CAIRNGORMS NATIONAL PARK AUTHORITY

FOR INFORMATION

Title: **A GREENHOUSE GAS EMISSIONS ASSESSMENT AND TARGET SCENARIO FOR THE CAIRNGORMS NATIONAL PARK**

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Purpose

To inform the Board of the greenhouse gas emissions assessment for the Cairngorms National Park undertaken by Small World Consulting and a target scenario to reaching net zero and to summarise the work the CNPA will undertake to support that journey.

Recommendation

That the Board consider the greenhouse gas emissions assessment for the National Park and note the target scenario to reach net zero followed by the positive carbon contribution that the National Park can make for Scotland in future.

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Background and Strategic Context

1. The climate crisis and the need to adapt to climate change and to reach net zero are globally accepted policies. National policy directs Scotland to reach net zero by 2045 or sooner. The UK's 6th Carbon budget, the Climate Change (Scotland) Act 2019 and Scotland's updated Climate Change Plan set out national pathways towards net zero. The Cairngorms National Park Partnership Plan (NPPP) has climate change embedded throughout its outcomes and actions and is the National Park's Climate Action Plan under the terms of the Glasgow Declaration. In particular, objective A1 of the NPPP states:

   "*Ensure the Cairngorms National Park reaches net zero as soon as possible and contributes all it can to helping Scotland meet its net zero commitments.*".

2. For more than a decade, the Lake District National Park Authority has been undertaking assessments of greenhouse gas emissions (GHG), carbon budgeting and planning to reduce greenhouse gas emissions through world-leading work by Small World Consulting (SWC). In 2021, the CNPA commissioned SWC to undertake a greenhouse gas emissions and target scenario for the Cairngorms National Park (CNP), building on the expertise developed in the work to support the Lake District National Park. The full report is attached as Annex 1.

3. Over 2021 and 2022 SWC were commissioned by each of the UK National Parks to undertake the same work, creating a baseline across the UK National Parks and allowing comparable assessments of the challenges facing different protected areas. That work is continuing and so far, the South Downs National Park Authority and Yorkshire Dales National Park Authority have published their equivalent reports. The relevant reports for the Lake District, South Downs and Yorkshire Dales National Parks are available via the following links:

   - Low-carbon Lake District : Lake District National Park
   - South-Downs-Carbon-Baseline-Assessment.pdf (southdowns.gov.uk)
   - Yorkshire-Dales-National-Park-Greenhouse-Gas-Assessment-Report-September-2022.pdf (yorkshiredales.org.uk)

4. Most GHG emissions reporting is undertaken using a production-based methodology that takes account of all emissions that are directly produced within a geographic area. The SWC methodology is based on a consumption-based emissions model to include as complete a picture as possible of the climate impact of people's lifestyles. This means that the indirect emissions that are embodied in goods and services consumed by resident and visitors within the CNP are also considered. The estimates of industry-related emissions are relatively crude at this point time because of the way that sectors are reported in business data and the geography of business addresses. However, the data is sufficiently robust for comparison with other areas. Inevitably, there is some overlap in categories of emissions between different sectors, most

obviously between land-based businesses and land itself. As carbon monitoring and accounting systems become more accurate and consistent in future, models and assessments will become more precise.

Emissions from residents, visitors in and travelling to the CNP and industry

5. The SWC report (Annex 1) provides a detailed assessment of greenhouse gas emissions and a potential pathway to net zero. The report is clear on the methodology used, the data available and the limitations of data. The overall emissions footprint is explained in detail in chapter 5 of the report and figure 1 provides a simple summary. The emissions are reported as the equivalent tonnes of carbon dioxide (tCO_2E).

Figure 1

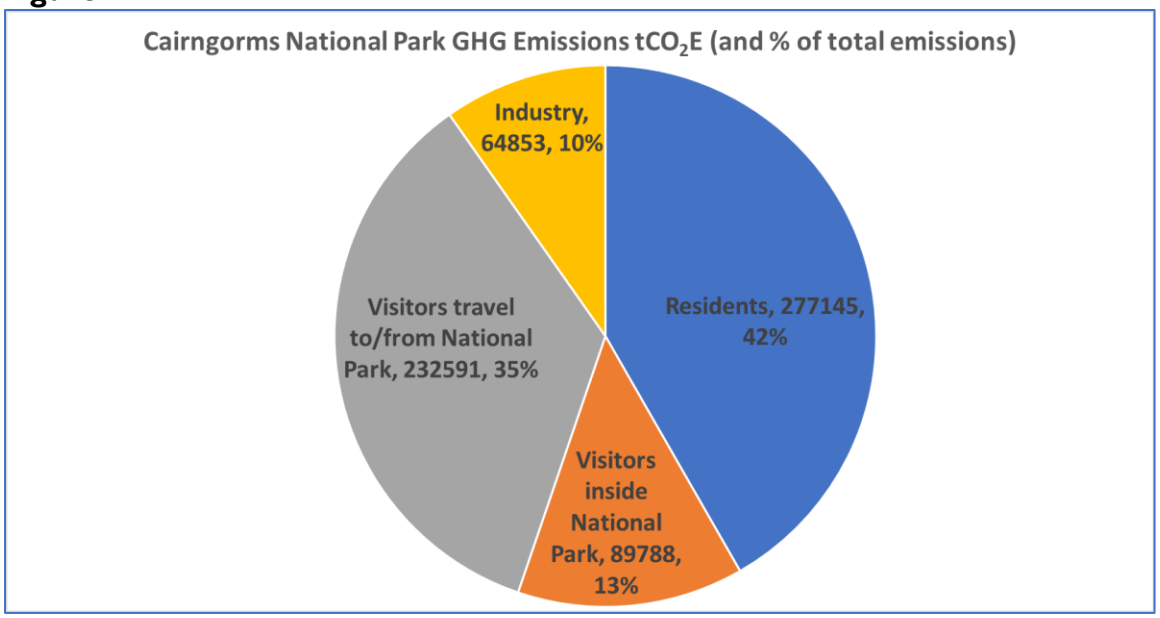
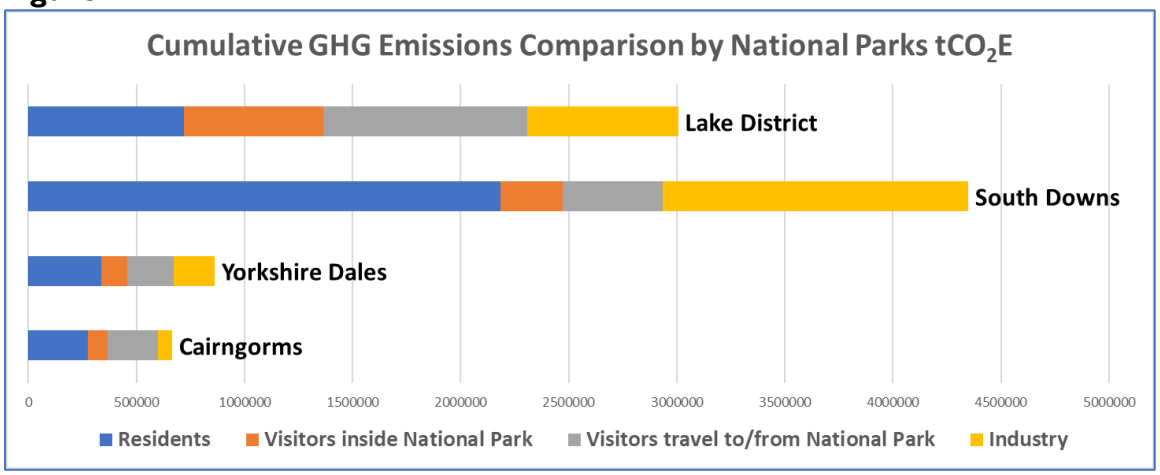


Figure 2



6. It is helpful to put the emissions of the CNP in the context of other comparable areas. Figure 2 compares the CNP with other national parks where reports have been published and shows that the total emissions from the CNP are relatively small in

comparison to those areas with more residents, visitors, or a combination of both. Figure 3 compares both size and number of residents in those national parks while figure 4 illustrates the visitor numbers to different national parks.

Figure 3

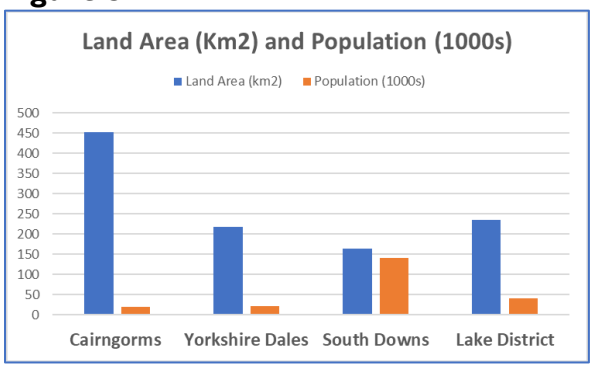
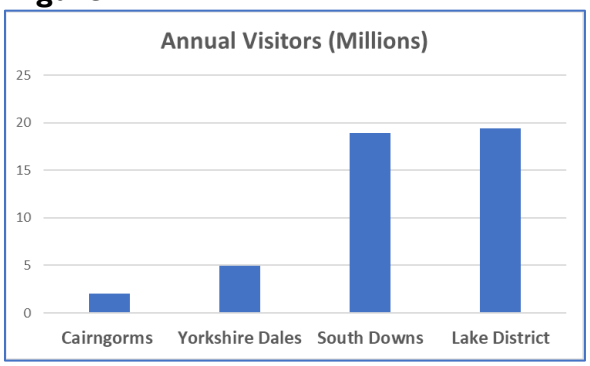


Figure 4



Land Use emissions and storage of greenhouse gases

7. The land use sector of the SWC report (Section 5.5) contains both sources and sinks of greenhouse gases. The sector overlaps with the land use, land use change and forestry (LULCF) sector for national GHG reporting so is consistent with international standards for reporting. The key difference is that the SWC land use sector includes emissions from livestock and fertilizer use, while the LULCF excludes those emissions which are then reported separately within the agriculture sector.

8. The methodology applied by SWC to land use GHG emissions and carbon sequestration is carefully explained in the report and while the science is developing every year, the report is based and the most up to date figures and estimates relating to different types of land use available at this point in time. Board members will know that there is debate about the relative carbon sequestration of different types of woodland on different soils and about the ways that changes from one land to another can impact the storage of carbon on land. The report assumes that the most appropriate choices of woodland establishment would be applied to any future changes and that peatland restoration is applied successfully to correspond with national targets and objectives.

9. Different sectors and studies will refine our understanding of the role of land and different management on carbon storage in future. The summary of the SWC estimate based on 2019 data is that the land use sector was a modest net carbon sink overall of 16,260 tCO_2E per year (about 2.5% of the annual emissions footprint summarised in figure 1).

Route to net zero for the Cairngorms National Park and carbon storage for Scotland

10. The SWC report applies a scenario for reducing GHG emissions based on national targets and tied to the relevant land uses and land characteristics of the relevant national park. The tailored targets for each area are then applied to show a hypothetical pathway to net zero and beyond. Section 6 of the SWC report in Annex 1 sets a scenario for reducing GHG emissions and increasing the storage of carbon

through land that is aligned with the United Nations Paris Agreement of 2015 at COP21 the UK's 2050 net zero policy and Scotland's updated Climate Change Plan. It combines ambitious reductions in emissions from energy, food, goods, travel of visitors and from land use with increased carbon storage from land use. The model assumes that all parts of the society and relevant public bodies make the relevant changes required. The targets that SWC identified for peatland restoration and woodland expansion in the CNP were higher than those that are set out in the National Park Partnership Plan, so a second scenario that applies the current Partnership Plan targets has also been applied.

Figure 5, CNP pathway to Net Zero based on Partnership Plan targets

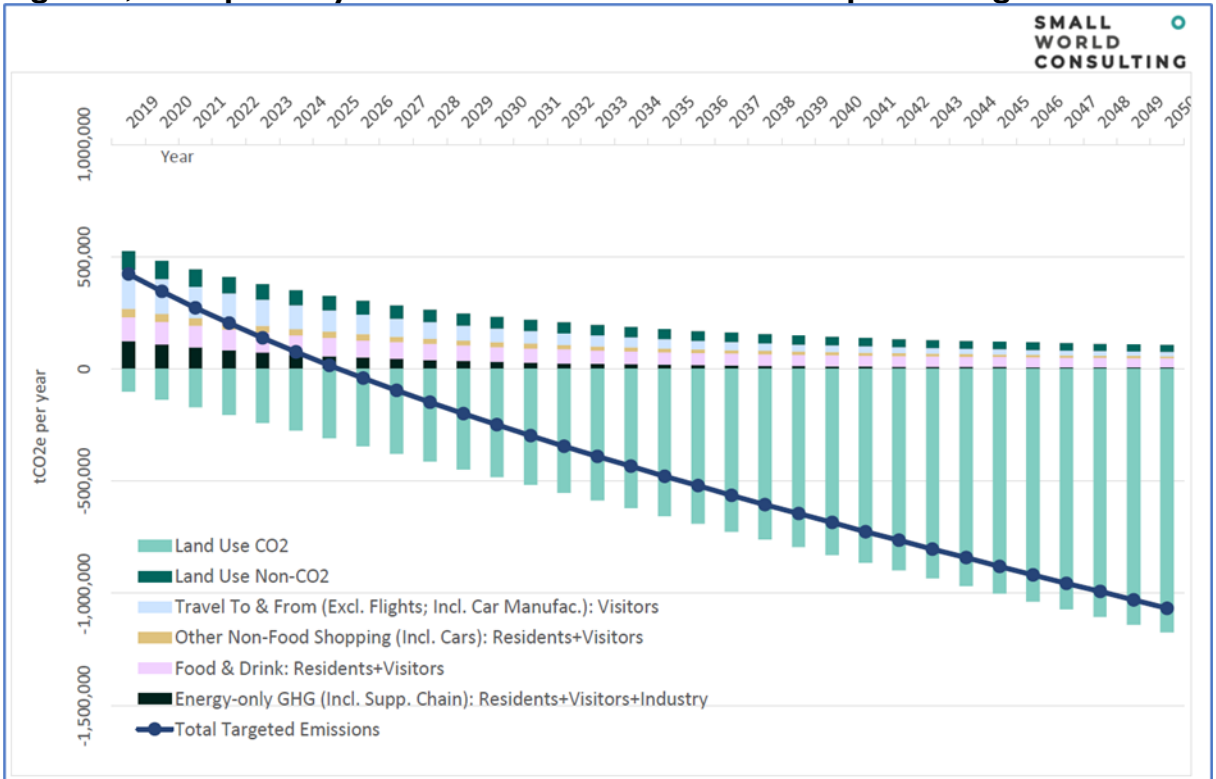


Figure 22. The Cairngorms National Park: Alternative pathway to Net Zero based on the woodland and peatland targets from the new Partnership Plan

11. The key point of this scenario is that if all the relevant targets are met, the CNPA would reach net zero in around 2024 under the core scenario and 2025 under the scenario using National Park Partnership Plan targets. In the years following 2024/2025, the CNP would start to make a significant contribution to carbon storage for Scotland and the UK. The CNP 'glidepath' to net zero and beyond is shown in figure 5 and both projections are shown in detail on pages 60 and 63 of Annex 1.

12. The fact the CNP is the UK's largest National Park, with significant areas of peatland that can be managed to prevent release of greenhouse gases as well as potential for woodland expansion is an important element in its potential pathway to net zero. Put simply, the CNP has a lot of land that can be managed to store carbon more efficiently and compared to areas with a larger resident population or numbers of visitors, has relatively lower carbon emissions from human activity.

13. For comparison, the projected net zero date for the Yorkshire Dales National Park is 2033-2034, for the Lake District National Park is 2037, and for the South Downs National Park is 2044.

14. The report doesn't attempt to make any distinction between the different routes by which land can be managed to store carbon in future. It is the fact that land within the CNP can be managed to store carbon more effectively that matters here, not whether it is funded through a public programme such as the Peatland Action Programme, or via private finance and carbon credits bought by business that is remote from that land. The carbon sequestration potential of the National Park will be considered as part of Scotland's contribution, the UK's contribution and linked to each of its local authorities as well as to owners of land and the people, and institutions who pay to store carbon.

Conclusion and next steps

15. The SWC greenhouse gas emissions assessment and target scenario for the National Park is the first consumption-based estimate of emissions and of a pathway to net zero at the scale of the National Park and provides a clear baseline from which to monitor change and progress. Clearly, the report also highlights many of the societal changes at a national and international level that are not within the immediate control of the CNPA or even any of the National Park Partnership Plan partners on their own. It relies on national government putting in place the necessary tools to support those changes and for relevant organisations to implement the changes within their control.

16. At the Cairngorms National Park scale, the report reinforces the importance of the actions already being delivered through the National Park Partnership Plan (NPPP) and the Heritage Horizons Cairngorms 2030 project. The peatland restoration and woodland expansion targets that are already within the NPPP are critical to the CNP's pathway to net zero and to the Cairngorms National Park's contribution to Scottish and UK targets. The work on active travel, climate conscious communities, the future farming project all help to raise awareness and support changes to a lower carbon future.

17. The SWC work takes an overview of the National Park, but individual sectors are already doing their own more detailed work into reducing emissions and will improve the availability and accuracy of data over time. There is much scientific debate about the relative carbon storage of changes in land use and land cover, particularly the contributions of different types of woodland. We expect that practical work in relevant habitats with site-based assessments will refine our understanding within the National Park and the specific ground and climatic conditions here.

18. We will provide an annual statement of the progress towards net zero in the National Park that sets out change against this baseline as well as case studies to show progress at a sector or project level.

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