A Carbon Budget for the Lake District National Park: Review of process and progress, December 2017

Climate change will have a direct impact on what the Lake District looks like, and how its environment, society and economy function in the future. The Lake District National Park Partnership is committed to leading the way on climate change. The Low Carbon Lake District™ is an area-wide initiative launched in 2008 that works with local businesses, communities and agencies, and seeks to tackle climate change in the Lake District. It is managed by a Climate Change Subgroup of the Lake District National Park (LDNP) Partnership. In 2010, it took a pioneering 'carbon budget' approach to measure and reduce greenhouse gas emissions at an area scale, and we have been monitoring this ever since.

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 carbon footprint analysis for the Lake District undertaken in 2010. The target tracks the national carbon budget, as set out in the 2008 Climate Change Act, recognising that some carbon savings will come from national action, and others will need to be driven locally if we are to meet the Paris Agreement aim to keep a global temperature rise well below 2°C this century.

Progress against the budget has been monitored each year by assessing the impact of low-carbon actions taken in the Lake District National Park. We estimate that cumulative savings over this time resulting from local actions are 342,744 tonnes of CO2e, with annual savings now reaching 94,000 tonnes of CO2 e per year. Annual savings are therefore estimated at 4.1% of total emissions against a target of 7%.

Whilst we are not yet meeting the 7% target (1% over 7 years), it is important to remember that we have over a quarter of a million tonnes of measured CO2e savings from local activity, which is still very significant. The target is the national target and by tracking local area progress we are able to learn about what is needed to drive the level of GHG savings needed to reduce the impacts of climate change.

The intention behind the carbon budget is to differentiate between more significant and less significant actions; create a culture of climate action; raise awareness at a policy level and show leadership as well as learning to deal with climate change at a local area level and cut carbon. We recognise that it is difficult to measure carbon savings from a diverse range of activities, led by different organisations and across a large area, and set out to create best estimates based on the data available to us, to help direct future action to where it is likely to be most effective.

It is good practice to review the methodology used in the carbon budget alongside developments in the relevant science at regular intervals. We know visitor numbers have increased, national emissions have reduced (e.g. energy/electricity emissions; vehicle emissions etc.) and the science behind the numbers has improved. Having pioneered the carbon budget approach for a local area, it also seemed appropriate seven years on to review what we had learnt and to offer some additional support to Partners to identify any efficiencies in the reporting process or what might be required to unlock greater carbon savings.

This year, in addition to the annual monitoring of actions from our Climate Change Action Plan for the 2016-17 year, we have therefore re-assessed the baseline carbon footprint from the original 2010 assessment, worked with partners to identify challenges in the data gathering and made some recommendations for future reporting.

A new carbon baseline for the Lake District National Park

The 2017 carbon footprint assessment provides a fresh estimate of greenhouse gas emissions (expressed as carbon dioxide equivalent or CO2e) from the Lake District National Park, using a similar consumption-based approach as the one used previously in 2010. It provides an up-to-date basis for understanding the carbon management priorities, and takes into account various changes which have occurred since 2010, (such as increased visitor numbers) as well as methodological and scientific improvements.

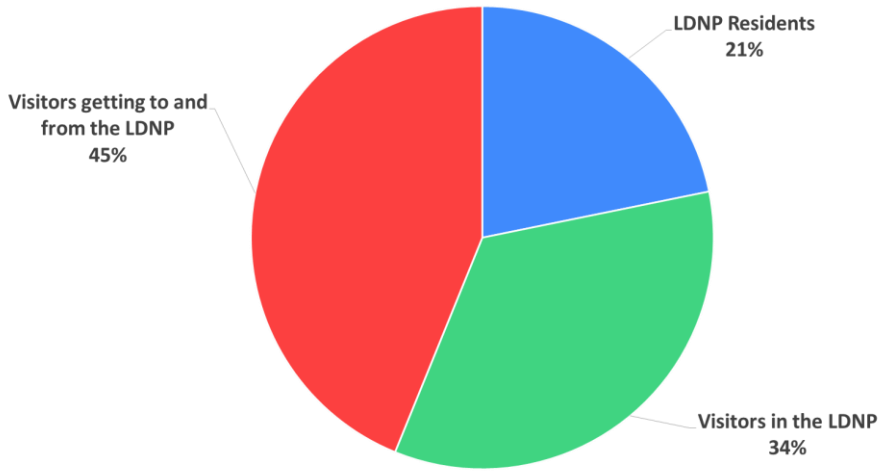
This time, as well as including all emissions from residents, from visitors and from visitor travel to and from the Lake District, we have also for the first time, provided a separate simple analysis of emissions resulting from the industry and business sector. This analysis is provided as a separate assessment as some overlap or 'double-counting' occurs with visitor/resident consumption of goods and services provided by local businesses and this is difficult to eliminate.

The full results are presented in the report 'A New Carbon Baseline for the Lake District National Park'. Differences between the two baselines are attributable to a number of different factors , including methodology , changes to the national carbon intensity , changes in visitor and resident populations as well as activities that have resulted in carbon savings . Therefore it isn't possible to compare the two baselines as an impact of local actions since 2010.

The new assessment estimates the total greenhouse gas 'footprint' of residents and visitors within the Lake District at 3.1 million tonnes of CO2e. Visitors getting to and from the Lake District account for 45% of the total. Visitors, whilst in the LDNP, make up 34% of the total footprint and residents 21% (see Figure 1). A more detailed breakdown is available in the full report.

Transport has become proportionately more important since the previous assessment, particularly visitor travel, largely due to an increase in visitor numbers. Accommodation, food and drink (combined) is the second largest area of greenhouse gas emissions after travel. The carbon footprint for both residents and visitors is higher than the UK average, due to the rural area and historic, dispersed building stock.

Fig 1. The GHG footprint of residents and visitors (3.1 million tonnes CO_2e total)



The separate assessment of business/industry emissions shows that these are almost equivalent in size to all emissions from residents, each of which are around 700,000 tonnes of CO2e. With the exception of agriculture, the majority of the industry emissions are within the supply chain, rather than at the LDNP based business source. The agriculture, forestry and fishing sector is responsible for nearly 50% of the industry emissions within the Lake District. It should be noted that the carbon footprint of businesses was

drawn from turnover data and generic macro-economic modelling of the carbon intensity of different industries in the UK and is not based on local information about the characteristics of each industry within the Lake District. It does not, for example, take account of any of the specific characteristics of farming in the National Park, compared to farming in the UK as a whole.

Recommendations for future reporting

1) **To maintain the target for reducing GHG emissions of 1% year on year**
   The target to reduce emissions by 1% year on year tracks the national carbon budget, as set out in the 2008 Climate Change Act. It is recommended by the Climate Change Subgroup to maintain the target of 1% for this reason. Although the baseline figure has changed, because progress against the target is measured in percentage terms, it is possible to use the same target, which would require year on year savings going forward of 31,000 tonnes of CO2e (carbon dioxide equivalent), compared to the previous 23,000 tonnes of CO2e figure.

   We are not yet meeting our target of 1%, so the alternative option would have been to reduce the target to a figure which might be more easily achievable. As this is in line with the national target required to keep climate change below the 2 degree scenario, the group recommends maintaining the target as aspirational, acknowledging the challenges involved and continuing to seek to close the gap. Achieving the 1% target will require senior leadership and support.

2) **Prioritise high impact actions**

   Going forward, we recommend prioritising actions which will deliver larger carbon savings. In particular visitor travel has become proportionately more important and it is recommended that additional effort is put into this area, particularly when combined with an anticipated increase in international visitor travel and the new World Heritage Site status for the Lake District. The Climate Change Subgroup would like to offer its support to Partners working in this area, particularly help towards making the case for funding.

3) **Making annual monitoring more efficient**

   There is a lot of effort in monitoring carbon saving activity and we have sought ways to make the approach more pragmatic and efficient for all involved in the process. We recognise that actions with smaller levels of carbon savings contribute to the overall savings, but we no longer propose to quantify the carbon savings from these actions. We will continue to collate and capture these actions in the most appropriate way (e.g. through the climate change action plan or case studies).

   Going forward, we will look at new macro or ‘top down’ measures for monitoring local actions where data is available, particularly for travel and home energy use. It is expected that where projects deliver significant carbon savings, they will build carbon reporting into their project reporting, and will therefore be able to report the savings in the usual way. We are therefore moving the focus to measuring and monitoring actions with more significant levels of carbon savings. However, at present there are few projects that fall into this description, which means without commitment at a senior level, the graph monitoring annual progress towards the target will start to flat-line.

Progress during 2016-17 financial year

Looking at progress in the year 2016-17, 94,292 tonnes of CO2e savings have been made, against a target of 161,000 tonnes. Many of the savings achieved during 2016-17 are actually the result of activity

in previous years, which are still resulting in savings this year. We have identified around 32,305 tonnes of savings resulting from new actions undertaken in 2016-17.

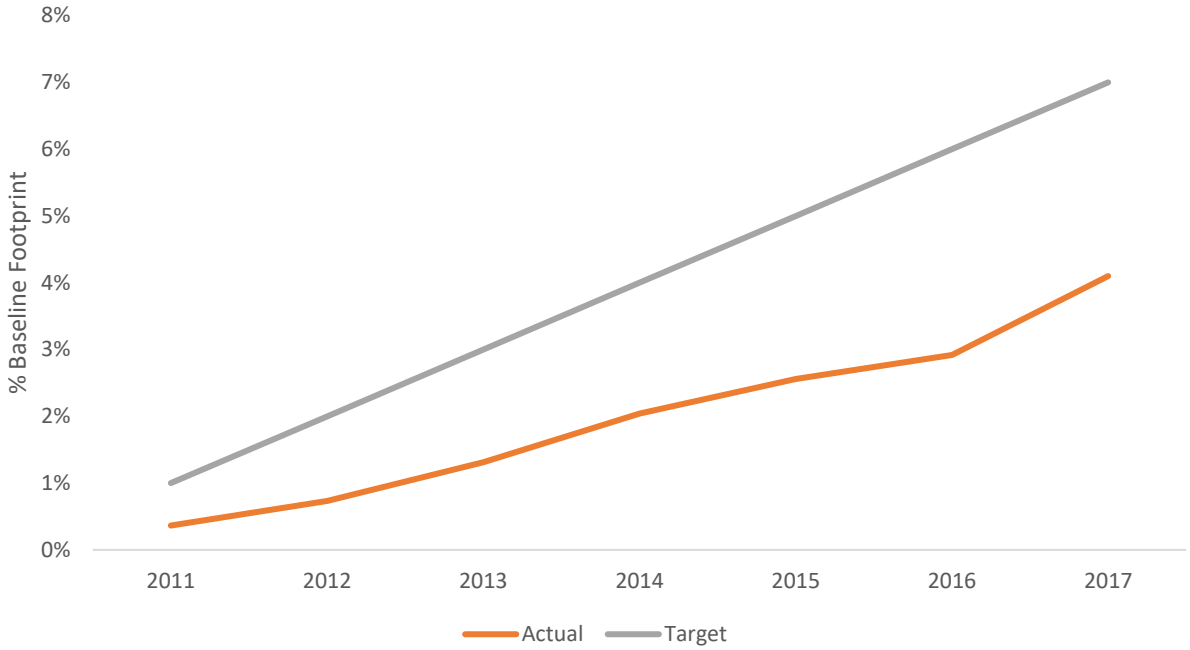


Figure 2 Cumulative carbon savings over seven years: target vs actual

The graph in Figure 2, of cumulative carbon savings, shows our progress against the target. The green line shows our target of 1% savings per year, rising to 7% in year 7. The red line shows the actual savings, with the dotted line as a projection for future years. The graph shows that additional measures will be required if we are to meet our target in future years.

Some of the 94,292 tonnes of savings from this year come from the following areas:

- 5,647 tonnes saved from the public sector, of particular note were the savings through internal reductions in emissions from Cumbria County Council from their LED Street Lighting Replacement Project.
- 29,392 tonnes saved from renewable energy projects, in particular several new large hydro schemes which have recently gone in
- 306 tonnes saved from a reduction of residual waste sent to landfill, contributing towards this was SLDC efficiency improvements to refuse collection and roll out of kerbside plastic and cardboard recycling with 98% households provided with a service across South Lakeland.
- 300 tonnes saved from various activities around more sustainable communities: reducing energy use workshops and advice; self-build green homes; draught-proofing and replacement of lightbulbs using LEDs etc.
- 20,886 tonnes saved from travel, including the ongoing impact of the Go Lakes and See More projects.
- 17,899 tonnes savings from land management activity, woodland creation, peatland restoration, scrubland creation and hay meadow restoration. 2000 tonnes of these CO2e savings resulted from new activity in 2016-17.
- 12,066 tonnes CO2e saved from home energy and efficiency actions, undertaken in previous years with ongoing annual savings carrying forwards.

The figures are best estimates based on the data made available to us by Partners, and there are caveats based on assumptions made. It should be noted that, 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.

The graph in Figure 3 shows our performance against the target, comparing 2016 with 2017. Note that the 2015 figure has been revised downwards as a result of improving the way that data is measured and captured.

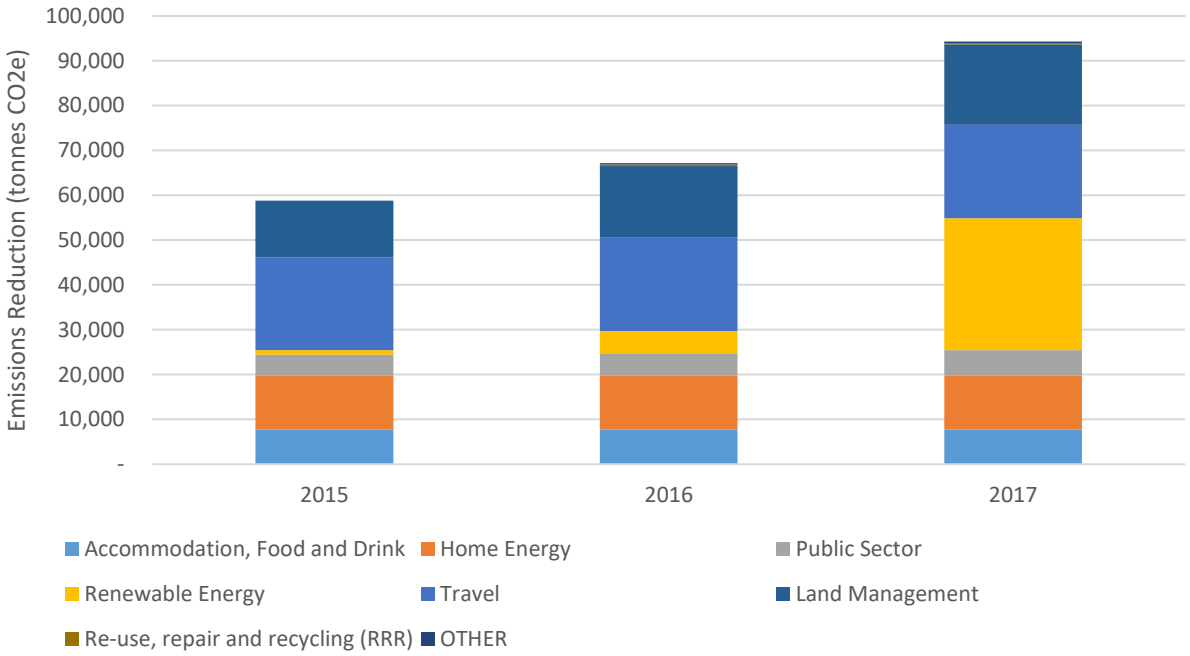


Figure 3. Progress towards year 7 reduction target of 161,000 tonnes CO2e

Climate Change Action Plan

The Lake District National Park Partnership's Climate Change Subgroup has carried out its annual review and refresh of the Partnership's Climate Change Action Plan, to continue working towards the target of an additional 1% savings. Some of these activities are dependent on relevant funding opportunities.

Sam Hagon and David Pickup, December 2017