



A Carbon Budget for the Lake District National Park:

Progress report, June 2014

The Lake District National Park Partnership is committed to leading the way on climate change. The Lake District is one of the first local areas to set itself a carbon budget, as part of our Low-carbon Lake District initiative.

The principle behind a carbon budget is simple: like a financial budget, we aim to find out how much carbon the Lake District is responsible for, and then reduce the carbon 'spend' year on year.

We aim to reduce the emission of carbon and other greenhouse gases, measured on a consumption basis, by 1% per year, against a baseline of 2.3 million tonnes in 2010. The target tracks the national carbon budget, as set out in the 2008 Climate Change Act.

The baseline was established through a carbon footprint analysis in 2010. This analysis, together with regular updates on progress, is available at www.lakedistrict.gov.uk/carbonbudget.

Progress is monitored regularly by the Climate Change Sub-group of the Partnership. Each year, Small World Consulting undertakes an audit of projects which aim to reduce carbon within the National Park, to assess carbon savings. This informs the revision of the Partnership's Plan each September.

Progress since June 2013

Small World Consulting has identified measurable carbon savings of nearly 45000 tonnes, using optimistic assumptions; or about 76000 tonnes if land management actions are included. This is a considerable increase on previous years. However, as explained below, some of this progress is actually a result of better data collection, from actions that were previously unreported.

Significant initiatives which are resulting in carbon reduction within the Lake District are listed at Annex A and include:

- Environmental advice and support to businesses, through the Cumbria Business and Environment Network – saving nearly 4000 tonnes
- Renewable energy installations, saving 19000 tonnes (see note below)
- Waste management actions, saving nearly 4000 tonnes (see note below)
- The GoLakes Travel Programme, saving around 1500 tonnes, a significant increase from last year
- Savings from woodland creation and peatland restoration (see note below).

However, in one notable area, action has decreased – there has been little additional action on home energy efficiency, due to the end of the government-backed CERT scheme and the slow uptake of the new Green Deal scheme.

A note on measurement

This year, we have significantly improved the way that we measure the impact of carbon savings in three areas: renewable energy, woodland creation and waste recycling. The renewables project and woodland creation results are explained below. For waste recycling, Cumbria County Council has improved its data

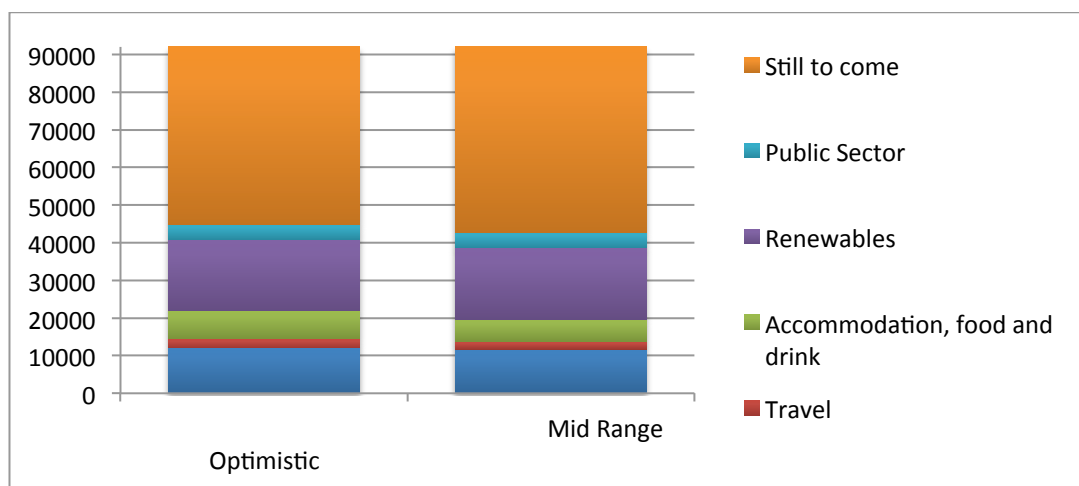
collection, resulting in a clearer picture of carbon savings. In all three cases, the increase in carbon savings is not a result of new action, instead we have just got better at measuring things that have been happening for some time. However, now that we have better information, we can use it to guide future action.

In addition to these savings, there are actions which will result in carbon savings, but can't be easily estimated. For example, the switch to superfast broadband may result in reduced business travel, but we don't have a good way of estimating savings. There may also be actions which increase carbon emissions, such as new construction or increased traffic, which we have not been able to measure.

Progress against the target

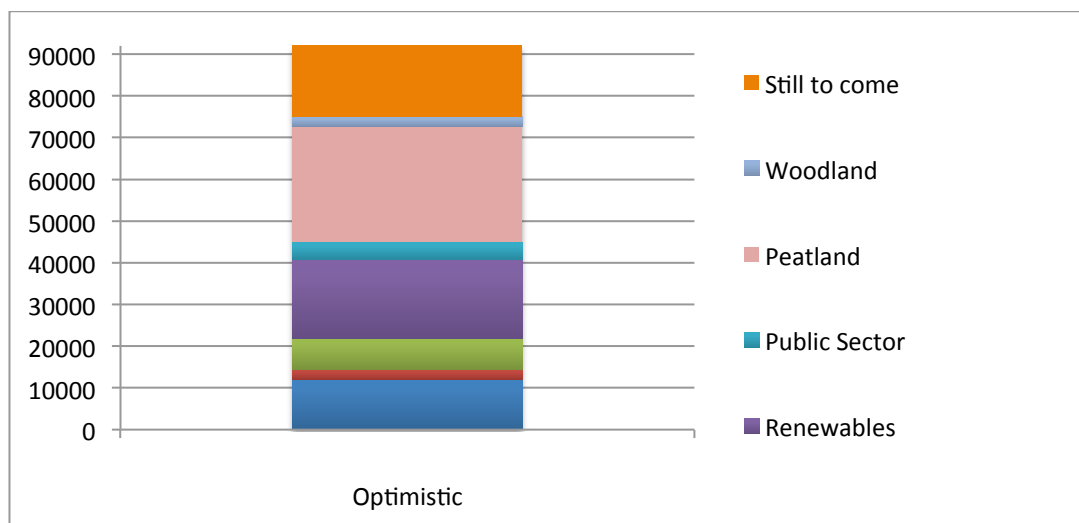
We have seen an increase in the rate of carbon savings (though this is largely accounted for by better measurement, particularly of renewable energy). We are closer than ever to meeting the target of 1% savings per year, or 4% in total. We are saving around 45000 tonnes, nearly 2% of the baseline, without including land management; or 76000 tonnes, just over 3% of the baseline, if land management is included. To hit the target of 4% after four years, we should be saving 92000 tonnes.

The graph below shows our performance against the target, without including land management.



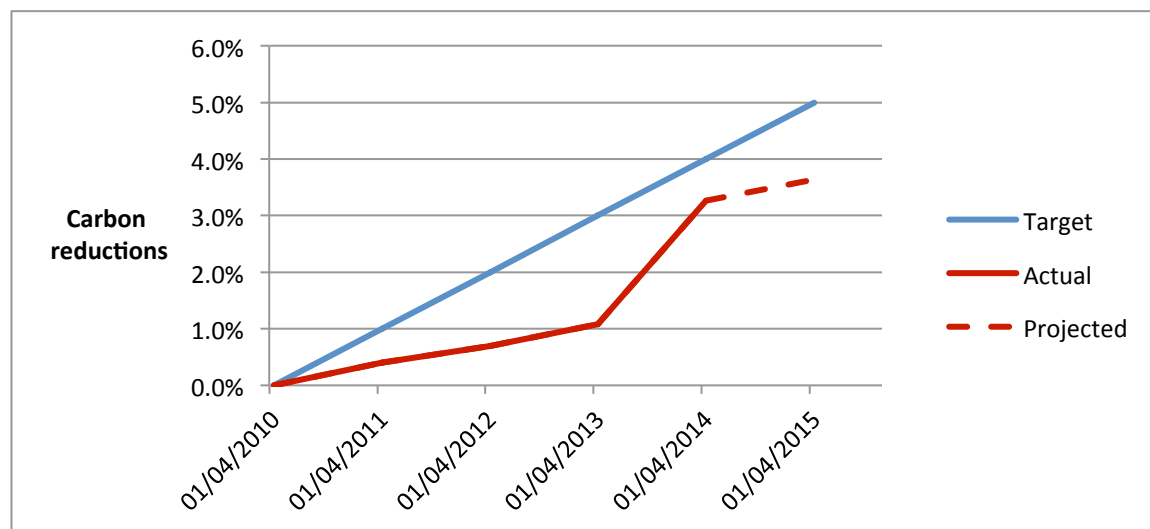
Progress towards year 4 reduction target of 92,000 tonnes CO2e, not including land management

If land management (carbon savings from woodland creation, and restoration of peatland) is included, and we take an optimistic scenario, we are close to meeting the target:



Progress towards year 4 reduction target of 92,000 tonnes CO2e, including land management

The graph below, of cumulative carbon savings, shows our progress against the target. The blue line shows our target of 1% savings per year, rising to 4% in year 4. The red line shows the actual savings, with the dotted line as a projection for future years. The steep increase in actual savings shown is a result of better measurement, as explained above. Therefore we would not expect savings to continue at this rate, unless significant breakthroughs are achieved in carbon management.



Cumulative carbon savings over four years: target vs actual

Carbon savings from land management

Last year we estimated carbon savings from land management for the first time. Since then, we have significantly improved how we collect the figures for woodland creation, and the graph now shows carbon savings from all woodland creation since 2010. This is a total saving of 3703 tonnes.

The other area of land management where carbon savings are measured is peatland restoration. We are working to improve how we measure carbon savings from these projects, and hope to have better data ready for next year's assessment. Therefore new peatland savings have not been estimated and this figure is based on last year's calculation. It should be noted that this is a provisional figure which we expect to change when we have more accurate information next year. The total saving from peatland restoration is 27,756 tonnes.

See Annex B for the assumptions behind these calculations.

Carbon savings from renewable energy installations

We now have much better information about renewable energy installations in the Lake District, thanks to a volunteer research placement, undertaken by Alex Finch. A full report will be available shortly. The analysis shows that we now have about 13 megawatts of heat and electricity capacity from renewables in the National Park, equivalent to 5-7 large wind turbines, through over a thousand mainly small-scale installations. The two dominant technologies are biomass heating and solar PV, with fewer numbers of hydro, wind and heat pump installations. Together, this is enough to heat and power around 2000 homes, and results in around 19000 tonnes of CO2 saved, compared to standard ('grid-average') generation.

Further actions

In March 2014 the Lake District National Park Partnership agreed a new Climate Change Action Plan, available at <http://www.lakedistrict.gov.uk/caringfor/partnership/carbonbudget>.

This includes further action on all the areas listed above, such as sustainable tourism; support to businesses; home energy efficiency and sustainable transport. However, some of these actions are dependent on external funding, for example from European funds which will open in 2015.

Becky Willis & Sam Hagon, June 2014

Annex A: Summary of carbon saving actions in the Lake District National Park

This table shows the carbon saving actions identified across the National Park, and a mid-range estimate of savings from each action. A more detailed list, the full calculations and an explanation of assumptions made are available.

The table does not show savings from land use actions, which are recorded separately.

Action	Partners	Comments	Mid range CO2e saving for 2014
Accommodation, Food & Drink			
Carbon Calculator for Tourism Businesses	Cumbria Tourism	Past action but savings continue	102
Green Workshops for Tourism Businesses during 2010.	Cumbria Tourism	Past action but savings continue	413
Promotion of green accreditation schemes	CT / Nurture Lakeland		28
Taste Cumbria Programme 2010-13	Cumbria Tourism	Past action but savings continue	683
Cumbria Food and Drink Summit	Cumbria Tourism		40
Tourism Connect Grant Scheme	Cumbria Tourism	Past action but savings continue	186
Low Carbon Beacon area	Nurture Lakeland/LDNPA	Past action but savings continue	355
Cumbria Business and Environment Network / Enworks: advice to business	CBEN / CREA		3982
Water saving advice and events	Nurture Lakeland		109
Assisting businesses with eco-installations	Nurture Lakeland		60
			5,967
Home Energy			
Warm Homes Project; CERT funded project to offer energy efficiency surveys to Cumbrian households	LDNPA	Very little new work in this area due to end of government-backed CERT scheme	11,200
Seeing the Stars; engaging people on energy efficiency	FLD / EST	Past action but savings continue	47
Green Ways to Work programme	Impact Housing/CAfS etc	Past action but savings continue	294

SENS project	Cafs		181
Green Deal Festival	Cafs		9
			11,731
Public Sector			
Waste Recycling	CCC		3,791
Public sector targets to cut emissions from energy use by 25% by 2014	Local authorities		300
			4,091
Renewable energy installations in the LDNPA	Various (information from LDNPA study)	Big increase from last year due to better information. Separate report available	18,940
			18,940
Transport			
Core Strategy planning	LNDPA	Carbon savings from spatial planning policy	454
Go Lakes Travel Project	LDNPA and partners		1,554
Sustainable Organised Recreational Events	Nurture Lakeland		8
			2,017
Total			42,745

Annex B: estimating carbon savings from land management

It has been difficult to estimate carbon savings from land management, due to its complexity. However, research continues and this year we have significantly improved how we measure our savings from woodland creation.

The basis for the estimates is as follows:

Carbon savings from woodland creation:

We have significantly improved how we measure new woodland creation within the Lake District, using information from funding provided by the Forestry Commission; Natural England through Higher Level Stewardship and Windermere Reflections through Save our Soils. Since 2010 there has been 320ha of new woodland created, saving 3703 tonnes.

Using the figures from the report '[A carbon account for the woodlands in the Lake District National Park \(2012\)](#)' (using calculations from the Woodland Carbon Code), a typical new Lake District broadleaf woodland will save a net 441.5 tonnes of CO₂e over 100 years. Although emissions are usually greater than sequestration in the first few years after planting, for the purpose of the carbon budget it is easiest to assume a linear uptake of carbon.

Carbon savings from peatland:

This is a provisional figure based on last year's calculation and we expect it to change when we have more accurate information available next year.

- There are 91,451 ha of peatland in the National Park.
- Degraded peat bogs in the Lake District National Park have been estimated to emit 31,984 tonnes CO₂e per year (which on average equates to approximately 0.35 tonnes CO₂e per ha per year).
- 39,650.8 ha of peatland within the National Park have been identified as subject to restoration management (estimate drawn up by the LDNPA following contributions from partners, and is available separately).
- If the peatland under restoration management is no longer emitting CO₂e (but is not yet sequestering), the savings will be 13,878 tonnes each year. Over two years, the saving will be 27,756 tonnes.
- In further years additional savings are expected as these sites recover and start to sequester carbon.

Inclusion of land use in the carbon budget:

Note that these savings cannot be directly compared to savings from other areas (eg transport, energy use etc) because land management is not included in the baseline calculations. They are included in the graph to help measure the effectiveness of carbon savings from land use compared to other actions. It should be highlighted though that these actions are equally as valid. Some are included in the national greenhouse gas inventory.