

Executive Summary

Cumbria Strategic Partnership (CSP) has signed up to the Local Area Agreement indicator NI 186 – reduction in per capita CO₂ emissions per annum, with a target of **11.5% savings by 2010/11** across the whole of Cumbria, excluding large industry, motorways, commercial scale renewable energy and also excluding 'indirect emissions' from food or imported goods into the county. This equates to savings of **619,000 tonnes CO₂** per year. Of this, national initiatives are assumed to contribute 7.75%, leaving 3.75% to be achieved by local actions, or the local component of national programmes. This equates to around **202,000 tonnes CO₂** per year.

This report recommends the following Action Plan to assist Cumbria Strategic Partnership to achieve this target.

Many organisations, businesses and householders in Cumbria are already taking steps to reduce their CO₂ emissions, and there are a number of support organisations with programmes in place to assist them. These activities will contribute towards the target and their impact has been quantified where possible. The table below shows the likely impact of the known, quantifiable, actions that will occur without further intervention, including the assumption that public sector organisations will hit their recommended or agreed targets.

Quantifiable Planned Actions Towards the Target

Sector	Baseline	Annual CO ₂ Savings	
Housing	1,309,000	31,100	2.38%
Business	2,434,500	27,000	1.11%
Transport	1,366,000	-24,600	-1.80%
Public Sector	269,500	44,150	16.38%
Microgeneration		3,500	
Total	5,379,000	81,150	1.51%
% of Target		40%	

As is clear from this, known planned measures will contribute 40% of the local target, but there is still a considerable gap to be met.

A range of possible actions to increase these CO₂ savings have been developed in conjunction with the potential delivery organisations, prioritising activities that are practicable and deliverable within the required timescale. Wherever appropriate, these measures build on existing or planned work by those organisations, so that they can be rapidly set up or expanded. Estimates of the savings potential of planned actions have been provided by some public sector organisations and the support organisations. Where these have not been available, estimates have been made based on comparable organisations in other parts of the UK. Calculations of the impact of further measures are based on a combination of information provided by the organisations involved, and similar measures carried out in other areas.

Where possible, costs for the recommended actions have been estimated. However, we recognise that there is insufficient accurate data available to give detailed figures for these and hence have classified the financial implications as low, medium or high cost per tonne of CO₂ saved.

Public Sector Actions

The public sector is responsible for just under 5% of Cumbria's total baseline for the NI186 indicator. Many of these organisations have already committed to stretching targets on reducing CO2 emissions from their own activities, and we have assumed similar targets for the remainder. If these targets are achieved, the public sector could save around 44,000 tonnes of CO2, or 16% of their emissions.

Potential CO2 Savings from Public Sector Organisations¹

Organisation	Baseline tCO2	Savings	Savings tCO2
County Council (inc schools & FRS)	40,000	24%	9,600
District Councils/LDNPA (estimate)	31,000	15%	4,650
University of Cumbria (estimate)	20,000	5%	3,000
NHS/PCT (estimate)	150,000	15%	22,500
Police Service (estimate)	25,000	15%	3,700
Others (NT, NE, EA, FC)	3,500	20%	700
Total	269,500	16.40%	44,150

The local authorities and the wider public sector have committed to achieving the CO2 reduction target through the CSP. However, further help and advice may be needed to support those organisations, particularly in the wider public sector, who are just starting to quantify and implement carbon reductions. The following measures would help to do this:

- Confirm that members of CSP will establish a CO2 baseline, target and action plan, consistent with the NI 186 target, by the end of 2008, and will report back to the CSP on progress.
- Through the CSP, ask senior figures in the public sector to act as climate change champions, publicising the issue, and actions taken, within their organisation and to the wider community. (See section on leadership and communications)
- Establish and resource a working group for practitioners in the wider public sector (NHS, universities & colleges, fire and rescue service, police) to enable information-sharing and peer-to-peer advice, using the North West's CLASP Programme.
- Through this group, share information about sources of funding for capital investment, particularly Salix Finance (a government-funded organisation providing finance and support for public sector carbon reduction). Provide funding through a revolving loan fund (see section on finance below) for projects not eligible for funding through Salix.

The Energy Saving Trust (EST) in their work with local authorities, recommend that each organisation should have one full time post for managing energy use and

¹ In the tables presented in this report, measures in green are planned or agreed, measures in yellow are proposed or need confirming.

emissions reduction for every £1 million energy spend. On this basis, within Cumbria, there should be around 20 people employed full time in the public sector working on reducing energy consumption in buildings.

Housing Actions

Housing accounts for just over 24% of the baseline CO2 emissions.

There are three main organisations/groups working to reduce CO2 emissions from housing in Cumbria;

- The Energy Saving Trust Advice Centre (ESTAC), based in Carlisle, which provides advice on energy efficiency measures and promotes other forms of help for householders such as the CERT and Warm Front grant schemes for insulation and efficient heating systems. The ESTAC has recently replaced Cumbria Energy Efficiency Advice Centre. This period of uncertainty and funding changes has affected some of its programmes;
- The Social Housing providers, either local authority or Housing Associations, who are responsible for their homes meeting the Decent Homes Standard, which includes requirement for insulation and other energy efficiency measures (though the emphasis is on comfort rather than carbon). They share information through the Cumbria Housing Group, which also includes the ESTAC;
- Community groups who are getting together to devise their own actions to address climate change.

The quantifiable planned actions are likely to reduce annual CO2 emissions in housing by around 31,100 tonnes or 2.4%. If new homes were to be added to the housing stock at the rate proposed in the Regional Spatial Strategy, this would increase housing emissions by around 12,500 tonnes/year by 2011, giving a net saving of 18,600 tonnes/year. Tightening the energy performance requirements for new dwellings beyond the current building regulations could save a further 4,000 tonnes CO2.

Further actions propose for the housing sector are;

1. **Work to increase the uptake of CERT-funded measures in Cumbria.** If this programme could enable the installation of basic insulation measures and top-up insulation in half the available homes, boiler replacement in 10% of the available homes, and solid wall insulation in 10% of the available homes, the savings would be around **50,000 tonnes CO2** annually.
2. **Target the Community Energy Saving Programme,** This programme will aim to support around 100 community-based schemes to provide energy efficiency measures and advice to every household in a neighbourhood suffering from fuel poverty. There are communities within Cumbria that are likely to be suitable for this. Cumbria Housing Group members should keep up to date with the development of this programme, identify suitable communities and promote these for inclusion in the programme.
3. **Facilitate further 'clusters'**. The existing and developing networks that are organising themselves to tackle climate change in their community have proved to be very successful at involving people who do not traditionally engage with

the public sector organisations. Providing "light-touch" support to these and facilitating the start-up of 10 further groups could save 2,500 tonnes CO₂/year.

4. **Concierge Service.** There is growing interest in 'concierge services' for the able-to-pay sector, under which home-owners pay for an energy audit of their home, and for help with implementing changes. Savings achieved are around 20% of the household CO₂ emissions. This service could be nearly or fully self-financing and support 5,000 households by 2011.

Potential CO₂ Savings from Housing Actions

Baseline CO₂ emissions (tonnes/year)	Revised	1,309,000	
	Households	Annual CO ₂ Savings	
ESTAC Programme	11,000	6,800	0.5%
CERT - known planned actions	17,000	21,000	1.6%
Social Housing – possible actions	3,000	3,300	0.3%
<i>Total Planned Actions</i>	<i>31,000</i>	<i>31,100</i>	<i>2.4%</i>
CERT - maximise funded measures	56,000	50,000	3.8%
Community Energy Programme	900	1,000	0.1%
Concierge service (net of CERT)	(5000)	5,000	0.4%
Community Support (net of CERT)	(2000)	2,000	0.2%
<i>Total Additional Actions</i>	<i>56,900</i>	<i>58,000</i>	<i>4.4%</i>
Maximum Achievable	87,900	89,100	6.8%
Housing Growth Impact - net new homes	5560	-12,500	-1.0%
Requiring CSH Level 3 in 2008		2,300	0.2%
Requiring CSH Level 4 in 2009		1,700	0.1%
Housing Net Maximum Total	93,460	80,600	6.2%

Business Sector Actions

Industry and Commerce, excluding organisations in the EU Emissions Trading Scheme and the public sector, is responsible for **2,434,500** tonnes CO₂ or just over 45% of the baseline CO₂ emissions.

Businesses are supported by 2 main organisations;

- The Carbon Trust, which provides energy auditing for companies with an annual energy bill over £50,000, more in-depth support for very large energy users, and telephone and website advice for smaller businesses.
- Cumbria Rural Enterprise Agency (CREA), who, through the regional Enworks Programme, provide business support to small to medium sized companies, and run the Cumbria Business Environment Network (CBEN) Award scheme.

Other business support networks, including the Cumbria Green Business Forum, the Chambers of Commerce, Cumbria Tourism etc, also offer some advisory services on energy efficiency and sustainability issues.

The Enworks Programme is due to deliver annual CO2 savings of 25,000 tonnes by 2010, and other activities through CBEN and the support networks may add a further 2,000 tonnes. It has not been possible to quantify the impact of the Carbon Trust's work in Cumbria, as they will not release this information.

Further measures proposed to increase the CO2 savings delivered by the business sector are;

1. **Develop a web-based self-help service** to support the very small businesses that will no longer be targeted by CREA under the Enworks Programme. Providing this indirect support to 5,000 Cumbrian businesses could save 7,500 tonnes CO2/year.
2. **Revise the CBEN Award Programme** so that large numbers of businesses can be helped through the first stage of the programme with email, telephone and web-based assistance, and consider charging for the higher levels of the award. This should ideally be carried out in conjunction with the recommendation above. Attracting 3,500 extra businesses to the first level of the scheme could result in annual savings of 25,000 tonnes CO2.
3. **Expand the Green Business Forum type activities.** The CGBF is valued by its members as a business-to-business network, providing an informal network of support and advice from companies that have "been there". Providing funding for administrative support would allow the network to expand and new groups be formed in the main business centres. Increasing membership to 1,000 businesses could generate 5,000 annual tonnes CO2 saving
4. **Actively recruit larger companies to the Carbon Trust's support services.** If a further 5 large companies were to develop long-term programmes with CT and 200 more were to make use of the free energy audits, this could achieve savings of around 24,000 tonnes CO2/year.

Potential CO2 Savings from Business Sector Actions

Baseline CO2 emissions (tonnes/year) - net of Public Sector		2,434,500	
	Businesses	Annual CO2 Savings	
Enworks	268	25,000	1.0%
CBEN & other support networks	130	2,000	0.1%
Web-based support	5,000	7,500	0.3%
CBEN Revision - target extra 3500 companies	3,500	25,000	1.0%
Facilitation of business-to-business networks	1,000	5,000	0.2%
Carbon Trust - promote use of	205	24,000	1.0%
Business Total Savings		88,500	3.6%

Note: The savings for the business sector must be treated with some caution given the lack of information from the Carbon Trust.

Transport Actions

For the purposes of the NI186 indicator, the transport sector includes all travel in or through Cumbria except on the M6. Of particular importance for Cumbria is the inclusion of visitor travel in this figure, and the potential for this to increase as drivers to reduce air travel increase. The baseline CO2 emissions from the Transport sector for Cumbria are **1,366,000** tonnes or 25% of the total.

Cumbria County Council have in place or planned a range of infrastructure improvements and travel planning measures which aim to reduce the rate of growth of traffic. These include travel planning for their own staff, schools and major employers, promotion of cycling and public transport use, demand-responsive buses for rural areas and working with the rail freight sector to move freight to rail. As a result of these measures the Local Transport Plan for Cumbria predicts an increase in traffic of 0.6% per year to 2011. If emissions follow the traffic trend, this equates to an **increase of 24,600 tonnes CO2** over the period of the NI186 indicator.

Further measures proposed to help reduce CO2 emissions from transport are;

1. **Expand the Workplace Travel Planning** advice scheme to cover all the large employers in Cumbria (over 100 employees) within the next 2 years, and ensure that savings are monitored. Although data on savings is still being collated, we estimate that expanding the scheme to cover a further 30,000 employees could save around 3,900 tonnes CO2.
2. **Introduce a Community Travel Planning** programme based on the models piloted in the Sustainable Transport Demonstration Towns, providing personalised travel advice for householders in a targeted area. Running this type of programme in 4 towns, could achieve savings of 18,000 tonnes CO2, based on the 12-13% reduction in car trips seen in other towns.
3. **Promote the Liftshare scheme** for the whole of Cumbria. If the Liftshare scheme were used by 10% of the population, the scheme could save 2,500 tonnes CO2/year.
4. **Provide a Sustainable Tourist Travel Advisor** to work with tourism businesses on sustainable transport options, including the development of sustainable travel packs. We estimate that tourist travel could account for 30% of car trips within Cumbria. If this advisor were to achieve a 2% reduction in tourist car mileage, this would equate to savings of 5,000 tonnes CO2/year.

Potential CO2 Savings from Transport Actions

Baseline CO2 emissions (tonnes/year) - Revised		1,366,000	
	People	Annual CO2 Savings	
LTP actions - 0.6% growth pa		-24,600	-1.8%
Individual Travel Planning - 4 communities	45,000	18,000	1.3%
Workplace Travel Planning	30,000	3,900	0.3%
Liftshare network	50,000	2,500	0.2%
Tourist Travel Adviser		5,000	0.4%
Net Transport Savings		4,800	0.4%

Microgeneration Actions

Due to the scale of commercial wind farms already installed or consented in Cumbria, current installed capacity for domestic scale microgeneration represents less than 2% of the total renewable mix in Cumbria. Annual CO₂ savings from large-scale wind projects are accounted for under national interventions. However, the impact of community scale and large business installations, where the energy generated is used on site rather than exported to the grid, will contribute to reductions in the energy demand linked to the NI186 target.

There is growing interest in micro-generation technologies in Cumbria and we estimate that with current support initiatives, new installations will reduce CO₂ emissions by 3,500 tonnes/year by 2011.

Although a relatively expensive option for short-term savings, microgeneration developments have the potential for lasting demand reductions, as well as contributing to issues such as security of supply. Measures put in place to promote greater uptake of small-scale renewables will mainly have an impact over a longer time-scale than that of the NI186 indicator. However, there are two further measures that could increase the level of uptake in the short term.

1. **Biomass for Public Buildings.** Identify 10 public authority buildings across Cumbria in which a biomass boiler would be an appropriate form of heating. Use 'Salix' and other funding to support the installation. The CO₂ savings from this will depend on the size and energy demand of the buildings chosen, but could be up to 3,000 tonnes CO₂. This saving will be accounted for within the public sector actions.
2. **Secure funding for a Cumbria renewable energy network team** to co-ordinate and expand the existing initiatives across Cumbria. The roles of the network should encompass: encouraging large companies in Cumbria with high energy demand to adopt renewable energy to replace existing heat or electricity needs; helping to co-ordinate the showcasing of microgeneration in Cumbria; and identifying & accessing funding to develop 'cluster' projects based geographically around a specific renewable energy type. This team should form the basis of a future Sustainable Energy Agency, establishing a Centre of Excellence for Cumbria, to catalyse and facilitate sustainable energy projects across the county.

Potential CO₂ Savings from Microgeneration Actions

Short Term	CO₂ savings
Existing/Planned Installations	3,500
Renewable Energy Team	2,500
(Biomass boilers - public sector)	(3,000)
Total Short-Term	6,000
Longer Term	
Community renewables (wind/hydro)	2,500
Large firms	5,000
Total Long-Term	7,500

Cross-Cutting Actions

Three themes emerge from the development of the actions in the main sectors above, which are necessary components of any successful initiatives on climate change;

Leadership and Communications

1. **Visible Leadership.** Defra (2007) reports that over 50% of those questioned in the UK would be prepared to do more themselves if they saw the Government doing more. Leaders of organisations in the Cumbria Strategic Partnership should act as climate change champions, publicising the issue, and actions taken. This should be backed up a concerted effort to communicate the members' progress and interesting examples of actions that are relevant to a wider audience across Cumbria.
2. **Publicising Examples.** There are numerous local examples of best practice in buildings, renewable energy installations etc. Providing and publicising more opportunities to visit / learn about these is likely to pay dividends, both short term and long term.
3. **Common Branding.** There is an opportunity to link various initiatives and support mechanisms on reducing CO₂ in Cumbria under one, more locally relevant hub, to create a focal point with a consistent underlying message across all sectors, and share the channels by which the messages and best practice on CO₂ can reach as many people as possible.
4. **Extending the Reach.** Other public sector advice and outreach functions should be assessed to establish whether they could signpost people and organisations to advice on CO₂ reduction as well. The CSP lead on Communication should also establish communication links with all 'community action' groups to provide them with updates of initiatives in Cumbria, with the intention that these are then communicated to their members.
5. **Reaching Visitors.** Given the high number of visitors to Cumbria, there should be a separate communications initiative, managed by Cumbria Tourism, to promote the county as a green destination. This will help to promote the measures to reduce carbon in businesses and transport associated with tourism.

Funding

Access to capital is an issue for many householders and businesses. Some funding is available through programmes such as CERT, Warm Front and the Low Carbon Buildings Programme for householders and some community organisations, from the Carbon Trust for businesses and Salix Finance for the public sector, and there is a raft of other potential funding sources for specific sectors such as community groups. However, each potential applicant has to identify and chase these funds themselves. A key part of the communications activity detailed above must be to gather and publicise the accessibility of funding, and provide assistance with funding applications.

A further option that the CSP should investigate is to provide a Revolving Loan Fund. The fund would provide low-interest or interest-free loans for businesses, other organisations, households or communities, to encourage them to make investments in energy saving or on-site energy generation. A loan fund works by motivating people to act, and demonstrating that the payback is worthwhile. It is also an efficient use of

money, compared to a grant. With a grant, the recipient is effectively paid twice: once through the grant, and again through the cost savings that result.

Supply Chain Support

A critical issue in all of the measures proposed is the ability to deliver them. We estimate that some 60 people need to be employed directly to support these activities, many of whom are already working for the public sector or support organisations. There is also potential for a significant number of jobs in providing services such as home insulation, and the opportunity to help expand some of the Cumbrian supplier companies. Work carried out for Cumbria Vision in June 2008 found that some 1500 new jobs could be created in Cumbria through a concerted response to climate change. The recommendations to support the supply chain are detailed in that report and are not repeated here, but must be an essential component of the CSP's work to meet NI186.

Activities in these three areas may produce results on their own, but combined with a programme of practical support, can achieve more than the sum of the parts.

Summary

Taking forward all the planned and proposed actions would produce savings of around **224,000 tonnes CO₂**, or 11% over the target.

Sector	Baseline	Annual CO ₂ Savings	
Housing	1,309,000	80,600	6.16%
Business	2,434,500	88,500	3.64%
Transport	1,366,000	4,800	0.35%
Public Sector	269,500	44,150	16.38%
Microgeneration		6,000	
Total	5,379,000	224,050	4.17%
Target		202,000	3.75%
% of Target		111%	

This appears to leave a small margin for prioritising the proposed interventions. However, external factors such as the weather will have an impact on year-to-year changes in household emissions, and changes in the economic structure of the county can have sudden and large impacts as firms move in or out. Regeneration of the West Coast in particular is likely to cause a rise in both business and transport emissions. Conversely, rising fuel prices and the economic situation are likely to cause energy use and emissions to reduce. So an apparent 11% over-supply of savings, is not substantial enough to merit a major reduction in the measures proposed.

The table below shows the measures proposed, together with their expected savings and an indication of the cost of the measure.

Outline Cost-Benefit Assessment of Proposed Measures

	CO2 Savings	£/tonne CO2*
Housing		
CERT - maximise funded measures	50,000	Medium-High
Community Energy Programme	1,000	Low
Concierge service (net of CERT)	5,000	Low
Community Support (net of CERT)	2,000	High
Business		
CBEN Revision and Web-based support	32,500	Low
Facilitation of business-to-business networks	5,000	Low
Carbon Trust - promote use of	24,000	Low
Transport		
Individual Travel Planning - 4 communities	18,000	High
Workplace Travel Planning	3,900	Medium
Liftshare network	2,500	Low
Tourist Travel Adviser	8,000	Medium
Microgeneration		
Renewable Energy Team	2,500	High
Biomass boilers - public sector	3,000	High

* £/tonne range, over the programme: Low <£20, Medium £20-£50, High >£50

It is very clear that financial cost should not be the only consideration. Measures to support insulation of homes are expensive to the public purse, whereas the financial benefit is seen by the householders. However, these measures not only produce guaranteed longer-term savings (people do not generally remove insulation once it is in, although an allowance has to be made for higher comfort levels), they also help remove people from fuel poverty, improve the health of certain people, increase the householders' disposable income and provide jobs for installers. Communications measures and those aiming to change behaviour suffer from real uncertainties over the actual long-term benefits, but it is recognised that the combined benefit of these with actual support measures (such as insulation or business advice programmes) is greater than the sum of the parts.

Finally, CSP members should recognise that there are huge uncertainties in the numbers, in terms of the monitoring figures provided by Defra, the assessments of savings potential and the cost to the public purse. Although every effort has been made to base these on examples from elsewhere and assessments made by potential delivery organisations, the costs will only be confirmed when each recommendation is either proposed as an in-house measure, or put out to tender for other organisations to deliver.

Moving on from 2011

This report has concentrated on the short term measures needed to meet the NI186 target for 2011. Putting in place the recommendations should help to achieve this. However, it is important that this is seen as only the start of a process, and that further targets will need to be met in the future, not least the planned 60% reduction in CO2 by 2050.

The CSP should therefore start to identify and tackle longer term initiatives that will be able to contribute to future targets. In particular, these will need to include serious investment and incentives to reduce car travel, a major shift in the contribution of micro- and community level renewable energy, and re-focussing of the county's economic development and planning policies to build a sustainable economy that takes advantage of the opportunities posed by climate change.