

DRAFT

**A CLIMATE CHANGE
STRATEGY FOR PENWITH**

DECEMBER 2005

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*Photo Credit: Mark Twynning
Waves at Penzance Promenade (October 2004)*

INTRODUCTION

Climate change may well be the most important single issue facing our local communities and the global community over the next few decades. Climate change is not something that if ignored will go away, climate change is already happening, and it is important that we all act now to help alleviate its affect on our environment, our business productivity and on our future quality of life. Although we cannot say that any particular severe weather event is due to climate change, we do know that the level of greenhouse gases in the atmosphere means that extreme weather events are likely to happen more often, however effective we are reducing emissions. Recent flood events that have occurred in Penwith demonstrate how vulnerable we are to the effects of severe weather events. It is important to realise that responding to the likely impacts of climate change is not just about reducing energy usage and greenhouse gas emissions, it is also about forward planning and adaptation.



*Photo Credit: BBC.Cornwall
Flooding at the Wharfside Car Park, Penzance (October 2004)*

As service providers, corporate managers and community leaders, local authorities have a

key role in preparing for climate change and adapting to its impacts. This Climate Change Strategy covers all aspects of energy use within the District including power, heat, water, waste disposal, and transport for the public, business and domestic sectors. The strategy also addresses how the authority will introduce measures to help Penwith mitigate the potential effects of climate change.

The Council recognises that for a Climate Change Strategy to be an effective document it has to cover issues which would not normally be the responsibility of a District Council, it requires the buy-in and support of other public bodies, the business sector and the community to ensure that it becomes an effective working strategy which does not find itself gathering dust on shelves. For this reason Penwith Council has tried to involve as many sections of the community and consult as widely as possible in the development of this Strategy. The Council expects that it can deliver the changes needed for sustainable energy both through its own activities and through enabling partnerships e.g. Cornwall Sustainable Energy Partnership and West Cornwall Together (the local strategic partnership for Penwith and Kerrier).

An effective climate change strategy will reduce the worst anticipated impacts of climate change and will offer economic and social opportunities. By taking early action to both address and adapt to the expected impacts of climate change, our communities can benefit from an improved environment including warmer homes, new business opportunities, improved air quality, less waste and more sustainable forms of transport.

This strategy addresses how climate change will impact Penwith and what we are able to do about it, in particular the Strategy:

- Examines the evidence for climate change and how it may affect life in Penwith and the delivery of the Council's services.
- Formulates policies in terms of the Council's role in addressing the causes of climate change and managing its impacts.
- Considers what actions the Council and its partners may take to address and manage the causes and effects of climate change.

The Strategy is a combination of:

- Actions the Council are already taking and will take in the future to demonstrate best practice and leadership
- Actions that we hope to encourage others to join us in taking forward.
- Local awareness raising about the implications of climate change and actions that can be taken to help us live more sustainably.

THE CORPORATE FIT - A SUSTAINABLE APPROACH TO CLIMATE CHANGE AND HOW IT DOVETAILS WITH OUR LONG-TERM VISION FOR PENWITH

Our long-term 'Vision' (the Community Strategy) for the area highlights our main ambitions for Penwith over the next twenty years.

Our Vision Statement

By 2025 Penwith will have a prosperous, vibrant economy, with employment opportunities for all. Safe, strong and healthy communities with sufficient housing to meet our needs. Our unique environment and culture will be protected and enhanced for the benefit of the community and our visitors.

Our Community Strategy has eight themes which together set out how we aim to achieve our vision. The targets and actions set out in this Climate Change Strategy will help Penwith to deliver its vision.

Theme 1 - INCREASE PROSPERITY AND JOB OPPORTUNITIES FOR ALL

There is a huge potential for job creation in sustainable energy. Energy efficiency installation, advice, local small-scale generation and renewables are all more labour intensive businesses than traditional power generation and the jobs created are rooted in the areas they serve (LGA, 2005). The Government's Renewable Advisory Board (RAB) estimates that up to 35,000 jobs could be sustained across the UK in the renewable energy industry by 2020. Promoting Penwith and its neighbouring districts as an attractive location for renewable energy companies and for new renewable energy developments will be key to ensuring that we benefit locally from new technologies. For example the Wave Hub Concept provides a specific opportunity to make Penwith (and Cornwall as a whole) a major centre for wave power and for attracting renewable energy companies and their suppliers into the County.

Through concentrating on the benefits of buying products and services locally, we can both reduce emissions through transport miles, whilst at the same time boosting our local economy. We need to motivate local businesses to manage their energy efficiency more effectively by promoting free and discounted energy/environmental management programmes supported through the Envision programme, the Carbon Trust, South West Tourism's Green Business Scheme, etc. Not only will this help reduce greenhouse emissions, but it will also lead to cost savings for our local companies.

Theme 2 - PROVIDE SUFFICIENT QUALITY HOUSING FOR COMMUNITY NEEDS

The Council's long-term vision is to allow all residents in Penwith the opportunity of a decent and affordable home which is energy efficient, healthy and designed for life. This Climate Change Strategy will promote high standards of sustainability in new buildings and refurbishment projects it will achieve this through planning policy guidance and provision of information. In particular it will encourage energy efficiency and renewables in all developments. Through partnership working on projects such as Home Health we expect to

end fuel poverty in vulnerable households in Penwith by 2010 in accordance with the Government's Energy White Paper.

Theme 3 – AN AREA THAT SUPPORTS SAFE, EMPOWERED AND THRIVING COMMUNITIES

The Council's long term vision is that by 2025 more people will have the opportunity to access services and facilities locally. Our Climate Change Strategy will play an important role in helping to achieve this. Reducing the need to travel by enabling residents and visitors access to the amenities they need with fewer and shorter car journeys will be a priority for the Council in its efforts to reduce transport related greenhouse gas emissions. There is the potential that long trade links could be seriously disrupted due to unpredictable and extreme weather conditions, we can improve our resilience by ensuring we can meet our basic needs locally e.g. food, warmth, shopping, entertainment, etc.

Theme 4 - A PLACE WHERE PEOPLE ARE HEALTHY AND ACTIVE

There is a clear connection between cold, damp housing and ill-health. The effects of illnesses such as bronchitis, asthma, chest infections, arthritis and rheumatism are all aggravated by cold, damp conditions, as are the psychological effects of living in miserable conditions. By raising energy efficiency standards throughout the district through the provision of planning guidance for developers and information for residents, supporting schemes which provide affordable warmth for residents, and through the installation of efficient central heating systems, wall and loft insulation, draught proofing and double/secondary glazing, we can help reduce the adverse health effects caused by inadequate heating and insulation.

Policies and plans aimed at reducing transport miles will also offer health advantages to our residents and visitors, through improved air quality, safer roads, and also through offering more opportunities for cycling and walking.

Through the creation of more, and maintenance/improvement of our existing, open spaces and leisure facilities we can ensure our residents can take advantage of any changes in our weather conditions which allow for more opportunities to take advantage of the outside environment.

Theme 5 - PROVISION OF LEARNING OPPORTUNITIES FOR ALL

By creating wider knowledge of climate change and sustainability through education and publicity, we can more easily help to bring about the changes we need to make. To really make a difference the local community needs to understand the issues at stake. This strategy sets out to inform the public of the potential local impacts of climate change and to explain the Council's role in reducing greenhouse gas emissions and how it hopes to work to mitigate the affects of climate change. Through our website and Shorelines magazine we need to ensure we are communicating climate change issues to our residents and local businesses and are creating awareness of environmental/sustainability courses and actions which can be taken to help reduce greenhouse gas emissions.

Theme 6 - A COMMUNITY THAT VALUES AND PROTECTS ITS DISTINCTIVE LANDSCAPE AND ENVIRONMENT

An effective Climate Change Strategy is of paramount importance in our efforts to protect Penwith's unique landscape. Reducing greenhouse gas emissions will slow down the effects of climate change, however we also need to adapt and plan ahead and accept that our landscape and environment may alter in the future. We will continue to work with our partners e.g. the National Trust, the Environment Agency, Cornwall Wildlife Trust, etc., to develop policy responses to address the natural environment and biodiversity issues by considering integrated land use in coastal and marine management in the context of dynamic habitats and changing landscapes, and to work towards a more integrated flood and coastal management.

Theme 7 - A COMMUNITY THAT PROTECTS, ENHANCES AND CELEBRATES ITS CULTURE AND HERITAGE

The United Nations Educational, Scientific and Cultural Organisation's World Heritage Committee recently declared that 'The impacts of climate change are affecting and are likely to affect more world heritage properties both natural and cultural'. Our historical buildings are likely to suffer greatly from the affects of climate change over the coming century. This Climate Change Strategy will help ensure that Penwith is able to plan ahead to help mitigate the impacts of climate change on our unique culture and heritage.

Theme 8 - A COMMUNITY THAT MAKES BEST USE OF ITS RESOURCES

Minimising our dependence on our non-renewable resources (especially the depletion of fossil fuels) is the fundamental aim of an effective Climate Change Strategy. This Strategy gives examples of best practice already happening in the District as well as recommendations and targets to help further reduce our reliance on non-renewable resources.

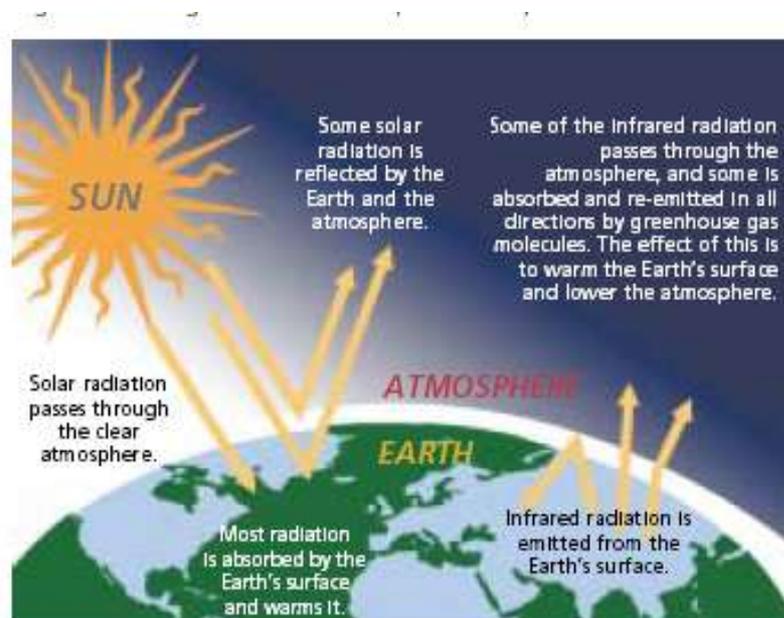
WHAT IS CLIMATE CHANGE?

The scientific consensus is that the world's climate is changing due to global warming resulting from increases in atmospheric greenhouse gas concentrations.

Climate change can be defined as any persistent change in our average weather patterns over a period of time, typically 30 years. Climate change has occurred many times over the Earth's history and global warming is just one particular type of climate change.

The greenhouse effect is the result of the interaction of certain atmospheric gases with solar and terrestrial radiation. The most important of these gases being water vapour, carbon dioxide, methane and nitrous oxides.

The Greenhouse Effect (Source: US Environmental Protection Agency (2001))



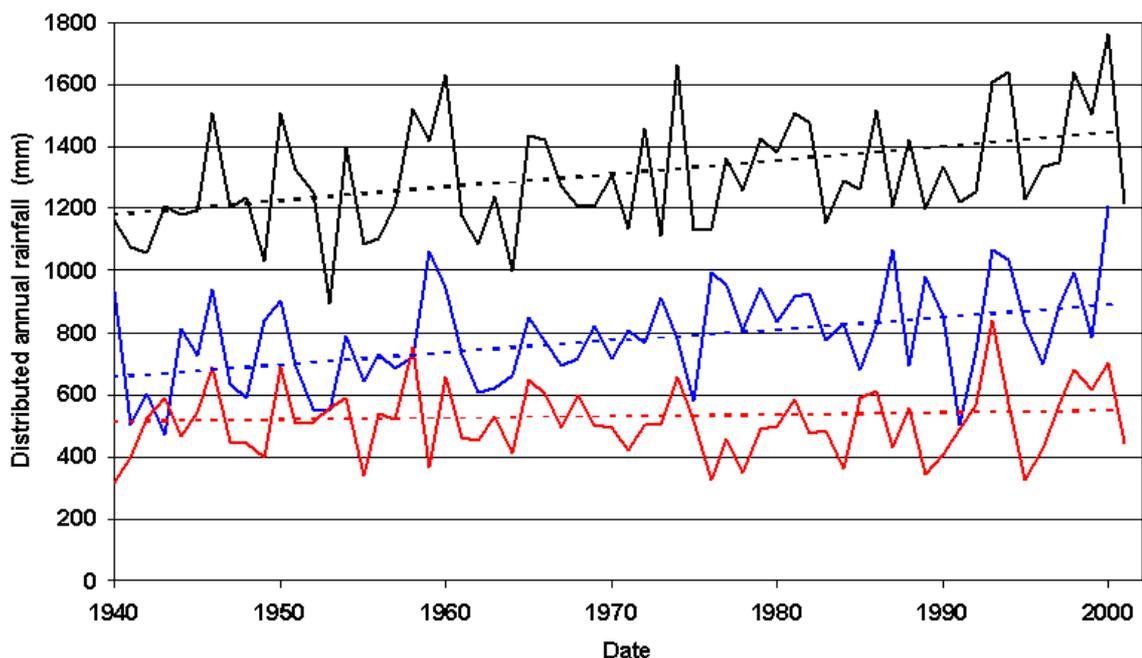
Without the natural greenhouse effect (which has operated for billions of years) life on Earth would not be sustainable because the average surface temperature would be about -18 degrees Celsius rather than the 15 degrees Celsius it is at present.

The fragile balance between radiation gained and radiation lost by the atmosphere is chiefly dependent on the two most important greenhouse gases; water vapour and carbon dioxide. Whilst the total amount of water vapour in the atmosphere has remained reasonably constant for as long as scientists have been able to measure it, the level of the other greenhouse gases (especially carbon dioxide) has been increasing mainly as a result of human activities such as deforestation and the burning of fossil fuels. Over a period of less than 200 years the atmospheric concentration of greenhouse gases has increased by over 50% relative to pre-industrial levels and there is growing evidence that our climate is changing due to human influence and that these changes are affecting the Earth's natural physical and biological systems (UKCIP,2002).

CLIMATE CHANGE PREDICTIONS FOR THE UK

The 3rd Assessment report of working group 1 of the International Panel on Climate Change (IPCC), states there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities. They believe that the average global temperature has increased 0.6 +/- 0.2 degrees Celsius over this time and that average night time daily minimum air temperatures over land increased by approximately 0.2 degrees Celsius per decade between 1950 and 1993. It is likely that the 1990's and 1998 were the warmest decade and year respectively in the instrumental record (since 1860). (IPCC, 2000).

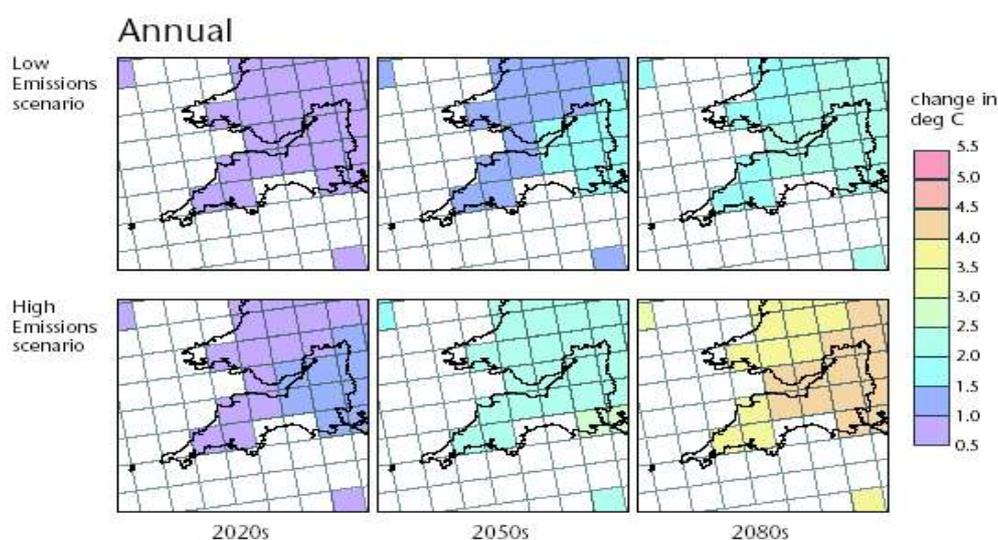
Changing Rainfall Patterns in Cornwall.
Rainfall in Cornwall 1940 - 2000
(Source: Dr David Watkins)



Key: Black Line – Total Annual Precipitation. Blue Line – Total Annual Winter Precipitation.
Red Line – Total Annual Summer Precipitation.

It is expected that Cornwall will experience wetter, stormier winters and slightly drier summers. The graph on the previous page is based on 60 years of data derived from the Cornwall Association of Rainfall Recorders. The graph suggests that our total annual precipitation in Cornwall has increased by about 22% over the past 60 years (black line), however more importantly it shows that the proportion of rainfall received in the winter (blue line) relative to the summer (red line) has been widening over time. Whilst our summers in Cornwall have shown little change in average precipitation over the past 60 years, our winters have indeed become much wetter, we now receive an average of approximately 850mm of winter rainfall compared to about 640mm in the 1940's.

The United Kingdom Climate Change Impact Programme (UKCIP) scenarios are the latest climate change predictions for the UK. The scenarios describe 4 alternative future climates for the UK (high emissions, medium high emissions, medium low emissions, and low emissions). The UKCIP do not suggest that one scenario is more likely than another nor that these scenarios describe the complete range of future climatic possibilities.



UKCIP Modelled Annual Temperature Increases for SW England

Whilst no long-term change in annual precipitation has been detected, the UKCIP02 have found a trend in the seasonality of UK precipitation. The proportion of rainfall received in winter relative to summer has changed over time, our winters have never been as wet compared to our summers in about 240 years of measurements than they have been over the past 30 years.

More important than changes in the total amount of annual rainfall received are trends in the intensity of short-term precipitation events. In the UK the contribution of the most intense rainstorms to total winter precipitation has increased over the last 40 years and the proportion of winter rainfall that has occurred in 5 day or longer sequences has also increased, whereas in the summer the opposite has occurred.

Key findings of the UKCIP Scenarios are:

- The UK climate will become warmer - average annual temperatures across the UK may rise between 2 – 3.5 degrees Celsius by the 2080's with the greatest warming occurring in the South East of England.
- High summer temperatures will become more frequent, whilst very cold winters will become increasingly rare.
- The temperature of our coastal waters will increase, although not as rapidly as predicted for over land.
- Average annual precipitation across the UK may decrease slightly by between 0 to 15%, however there are likely to be large regional and seasonal differences.
- The seasonal distribution of precipitation will change over time – our winters will become wetter and our summers perhaps drier.
- Storminess is expected to rise with up to 50% more winter depressions crossing the UK.

- Extreme winter precipitation events will become more frequent, by the 2080's winter daily precipitation intensities that are experienced once every 2 years on average may become up to 20% heavier.
- There will be increases in relative sea level rise, this could rise by as much as 76cm by the 2080's.
- Extreme sea levels will be experienced more frequently.

It is generally assumed that these changes will take effect gradually allowing society to adapt over time. However, there has been abrupt change to a radical new climate state at least eight times during the Earth's history, therefore we need to be thinking through the implications of sudden, as well as more gradual, change.

HOW MIGHT THESE PREDICTED CHANGES IMPACT OUR LOCAL ENVIRONMENT, ECONOMY AND QUALITY OF LIFE?

Global warming is expected to bring about changes in the occurrence of extreme weather conditions, increased flood events and droughts, stormier winters and rising sea levels. The National Trust believe that a 'managed retreat' may indeed be the only solution for some low lying areas e.g. Marazion in light of modelled sea-level rise predictions. Some changes might even be seen as beneficial (at least in the short-term), the South West Region Climate Change Impacts Study has summarised the potential impacts of climate change for the region these include:

Infrastructure – West Cornwall is extremely dependent on its infrastructure, located at the far end of the South West Peninsula the region is extremely remote. Buildings, bridges, power lines, roads and railways are vulnerable to most aspects of climate change. Physical damage to our infrastructure through flooding, storm damage, and subsidence is likely to increase. Long lead times and investment periods mean that those responsible for infrastructure need to take possible climate changes into account now.



*Photo credit: Laurence Chartwell
Damage to Penzance Promenade (October 2004)*

Built Environment and Housing – New buildings will have to be designed to take into account factors such as increased soil shrinkage, the need for more and better ventilation,

increased rain penetration and increased wind loads on roofs. Developers will have to avoid floodplains and to take into account the possibility of future coastal erosion and sea encroachment. As relative sea levels continue to rise, increased wave heights and potential storminess will become more frequent. This may adversely affect sea defences, harbours, homes and businesses. The costs of building and maintaining sea defences are likely to be significant and in some cases relocation or managed retreat may be the best option. Whilst milder winters may lead to a reduced demand for heating, there is likely to be an increased need for cooling of buildings in the summer. There is also a potential increase in storm damage, light degradation, rain, fungal and beetle damage to historic/listed buildings in the District.

Key issues include:

- Design standards will need to be revised in light of new climate scenarios.
- Sustainable technologies will be needed for cooling and heating of buildings to avoid increased releases of greenhouse gases into the atmosphere.
- There is likely to be an increased need for shading e.g. more trees in urban streets and squares.

Health

Milder, warmer conditions may bring some health benefits for example there may be a reduction in the number of health problems related to cold weather e.g. hypothermia, pneumonia and injuries caused from slipping on ice. Other benefits may include increased opportunities for outdoor activities, more fresh locally produced foods being available for a longer period. However, these factors may be outweighed by new challenges; our medical services may need to respond to changing patterns of disease and illness and requests for environmental health services and pest control services may increase. Changes in our weather patterns may lead to lifestyle changes e.g. there is likely to be a greater use of the outside environment in parks, pavement cafes, cycling and other leisure activities and this needs to be addressed when planning for the future.

Other challenges may include:

- Increased risk of heat related illnesses and deaths
- Increased risk of illnesses and deaths related to UV exposure e.g. skin cancer, cataracts.
- Increased incidence of pathogen related diseases e.g. legionella and salmonella.
- Increased risk of injuries and deaths due to extreme bad weather events e.g. storms and floods.
- Diseases dependent on hotter climates e.g. malaria, may extend their range into the UK.
- Infestations may occur more frequently as species migrate and/or breeding increases due to warmer conditions.
- Increased risk of respiratory illnesses due to damp in cold weather and increased low level ozone levels in summer months.

Tourism

In the short-term at least climate change may present some benefits to the tourism industry in Penwith. Longer, drier summers and milder winters, may lead to a more year-round tourist season and indeed there is the potential that Mediterranean holiday destinations may

become so hot that Cornwall may be seen as a preferential alternative. However, the economic advantages from increased visitor spend and employment opportunities may, without forward planning, lead to more environmental challenges and pressures on our infrastructure.

Challenges include:

- Increased visitor numbers will put an additional demand on our transport infrastructure, leading to increased congestion and pollution.
- Increased number of visitors due to warmer weather conditions could lead to negative impacts on the natural environment e.g. disturbance of breeding grounds, increased erosion of coastal paths, etc.
- Increased tourism will increase the demand on our utilities.
- Coastal attractions will be vulnerable to sea-level rise and stormier conditions.

Biodiversity/Natural Environment

Penwith has a wealth of natural and historic features including; unspoilt beaches, historic villages and fishing ports, rugged cliffs, heath and moorland, ancient field systems and a rich mining heritage. Many habitats are islands surrounded by farmland through which native plant and animal species may have to migrate as the climate changes and the predicted increases in flood events and coastal erosion may lead to the loss of vulnerable habitats and a potential loss of species. An integrated approach to enabling semi-natural habitats to migrate in response to climate change should be adopted e.g. Wetlands created in flood plains could also function as 'green infrastructure' providing flood control measures as well as providing quality green open space for local communities.

Challenges include:

- Risk to species intolerant to drought conditions.
- Risk to species intolerant to waterlogged conditions.
- Risk of expansion of naturalised aliens e.g. *Fuchsia*
- Increased incidence of fire during hot, dry summer periods.
- Species with a pronounced southern distribution are likely to spread.
- Species requiring a sub-zero period to break seed dormancy will be at risk.
- There is likely to be a loss of coastal and estuarine habitats due to increased coastal erosion and invasion.
- There is likely to be increased visitor pressure on the natural environment.
- There may be an increased risk of oil pollution events/shipwrecks due to stormier conditions at sea.

Agriculture

Agriculture will be affected by climate change. Increased levels of carbon dioxide in the atmosphere will encourage photosynthesis and reduce transpiration and therefore could be advantageous for crop growth. However the combination of higher temperatures and changed precipitation regimes has implications for water balances and the organic content

of soils, with consequences for irrigation demand and use. Agricultural land in low-lying areas could be affected by incursion of salt water into aquifers, coastal erosion and flooding. The range of current crops will move northward and new crop varieties suitable for the changed climate may need to be selected. Significant uncertainties remain in our understanding of how climate change may affect agriculture practices however we do need to maintain or enhance our ability to adapt to change.

Challenges include:

- Need for increased irrigation in summer months.
- Reduced die-off of pests and diseases due to warmer winters and risk of the introduction of new crop pests.
- Decreased soil quality and increased erosion due to increased run-off from winter precipitation.
- Possible wind and storm damage to crops.
- Potential loss of the South West's competitive advantage.
- Some crops will become less viable, whilst new crops will become more viable. This will change the exposure of soils to erosion and will have implications for biodiversity.

Water resources and water quality – Climate change could affect the region's water resources. The availability of water in reservoirs and rivers for abstraction would be reduced in summer. Low river levels and turbulent flow after heavy downpours will both have an adverse effect on water quality. Climate change may lead to increased risk of flooding in low lying areas and insurance for flood damage may be prohibitively expensive. Flood defences may need to be upgraded.

Challenges include:

- Increased risk of flooding – due to increase in duration/intensity of rainfall events (especially in winter months and in low-lying urban areas).
- Increased demand for water in the summer months.
- Increased risk of sediment and pollution run-off into watercourses.
- Flood defences, urban drainage and rainwater disposal systems may need to be improved and built to higher specifications.
- Enhanced water quality treatment may be required and the capacity of wastewater treatment plants may need to be increased.
- There may be higher concentrations of pollutants in water courses during summer months due to reduced rainfall.
- There may be an increased risk of algae blooms and pollution in reservoirs in summer months due to reduced water levels and low inflow rates.
- There is the potential for saline intrusion into coastal abstraction plants and boreholes.

Financial Services

Claims for storm and flood damage in the UK have doubled to over £6 billion in the UK over the period 1998-2003 compared to the previous five years. Insurers can provide market signals to encourage or incentivise customers to avoid or avert risks whilst Government and local authorities can help ensure that society both addresses the underlying causes of

greenhouse gas concentrations and improves our ability to deal with climate change. If society takes no action to prepare for the impacts of climate change, weather related damage costs will continue to increase with inevitable consequences for the price and availability of insurance. The insurance industry is likely to move towards a more risk based approach to insurance underwriting. This may lead to high insurance costs generally due to the increased risk of flooding, landslips, storm damage and subsidence. There is also the potential for insurers not to provide cover to certain locations, premises and activities. In some cases we may need to be prepared to consider whether or not a managed retreat is the only sensible option.



*Photo credit: BBC.Cornwall
Parts of St Ives under 5ft of water (November 2002)*

We need to continue to work with the Environment Agency regarding flood defence measures, the costs of mitigation work may be offset in reduced future insurance costs, not just for our own properties/land but also for members of our community.

NATIONAL ACTION

The United Kingdom's Climate Change Programme was published in November 2000, it sets out how the UK plans to deliver its Kyoto target to cut its greenhouse gas emissions by 12.5% of 1990 levels by 2008-2012. They expect to achieve this target through the reduction of energy consumption and by switching to low carbon energy sources. The Government's Energy White Paper includes a commitment to cut the UK's greenhouse gas emissions by 60% by 2050, and for 10% of all electricity to be sourced from renewables by 2010, rising to 20% by 2020. The key challenge is to meet these targets without sacrificing our quality of life. The Government has now begun to build climate change into many areas of its mainstream policy writing.

REGIONAL ACTION

In June 2005 GOSW (Government Office for the South West) and SWRA (South West Regional Assembly) published its proposed regional spatial strategy renewable energy policies. These policies, if adopted, include a Cornwall target of 93-108 MW of installed onshore renewable energy targets by 2010. Regional renewable heat targets of 503MW of installed thermal capacity by 2020 and for all developments to include a proportion of their energy from renewable sources.

Our Climate Change Strategy will help turn National Policy and Regional Policy to action at

the local level. The following pages outline some of the areas we need to address, provides case studies of best practice and work already being done by the Council and its partners, and further actions we and our partners can take.

ENERGY

Carbon Dioxide from the burning of fossil fuels for energy accounts for the majority of man-made greenhouse gas emissions in the UK (Environment Agency, 2005). To deal with climate change we need to reduce our reliance on fossil fuels and create a sustainable approach to energy in a way which does not lead to poorer living standards. People need to be enabled to live well with less climate impact. To achieve this we need to decouple quality of life from environmentally damaging forms of energy use. The key to achieving this is by following the principles of the Energy Hierarchy.

The Energy Hierarchy

- **Reduce the need for energy**
- **Use energy more efficiently**
- **Supply energy from renewable sources**
- **Any continuing use of fossil fuels to use clean technologies and to be efficient e.g. using CHP**

Reduce the need for energy – this is about receiving the benefits of warmth, comfort, light etc., without needing to use energy at all. Energy avoidance can be achieved by designing buildings to receive solar warmth, natural light and ventilation, or by enabling people to access services and amenities with fewer and shorter car journeys.

Using energy more efficiently – this is about achieving a greater benefit per unit of energy consumed. This can be achieved through using higher efficiency appliances, generating power and heat together, or insulating buildings better to retain heat.

Once buildings have been designed to the highest possible energy efficiency standards, we should look to switching to less environmentally damaging forms of energy supply, especially renewables e.g. energy crops, wind turbines, solar panels, etc.

Penwith District Council is an active member of the Cornwall Sustainable Energy Partnership. This Partnership was formed in 2001 when over forty organisations including Cornwall County Council and all the six district authorities in Cornwall signed the Action Plan for Energy Partnerships. The Partnership is a public and private sector consortium that aims to create a sustainable energy future for the communities and businesses of Cornwall.

In 2004 The Cornwall Sustainable Energy Partnership launched the Energy Strategy for Cornwall 'Action Today for a Sustainable Tomorrow' (www.csep.org.uk). This document provides an holistic approach to meeting Cornwall's Energy needs. It shows how the integration of actions to minimise energy demand, to use energy efficiently and to use renewable energy sources can deliver more sustainable communities.

All of Cornwall's County, District, Borough and the Isles of Scilly councils were awarded Beacon Council Status 2005 for Sustainable Energy. This award is unique in that it has

been presented to a group of councils working in Partnership. It is specifically awarded to Cornwall for the role that all the councils have played in the creation, development and delivery of the Public/Private sector **Cornwall Sustainable Energy Partnership** and the subsequent **Energy Strategy for Cornwall**.

The Council's Sustainable Communities Officer is currently drawing up guidance and a sustainability checklist for Project Development Officers to ensure that energy efficiency and renewable energy technologies are considered in all new capital projects. Officers will be required to use the checklist at regular intervals throughout the development of new capital projects to ensure that the project continues to consider the environmental, social and economic factors in an holistic manner.

Home Health is an award-winning fuel poverty project created by the Cornwall Sustainable Energy Partnership (CSEP). The project is managed and delivered by a sub-group of the Domestic Energy and Health Task Group, the Home Health Management Group, of which Penwith DC is a member. Community Energy Plus co-ordinate the various partner activities, manage the funding and established a community sector referral network. By combining local and national funding streams, a zoned approach is taken in deprived areas, in which all householders are eligible for free energy efficiency measures. This removes the stigma of means testing helping to encourage applications from vulnerable hard-to-reach and low income homes not claiming benefit. Referrals to the scheme are made through doctors' surgeries and members of a community network such as Age Concern and Surestart. During the pilot scheme, which began in August 2002, an average of more than four low energy light bulbs were distributed to the 655 homes in Pendeen, loft and cavity wall insulation were installed in 255 and 49 properties respectively, and 55 new hot water tank jackets were supplied. The project was extended into three new areas of Kerrier up until March 2004. CSEP has now been awarded a £500,000 Single Regeneration Budget Grant, and £100,000 NRF funding to deliver phase three of the project, *Home Health –here to HELP* in seven new zones, including five in Penwith, during 2004-06. Two of these zones, Penzance and St Ives were identified in the Council's 2003 Private Sector Stock Condition Survey as having some of the highest proportions of homes in fuel poverty in the District.

In addition £1.62 million Private Sector Renewal funding has been secured to deliver a new version of the project in ten zones on behalf of five of Cornwall's District Councils, including Penwith, between 2004-2006. **Home Health Plus** will combine fuel poverty and energy efficiency measures with local authority loans and grants for repairs and heating with the aim of bringing private sector properties up to the Government's Decent Homes Standard. The Home Health projects will contribute towards Cornwall County Council's Local Public Service Agreement (LPSA) Energy Deprivation Target for 2006: the County Council is one of the first in the UK to set a fuel poverty LPSA target.



St. Ives Town Mayor helps with overcladding in the home health project at Carnstabba

Renewable Energy

The Council will continue to work in partnership with the Cornwall Sustainable Energy Partnership to help them achieve their target of 93-108MW of installed capacity by 2010, and to work with building developers and regeneration agencies to ensure that local renewable resources are considered in all developments.

Penwith Housing Association were awarded a £35,000 grant from the Government Clearskies Programme to retrofit ground source heat pumps into sixteen tenanted bungalows at Chy-an-Gweal. These properties relied on solid fuel for heating, which was both expensive and difficult for the elderly to use. Not only did the scheme lead to a reduction in greenhouse gas emissions but it also led to significant cost savings and enhanced air quality for the elderly residents at Chy-an-Gweal. Penwith Housing Association contributed £70,000 towards the project and Penwith District Council were pleased to help provide the £25,000 funding shortfall to enable this scheme to become a reality. This innovative project was groundbreaking in that it was the first time such technology had been incorporated into established social housing stock rather than new build.



*Ground Source Heat Pumps have been retrofitted at Chy-an-Gweal
Photo credit Penwith Housing Association*

The Council has recently resolved to match fund £20,000 from the Energy Saving Trust for a renewable energy research demonstration proposal. This project 'Plug into the Sun' is aimed at raising awareness of renewable energy and increasing demand for solar photovoltaic power. Plug into the Sun will demonstrate the installation of photovoltaic solar panels into four residential properties in Penwith.

The Council's newest carpark at St Ives Leisure Centre became the first carpark in Cornwall to run solely on solar energy, all the lights and parking meters in this carpark incorporate photovoltaic technology. Trenwith Carpark is now lit by six stand-alone street lights that were designed and supplied by SolarGen Solutions Ltd. Seven pay and display machines manufactured by Cale BriParc Ltd., have also been installed. The lights and parking meters are powered by their own individual solar panel. Each panel stores enough electrical charge in its batteries during daylight hours to power the appliance and therefore there is no requirement for any external cabling or electricity supply. SolarGen Solutions' lights are fully recyclable and the PV panels used are carbon neutral after six years, this means that within six years of manufacture the repayment of carbon dioxide free energy has balanced out the

carbon dioxide that was powered in the manufacture of the panel.

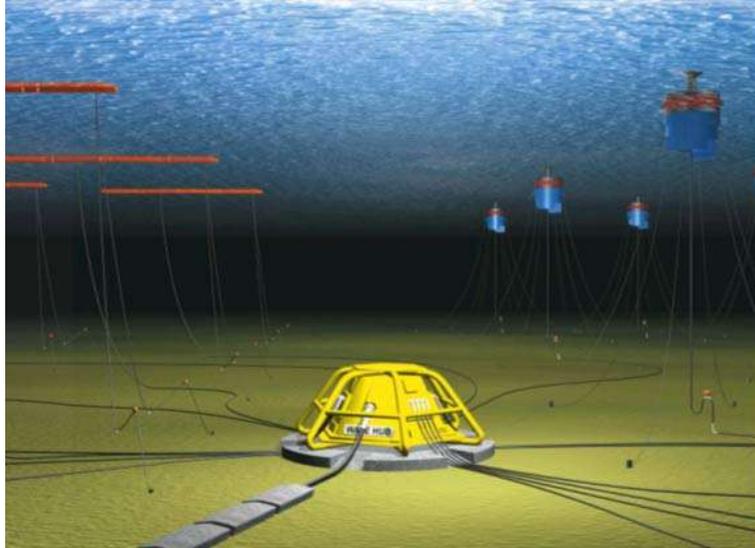
Members and supporters of the Pendeen Parish Members' institute were recently delighted that their planning application for photovoltaic panels on the roof of their new centre was approved with no conditions. Ian Smith, Director of Cornwall Energy Partnership (CEP) said: "Penwith District Council has recognised that the environmental and economic benefits of the project far outweighed the visual impact. It has been Government policy to encourage small scale renewable technologies in conservation areas for some time. It is great to see that our local planners are leading the way in implementing nationally recommended policies". The 'Centre of Pendeen' is a new build multi-purpose community facility with buildings integrated ground source heat pumps and a solar PV array. The building also has super insulation standards in floors, walls and ceilings. The total cost of the project was £667,000 of which £33,000 was funded through the Council's Capital Projects Fund. The solar arrays and groundsource heat pumps were funded by the Energy Saving Trust, EDF Energy, and the Government's Clear Skies Programme.



Fitting of solar panels on the roof of Pendeen Parish Member's Institute

Through its involvement with Cornwall Sustainable Energy Partnership's Marine Renewable Working Group, and through liaison with SWRDA, RegenSW and other partners, the Council will continue to ensure that proposals for regeneration have regard to the local needs of suppliers, developers and support companies for the Wave Hub project. Through early involvement the Council can help ensure that the correct infrastructure is in place to attract employers to the District.

The Wave Hub offers an exciting opportunity to build on the UK's leading position in the development of wave energy. Wave Hub consists of an electrical 'socket' connecting arrays of wave-powered electricity generators to the national grid. The best area for wave energy is close to the electricity grid off the North Cornwall coast. Critical constraints are the wave
*An artist's impression of the Wave Hub. The wave energy converters are the 'MRC1000' being developed by ORECon of Plymouth (right) and 'Pelamis' by Ocean Power Delivery of Edinburgh (left).
 Image by Industrial Art Studio Ltd, St Ives, Cornwall www.ind-art.co.uk*



and sea areas excluded by a variety of other established users. Taking into account water depth, seabed condition, shipping lanes, the MOD practice firing range and following consultation with the fishing industry, SWRDA have established that the best place for the wave hub is about 10 miles off the coast of Hayle. This area may also have a beneficial affect as a nursery ground and 'no take zone' for fish stocks. The Wave Hub project will attract device and project developers, create construction and operation jobs, grow a high value added industry, develop areas of excellence and contribute to renewable energy targets for the South West. The Wave Hub project could stimulate connection of up to 20 MW of generation capacity by 2010. At this capacity the project would create 100 jobs directly. Indirect benefits could include by to 450 jobs by 2010 and 700 jobs by 2020. This corresponds to an increase in Gross Value Added (GVA) to the South West of £15 million and £27 million respectively. At least 40% - 65% of these jobs and 20% to 40% of GVA could be realised in Cornwall. The strongest factor influencing the magnitude of these impacts is whether developers manufacture locally. (Arthur D Little, Wave Hub Business Case Study).

Cornwall County Council working in partnership with all the other Local Authorities in Cornwall, agreed that the Local Area Agreements (LAA) will include a renewable energy stretch target. This target 'Energy Deprivation and Social Exclusion – Renewable energy solutions in rural areas' aims to improve the quality of life of Cornwall's communities by increasing access to cleaner, greener, more affordable and more secure energy supplies. Working with Cornwall Sustainable Energy Partnership the Council will help ensure that the targets and objectives in this LAA theme are achieved.

ENERGY USAGE IN OUR BUILDINGS

The Council uses a green tariff to purchase all its electricity and is currently working with its partners in the Cornwall Sustainable Energy Partnership to ensure that the future procurement of green energy can be sustained as demand for renewable energy supplies

increases.

The Council recently took advantage the Carbon Trust's free assessment of initial energy saving opportunities for its main offices at St Clare and also for the Guildhall, St Ives and St John's Hall, Penzance. The agreed objectives of the assessment were to identify and prioritise up to 10 actions that can be taken by the Council to save carbon. The consultants benchmarked the performance of the St Clare Offices using the Carbon Trust's Energy Consumption Guide ECG087 which deals specifically with the performance of government civil buildings. The report concluded that the performance of St Clare is already very good for the mix and type of buildings in use, with the good availability of natural light delivering low electricity consumptions. However, there is scope for cutting gas consumptions. Although it was not valid to benchmark either St John's Hall or the Guildhall, the survey suggested that they too are also efficient with very little wastage.

Nine priority areas for energy saving were identified through the assessment as detailed in Appendix 1 of this Strategy. The number one priority is to write and adopt an energy management policy. This area of work will be undertaken by the Energy Management sub-group of the Climate Change Strategy Working Group.

The viability of retrofitting renewable energy technologies into our buildings also needs to be investigated. Operational Services are currently working with Cornwall Regeneration to investigate the feasibility of replacing the old oil boiler at St John's Hall with a woodchip alternative.

PLANNING AND REGULATION

Current planning regulations limit the extent to which local authorities can insist on a new development being sustainable. There is a perception amongst some developers that building to high standards of energy efficiency is prohibitively expensive and therefore there is a general reluctance among many developers to do this. The Council will actively encourage developers to use more sustainable construction methods.

The Council is currently working on the production of a design guide which will give guidance and sources of further information on sustainable development for developers and architects. In partnership with the planning departments of all the local authorities in Cornwall we are currently drafting a project proposal 'Delivering renewable energy solutions through planning policy'. The proposed project will aid in implementing the LAA Stretch Target: Energy Deprivation and Social Exclusion – Renewable Energy Solutions in Rural Areas, by developing planning policy and associated guidance which supports the integration of renewable technologies within built development. The resultant guidance will have the potential to be adopted as a Supplementary Planning Document (SPD) and could be tied in with County and District Design Guides.

We have also produced an environmentally friendly guide to house renovation and improvement for householders. This guide is sent out to all planning applicants and includes information on energy efficiency and renewable energy, recycling, environmentally friendly materials, and grants.

In the absence of any national action, the Council, in partnership with West Cornwall Together, The Cornwall Sustainable Energy Partnership and Cornwall Sustainable Building Trust, should set local guidelines that encourage greenhouse gas reduction measures to

become integral in any new building or development.

The Council recognises that extreme weather conditions are likely to be experienced more often in the future. In partnership with County Council and the emergency services, key members of our staff are now trained in emergency planning and procedures have been put in place to ensure that in the event of an emergency situation the Council are still in a position to provide its services. We take steps to prepare as much as possible for extreme weather conditions for example we ensure that we always have adequate stocks of sand and sandbags

We work with the Environment Agency and local landowners to prevent eroded soils during rainfall events from silting up at the field edges. The build up of soil at field edges can lead to increased rainfall run off and localised flooding in our towns and villages. These measures also help to ensure that good quality soils with essential nutrients are retained for future agricultural use. We also work with the Environment Agency clearing rivers to help reduce flood risk. The Council has a trained team of officers ready at all times to respond to a flooding emergency, and is the only Cornish district council to have taken over maintenance responsibility for the watercourses in its area.

Further steps to take could include setting a target for a certain percentage of all new builds in the district to incorporate sustainable design measures including renewable energy, energy efficiency above and beyond current building regulations.

The Sustainable Development and Improvement Department will need to be prepared to make difficult decisions in light of climate change especially when considering sea-level rise. Supplementary planning guidance needs to be developed to ensure that climate change issues are taken into account in all planning applications. Environmental and sustainable appraisal tools can be effective for ensuring that climate change is addressed in planning policy. The Council and its partners need to develop strategies to protect structures that are likely to be worst affected and (when available in 2007) adopt the EU's guidelines on the adaptation of cultural heritage sites to climate change (NOAHSARK Project http://europa.eu.int/comm/research/fp6/ssp/noahsark_en.htm).

Our Sustainable Development and Improvement Department should consider identifying areas at risk of flooding and unstable land due to erosion and show these areas on the local development framework to guide developers and adopt a precautionary approach when dealing with proposals for such areas.

WASTE

Waste is what we throw away because we no longer need or want it. In the United Kingdom over 25 million tonnes of rubbish is collected from households every year, that averages out at 500kg (half a tonne) of waste per person!!!! and we are producing more and more of it. Recycling reduces the amount of waste going into landfill. Landfill space in Cornwall is quickly running out, all the waste produced by Penwith households currently has to be transported to the landfill site at Connan Bridge in North Cornwall (a 120 mile round trip from Penzance, the largest population centre in Penwith). Obviously this has time and cost

implications as well as impacting the local and global effects of transportation on the environment. Therefore reducing the amount of waste needing to go to landfill is of an even greater importance to Penwith District Council than it may be for other local authorities.

It also matters because if we do not recycle we are using up the World's valuable resources, many of which cannot be replaced. If we do this indefinitely they will eventually run out. Not only are we wasting the materials from which the product is made, we are also wasting the energy used in its manufacture.

Many of the products we buy and then discard are manufactured from materials that had to be extracted from the ground. Mining, logging, quarrying and other industrial processes (as well as the transportation of raw materials and goods), not only damage the physical environment but also release chemicals substances and carbon dioxide into the atmosphere.

Recycling often uses less energy and causes less pollution than using raw materials for example recycling aluminium cans saves 95% of the energy used in producing a new can. Waste prevention and recycling reduce greenhouse gases by saving trees that take up carbon dioxide.

Landfills are the top human-caused source of methane. Organic materials (derived from living organisms) decompose in landfills in the absence of oxygen, creating methane gas. Methane is a potent greenhouse gas, 21 times more effective at trapping heat in the atmosphere than carbon dioxide. Some landfill sites collect trapped methane gas for energy use, however it is not possible to collect 100% of the methane produced, the usual recovery rate being about 40%.

Using the earth's natural resources to make products which we then just throw away is not sustainable - it cannot go on for ever. A sustainable society needs to leave resources available for future generations to use.

Penwith District Council enjoys an excellent working relationship with Cornwall County Council and the other five district councils in Cornwall. Recycling and waste working groups involving all districts, County Council and the Environment Agency have been established for 12 years and we are in the process of formulating a countywide strategic approach towards waste management in Cornwall and increasing participation in Cornwall's recycling schemes.

In March 2003 we launched our Green Box Recycling Scheme which is provided by our contractor Biffa Waste Services. Collections are made using new purpose designed "Kerbsider" recyclables collection vehicles. This kerbside service covers 100% of the district and offers a fortnightly collection of glass, paper, textiles, aluminium foil, cans and aerosols.

The Council is responsible for providing "Community Recycling Point" sites. For schools in the district we provide a collection service for recyclables, including cardboard.

Until we instigated our kerbside recycling scheme Penwith had a very poor recycling record with only 4.5% of our waste being recycled and the rest going directly into landfill. Kerbside collection has so far been extremely successful and, together with all our services, 17.13% of our waste was diverted from landfill in 2003/04. The Government have set a national target for local authorities to be diverting 18% from landfill by 2004/05, but we have set ourselves, and expect to achieve, a more ambitious target of 20%.

The Council, in partnership with County Council, The Environment Agency, Cornwall Health Care Trust, and the other five district authorities in Cornwall, were awarded grant funding from WRAP for a countywide waste and recycling awareness campaign aimed at householders. This 'Recycle for Cornwall' campaign is managed on our behalf by the community groups ReZolve and Cornwall Waste Action Group (www.recycleforcornwall).

We have recently launched a pilot green waste collection service. The collected green waste is composted at a local farm and used directly on their land. We also actively encourage home composting.

The Council believes that only by making it easier to recycle and harder to dispose of mixed waste going to landfill, will we be able to dramatically improve our recycling rates. We are currently researching the feasibility of increasing the range of recyclables we collect at the kerbside to include plastics and cardboard whilst at the same time reducing the frequency of municipal waste collection.

Our Sustainable Development department should encourage developers to allocate adequate provision for the storage and collection of waste and recycling materials, and where appropriate, recycling on site.

TRANSPORTATION

Road transport has revolutionised the way in which we live in the UK. Cars have given us greater mobility and freedom, however the growth in road traffic has led to negative effects on our environment. Transport accounts for more than one-quarter of all carbon dioxide emissions in the UK, plus other greenhouse gases such as nitrous oxides, methane and hydrofluoro-carbons. Transport emissions have almost doubled in the last 20 years and is the only major sector that is not reducing its emissions. In order to reduce emissions we need to promote more sustainable transport choices for people and freight, promote accessibility to jobs, shopping, leisure facilities and services by public transport, promote walking and cycling and reduce the need to travel, especially by car.

The Council has recently adopted its Travel Plan which is a package of measures, initiatives and targets designed to help reduce the environmental effects of council related transportation on the environment by reducing the level of unnecessary travel and encouraging those who do have to travel to do so in a more sustainable way. The Travel Plan sub-group of the Climate Change Strategy Working Group will be responsible for developing the actions and targets set out in the Travel Plan.

Our Sustainable Development and Improvement department require large new building developments to draw up Travel Plans, and our Sustainable Communities Officer gives local companies/community groups guidance in the writing of travel plans.

We recently commissioned Halcrow to undertake a study of parking provision in Penwith, this study investigated the viability of park and ride for the main towns of Penzance, St Ives and Hayle. The study concluded that St. Erth would be the most viable site for Park and Ride to serve the district and this has now been included in Cornwall County Council's Local Transport Plan.

The Council is an active partner in and financially supports the West Cornwall Rural

Transport Partnership. The Rural Transport Partnerships work with communities to develop ways of improving local people's access to employment, services and facilities.

The Partnership aims to support and develop community transport. They also seek to improve the availability of public transport information, to promote the integration of transport services, and to target the needs of isolated rural areas

The main environmental focus for the transport sector has been to reduce carbon emissions. Whilst the Council needs to continue to work in this area we also need to work with our partners to ensure we investigate ways in which we can protect our road and rail infrastructure. New transport infrastructure needs to be assessed for its impact on greenhouse gas reduction targets and on its ability to adapt to climate change.

PROCUREMENT

Every purchasing decision has an impact on our environment. Consideration should be given to goods and services that have the least environmental impact in terms of their production, delivery, use and disposal. All phases of a product's lifecycle should be considered when determining its potential impact on our environment. The Council are in the process of drawing up a sustainability checklist for procurement which as well as ensuring fitness for purpose and value for money, will take into account the amount and type of packaging, re-use and/or recycled content, pollution arising from production and use, durability and capacity for repair and upgrading, and energy efficiency. Suppliers will be asked to provide information on how their product or service impacts on greenhouse gas emissions over its lifecycle and to also provide information on their own energy efficiency measures.

Penwith District Council uses Sun Microsystems for its computing. One of our prime reasons for selecting Sun Systems was because of the huge energy savings they offer when compared to traditional desktop systems. The Sun System uses Ultra Thin Clients (UTC's) instead of conventional desktop PC's. This approach means that the computer on each desk does not require the processing power of a 'normal' personal computer, it is purely the gateway to a data centre and therefore does not have to be changed when the system is upgraded. The UTC has a life expectancy of 2 to 3 times that of a traditional PC. Running at around 15 watts the reductions in power consumption are around 90% compared to conventional PCs which run at an average of 250 watts.

MANAGEMENT OF OPEN SPACES

Parks, gardens, well maintained woodlands, clean streets and floral displays all help to improve our quality of life and feeling of well-being. Our parks and green open spaces provide a strong focal point, are a hub of community activity and help to conserve our local environment, culture and heritage. Looking after our environment through greater recycling, creating clean and safe open spaces and streets and providing the visual attraction of floral displays and borders, all help to reinforce our commitment towards improving the quality of life for us all. As the climate changes greater use is likely to be made of our open spaces.

The Council will shortly commence work on a Green Space Strategy which will consider new approaches to managing these areas within a changing climate. As many of these practices may also apply to private gardens the Council will have an educational role to play.

In Penwith sustainable planting schemes are now becoming widespread, not only for their attractiveness but because they thrive well in our mild sub-tropical climate and require very little maintenance and watering. Over the past few years many of our traditional flower beds have been converted into sustainable beds and the Council will continue to explore opportunities for sustainable planting. We will also continue to enter Britain in Bloom as we believe it is a valuable tool for promoting our achievements in sustainable development and helps create community involvement and participation in our local environment. Our Environmental Services staff are encouraged to purchase goods and services that cause the least harm to environment and to re-use and recycle as much waste as possible.

Through West Cornwall Together, we have been chosen, in partnership with Kerrier District Council, to conduct a pilot Liveability Project. Liveability is about the quality of the physical environment in which we live, work and play, through the enhancement and maintenance of clean, safe and green open spaces. This funding from the Office of the Deputy Prime Minister is being to help finance three major projects in Penwith; The Princess May Recreation Ground, St. Ives Rugby Club, and a centre of horticultural education excellence to be built at Morrab Gardens. This site of horticultural education will raise awareness of climate change and sustainable gardening issues by providing training to staff, community groups and local schools/colleges. All the Liveability projects entail a great deal of community involvement and it is expected that they will result in community facilities that will be highly sustainable.



Greenspace Strategy and Action Plan - The Council have committed to developing a Greenspace Strategy and Action Plan for the District. The aims of a Greenspace Strategy are to establish clear lines of responsibility for parks and green spaces, and to ensure that green spaces enhance the quality and diversity of the environment, the life of local communities and promote civic pride and social inclusion. There are many benefits in adopting a Greenspace Strategy, in relation to climate change the major benefits include:

- Raising air quality and moderating extremes of temperature

- Offering alternative networks for walking and cycling
- Protecting and enhancing levels of biodiversity and ecological habitats
- Providing environmental infrastructure to improve water quality and flood control
- Protecting our historical, cultural and archaeological heritage

Trees and plants absorb Carbon Dioxide and filter solar radiation the Council will consider the impacts of climate change on trees and the scope for new planting to aid carbon sequestration. Trees will have to be closely monitored in drought years and the Council needs to ensure a varied tree stock to ensure a significant number thrive in future climates. The Council should set an annual target for planting trees within the District.

LOCAL ECONOMY AND TOURISM

The Council employs a Sustainable Tourism Officer and has adopted a Tourism Strategy based on the principles of sustainable development and centred around the VICE model for tourism development. Our strategy recognises that a sustainable environment and society underpin a sustainable economy. In partnership with Cornwall County Council, the West Cornwall Rural Transport Partnership and Penwith Tourism Action group we have produced the 'Boot, bus and branchline' brochure which actively promotes public transport as a viable alternative to private car usage. It is our collective intention to grow visitor use of this service by 5% per annum.

Through the Penwith Tourism Action Group we are actively pursuing the introduction of a green tourism business scheme in which all tourism related businesses collectively participate. This scheme requires award holders to increase and promote energy efficiency, reduce and recycle waste, reduce water usage, promote local transport, promote and source local food and includes measures in which businesses can engage in actively promoting biodiversity in their own premises.

Our Sustainable Tourism Strategy contains objectives which link to this Climate Change Strategy. These are identified in Appendix 2 of this strategy.

In partnership with Cornwall Enterprise, the other District/Borough Councils in Cornwall and County Council we finance, organise and promote the Cornwall Sustainable Business Awards. These awards celebrate sustainability best practice within the Cornish business community and help promote actions that reduce greenhouse gas emissions.

We will continue to work with our partners to help promote local purchasing. Buying local not only supports our economy but also leads to reduced greenhouse gas emissions through a reduction in transport miles. Schemes the Council are currently involved with include 'Deliciously Dirty .. the story of Cornish Early Potatoes' and 'Penwith Produce' a guide (now in its second edition) on where to find, buy or eat locally produced food and drink. This innovative guide produced by the Council and Taste of the West was a winner in the nationally recognised Green Apple Awards.

The Healthy Boxes Project aims to change a lifetime's poor perception of eating fruit and vegetables, making them easily accessible to families and residents most distant from the food chain. West Cornwall is among the most remote parts of Britain and the most disadvantaged.

The Council's Social Inclusion Officer identified that one of the main barriers to healthy

eating, especially in our most deprived wards, was access to fresh fruit and vegetables, and training/education on how to cook healthy meals. At the same time the Council's Rural Economy Officer was seeking a buy market offering a fair price for locally grown fruit and vegetables which are the wrong colour or either too big or too small for contracts with the large supermarket chains. This innovative project is truly sustainable in that it supports our local economy, our community and, due to the reduction in transport miles, our environment.

The project commenced delivering boxes in June 2004. Over 300 boxes per week were being sold by October 2004. There are currently 15 drop off points throughout the Districts of Penwith and its neighbour Kerrier. The Healthy Box contains seven or eight items of fresh (and wherever possible) local fruit and vegetables. Customers buy their box from an appointed key person and indicate if they wish a box for the following week. Reusable cloth bags are provided to enable customers to carry the produce more easily. Customers can collect reward stamps for returning their empty boxes so they can be re-used. A standard healthy box only costs £4.00 per week (although free trial boxes for a period of six weeks are offered to selected hard to reach groups). Cost Plus boxes (£4.50) are sold at workplaces to employees and distributed at a central point within the building. The small profit from selling Cost Plus boxes is expected to help the project become self-sustaining in the future.

The selection of vegetables and fruit changes every week, with an emphasis being placed on taste, freshness and flavour. Size and appearance are the main factors in determining what is selected. One of the key features of the project is to provide an outlet for produce that might not fit in with the major supermarkets' tight and constantly changing specifications.

It has been widely acknowledged that many farmers are excellent at growing but not so good at marketing and/or lack the critical mass to deal with the big buyers. The project provides a useful, guaranteed market for many farmers.

The produce is delivered to a local distribution depot and packed into the boxes, with packaging being recycled at all levels. No produce is given additional packaging unless absolutely necessary. Deliveries are made to Sure Starts, church groups, toddler groups, community centres, homeless hostels and village shops in West Cornwall. Healthy boxes are not sold in communities with a village shop that sells local vegetables. Villages shops that do not sell fresh produce are given the opportunity to sell healthy boxes on a sale or return basis.

The Healthy Boxes project, which recently won a National Green Apple Award for good practice in Environmental Sustainability, is a prime example of real partnership working at its best with each partner contributing different skills and knowledge. Healthy Boxes has forged strong links with the Eatsome and Eatwell projects (managed by the Healthy Living Initiative) which teach people how to prepare and cook food, and is especially targeted at young mothers. The Co-ordinators of these projects use the contents of that particular week's healthy box to cook with. People attending the classes are given the opportunity to buy healthy boxes at a subsidised rate for the duration of the cookery course. Championed by Penwith District Council the project is funded by The Neighbourhood Renewal Fund through West Cornwall Together (the local strategic partnership), Penwith District Council and the Healthy Living Initiative's Health Action Zone. The project receives support from the Penwith Community Development Trust who employ the Project's Co-ordinator.



Work is already underway to develop a new bid 'The Food for Life' Project. Learning from the mistakes and areas of best practice of the Healthy Boxes Scheme, this new project aims to engage 30 local community food workers, set up food co-operatives and embed healthy eating lifestyles into the heart of our most deprived, rural communities. Food for Life will build self-esteem within our communities and demonstrate how through local buying we can feed our families for a fraction of the supermarket prices.

ECOLOGICAL FOOTPRINTS AND GREENHOUSE GAS EMISSIONS

The South West's 'eco-footprint' shows that if the region's consumption patterns were the world-wide norm we would need two extra planets to sustain us. The challenge for Penwith is to reduce social and economic inequalities and to manage our ageing population and growing tourism in ways which use natural resources efficiently, minimise greenhouse gas emissions and protect our unique environment and heritage.

The Council will encourage West Cornwall Together (our Local Strategic Partnership) to commission research into measuring the estimated greenhouse gas emissions for West Cornwall. Once the data has been collected and analysed it can be used both as an indicator to show trends over time and for comparison between different geographical areas. This work is felt to be important because it will allow us to set and measure targets for greenhouse gas reductions.

THE NEXT STEPS – HOW WE WILL ENSURE THIS STRATEGY BECOMES AN EFFECTIVE WORKING DOCUMENT

In order to ensure this Strategy does not sit gathering dust on shelves, our Social, Economic and Environment Committee nominated one of our Councillors as Climate Change and Sustainable Energy Champion. Our Climate Change Champion will work closely with our Sustainable Communities Policy Officer to help ensure that Climate Change issues remain a priority for the Council and our partners. Our Climate Change Champion will also sit on the newly formed Cornwall Sustainable Energy Partnership's Members' Forum. The purpose of the Forum is to provide a means by which Councillors from all the Cornish Authorities will be able to share ideas and best practice.

Outlined below are our proposed actions and targets. To help us achieve these we will set up a Climate Change Councillor/Officer Group. This Working Group will meet on a monthly basis and will be responsible for ensuring that Penwith District Council continues to improve its own environmental performance and also continues to work in partnership with relevant organisations to help prepare for changes in our climate, to mitigate the effects of climate change and to reduce greenhouse gas emissions.

TABLE 1 – ACTIONS THE COUNCIL WILL CONTINUE TO UNDERTAKE	
Work with the Environment Agency and other partners regarding flood defence measures.	
Work with our partners to develop policy responses to address the natural environment and biodiversity issues by considering integrated land use in coastal and marine management and to work towards a more integrated flood and coastal management.	
Seek to prevent development within flood plain areas.	
Encourage development that reduces the need to travel.	
Work in partnership with health care providers to ensure that important information regarding protection against the damage caused by UV rays reaches the general public.	
Support the Air Quality Forum	
Help organise and sponsor the Cornwall Sustainable Business Awards in partnership with Cornwall Enterprise and the other Cornish local authorities.	
Work with our partners to roll out the Home Health programme and develop Home Health Plus for the private rented sector housing.	
Work with the AONB partnership to mitigate or lessen the effects of climate change on the special character of Penwith.	
Hold an annual waste awareness event to promote recycling and the need to reduce waste.	
Promote local produce and goods. Encourage local hotels and catering businesses to source food locally. Continue to support the Healthy Boxes Scheme and Penwith Produce.	
Purchase our electricity on a green tariff.	
Increase recycling and encourage waste reduction, re-use and the purchase of products with a recycled content both within the Council and in our wider community.	
Support the West Cornwall Rural Transport Partnership	
Support the Cornwall Sustainable Energy Partnership in achieving their targets and objectives as set out in their Energy Strategy for Cornwall 'Action Today for a Sustainable Tomorrow'.	
Send out a copy of our Environmentally Friendly Guide to Household Renovation with all planning applications.	
With our partners, promote farming methods that seek to minimise the effects of surface run-off and soil erosion.	
Enter Britain in Bloom to help raise awareness of sustainability issues	
Promote uptake of the Green Tourism Business Scheme	

CLIMATE CHANGE ACTION PLAN	
Proposed measures:	Lead Officer and/or Department/Agency
Extend green housekeeping and staff awareness within Penwith District Council. Establish a Climate Change Officers Working Group to deliver this Strategy and to integrate the Council's Sustainability Statement into the day-to-day running of the Council's buildings and offices.	Sustainable Communities Officer
Investigate the feasibility of increasing car parking charges and use the extra income to offset the effects of car use e.g. park and ride facilities	Building and Engineering Manager
Take into account the impact of Greenhouse Gas emissions in the development of all Council policies and strategies and reappraise policies in light of climate change impacts during their review. This can be incorporated into sustainability appraisal.	Sustainable Communities Officer
With our partners, promote and help educate the general public on matters relating to Climate Change and ways in which we can mitigate the affects of climate change.	Sustainable Communities Officer, Sustainable Tourism Officer, CSEP, CoAST
With the Cornwall Sustainable Energy Partnership and West Cornwall Together increase support given to local businesses to reduce their energy usage and transportation miles.	CSEP/WCT
Encourage local businesses to conduct energy efficiency audits by promoting the Government's Action Energy scheme	Regeneration Tourism and Leisure, CSEP
Investigate commissioning research into estimated carbon dioxide emissions for West Cornwall. This information can then be used as a base from which to set and measure targets on carbon dioxide reduction.	West Cornwall Together Environment, Culture and Heritage Sub-group
Ensure all of our sustainable development and building control officers and Planning Committee Members receive regular training on renewable energy and sustainable construction techniques.	Sustainable Development and Improvement/CSEP/CSBT
Implement the Energy Efficiency Actions as recommended through the Carbon Trust's audit of our main buildings (see Appendix 1)	Energy Management Officer Group/Operational Services
Actively encourage developers to use more sustainable construction methods and produce a 'Design Guide' for local developers and architects which will include all aspects of sustainable construction and climate change mitigation measures.	Sustainable Development and Improvement, Regeneration, Tourism and Leisure, CSEP, CSBT
Investigate the feasibility of formulating a sustainability checklist for planning applications	Sustainable Development and Improvement

CLIMATE CHANGE ACTION PLAN	
Through our planning system promote and support the installation of Sustainable Urban Drainage Schemes by requiring SUDS to be implemented as part of new development where possible.	Sustainable Development and Improvement
Ensure the Local Development Framework and associated guidance fully reflects sustainable development objectives	Sustainable Development and Improvement
Make it policy that any Council land sold for housing development is sold on the condition that the houses are more energy efficient than current building regulations.	Sustainable Development and Improvement
Through our planning system secure more renewable energy in new development by setting a target of at least 10%	Sustainable Development and Improvement
Develop a comprehensive and integrated Greenspace Strategy and action plan	Sustainable Development and Improvement/Open Spaces Manager
Trial the use of a sustainability checklist and guidance for officers developing Capital Projects.	Sustainable Communities Officer
Write and implement an Energy Management Policy and explore the possibility of retrofitting renewable energy systems into our buildings and offices.	Sustainable Communities Officer/Operational Services
Publish information about local air quality on our website and provide a link to the BBC air quality forecast.	IT department
Set an annual target for planting trees in the District and implement a tree monitoring system (this could be incorporated into our Green Spaces Strategy).	Sustainable Development/Open Spaces Manager
Ensure the Local Development Framework and associated guidance fully reflects sustainable development objectives through the use of sustainability appraisal methodology.	Sustainable Development
Work with our partners to identify areas most at risk of flooding and sea level rise and unstable land due to erosion, with a view to developing an informed debate about realistic options for the future.	Sustainable Development, English Nature, Environment Agency, Cornwall County Council, etc.
Show such identified at risk areas on the local development framework to guide developers and adopt a precautionary approach when dealing with proposals for such areas.	Sustainable Development
With our partners, identify and develop strategies to protect structures that are likely be worst affected by climate change.	Conservation Officers, English Heritage, National Trust, etc.
Research the feasibility of increasing the range of recyclables we collect at the kerbside whilst at the same time reducing the frequency of municipal waste collection.	Recycling and Waste Manager

CLIMATE CHANGE ACTION PLAN	
Establish an Officer Travel Plan sub-group of the Climate Change Strategy Working Group to develop the actions and targets set out in our Travel Plan.	All Services
Work with our partners to ensure we investigate ways in which we can protect our road and rail infrastructure.	Sustainable Development and Improvement, CCC, Highways Agency, public transport providers
Reduce the impact of visitors on our resources and environment by implementing the actions set out in our Sustainable Tourism Strategy (See Appendix 2)	Sustainable Tourism Officer
Work with our partners to assess new transport infrastructure's impact on greenhouse gas reduction targets and on its ability to adapt to climate change.	Sustainable Development and Improvement, CCC, Highways Agency, Transport providers e.g. First
Complete and implement our Sustainable Procurement Policy	Finance/Legal
Work with our partners to help ensure the LPSA2 Renewable Energy Target is achieved.	CCC, CSEP, PDC
Hold an annual 'Warmer Homes Action Day' to raise awareness of energy efficiency and fuel poverty issues	Sustainable Development/Councillors
Promote take up of environmental management courses for businesses, e.g. Envision, Green Tourism Business Scheme (GTBS)	Regeneration, Tourism and Leisure, SWT, CSEP