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**A Carbon Budget for the Lake District National Park:**

**Progress report, September 2016**

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](http://www.lakedistrict.gov.uk/carbonbudget) .

Progress against the Partnership’s Climate Change Action Plan 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 during 2015-16 financial year: summary**

Looking at progress against the target since its introduction in 2010, we have identified 251,000 tonnes of emissions savings (measured as CO2e). We are falling short of meeting the overall target of 381,000 tonnes of emissions savings. Expressed in percentages, this is a saving of 3.91% of the baseline, against a target of 6%.

Looking at progress in the year 2015-16, nearly 90,000 tonnes of CO2e savings have been made, against a target of 138,000 tonnes. Many of the savings achieved during 2015-16 are actually the result of activity in previous years, which is still resulting in savings this year. We have identified around 11,000 tonnes of savings resulting from new actions undertaken in 2015-16.

The 11,000 tonnes of additional savings from this year come from the following areas:

* 152 tonnes saved from the public sector; through internal reductions in emissions from SLDC and LDNPA (figures for any savings from other local authorities were not available and so have not been included).
* 300 tonnes saved from a reduction of residual waste sent to landfill (23% compared to the same period last year) in the South Lakeland area of the National Park. In total 44% of waste was reused, recycled or composted.
* 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.
* Some travel savings in addition to those from Go Lakes project, this time achieved through the See More project.
* Just over 5,000 tonnes of CO2e savings from renewables. Note that the database uses each new application to improve accuracy of all the historic entries, so not all of these savings may be from new installations. Renewables installed in 2015-16 include amongst others, two new hydro schemes of 880,000 kwh and 245,000 kwh.
* Almost 5,900 tonnes savings from land management activity, including new woodland creation, peatland restoration, scrubland creation and haymeadow restoration.
* There were some additional actions that provided smaller savings (e.g. water efficiency savings of around 5 tonnes) or that were excluded from the total altogether as we felt unable to quantify them in carbon terms.

**A note on measurement**

The figures are best estimates based on the data made available to us by Partners, and there are caveats based on assumptions made. The intention of the carbon budget is to ‘measure the unmeasurable’ as far as possible and thereby:

* Create best estimates
* Differentiate between more significant and less significant actions (at least by order of magnitude)
* Create a culture of climate action
* Cut carbon
* Raise awareness at a policy level and show leadership
* Learn about how to deal with climate change at a local area level

We continue to improve the way that we collect data on carbon savings. In particular:

a) Renewable Energy Installations: In 2014 we undertook a comprehensive survey of renewable energy installations in the National Park, resulting in a much better understanding and reporting of carbon savings from renewable energy. We updated the figures for 2015, showing a slight increase. The development management team at the National Park now routinely collect information about planning applications for renewables installations (including, for example, buildings that incorporate renewable heat or electricity generation in their design), which will help to improve reporting in future years. The data was reinterpreted (downwards) in 2016 to show the annual carbon savings, as opposed to total carbon savings from renewable energy, which were not in line with the way other data was shown.

b) Carbon saving from land management: We have updated woodland creation figures for 2014 to 2016, and have recalculated peatland restoration savings based on new data and developments in the science in this area. For the first time, we have also been able to report carbon savings from scrubland creation and haymeadow restoration as well. More information about how these savings were calculated is available in Annex A.

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. 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 carbon savings, although many of the savings from this year are carried forward from activity in previous years. We are saving 90,000 tonnes or 3.91% of the baseline. This means we are not meeting our target of a reduction in the carbon footprint of the National Park by 138,000 tonnes or 6% after 6 years. This figure includes carbon savings from land management.

The graph below shows our performance against the target, comparing 2015 with 2016. Note that the 2015 figure has been revised downwards as a result of improving the way that data is measured and captured. Both renewable energy and peatland restoration have seen changes to the methodology and the way that carbon savings are reported since it was monitored last year. This is reflected in the graphs which follow.

***Progress towards year 6 reduction target of 138,000 tonnes CO2e***

***Cumulative carbon savings over six years: target vs actual***

The graph above, of cumulative carbon savings, shows our progress against the target. The blue line shows our target of 1% savings per year, rising to 6% in year 6. 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.

**Note on future resourcing of these actions**

Since the Lake District’s carbon budget was introduced in 2010, there has been progress in tackling climate change at both international and national levels. The Paris Agreement of 2015 set clear targets for international action. At national level, the UK remains committed to the carbon budgets introduced in the 2008 Climate Change Act, and has recently committed to the 5th Carbon Budget under the Act. This progress at international and national level may result in better support for local areas such as the Lake District.

At local level, funding streams including LEADER and the LEP contain support for carbon savings. However, many of the national or European schemes which in the past supported local carbon reduction projects are no longer available (e.g. significant funding for home energy efficiency, business resource efficiency etc). While the enthusiasm of the Partnership continues, delivery at local level does to an extent depend on these national opportunities.

When the UK’s national carbon plan is announced later this year, we hope that it will provide incentives and support for local areas who are in a position to take action on climate change. Through dialogue with the Committee on Climate Change, and BEIS, who have Departmental responsibility for the carbon budget, we have been making the case for support for local action.

The climate change action plan, demonstrates a range of activity in the year ahead planned to be undertaken or already underway by Partners. These will result in carbon savings as well as other benefits to the economy and local communities. The LEP could provide local funding opportunities for further initiatives. However, if incentives for local action do not emerge at national level, this will affect our ability to meet the target. For example, significant action on home energy and business advice is to a large extent dependent on national schemes.

**Further actions**

The Lake District National Park Partnership’s Climate Change sub-group 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. As explained above, some of these activities are dependent on relevant funding opportunities.

Activities include the establishment of a Low Carbon Hub for Cumbria; providing community energy support including consultancy support, 1:1 advice to break through barriers and training; self-build and development industry events; additional hydro schemes in development; a district heating feasibility study completed and entering commercialisation stage; reducing water leakage across West Cumbria; and a number of travel and transport improvements including a cycle strategy for Cumbria; improvements to access corridors; and bus services and pay as you drive cars continuing to operate commercially from previous travel schemes.

**Sam Hagon and Becky Willis, September 2016**

**Annex A: Estimating carbon savings from land management**

The basis for the estimates is as follows:

**Carbon savings from woodland creation:**

We have updated figures for savings from woodland creation for 2014-15 and 2015-16, with a total of 3,430 tonnes of CO2e savings over the two years.

Using the figures from the report ‘[A carbon account for the woodlands in the Lake District National Park (2012)’](http://www.lakedistrict.gov.uk/__data/assets/pdf_file/0007/277585/A-Carbon-Account-for-the-Woodlands-in-the-Lake-District-National-ParkFINAL.pdf) (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:**

We have recalculated savings from peatland restoration, which historically has been very difficult to put a figure against. New developments allow for a different and more accurate way of reporting carbon-dioxide equivalent savings from this activity. This will be an under-estimate of overall savings, as it is only includes some of the sites which have been restored over the period 2010-2016. We will aim to improve this in the future.

Calculations are now undertaken on a site by site basis, using the Peatland Code methodology and consider the total size of the area restored, as well as the state prior to any restoration and the likely condition the peatland will return to. In 2015-16 the annual savings are 11,141 from five projects over 2055 hectares of restoration activity. Since 2010, those five projects have saved just over 29,000 tonnes of CO2e.

**Carbon savings from creation of scrub:**

It has been difficult to estimate carbon savings from land management, due to its complexity. However, research continues, and for the first time this year we are able to include carbon savings from the creation of scrubland. This provides almost 5500 tonnes of CO2e savings from scrubland created in the Lake District since 2010. It has not been possible to split these savings year by year, so will be an underestimate of the total savings since 2010. Equally, these savings do not all result from scrubland created in the 2015-16 year. However the 5500 tonnes of CO2e savings will be new savings from the 2015-16 year.

**Carbon savings from haymeadow restoration:**

It has been difficult to estimate carbon savings from land management, due to its complexity. However, research continues, and for the first time this year, we have been able to include carbon savings from hay-meadow restoration of 32 tonnes of CO2e from activity undertaken during 2015-16.

**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