseases like Foot and Mouth in previous years.

The Scrutiny Board has also heard concerns over the threat of climate change on food crops, particularly in relation to how extreme weather events like flooding, can adversely affect the quantity and quality of food crops. Several individuals have suggested that this can lead to shortages of certain foodstuffs and higher food prices, but also food security issues in terms of the threat to human health from poor quality crops. Some respondents have

also questioned the proportion of land in the region that will be diverted from growing food to the growing of crops for biofuel. From April 2008, all petrol and diesel sold at forecourts in the UK must contain a minimum of 2.5% biofuel, and this target is set to increase to 5% in the UK in 2010. With a pressure to reduce the amount of raw materials that are imported into the UK for biofuel production, some respondents to this review are concerned that more land in the UK will need to be allocated to biofuel plantation and that this will exacerbate food shortages.

The second economic, social and environmental impact of climate change is public health. The European heatwave of 2003 lasted for three months, and caused 14,000 premature deaths in France, and 2,100 deaths in the UK. If carbon emissions are not reduced, temperatures could rise by 1 to 2.5 degrees Celsius by 2050, and by as much as 4 degrees Celsius by 2080, thereby increasing the risk of further heat waves. Like the increased risk of animal infection, it is also broadly acknowledged that fluctuating global temperatures will cause insect migration, increasing the risk of human infection such as malaria. Respiratory disease is also dependent on the climate, and the risk of food poisoning increases the warmer the temperature gets. It is widely believed that the sections of society that are most at risk from the health impacts of extremely warm or cold weather are the elderly and poorer households.

Many respondents are particularly concerned about the impact of climate change being felt more acutely by the region's poorer communities, in terms of residing in areas prone to flooding, being more reliant on public transport to access employment, and being more susceptible to health problems which are exacerbated by extreme fluctuations in rainfall and temperature. The Scrutiny Board agrees with the respondents that Yorkshire Forward has a key role in tackling the economic and social inequalities that make poorer residents susceptible to the impacts of climate change. The Scrutiny Board therefore welcomes the fact that Yorkshire Forward will work with local communities on Community Energy Solutions (CES) activities which will address fuel poverty and potentially provide job creation in the delivery of low carbon products and services.

The threat to public health and poorer communities is both social and economic, as there are risks to the general well being of residents, and a risk of rising public health costs to treat illness. In comparison, the threat that climate change poses to the existence and survival of land-based industries is largely an economic one, as there is a risk to the viability of the businesses, and a knock-on effect on

the supply of foodstuffs, non-food crops and animal produce to market. As the organisation responsible for addressing market failure, Yorkshire Forward has a recognised role for ensuring the survival of land-based industries in the region. However, the Scrutiny Board also believes that Yorkshire Forward, Natural England, the Environment Agency, the Department for the Environment, Food and Rural Affairs (DEFRA) and the Department of Health (DH) must ensure that their climate change adaptation initiatives, protect the viability of the region's land-based industries and the most vulnerable members of our communities. Yorkshire Forward has assured the Scrutiny Board that it will consider how to deal with economic and social impacts of climate change as a result of the Regional Adaptation Study.

Green Infrastructure as a Solution

The majority of comments that the Scrutiny Board has received on the issue of climate change adaptation have suggested that the development of 'green infrastructure' is a real solution to the climate change issue of extreme water and temperature levels. The term 'green infrastructure' refers to plant life, gardens, parks, village greens, woodlands and waterways, and the Assembly is currently mapping the state of green infrastructure in the Yorkshire and Humber region.

It is important to note the value of the region's woodlands specifically, as both a climate change mitigation and adaptation measure. The use of woodlands as a method for reducing carbon emissions has already been covered in this report. In terms of adaptation measures though, the respondents to this review agree that woodlands can significantly reduce flood risk by soaking up excess rainfall. This viewpoint is supported by a study which the Forestry Commission conducted that identified a large number of woodlands in the Yorkshire and Humber region that are under managed and under utilised for biomass raw material and as a natural flood defence. The Scrutiny Board welcomes the fact that Yorkshire Forward is working with the Forestry Commission to consider ways in which the region's woodlands can be used to manage flood risk. However, the Scrutiny Board also recognises the broader issues of needing to create and conserve natural habitats that will support the region's biodiversity, and protect the region's wildlife from climate change impacts. Several individuals and organisations have indicated that if the region's woodlands are to be used effectively as a climate change adaptation measure, far greater investment is needed to restore parts of the woods that have degraded, and to restore and re-plant ancient woodland that has been cleared and replaced with conifers.

The respondents to this review have reported a need for green infrastructure to be sited in urban areas as well. Many respondents have highlighted the fact that the desire to base a business in an urban centre, and the trend for urban living, has resulted in the building of office and apartment blocks with surrounding areas that are paved or concreted over. Apart from contributing to the 'heat island effect' of the region's towns and cities, this type of urban development means that rainwater runs off the hard surfaces rather than being absorbed, and in cases of prolonged heavy rainfall, the drainage system overflows, resulting in localised flooding. Evidence suggests that if urban design includes the planting of mature trees and shrubs on streets and roads, with gardens and green spaces between buildings, this will ensure that buildings are partially shaded thereby reducing the air temperature, rainwater is largely absorbed by the soil reducing the risk of flooding, and air quality will improve.

Insufficient green infrastructure does not just apply to new developments in urban areas. Trends in garden design have led to residents of existing housing, paving over lawned areas. The Pitt review on flooding has highlighted this as an area of concern, and has recommended that householders should be prevented from laying impermeable surfaces on front gardens. As gardens are also classified as brownfield land and not greenbelt, residents can sell large sections of their gardens to developers, thereby reducing the proportion of green space in residential areas. Whilst the inclusion of green infrastructure is a matter for local authorities to consider when granting planning permission for high-density office and residential developments and for building on gardens, the Scrutiny Board believes that Yorkshire Forward should also consider green infrastructure as part of their urban renaissance policy, and in their impending responsibilities for housing and planning. Yorkshire Forward has assured the Scrutiny Board that their approach to urban renaissance will be informed by a pilot programme on green infrastructure in West Yorkshire and by the Regional Spatial Strategy.

Sustainable Construction

As buildings will have to cope with extremes of heat in a changing climate, innovative building design and sustainable construction methods will become increasingly important. The Building Research Establishment (BRE) has estimated that buildings produce 48% of all carbon emissions across the UK, and the respondents to this scrutiny review believe that this is where Yorkshire Forward could make a considerable reduction in carbon emissions. Yorkshire Forward currently supports some construction initiatives and is presently developing their position on sustainable construction.

The BRE created an Environmental Assessment Method, called BREEAM, to determine the sustainability and environmental performance of new or existing buildings. Under BREEAM, commercial, industrial and residential buildings are assessed against eight criteria by independent and licensed assessors. The criteria are Management, Energy Use (including carbon emissions), Health and Wellbeing, Pollution (both air and water), Transport (including carbon emissions from accessing the location of the building), Land Use and Ecology, Materials (use of sustainable materials and the life-cycle of the building) and Water. The assessor determines the overall score for the building and awards a certificate on the basis of four ratings; Pass, Good, Very Good and Excellent. BREEAM is a widely used tool, and Yorkshire Forward encourages buildings to achieve either a Very Good or Excellent BREEAM rating. Yorkshire Forward has already invested in some buildings in the region which are of the highest BREEAM rating, such as the Thorpe Park Sustainable Office near Leeds. However, the Scrutiny Board considered whether Yorkshire Forward could go much further than this by aiming for any building that they provide funding for to meet the Excellent BREEAM rating. Yorkshire Forward has confirmed to the Scrutiny Board that as it is difficult to achieve an Excellent rating on some older buildings or on developments in areas that have a low land value and poor transport links, this would significantly limit where Yorkshire Forward could invest its funding. Some individuals have also commented to the Scrutiny Board, that Yorkshire Forward should insist that any buildings which they provide funding for, should be carbon neutral. However, Yorkshire Forward does not consider that this is practical at this time, as the construction industry does not yet have the capacity to deliver this.

The Scrutiny Board has been informed of examples where local and national agencies are aiming to meet the highest standards for housing. The National Housing Federation is currently lobbying Government to compel private housing developers to meet the same standards as Housing Associations, and some local authorities in the region are trying to influence private developers to build at Level 6 of the Code for Sustainable Homes. As mentioned previously in this report, the energy efficiency measures in the Code for Sustainable Homes only apply to new housing, and the most significant concern that respondents have expressed is the need for retrofitting energy efficiency measures in existing housing stock. Some of the region's local authorities have already begun work to ascertain the costs involved in tackling retrofitting, on the basis that the investment would provide a massive return in reduced carbon emissions. In response to questions from the respondents about whether Yorkshire Forward could

provide additional support in conjunction with Housing Associations and Arms Length Management Organisations (ALMOs) to address retro fitting, Yorkshire Forward feels that this is something which should be dealt with by the Regional Housing Board. However, Yorkshire Forward has confirmed that the retro fitting issue will be considered, pending further clarity from the Government on future housing responsibilities.

In terms of the use of sustainable materials in the construction of buildings, Yorkshire Forward insists that developments requiring their funding must ensure that a minimum of 10% of the total value of materials are recycled products. Yorkshire Forward has informed the Scrutiny Board that sustainable technologies are included in the majority of the buildings which they fund, and has provided three examples of how sustainable methods have been included in buildings across the region. The Thorpe Park Sustainable Office was built using 40% of recycled aggregate materials. The building incorporates TermoDeck, which is a fan-assisted heating, cooling and ventilation system that uses high thermal hollowcore concrete slabs to either warm or cool fresh air before it is distributed into rooms in the building. This system reduces carbon emissions by approximately 80% in comparison to a conventional commercial office, whilst ensuring that the building's internal temperature is adaptable. The Eco-Depot in York was built using

compressed straw bales and also incorporates adaptive functions such as rain water harvesting, solar water heating and photovoltaic panels. The Energy and Environmental Technology Centre on the Advanced Manufacturing Park near Rotherham is a carbon negative building that is currently under construction. The building will be powered by a fuel cell which uses wind generated hydrogen, and not only will it meet the building's energy needs, but any excess power generated will be fed into the national grid.

The respondents to this review have suggested that Yorkshire Forward should further encourage the increased use of sustainable building materials, such as timber framing from sustainable forestry resources and compressed straw bales. The respondents also suggest the incorporation of rainwater butts and SUDS, and the installation of renewable heat and power and water systems (for example, ground or air source heat pumps, photovoltaic panels and biomass boilers), to put greater emphasis on the energy efficiency of buildings over their whole life-cycle. This would ensure that the buildings were adaptable and able to cope with fluctuations in rainfall and temperature. Yorkshire Forward has confirmed to the Scrutiny Board that they will encourage the continued demonstration of high thermal mass buildings.



The Scrutiny Board wanted to understand the extent to which Yorkshire Forward had promoted these projects as good practice so that they could be replicated in other parts of the region and UK. Yorkshire Forward has informed the Scrutiny Board that the technologies used at Thorpe Park and the Eco-Depot had been replicated elsewhere and confirmed that their intention is to provide exemplar developments that demonstrate how sustainable construction and sustainable technologies can be both successful and cost-effective. The Scrutiny Board has identified a lack of promotion from Yorkshire Forward on the sustainable construction methods that they have funded, so that they can be more widely replicated. The Scrutiny Board is therefore pleased to hear that Yorkshire Forward intends to produce a publication in 2008 which highlights their interventions and promotes best practice in building structure and materials. However, the Scrutiny Board stresses the importance of distributing this publication widely, including to other regions.

New Ways of Dealing with Carbon

There are two ways of dealing with carbon which Yorkshire Forward is actively pursuing; carbon capture and storage technology, and carbon budgeting.

The European Union (EU) and the Government are both keen to promote carbon capture and storage. This involves capturing and trapping the carbon that is produced when fossil fuel is burnt, before it is released into the atmosphere, for example through a filtering system at a power station, and injecting it into a secure storage facility so that it does not leak out into the atmosphere. Once captured, the carbon is stored in liquid form in exhausted oil and gas fields, such as those underneath the sea bed. It is widely believed that underground carbon storage facilities are capable of storing large volumes of carbon in reservoirs, and the Government is already investing in an offshore reservoir under the North Sea.

Yorkshire Forward facilitates an industry-led Committee, including utility companies, which is investigating the potential application of carbon capture and storage technology in the Yorkshire and Humber region. The Scrutiny Board has been informed by Yorkshire Forward that a potential carbon capture project includes capturing the carbon from the region's power stations, and transporting it to a secure storage facility in a redundant gas field, through a series of underground pipes. Yorkshire Forward is also looking to restore the peat uplands in carbon-offsetting schemes and recreating them as carbon sinks. The respondents to this review agree that carbon capture and storage should be investigated further, and funded appropriately. The Scrutiny Board is concerned about the potential costs involved in developing the underground infrastructure that will be needed to support regional carbon capture and storage. However, Yorkshire Forward has informed the Scrutiny Board that the intention is not to fund a carbon capture and storage network with Single Pot funding, but instead to work with partners to lobby for a European incentive scheme, and bid for international funds to finance the infrastructure costs. The Scrutiny Board encourages Yorkshire Forward to explore with other partners how other funding can be pooled for carbon capture and also used to offset some of the costs of carbon sequestration in the peat uplands.

Yorkshire Forward is also keen to develop the challenging concept of carbon budgeting and carbon currency at the regional level. Under the Climate Change Bill, a national carbon budget will be set every five years. Each national carbon budget will have a set limit on the amount of carbon that can be emitted in the



Recommendation 9

Yorkshire Forward should ensure that the Best Practice publication clearly explains how new technologies have been used in the construction of buildings in the region, the costs involved, the impact that the technology has had on carbon emissions and how these can be easily replicated in other regions. The publication should also include examples of best practice that originated in other regions and countries and how these have been replicated in Yorkshire and Humber.



UK, with the intention that the carbon budget allowed will keep on reducing. Carbon budgets are not an entirely new idea. In 1942, the economist and social reformer Sir William Beveridge proposed a personal fuel allowance system in the UK, where every household would be given an allocation of 'points' that they could spend on energy. Although this was suggested at a time when the UK was at war and demand for energy outstripped supply, the concept of personal carbon allowances or domestic tradeable quotas has been championed recently by organisations like Friends of the Earth, as a way of reducing carbon emissions. If progressed, the Yorkshire Forward carbon budget scheme will create a regional carbon currency from captured carbon with which to trade, along the same principle as the EU Emissions Trading Scheme, where organisations can invest in projects that are reducing emissions, in return for carbon credits.

The regional carbon budget scheme would form part of Yorkshire Forward's activities under their Lower Carbon Economy policy, and the individuals and organisations that have commented during this review applaud Yorkshire Forward for their forward thinking on carbon budgeting. Some of the region's local authorities appear particularly keen to implement a carbon budget and carbon currency at district level. The respondents have noted however, that if there were to be a regional carbon budget in Yorkshire and Humber, there would also need to be a similar regional carbon budget in every English region, to make it work.

Changing Behaviour

Whilst significant reductions in carbon emissions can be obtained just by making buildings and cars more energy efficient, and by investing in new technologies that will decrease the reliance on fossil fuel, the biggest impact will come from changing the behaviour of the region's businesses and residents. National statistics show that the two largest emitters of carbon into the atmosphere are housing and transport, and these are affected to some extent by personal choice, in terms of how much energy is consumed in the home, and the mode of transport that individuals use. Yorkshire Forward agrees with the Scrutiny Board that changing behaviour and attitudes is the key to reducing greenhouse gas emissions.

Tackling climate change in the Yorkshire and Humber region is not just the responsibility of one organisation, or even several organisations collectively. It is a responsibility that every organisation, every business, every community and every resident needs to share. It is evident that awareness of climate change has increased significantly in recent years, but although the Scrutiny Board has met with a vast number of individuals, businesses and organisations who are all knowledgeable about climate change, and are committed to tackling it, the Scrutiny Board is concerned that this level of knowledge does not extend to all businesses and residents in the region. Climate change is not an easily understood subject and the Scrutiny Board believes that it needs to be more clearly communicated so that everyone understands how their energy consumption, their waste and lifestyle choices, impact on the environment and affect the climate.

The Government recently launched the 'Local Authority Best Practice Programme on Climate Change', which disseminates best practice amongst the local authorities, and provides guidance on what local authorities can do to mitigate the effects of climate change in local communities. It has been suggested

Recommendation 10

Yorkshire Forward should formally investigate the costs and practicalities involved in developing a regional carbon budget and carbon currency. Yorkshire Forward should also look at how the region's business community can be advised and supported to make a Carbon Reduction Commitment.

through this review that the dissemination of best practice on climate change action needs to spread more widely, so that public, private and voluntary and community sectors can develop a 'can do' attitude to reducing their own carbon footprints, and encouraging their customers and clients to do the same.

As far as changing the behaviour of businesses is concerned, there is a clear role for Yorkshire Forward. Yorkshire Forward is responsible for business support services, and the Scrutiny Board believes that this is an invaluable route through which businesses can be educated about energy efficiency and waste management, and encouraged to become more resource efficient. The Scrutiny Board also acknowledges that if businesses become more resource efficient, they may be able to influence the behaviour of their customers in turn. Yorkshire Forward has informed the Scrutiny Board that they are already providing direct environmental business support, and supporting a training and capacity building programme with regional Business Link Advisors to ensure that they are able to effectively diagnose business needs on resource efficiency, and signpost them to appropriate delivery organisations.

In terms of large businesses, the Scrutiny Board recognises that there will be a particular role for Yorkshire Forward in ensuring that they are advised and supported on the implementation of the Carbon Reduction Commitment, or cap and trade scheme, from the Climate Change Bill. Yorkshire Forward is already encouraging the top 100 businesses and major public sector organisations in the region, most of which are large businesses, to take action against climate change, and reduce their emission, through Carbon Action Yorkshire. Yorkshire Forward is also supporting ongoing resource efficiency programmes and improving business support advice on climate change. Yorkshire Forward expects a high return from these activities on carbon emission reduction in the region, and the Scrutiny Board recognises the merit in changing the behaviour of the region's top 100 companies. However, the Scrutiny Board also recognises that the top 100 companies are mainly large companies who have well-developed Corporate Social Responsibility policies. Some respondents have therefore questioned whether these particular businesses would have addressed their carbon emissions without Yorkshire Forward's intervention.

The Scrutiny Board is more concerned about how the region's vast number of Small and Medium sized Enterprises (SMEs) can be encouraged, advised and supported to install energy saving equipment and renewable energy systems, and reduce their contribution to landfill waste. Feedback from those consulted during

the review suggests that this specific form of business advice is not widespread and that there is a lack of co-ordination. The Scrutiny Board believes that Yorkshire Forward should ensure that advice and support to all businesses is mainstreamed through the Information, Diagnostic and Brokerage (IDB) that is delivered under the Business Link brand. In response, Yorkshire Forward has confirmed to the Scrutiny Board that they intend to mainstream resource efficiency into general business support services. The Scrutiny Board also believes that Yorkshire Forward needs to work collaboratively with business representative organisations on the promotion of climate change issues in order to channel information through to those businesses that do not access Business Link. Although DEFRA has reduced the funding available for business support, the Carbon Trust and Envirowise have a range of toolkits and applications that SMEs can use. Yorkshire Forward also intends their New Resource Efficiency programme to plug any gaps in business support.

Whilst there are established routes through which businesses can be encouraged to become more resource efficient, changing the behaviour of the region's residents is perhaps a bigger challenge. Although it is not Yorkshire Forward's responsibility to do this, it is a challenge that other agencies in the region need to address. Local authorities and the Energy Saving Trust have a clear role in advising residents of the small measures that they can do to reduce their carbon emissions, such as recycling and re-using products and using the car less. They can also advise on the more costly measures that residents can take that will significantly reduce their individual carbon footprint, for example, the installation of roof and cavity wall insulation, and the installation of renewable energy systems for domestic heat, light and power. The Waste and Resources Action Programme (WRAP) was established in 2000 to assist residents, businesses and local authorities, to recycle and minimise waste. WRAP is the organisation behind the national Recycle Now programme, which provides practical advice and information to residents on recycling and composting, and the Love Food Hate Waste campaign which advises residents on how to minimise food waste, and which provides information on why it is important to reduce food waste. However, the Scrutiny Board is uncertain as to how much individuals know about these organisations and marketing campaigns. The Scrutiny Board therefore believes that if there was greater collaboration and co-ordination by agencies such as local authorities, the Environment Agency, the Energy Savings Trust, the Carbon Trust, WRAP and the region's media, the communication on climate change and why it is important could be significantly improved and could encourage more of the region's residents to become energy and resource efficient.

Conclusions

The Scrutiny Board has concluded from this scrutiny review on 'Meeting the Climate Change Challenge' that Yorkshire Forward has exceeded the remit that it has been given by the Government on responding to the threats that climate change poses to the region's economy. The respondents to this review have been broadly supportive of the work of the Sustainable Development Team in particular, and Yorkshire Forward has been praised for its intentions to develop innovative projects that will reduce greenhouse gas emissions in the region.

Although the Scrutiny Board acknowledges that Yorkshire Forward is just one of many organisations responsible for addressing the issue of climate change, the Scrutiny Board believes that Yorkshire Forward does have some areas where improvements need to be made. The first issue that must be addressed is the recording and reporting of greenhouse gas emissions reduction data. The Scrutiny Board believes that the data on the carbon 'savings' made from projects across the region is insufficiently gathered and communicated. The second issue which requires immediate attention, is the need for Yorkshire Forward to identify the remedial activities that are needed to ensure that the greenhouse gas emissions reduction target in the Regional Economic Strategy (RES) is met. Although the Scrutiny Board appreciates that the RES target is ambitious, the Scrutiny Board is concerned that emerging UK policy and legislation will stretch carbon emissions reduction targets even further, so failure to hit the regional target is not an option.

The Scrutiny Board has been overwhelmed by the enthusiasm shown by public and voluntary and community sector partners, and residents, to reducing the impact of climate change on Yorkshire and Humber's economy, social well-being and environment. The Scrutiny Board has therefore detected a willingness of these organisations and individuals to assist Yorkshire Forward in delivering the RES and Yorkshire Forward's Lower Carbon Policy Product. The Scrutiny Board and respondents to this review are particularly keen for Yorkshire Forward to invest in newer and bigger environmental and renewable technologies to reduce the use of fossil fuel, and provide a larger proportion of energy from renewable sources. There is also a desire to see investment from Yorkshire Forward in schemes that will de-couple economic growth from carbon emissions. De-coupling economic growth is a big challenge for Yorkshire Forward, and the Scrutiny Board recognises that the Government must ensure that economic growth is not obtained to the detriment of the environment, by ensuring that equal emphasis is placed on economic, social and environmental factors.

Whilst the Scrutiny Board applauds the work that Yorkshire Forward has been undertaking in relation to the threat of flooding from increased rainfall patterns, the Scrutiny Board believes that more effort is needed to address ways in which fluctuations in temperature can be handled. Finally, if the region is to adapt to a changing climate, the Scrutiny Board believes that the attitudes and behaviour of the region's businesses and residents must change, so that the overall consumption of energy, and the production of waste is reduced. Yorkshire Forward cannot reach the RES target alone, and all partners, businesses, communities and residents must make efforts to reduce their energy and resource consumption, and play their part.

Key Messages for Partners

Climate change is not an issue that just one organisation in the region can address. It is one which will take all sectors of society to get involved with, and play a part in. The scrutiny review on ‘Meeting the Climate Change Challenge’ has identified four key messages for regional agencies and local partners to consider, in order to deliver the aims and objectives of the Regional Economic Strategy (RES) for Yorkshire and Humber effectively, and to reduce greenhouse gas emissions:

Issue	Suggested Action
Regional Transport	Regional transport policy should be more directed at developing less carbon intensive public transport and safe cycle routes as an alternative to car use, as this is a highly recognised area in need to greater national, regional and local investment. The Scrutiny Board feels that this is an issue which the Regional Transport Board needs to consider for the Regional Transport Strategy.
Energy Efficiency	<p>A Regional Energy Efficiency Strategy should be developed that is linked to carbon emissions reduction, and will inform co-ordinated action by the region’s key regional bodies.</p> <p>Partners should consider how gap funding can be obtained to enable all local authorities to tackle the energy efficiency of existing housing stock, through the mass installation of roof and cavity wall insulation and other energy efficiency measures such as draught excluders, double/triple glazing, to reduce domestic carbon emissions.</p> <p>Communication to businesses, communities and residents needs to be improved, to proactively encourage them to become more energy and resource efficient. This will require greater collaboration and co-ordination by agencies such as local authorities, Local Government Yorkshire and Humber, the Environment Agency, the Energy Savings Trust, the Carbon Trust and the region’s media.</p>
Wetlands	A joined-up strategic approach to wetland investment needs to be developed. Key partners could include Yorkshire Forward, Natural England and the Environment Agency.
Recycling	Local authorities in Yorkshire and Humber should consider ways in which recycling facilities in the region can be simplified, standardised and shared, so that all local authorities in the region are able to offer residents the same opportunities for recycling their waste.

Key Messages for the Regional Climate Change Partnership

At a regional level, the Regional Climate Change Partnership (formerly known as the Climate Change Executive Group) was formed to co-ordinate the activities of the different regional agencies and key partners within Yorkshire and Humber. Yorkshire Forward is a key member of this partnership. Other members include:

- Government Office for Yorkshire and the Humber
- Business in the Community
- Local authority representation
- Environment Agency
- Regional Sustainable Development Board
- UK Climate Impacts Programme (UKCIP)
- World Wildlife Fund (WWF)
- Yorkshire Futures
- Yorkshire Water
- Regional Flood Defence Committee
- Yorkshire and Humber Assembly

In 2005 a Climate Change Action Plan, ‘Your Climate’, was produced. It was announced in Spring 2008 that the Action Plan would be reviewed and radically revised. Throughout this review, feedback has highlighted that there are a number of issues and challenges which need to be fed into the update of the Action Plan, and inform the way that the Regional Climate Change Partnership works in future. The following table highlights the key messages from this review for the partnership to consider:

Issue	Suggested Action
Leadership, roles and responsibilities	Nationally, there is a distinct lack of clarity on the roles and lead responsibilities of key agencies and partners on climate change. The Regional Climate Change Partnership could provide this clarity in the Yorkshire and Humber region, by clearly defining and more widely communicating the roles and responsibilities of all partners on climate change, including any distinct lead roles which individual members of the partnership have.
Engaging the region in the challenge	Other partners and agencies need to be engaged in consultation on the re-development of the Action Plan, for example Natural England, the Regional Environment Forum, and the business sector. A communication plan could be devised to promote more widely the activities, delivery and progress made against the Action Plan, in reducing emissions across the region. The www.yourclimate.org website could also be improved, and made as user friendly as possible, with easily accessible key documents, action plan updates and other useful information available.
Agreeing targets for the region	The Regional Economic Strategy (RES) target could be fully incorporated into the revised Climate Change Action Plan, so that a collective of organisations can take ownership of the target.
Progress against targets	There is little awareness of the actions being undertaken against the current Climate Change Action Plan, and the impact that they are having in reaching the regional targets. Each member could publicise the actions assigned to them which have been delivered, confirm the targets that they are working to (regional and individual targets), and report the impact that the actions have had in reducing carbon emissions since the Action Plan was launched in 2005. If the regional targets have not been hit, a list of remedial actions that can be implemented to boost performance could be identified.

Issue	Suggested Action
<p>Measuring progress</p>	<p>A consistent methodology for measuring the region’s progress against reducing emissions, could be developed and agreed by all partners. The Resource and Energy Analysis Programme (REAP) and Regional Economy Environment Input-Output Model (REEIO) reports could be used to inform the development of an appropriate measurement framework for the region. The framework should be clear and consistent, and not only record Yorkshire Forward’s progress against the regional targets, but also the contribution of other partners and agencies.</p>
<p>Monitoring and formal reporting</p>	<p>Most members of the partnership are developing plans to deliver the actions assigned to them in the Climate Change Action Plan. However, there is a need for improved co-ordination of partner delivery, particularly in regards to recording carbon emission reduction activities, and tracking progress against the climate change targets. The partnership could ensure that information from individual members on their delivery of the actions assigned to them is routinely pulled together and regularly monitored. It is also suggested that progress against the actions could be formally reported to the Regional Executive Board, with these updates on progress made available to members and non-members of the partnership.</p>

Further information on the Regional Climate Change Partnership and its work can be found on the website www.yourclimate.org

Key Messages for Government

This scrutiny review has highlighted the conflicting and contradictory policy from national Government, which restricts Yorkshire and Humber from moving further in reducing emissions and tackling climate change. Individuals and organisations have urged the Government to more effectively join-up national economic and environmental policies, to send out a single and consistent message on climate change, and to provide increased national leadership on the issue.

The importance of Government targets related to economic growth and sustainable development has also been stressed. The focus on the use of the Gross Value Added (GVA) target is considered inappropriate and too narrowly defined, and respondents would like to see a more inclusive range of targets such as those included in the Index of Sustainable Economic Wellbeing (ISEW). In addition, the respondents want to see far greater consistency from the different Government departments in setting targets. An example given was the local authority climate change targets that are set by the Department for Communities and Local Government (CLG), and the Regional Development Agency targets set by the Department for Business, Enterprise and Regulatory Reform (DBERR), which are at odds with each other.

Within the region, there is a clear role for Government Office for Yorkshire and the Humber in response to this, as they can usefully provide the steer for the region on articulating national policy on economic growth and climate change and what it means for the region. Throughout the review, respondents have highlighted a number of policy areas that could have an impact on reducing emissions:

1. Extract from an Energy Efficiency motion from North Yorkshire County Council in June 2007; “North Yorkshire County Council supports the need for energy efficiency, both as a way of reducing carbon emissions and also in reducing fuel poverty (nearly one in four households in North Yorkshire are subject to fuel poverty).”
2. The motion calls on the Government to fund a range of grants to enable every household in the UK to insulate their homes to current UK building standards. It also urges the Government to remove the rate of VAT on equipment materials and labour, which will provide renewable energy and energy conservation for homes, businesses and public buildings. This would make it cheaper for local authorities and Housing Associations to retro fit rather than rebuild, and easier for residents to reduce their domestic carbon emissions.
3. Initiatives for domestic energy efficiency should be funded, rather than winter fuel allowances.
4. Gardens should be re-classified as green belt to retain green infrastructure in urban areas and act as sponges for excess rainfall as well as health benefits.
5. Feed-in energy tariffs should be explored.

Next Steps

The Scrutiny Board has made ten recommendations on how activities to address climate change in the Yorkshire and Humber region should be developed. Yorkshire Forward has developed an Action Plan which outlines how it will work with partners to deliver against these recommendations. A copy of this Action Plan can be found in Appendix I.

The Scrutiny Board will monitor the delivery of the Action Plan through written progress reports and attendance by Yorkshire Forward at two Scrutiny Board meetings each year, to discuss the progress made against the Action Plan and to present future activities. The Scrutiny Board will update Assembly members on the delivery of the Action Plans by presenting six monthly reports at Assembly meetings. Members, partners and businesses will also be able to view the progress reports on the 'Scrutiny' pages of our website www.yhassembly.gov.uk

Appendix 1: Action Plan

Recommendation		Current Progress/Activity	New Activity	Timescale
LINE OF ENQUIRY 1: CLIMATE CHANGE TARGETS AND REGIONAL PERFORMANCE	Recommendation 1 Yorkshire Forward should ensure that the Single Integrated Regional Strategy better aligns, and clearly embeds climate change action and the development of a low carbon economy as a crosscutting theme.	The need for this is set out in the SNR which clearly states the need to implement reforms in a way that ensures we achieve growth that is environmentally sustainable and makes the transition to a low carbon economy. Yorkshire Forward is committed to the low carbon economy agenda and is currently developing thoughts on how best to promote low-carbon economic development through the new Integrated Regional Strategy.	In line with the outcomes of the SNR, develop a new Integrated Regional Strategy that is based on the principles of sustainable economic development and aims to reduce greenhouse gas emissions from economic growth through a range of activities. This will include prioritising climate change within strategy development, which will incorporate a comprehensive sustainability appraisal and strategic economic assessment. It will also build on the outcomes of the proposed DEFRA Transformation Fund activity which will aim to raise awareness of and build capacity in key regional issues including climate change.	September 2009-September 2011
	Recommendation 2 Yorkshire Forward should develop their own dedicated Climate Change Delivery Plan to identify and communicate the climate change issues and actions that they will specifically deliver in the region, how they will develop a low carbon economy in Yorkshire and Humber, and their priority innovation and business support activities that will address climate change issues.	The RES, our Corporate Plan and the Low Carbon Economy Policy Product Range already set out the rationale for developing a low carbon regional economy and our priority climate change actions, essentially forming a basis for this. The Low Carbon Economy Policy Product also sets out clear links to all other Policy Product areas. In view of this, we are currently developing a low carbon economy marketing strategy to identify the best way of communicating our ambitions, activities and best practice.	Deliver the low carbon economy marketing strategy in a way that ensures effective communication on our climate change aims and interventions.	As set out within the final marketing strategy.

Recommendation	Current Progress/Activity	New Activity	Timescale
<p>LINE OF ENQUIRY 2:</p> <p>BALANCING CLIMATE CHANGE ACTION AND ECONOMIC GROWTH</p>	<p>Recommendation 3</p> <p>Yorkshire Forward should develop their own set of output targets for their funding, against which they will measure changes in GVA, the region's economic performance, social well-being and quality of life, environmental progress and protection and carbon emissions reduction.</p>	<p>Work with partners during 2008/09 to identify output targets and outcome measures which reflect our policy priorities in Yorkshire and Humber, including wider and complementary indicators of sustainable economic growth and prosperity such as carbon emissions, climate change adaptation and resource efficiency</p>	<p>September 2009</p> <p>Monitor progress against these targets as part of IRS implementation.</p>
<p>Recommendation 4</p> <p>Yorkshire Forward should help to tackle the long-term under-investment in sustainable transport options in the region by strategically influencing Government in partnership with relevant organisations and agencies, to increase the level of national investment in transport, with additional spending ring-fenced for public transport and cycling improvements where there is evidenced need.</p>	<p>We will continue to influence Government and other partners to ensure commitment to the region's long-term transport priorities, through developing the evidence base; influencing transport providers and operators; working with partners to invest in transport by exception and where there is genuine economic rational to do so; and achieving consensus on transport priorities.</p>	<p>Ongoing</p>	<p>Ongoing</p>
<p>Recommendation 5</p> <p>Yorkshire Forward should promote the use of sustainable development assessments in project development with other public agencies in the region, in order to develop best practice.</p>	<p>Continue to promote best practice and demonstrate the benefits of sustainability appraisal/assessment through publicising key achievements and raising awareness amongst our partners.</p>	<p>Further develop the assessment process to provide "tailor-made" advice for specific project types e.g. Public Realm or major cultural and sporting events.</p> <p>Continue to raise awareness and confidence in the process through further training for project managers.</p> <p>Research best practice to establish what more can be done to better integrate sustainable development into Single Pot projects.</p>	<p>Ongoing</p>

Recommendation	Current Progress/Activity	New Activity	Timescale
<p>Recommendation 6</p> <p>Yorkshire Forward should continue to adopt a strategic approach to support the development and deployment of renewable energy in a manner that benefits businesses and communities and results in best practice. Yorkshire Forward should ensure that this best practice is disseminated region wide so that it may be replicated.</p>	<p>Our work aligns with the Regional Energy Infrastructure Strategy which has the following priorities:</p> <ul style="list-style-type: none"> (a) working with coal-fired power generators and Government to secure a clean coal project for the region (b) initiating a regional carbon capture and storage programme (c) Delivering the Biomass Action Plan (d) Delivering community scale energy systems (e) Demonstrating and deploying renewable energy technologies through Future Energy Yorkshire 	<p>We will progress delivery of the Regional Energy Infrastructure Strategy. This will include continuing to deliver Community Energy Solutions, lowering costs by facilitating installations and developing heat and power networks in large numbers. Biomass heat and power generation will be developed through the Vision for Biomass, and we will also help to deliver the region's Vision for Coal which recognises the importance of deploying cleaner coal technologies in existing and new plant to meet carbon reduction targets.</p>	<p>Ongoing</p>
<p>Recommendation 7</p> <p>Yorkshire Forward should work in partnership with Local Authorities to establish a pilot anaerobic digestion facility in the Yorkshire and Humber region as an alternative to waste incineration. Yorkshire Forward should also consider ways in which the region's businesses can be supported on dealing with commercial and industrial waste and in becoming more resource efficient.</p>	<p>Continue work in this area (see paragraph 69 of the Scrutiny Report), as well as a range of other aspects of waste management and minimisation, ensuring priority is placed on resource efficiency and waste management as set out in the National Waste Strategy (WS07) which strengthens Yorkshire Forward's role in these areas.</p>	<p>We will take a regional lead on implementing the National Waste Strategy (WS07) which strengthens our role in delivering resource efficiency and waste management and sets targets up to and including 2020 focusing specifically on business resource efficiency, integrating environmental business support into the wider business support activities of the region, developing the skills levels of practitioners and promoting integrated treatment facilities.</p> <p>More specifically we will continue to promote business competitiveness through reducing energy, raw material and waste consumption; addressing the problems around commercial and industrial waste facilities; providing support on resource efficiency in business; developing and promoting new waste and other environmental technologies; and supporting the region's recycling sector.</p>	<p>Ongoing</p>

Recommendation	Current Progress/Activity	New Activity	Timescale
<p>LINE OF ENQUIRY 3: ADAPTING TO CLIMATE CHANGE</p>	<p>Recommendation 8 Yorkshire Forward should actively contribute to the Regional Adaptation Study and use the outcomes of the study to identify a programme of activities that are focused on adapting to the economic risks and opportunities presented by climate change.</p>	<p>Yorkshire Forward is committed to working in collaboration with partners to develop the Regional Adaptation Study. Yorkshire Forward is also currently undertaking research which will inform our activities on climate change adaptation.</p>	<p>Yorkshire Forward will use the outcomes of the Regional Adaptation Study to support the development of the Integrated Regional Strategy. Yorkshire Forward will also work with partners on the development of adaptation approaches and action in the region to address the economic and social impacts of climate change.</p>
	<p>Recommendation 9 Yorkshire Forward should ensure that the Best Practice publication clearly explains how new technologies have been used in the construction of buildings in the region, the costs involved, the impact that the technology has had on carbon emissions and how these can be easily replicated in other regions. The publication should also include examples of best practice that originated in other regions and countries and how these have been replicated in Yorkshire and Humber:</p>	<p>Continue to develop the best practice publication taking into account the Scrutiny recommendation.</p>	<p>Publish and promote the document to raise awareness of Yorkshire Forward's approach to sustainable construction and encourage best practice within the region and beyond.</p>

Recommendation	Current Progress/Activity	New Activity	Timescale
<p>Recommendation 10</p> <p>Yorkshire Forward should formally investigate the costs and practicalities involved in developing a regional carbon budget and carbon currency. Yorkshire Forward should also look at how the region's business community can be advised and supported to make a Carbon Reduction Commitment.</p>	<p>We have recently commissioned research on regional carbon budget and currency issues and will implement the recommendations as appropriate.</p> <p>We also support regional businesses to increase competitiveness, take advantage of the opportunities for innovation and meet regional climate change targets. However, our business support activity will not provide financial support in meeting the Carbon Reduction Commitment or any other legislation which is part of business statutory duty.</p>	<p>With regional partners, implement the outcomes and requirements of the Climate Change Bill once it is passed into legislation.</p> <p>Develop and implement the recommendations of research on regional carbon currency as appropriate.</p> <p>Continue to promote the reduction of emissions from business, through both our work on resource efficiency as delivered through the new Business Link IDB model and through the activities of the Sustainable Futures Company.</p>	<p>Dependent on the Climate Change Bill timescales (expected to receive Royal Assent Summer 2008)</p> <p>Ongoing</p> <p>Ongoing</p>

Appendix 2: Yorkshire Forward Panel

Cllr Kath Pinnock - Board Member, Yorkshire Forward

Kath is an elected member of Kirklees Council. Kath is a member of the West Yorkshire Economic Partnership Board and a trustee of Kirklees Council Mayor's Charity Appeal Fund. Kath also chairs Yorkshire Forward's Scrutiny Panel, which involves working closely with the Yorkshire and Humber Assembly. Kath is the Chair of the Yorkshire Forward Scrutiny Panel.

Mark Lovell - Board Member, Yorkshire Forward

Mark is the Executive Chairman of A4e Ltd and is a dynamic and successful entrepreneur/business leader focused on high growth business in global public service markets. His company has grown from start-up to a £100m turnover business over the last fifteen years and has received a number of accolades.

Don Stewart - Executive Director of Strategy, Yorkshire Forward

Don is one of the founder Directors of Yorkshire Forward. His remit covers the Regional Economic Strategy (RES), Investment Planning, Northern Way, Yorkshire Forward Development Fund (YFDF), Culture, Sport, Tourism, Major Events and key account management of sub-regional/city-regional partnerships and Treasury. Don has worked in the public sector for 30 years and has a background that is probably unique in its diversity. His career started in Transport, before he moved to the British Overseas Trade Board. From there Don moved through all the major economic Departments of State, including Prices and Consumer Protection, Environment, Housing, Education, Training and Employment, as well as the Office of the Health Service Commissioner, Manpower Services Commission and Government Offices in Manchester and Leeds before joining the Regional Development Agency.

Jan Anderson - Executive Director of Environment, Yorkshire Forward

Jan was appointed Executive Director of Yorkshire Forward's Environment directorate in March 2004, a role that covers Yorkshire Forward's intervention in the property market, the rural economy, sustainable development issues and urban renaissance agenda. Prior to this, she was seconded from the Office of the Deputy Prime Minister (ODPM) to the South East England Development Agency as Head of Urban Renaissance and Policy. From July 2003 to March 2004, Jan was seconded back to ODPM for two days per week as Head of the Secretariat. Between 1992 and 1997, Jan was Head of the London Docklands Development Corporation sponsorship team. She was then appointed as Director of Corporate Affairs and Government Relations for the Dome's New Millennium Experience Company. Jan then became Head of Towns & Cities, Urban Regeneration Companies, Millennium Communities, Town Centre Management and Fiscal Incentives teams within the Office of the Deputy Prime Minister's Urban Policy Unit.

Mike Smith - Head of Sustainable Development, Yorkshire Forward

Mike is an experienced Regional Development Agency Head of Service for Sustainable Development, covering regional energy, construction, environmental assets and infrastructure, housing, planning, waste, resource efficiency and environmental business support. He has additional experience as an environmental scientist, health and safety professional, facilitator and sustainability practitioner. Skills include construction programmes, consultancy, research, business development, commercial awareness, presentation ability, training provision and stakeholder facilitation. He has an extensive network amongst experienced sustainability practitioners, local authority, regional development agency and corporate leaders.

Appendix 3: Good Practice Examples



Thorpe Park, Leeds

Thorpe Park Sustainable Office, officially launched earlier this year, is a joint venture between Innovate Property Ltd and Yorkshire Forward to develop a groundbreaking example of a sustainable commercial office building. The 40,000 sq ft commercial office is of an innovative design that, for the first time, applies the principles of sustainable design to a mainstream office development. The building will be used as an example to the market to demonstrate sustainable construction principles in practice, and that investment in energy efficient design will give considerable savings in the operation of a building over its lifetime.

The building was comprehensively monitored during its construction and will continue to be through its first year of operation, testing the design philosophy and proving the actual benefits that arise on a whole life cost basis.

The building design and construction process incorporates:

- Minimal ecological footprint
- Super insulation to give the building a high thermal mass
- Minimal net carbon debt through minimising energy consumed in its operation and some local generation of power by combined heat and power
- Minimal embodied energy through use of off site manufacture of the frame, use of recycled materials and utilisation of local labour and suppliers
- Innovative drainage solution to minimise water consumption and allow use of a rainwater recovery system for the toilet systems. Sustainable Urban Drainage System for hard surface water drainage
- Maximising daylight to reduce use of artificial lighting, whilst minimising solar gain

- Maximising use of recycled materials for concrete, foundations, concrete reinforcement, some walls and cladding, solar fins and pipework
- Minimal construction waste
- On-site recycling facilities

The project has a total value of £10.2m of which Yorkshire Forward invested £1.1m. A conventional commercial office of comparable size would cost around £6.6m to develop, but there are expectations of gains from lower operating and consistently high occupation rates over the lifetime of the building.



Innovation Centre, Advanced Manufacturing Park, South Yorkshire

This £9.75 million environmentally efficient flagship building was developed to provide a hub at the heart of the Advanced Manufacturing Park for the advanced engineering technologies industry, providing high quality offices and workshops for up to 20 start-up and growing companies. The development took an innovative approach to achieving a BREEAM Excellent rating, for example using renewable energy for heating and cooling the building.



York Eco-Depot

Now completed, this is Europe's largest straw bale and render building. It has a highly energy efficient, low impact design, which challenged and revised the main contractor's approach to construction. The Eco-Depot will include a pioneering new straw-clad commercial services office, with a number of sustainable design principles meaning it will use 76% less energy than similar size buildings of a standard design. It is also estimated that the reduced energy use will save around £46,000 each year.

We aim to ensure that this facility provides a centre for displaying to others how the project was developed and delivered; how it monitors and delivers on its sustainable energy; how it has contributed (and continues to do so) to greenhouse gas emissions reduction. This will be undertaken in conjunction with the energy efficient homes development and the local nature reserve. We intend to actively promote the facility and all its lessons learned through a positive programme aimed at developers, other councils and contractors.



Tower Works, Leeds

Tower Works is being progressed via a detailed sustainable development brief. A number of pre-submission workshops were held with potential developers to influence and challenge their thinking. The scheme aims to be exemplar and pioneering in sustainability terms, yet also be financially and technically feasible, as well as replicable elsewhere. As well as providing sustainability benefits, including saving 20,000 of carbon emissions, it will also support the local economy by creating 20 new businesses, 200 jobs, and leveraging in £9.1m of private investment.

Appendix 4: Contributors

We would like to thank the following organisations and individuals for contributing their views and comments on Meeting the Climate Change Challenge:

- Appleton and Spaunton Community Energy
- Bradford Metropolitan District Council
- Calderdale Metropolitan Borough Council
- Campaign to Protect Rural England
- Climate Action in Calderdale
- CRESR, Sheffield Hallam University
- DLA Piper UK LLP
- East Riding of Yorkshire Council
- Forestry Commission
- Forum for the Future
- Friends of Queen Park
- Friends of the Earth
- Hambleton District Council
- Harmsworth, Townley & Co Ltd
- Highfield Technical Assurance Services Ltd
- Humber Industry Nature Conservation Association (INCA)
- Institution of Civil Engineers (ICE) Yorkshire and Humber
- Keighley Furniture Project
- Leeds City Council
- Leeds University - School of Geography
- Leeds Voice, Environment Forum
- National Housing Federation
- Natural England
- Network Accent Alliance
- North East Lincolnshire Council
- North Lincolnshire Council
- North Yorkshire County Council
- Pennine Prospects
- Permaculture Association (Britain)
- Renewable Energy Association
- Rotherham Metropolitan Borough Council
- Ryedale District Council
- Ryedale Energy Conservation Group
- Sheffield City Council
- Sheffield Hallam University
- South Yorkshire Housing Association
- The Woodland Trust
- Tockwith with Wilstrop Parish Council
- University of Leeds
- University of Sheffield
- University of York
- Wakefield and District Housing
- Wakefield Metropolitan District Council
- World Development Movement Leeds
- YHEEMG
- York Environment Forum
- Yorkshire and Humber Regional Energy Forum
- Yorkshire and Humber Regional Environment Forum
- Yorkshire and the Humber Tenants and Residents Federation

In addition, we would like to thank the 15 members of the public who gave their time to contribute their views and comments to the scrutiny review, and ECOTEC Research and Consulting for their assistance and support to the Scrutiny Board.

Glossary

ALMO	Arms Length Management Organisation
BRE	Building Research Establishment
BREEAM	Building Research Establishment Environmental Assessment Method
BREW	Business Resource Efficiency and Waste
CES	Community Energy Solutions
CFC	Chlorofluorocarbons
CLG	Department for Communities and Local Government
DBERR	Department for Business, Enterprise and Regulatory Reform
DEFRA	Department for the Environment, Food and Rural Affairs
DH	Department of Health
ETS	Emission Trading Scheme
EU	European Union
FEY	Future Energy Yorkshire
GBSO	Green Business Support Organisations
GDP	Gross Domestic Product
GVA	Gross Value Added
ICE	Institution of Civil Engineers
IDB	Information, Diagnostic and Brokerage
IPCC	Integrated Pollution Prevention and Control
ISEW	Index of Sustainable Economic Wellbeing
PSA	Public Service Agreement
RAY	Recycling Action Yorkshire
RDA	Regional Development Agency
REAP	Resource and Energy Analysis Programme
REEIO	Regional Economy Environment Input-Output Model
RES	Regional Economic Strategy
RTFO	Renewable Transport Fuels Obligation
SFCo	Sustainable Futures Company
SME	Small and Medium sized Enterprise
SNR	Sub-national Review of Economic Development and Regeneration
SSSI	Site of Special Scientific Interest
SUDS	Sustainable Urban Drainage System
UK	United Kingdom
UKCIP	United Kingdom Climate Impacts Programme
UNFCCC	United Nations Framework Convention on Climate Change
WEEE	Waste Electrical and Electronic Equipment
WRAG	Waste Recycling Advisory Group
WRAP	Waste and Resources Action Programme

**YORKSHIRE
AND
HUMBER
ASSEMBLY**

The **Regional** Strategic Partnership

impact
ISSUES
challenges
recommendations

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