

A Climate Change Strategy for Penwith

References:

Arthur D. Little (2005) Wave Hub Summary Business Case report to South West of England Regional Development Agency, reference 20118/048rep.doc www.adlittle.uk.com

Bryden H. & Cunningham S. (2005) Slowing of the Atlantic meridional overturning circulation at 25 degrees North. *Nature* 438, p. 655-657: Nature Publishing Group

Cornwall County Council (2006), Local Transport Plan 2006 – 2011 (final version) www.cornwall.gov.uk/index.cfm?articleid=350

Cornwall Sustainable Energy Partnership (2004) Action Today for a Sustainable Tomorrow, the Energy Strategy for Cornwall www.csep.co.uk

Defra (2000), The United Kingdom Climate Change Programme 2000, Stationery Office (www.defra.gov.uk/ENVIRONMENT/climatechange/uk/ukccp/2000/index.htm)

Defra (2006), The United Kingdom Climate Change Programme 2006, Stationery Office (www.defra.gov.uk/ENVIRONMENT/climatechange/uk/ukccp/index.htm)

DTI (2003), Energy White Paper – Our Energy Future- Creating a low carbon economy, Stationery Office

DTI (2006), Our Energy Challenge – securing clean, affordable energy for the long-term (consultation document) www.dti.gov.uk/energy/review

Hulme, Jenkins et al (2002) Climate Change Scenarios for the United Kingdom: The UKCIP02 Scientific Report, Tyndall Centre for Climate Change Research, School of Environmental Sciences, University of East Anglia, Norwich, United Kingdom

IPCC (2001) Climate Change 2001: The scientific basis. Contribution of Working Group 1 to the third assessment report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA

SWCCIP (2003) Warming to the idea – meeting the challenge of climate change in the South West, Environment Agency, Exeter, United Kingdom

UKCIP (2005) Updates to regional net sea-level change estimates for Great Britain, UKCIP, (www.ukcip.org.uk/resources/publications/documents/124.pdf)

The Wildlife Trusts, Rebuilding Biodiversity in the South West new landscapes for wildlife and people,

A Climate Change Strategy for Penwith Appendix 1

Energy Saving Strategies

The key assumptions and more supporting information for the following recommendation are included in appendix 1.

PRIORITY 1 WRITE AND ADOPT AND ENERGY / ENVIRONMENTAL POLICY

Saving per year	CO2 Savings Tonnes/year	Saving per year	Cost	Saving per year
£ 260	0.9	7,530	Negligible	Immediate

Detail:

Energy issues do not currently seem to be regarded as an important factor at the Council (but clearly have been in the past as demonstrated by the very low consumptions and hence small scope for further savings). This is largely because it apparently does not feature in any part of the existing management policies or procedures. Therefore, unless a policy is adopted that includes the proactive management of energy and other utilities it will never be resourced appropriately.

Rationale:

Adopting an energy (and/or environmental) policy that has Council approval and involvement will help to ensure that the appropriate level of resources are applied. Unless energy issues are seen to be important by all those who work for the Council, progress will be slow and difficult.

Risks:

It is important that the ownership and responsibilities for implementing any new policy are agreed.

Next Step:

Write and launch the energy section of a perhaps a wider environmental policy.

Relevant Publications:GPG 119 Organising Energy Management, GPG 200 A strategic approach to energy & environmental management, GPG 186 Developing an Effective Energy Policy.

A Climate Change Strategy for Penwith

PRIORITY 2 ST CLARE - CHECK BOILER CONTROL SETTINGS AND BMS CONTROLS

Saving per year	CO2 Savings Tonnes/year	Saving per year	Cost	Saving per year
£ 210	2.2	11,460	Negligible	Immediate

Detail:

During the survey the main boiler room could not be accessed. However, three, smaller boiler rooms were surveyed and a range of controls found. Many of the settings, both time and temperature were noted to be not quite correct.

Additionally the new boilers feeding York house are controlled by BMS managed remotely (from County Hall). The survey was undertaken on one of the hottest days of the summer (ambient temp 24oC) and yet these heating boilers had fired suggesting that the settings in the BMS are also incorrect.

Rationale:

If the consumption of gas is to be minimised then the settings within all the controllers and their internal clocks need to be correctly set.

Risks:

None

Next Step:

Re-set clocks and check all settings.

Relevant Publications:

None

A Climate Change Strategy for Penwith

PRIORITY 3 ST CLARE - LOCK ALL TRV'S

Saving per year	CO2 Savings Tonnes/year	Saving per year	Cost	Payback Years
£ 110	1.1	5,730	Negligible	Immediate

Detail:

The majority of heating systems comprises a network of radiators served by both single and two-pipe flow & return pipe distribution systems, most of which are fitted with thermostatic radiator valves (TRVs). Most of these were found to be on "max" but have anti-tamper features to prevent unauthorised adjustment. It is recommended that these are set to an appropriate level and locked wherever possible.

Rationale:

TRVs will allow the temperature of individual rooms, corridors, etc. to be controlled independently. Ideally they should be set to achieve a comfortable room temperature (19 to 21oC) and then left alone.

Risks:

With single pipe by pass systems, heat rising from the pipe below can cause problems with false readings. It is also important to avoid installing TRVs in room(s) containing the thermostats or temperature sensors for the BMS or other heating system controllers, as this can cause problems with the overall control of the building's temperature.

Next Step:

Re-set and lock all TRVs.

Relevant Publications:

None

A Climate Change Strategy for Penwith

PRIORITY 4 ST JOHNS HALL - UNDERSTAND HEATING ZONES AND ELECTRICAL DISTRIBUTION

Saving per year	CO2 Savings Tonnes/year	Saving per year	Cost	Payback Years
£ 110	0.6	3,810	Negligible	Immediate

Detail:

St John's Hall has 3 separate heating zones and 2 (or 3?) electricity supplies and meters. As the building has several different "functional" areas i.e. offices (some sub-let), the court and associated rooms, as well as the main hall and committee rooms, it should be possible to manage the supply of heat to these areas to match the varied occupancy times and temperatures.

During the survey it was not possible to ascertain which parts of the building the zones fed, nor whether the BMS (as managed by County Hall) is being used effectively.

Rationale:

Unless the heating and electricity distribution systems are fully understood, it is not easy to manage the energy consumption efficiently.

Risks:

None

Next Step:

Establish which areas the heating zones feed and the electricity supplies serve, then ensure this information is used to proactively manage the building's energy consumption.

Relevant Publications:

None

A Climate Change Strategy for Penwith

PRIORITY 5 ST CLARE - PIR COMMITTEE ROOM LIGHTING

Saving per year	CO2 Savings Tonnes/year	Saving per year	Cost	Payback Years
£ 150	-	2,340	£ 250	1.7

Detail:

The large committee room is lit by over 30, fittings having a total load of over 2kW. The occupancy of the room is intermittent, but during the survey was found to be unoccupied twice with all the lights on. It is therefore recommended that presence detection control is retrofitted to this room such that the lights are switched off when the room is unoccupied.

Rationale:

Reducing the unnecessary operation of these lights will save energy.

Risks:

There are several lighting circuits in the room which may make retrofitting PIR controls more costly than usual.

Next Step:

Apply lighting controls to this room. If necessary obtain quotation from a specialist lighting control company.

Relevant Publications:

None

A Climate Change Strategy for Penwith

PRIORITY 6 ST CLARE - RE LAMP STAFF ROOM AND APPLY PIR CONTROL

Saving per year	CO2 Savings Tonnes/year	Saving per year	Cost	Payback Years
£ 100	-	1,600	£ 200	2.0

Detail:

The recently refurbished staff room is lit by 20, 50W "dichroic" fittings having a total load of 1kW. The occupancy of the room is intermittent. These lamps are inefficient light sources and have a high maintenance requirement and are not suited to general lighting applications. Consideration should be given to replacing all these with Phillips Masterline ES 30W or Osram IRC 35W dichroics (other manufacturers may offer similar products). These employ a special coating on the lamp, delivering that the same light output as a standard dichroic lamp using less energy. It is also recommended that presence control is retrofitted to this room.

NOTE: Generally dichroic lamps, even the lower wattage versions suggested here, are not efficient. The long term aim should aim to use T5 fluorescents with high frequency control gear.

Rationale:

Reducing electricity consumption, heat gains and maintenance costs. If new lamps are installed as part of routine/scheduled maintenance work the payback will be considerably shorter.

Risks:

If these lamps are 240V (i.e. not 12V) an alternative lamp (possibly based on a compact fluorescent) should be considered instead.

Next Step:

Replace dichroics with lamps detailed above and install PIR control.

A Climate Change Strategy for Penwith

PRIORITY 7 ST CLARE - CHANGE RECEPTION LIGHT AND APPLY PHOTO CELL CONTROL

Saving per year	CO2 Savings Tonnes/year	Saving per year	Cost	Payback Years
£ 40	-	550	£ 100	2.5

Detail:

The St Clare public reception desk has a good level of natural light and is lit by 250W sodium based up-lighter fitting. This type of light has very poor colour rendering properties (i.e. it is not easy to determine colours accurately), and is not generally suited to commercial applications.

Replacing this light with say a 150W metal halide based fitting controlled by a photo cell would save energy

Rationale:

Changing the existing light and applying day light control will reduce running costs and improve the visual appearance of the reception area.

Risks:

The lamp life of an HQI may not be as good as the existing sodium.

Next Step:

Obtain quotation for new light.

A Climate Change Strategy for Penwith

PRIORITY 8 ST JOHNS HALL - REPLACE LIGHTING IN JUDGES STAIRS

Saving per year	CO2 Savings Tonnes/year	Saving per year	Cost	Payback Years
£ 20	-	310	£ 60	3.0

Detail:

The bottom of the Judges staircase is lit by 6 x 150W tungsten lamps having a total load of almost 1kW.

Rationale:

Replacing the existing lamps with compact fluorescent equivalents with an integral reflector will save energy and maintenance costs.

Risks:

It will be important to specify "warm" white (e.g. 2700oK, 872) lamps to ensure that the aesthetics are retained.

Next Step:

Replace existing lamps.

A Climate Change Strategy for Penwith

PRIORITY 9 ST CLARE - CHANGE OLDEST 8' T12 FLUORESCENT LIGHTING

Saving per year	CO2 Savings Tonnes/year	Saving per year	Cost	Payback Years
£ 30	-	500	£ 160	5.3

Detail:

In some parts of the St Clare offices 8', T12 (38mm diameter tube) light fittings are in use. The technology in these types of fittings dates from the 1970's and is a very inefficient form of lighting compared to modern standards.

Rationale:

The majority of these old fluorescent fittings are in circulation areas. Replacing the existing lighting with modern fluorescent fittings (i.e. T5 lamps and high frequency control gear) would save almost 40% the electricity consumption for the same lux level.

Risks:

Due to the age of the light fittings it may not be possible to do a straight fitting for fitting change as the distribution cabling may not comply with modern standards. If this is the case the energy savings alone may not justify the capital investment required to pay for the renewal of the installation.

Next Step:

Obtain quotations for replacing oldest T12 lighting throughout with T5 lamps and high frequency control gear.

A Climate Change Strategy for Penwith

Appendix 2

Linkages with Objectives of the Sustainable Tourism Strategy

Identified Issues from Climate Change Strategy	Sustainable Tourism Strategy identified mitigation
Theme 1: Increase prosperity for all	Objective 1 Be seen by consumers as an accessible, welcoming destination offering high quality, value for money diverse experiences.
Theme 5: Provision of learning opportunities for all	Objective 7 Be a destination in which visitors are aware of our public transport service and who view the service both as an attraction and as a viable alternative to private car use.
Theme 6 : A community that values and protects its distinctive landscape and environment	Objective 4 Be an industry, which is fully rooted in the Penwith community, which is valued for reinforcing, maintaining / improving the environmental, natural, historical, cultural distinctiveness of Penwith. Objective 5 Be an industry, which is able to capitalise on its maritime assets and heritage. Objective 7 Be a destination in which visitors are aware of our public transport service and who view the service both as an attraction and as a viable alternative to private car use.
Theme 7 : A community that protects, enhances and celebrates its culture & Heritage	Objective 5 Be an industry, which is able to capitalise on its maritime assets and heritage. Objective 9 - Be an industry which recognises the Penwith landscape as a valuable asset that makes an important contribution to Penwith's tourism industry

Action Plan

Add:

1. Work with visitors to promote responsible tourism "future footprints" and "countryside code" – RTL
2. Work with Tourism businesses to promote uptake of Sustainable tourism management qualification and GTBS Scheme - RTL

A Climate Change Strategy for Penwith

Identified Issues from Climate Change Strategy	Sustainable Tourism Strategy identified mitigation
<p>Issue 1: Increased visitor numbers impact on transport</p>	<p>Objective 7: Be a destination in which visitors are aware of our public transport service and who view the service both as an attraction and as a viable alternative to private car use.</p> <ul style="list-style-type: none"> • Secure a commitment from all P-TAG members that they will stock and promote copies of the Boot, Bus & Branchline Brochure. • Collect data in 2005 from attraction operators who offer a discount for visitors arriving by Public Transport to serve as baseline data. • Grow number of attractions offering discount for visitors arriving by public transport. • Grow visitor use of public transport by 5% per annum from 2005. • Work with Wessex Trains and others to promote St. Ives branchline as an attraction in its own right. • To recognise that within the district there are potentially perfect 'car free' areas and where appropriate all tourism activity should utilise alternative modes of transport especially walking and cycling
<p>Issue 2: Increased visitor impact on natural environment</p>	<p>Objective 9: Be an industry which recognises the Penwith landscape as a valuable asset that makes an important contribution to Penwith's tourism industry.</p> <ul style="list-style-type: none"> • To work with AONB Unit and other partners to establish how Penwith can contribute to the development and use of Landscape Character Assessment as a tool to assess landscape sensitivity and carrying capacity, commencing in 2005. • Survey to be conducted in Hayle to gauge 'Host Community' attitude to tourism September / October 2004 and then compared with SWT 2004 region wide survey, to establish if any differences emerge. • Introduce a Green Tourism Business Scheme open to all tourism businesses in Penwith. It would be of positive value to tie the AONB designation into our scheme so that the proactive management of the landscape of the AONB by tourism businesses which operate within the AONB or directly impact upon the AONB can be encouraged and promoted. • Ensure all tourism businesses have the opportunity to participate in the following industry familiarisation visits around Penwith: AONB Tour – including a workshop on the value of our landscape / History & Heritage Tour / Arts & Culture Tour.
<p>Issue 3: Increased tourism impact on utilities</p>	<p>Objective 1 Be seen by consumers as an accessible, welcoming destination offering high quality, value for money diverse experiences. This links in with Green tourism scheme – Waste, energy and water minimisation & Future Footprints Scheme</p>

A Climate Change Strategy for Penwith

Appendix 3

Cornwall Sustainable Energy Partnerships Action Plan

	Action detail	Suggested Key Partners	Timeframe	Milestones / Targets	Priority
1	Increasing Staffing and more inter task group working	CCC, utilities, European Commission	2004-2005	Recruit new staff by Jan 2005	High
2	Establish an Energy Service Company	Private sector company, local authorities, utilities, EST	2004-2006	2004 Scope possible roles formulate funding bid. 2005 obtain funding for feasibility/business plan. 2006 establish ESCO	High
3	a) Input into regional energy strategies and other regional strategies. b) Input into EU structural Funds SPD beyond 2006	a) RegenSW, SWRDA, GOSW, Regional Assembly, Sustainability SW. b) Objective One, GOSW	a) 2004-2007. b) 2004-2006		b)High
4	Integrate sustainable energy in County level strategies and plans	CCC, Environment Kernow, CoaST, CSBT	2004-2007	Adoption of County Structure Plan. Revisions of county community strategy.	High
5	Work with LSPs and integrate sustainable energy in district level community strategies, local development frameworks and parish plans	LSPs, Parish Councils	2004-2007	At least 75% of plans to include sustainable energy by July 2006	
6	Create a common gateway for advice and support	EST, RegenSW, CSBT	2004-2006	By October 2005 review current advice and support. By June 2006 implement findings for review.	
7	Create GIS map based databases on levels of fuel poverty and energy efficiency of the housing stock	Caradon DC, CCC, utilities	2004-2006	By 2006 map the whole of Cornwall	High
8	Fuel Poverty and Energy Efficiency Action Plan	CCC, district authorities, utilities, Eaga	2004-2006	By 2006 publish plan	High
9	Roll out Home Health programme to other parts of Cornwall and develop 'Home Health Plus' for private rented sector housing	Social housing providers, utilities, district authorities, GOSW, local and national charities, PCTs, community organisations	2003-2010	PSA target to increase take up of energy efficiency in deprived areas to an extra 3000 homes by 2006. Roll out to the rest of Cornwall by 2010	High

A Climate Change Strategy for Penwith

Action detail	Suggested Key Partners	Timeframe	Milestones / Targets	Priority
10 Develop programme for those 'able to pay'	EEAC, Enact Energy	2005-2010	Pilot 'able to pay' zone in 2005	
11 Develop programme to address 'hard to treat' homes	Utilities, housing associations, district authorities	2005-2010	Pilot 'hard to treat' in 2006/7	High
12 Work with Parish Councils to create sustainable communities	DTI renewable energy pilot for non gas areas, CAPTC	2004-2006	By 2006 establish projects in 6 Parishes	
13 Work with the RETG to promote the role of RE technologies in new	Social housing providers, local authorities, housing schemes CSBT, DTI	2004-2010	Pathfinder project in 2005	
14 Work with local & regional partners to assist in meeting the 2010 targets for renewable electricity	GOSW, SWDRA, RegenSW, REOC, Sustainability SW	2004-2010	93-108MW installed capacity	High
15 Work with building developers and regeneration agencies to ensure that local renewable resources (providing heat and/or electricity) are considered in all developments e.g.CPR Regeneration	CPR Regeneration, SWRDA, SWEEG, CSBT, Local Authority planning depts, Engage Partnership.	2004-2010	One demonstration project completed and delivered as a case study by 2006/7	High
16 Implement model planning policies to promote integration of RE technologies in new development	GOSW, RegenSW, Local Planning Authorities, Regional Assembly	2004-2007	By Dec 2004 hold workshop with planners. By June 2005 draft model planning policy. By 2007 include in all LDFs	High
17 Promote proving zone for Sea Power	GOSW, Regen SW, Regional Assembly, DTI, Wave Energy Specialists	2004-2005	By Dec 2004 Secure Objective 1 funding for Wave Hub Support SEA process	High
18 Facilitation of a stakeholder group to address the wider impacts of the deployment of Marine Renewable technologies off the coast of Cornwall	Marine Renewable Energy Specialists, Marine conservation, fishing, leisure/tourism representatives and statutory bodies	2004-2006	An agreement concord at 2006	High

A Climate Change Strategy for Penwith

Action detail	Suggested Key Partners	Timeframe	Milestones / Targets	Priority
19 Promote development of small-scale biomass plant and markets for biomass energy	Bical, South West Wood Fuels, Regen SW	2004-2007	Demonstration plant by 2006	High
20 Promote the role of biomass CHP in all major new developments	CHPA, EST, Regen SW	2004-2006	One major project by 2006	High
21 Promote awareness of the benefits of RE in the context of sustainable communities	EPSRC, CSBT, Institute of Electrical Engineers, Sustainability SW	2004-2007	Employ an Energy Adviser by 2005	High
22 Work with education and training organisations to ensure R&D and skills capacity related to sustainable energy is developed	CUC, Cornwall College, Learning and Skills Council, CSBT	2004-2007	30 trainees	High
23 Ensure that training is available for elected members and officers of public sector organisations on sustainable energy technologies	Training providers	2005-2007	Annual training	High
24 Promote the procurement of 'green energy' and general procurement policies which take account of transport impacts and energy efficiency.	Green energy suppliers	Now-2010	All public sector organisations to aim to procure 100% green energy by 2010 if the resources are available. Every public sector organisation to have in place sustainable procurement policies by 2006.	High
25 Promote and demonstrate good and progressive energy management in public sector organisations.	Energy Managers	2004-2010	Develop case studies of good energy management in Cornwall by 2010.	High
26 Integrate sustainable energy consideration in PFI contracts and in all public sector building development.	Domestic Energy & Health Task Group, Dept of Health, Dept Education and Skills.	2004-2010	Facilitate integration of sustainable energy into at least three exemplar projects by 2006	High

A Climate Change Strategy for Penwith

Action detail	Suggested Key Partners	Timeframe	Milestones / Targets	Priority
27 Work with the Renewable Energy Task Group and the Business Sector Task group to promote the use of alternative and renewably fuelled vehicles in public sector transport fleets.	EST, Cornwall County Council Transport Policy Team	a) Now - 2006, feasibility study to be carried out by each local authority b) 2005-2010	a) All LAs to have some alternative fuel vehicles. A public sector organisation to be trialling fuel cell vehicles by 2006. b) All LAs to have alternative fuel vehicles. Development of network of shared refuelling facilities with private sector.	
28 Reduce car journeys through use of ICT and green travel plans.	Act Now, Cornwall Fire Brigade		All public sector organisations to commit to reduce travel mileage by 2006.	
29 Achieve an advice and support programme for businesses in Cornwall.	Other advice agencies. Business Link, ReMaDe Kernow, Global Action Plan, Groundwork, Cornwall Business School, South West Water, local authorities, Cornwall Enterprise, Pure Business.	2004-2007	Funding secured 2005	High
30 Work with the Renewable Energy Task Group to promote the use of renewable energy powered and fuel cell vehicles in private sector transport fleet	EST/Powershift, Sustrans, Vehicle manufacturers, Fleet managers, Fuel distributors.	(a) 2004-2006 (b) 2004-2005 (c) 2005-2010	(a) 6 exemplar businesses to have alternative fuel vehicles by 2006. (b) A business to be trialling fuel cell vehicles by 2006. (c) Development of network of shared refuelling facilities with private sector.	
31 Promote the benefits of sustainable design and incorporation of RE technologies in business developments	Envision, Planners, Cornwall Sustainable Building Trust	2005-2010	Adopt appropriate planning policies. 2008 - see Action 11	
32 Promote greater engagement with the tourism industry	CoaST, LA sustainability officers	2004-2010	Exemplar development by 2007	High

A Climate Change Strategy for Penwith



For further information contact:

Karen Clowes
Sustainable Community Policy Officer
Sustainable Development and Improvement
Penwith District Council
St Clare
Penzance
TR18 3LU
Tel : 01736 336747
email: karen.clowes@penwith.gov.uk

For Penwith's
sake



This document has
been printed on 100%
recycled paper