CAIRNGORMS NATIONAL PARK AUTHORITY

FOR DECISION

Title: **CAIRNGORMS NATIONAL PARK - NET ZERO WITH NATURE**

Prepared by: **GRANT MOIR, CEO**

Purpose

This paper looks at how the Cairngorms National Park and the CNPA responds to the challenges of the global climate emergency. This is about building on work already underway but is about a step change in what we need to do to contribute to the net zero target by 2045 and the even more pressing 75% reduction by 2030.

While considerable work is taking place in the Cairngorms to address climate change, business as usual will not put us on the trajectory to reduce emissions and transform our economy. This is the first in a series of papers over the next year.

Recommendations

The Board are asked to endorse the following four recommendations:

a) **To identify the global climate emergency as an overarching priority for the CNPA.**
b) **To agree that it should be one of the central themes of the next National Park Partnership Plan (2022 – 2027) for the CNP.**
c) **To agree to the CNPA establishing a realistic date to achieve zero direct emissions as an organisation. To agree this target date with the Board by December 2020.**
d) **To discuss the delivery of Net Zero with Nature and the role of young people at the first meeting of the Cairngorms Youth Action Team.**

CAIRNGORMS NATIONAL PARK - NET ZERO WITH NATURE – FOR DECISION

The National Context

1. Last year, the Intergovernmental Panel on Climate Change (IPCC) issued a stark warning that the world must halve CO2 emissions by 2030 if we are to avoid global temperature rises of more than 1.5 degrees. The Net Zero report[1] by the UK Committee on Climate Change advised that Scotland could achieve net-zero emissions (whereby any remaining emissions are balanced by solutions such as forestry or peatland restoration) by 2045. It noted that this would require a substantial increase in effort across all sectors of the economy.

2. At the same time, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) issued a report[2] warning about the damage human beings are causing to the planet. The IPBES report shows that the pressures on nature are increasing, and that the loss of species and ecosystems is a global and generational threat to human well-being.

3. These reports highlight that transformative change is required if we are to address the twin challenges of climate change and global biodiversity loss. They do however both suggest that it is not too late to act, but that all countries must act quickly and decisively to address these fundamental challenges.

4. Recognising the impact that the global climate emergency will have on every community and every business, and in response to calls from young people, scientists and businesses across the country, the Scottish Government has set ambitious targets as part of its Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. This sets a target of net-zero emissions by 2045 and a 75% emissions reduction by 2030.

5. Scotland's Climate Change Plan[3] sets out a comprehensive view of how all aspects of society across industry, transport, energy, buildings, heating and land use will need to change if we are to reach our vision for growing the economy, improving the wellbeing of the people of Scotland and protecting and enhancing our natural environment. The Scottish Government has committed to updating the Plan in light of the new targets within six months of the bill receiving Royal Assent so this will be around April 2020.

6. The Climate Change Act also puts into law the requirements for the transition to a net-zero economy to be "just". Last year the Scottish Government established a Just Transition Commission[4] to advise on a how to achieve a net-zero economy in a way that is fair for all by following the internationally recognised principles that requires all actors to:

[1] Net Zero – The UK's contribution to stopping global warming
[2] Global Assessment Report on Biodiversity and Ecosystem Services
[3] Climate Change Plan
[4] Just Transition Commission

a) Plan, invest and implement a transition to environmentally and socially sustainable jobs, sectors and economies, building on Scotland's economic and workforce strengths and potential

b) Create opportunities to develop resource efficient and sustainable economic approaches, which help address inequality and poverty

c) Design and deliver low carbon investment and infrastructure, and make all possible efforts to create decent, fair and high value work, in a way which does not negatively affect the current workforce and overall economy.

7. Much of the climate emergency response focusses on reducing emissions (mitigation). Due to the complexity of how our atmosphere works, many of these interventions will take decades for the climate benefits to be realised. In the meantime, it is essential that we also concentrate on resilience and adaptation actions to address the ongoing impacts of climate change such as 'hotter dryer summers, warmer wetter winters and increased flooding' that we are all starting to experience. The Second Scottish Climate Adaptation Programme 2019-2024 was published in September and sets out how Scotland will prepare for the challenges of a changing climate.

8. Achieving net zero by 2045 is an immense challenge that will require structural changes at all levels of society. There are many profound changes that need to happen including how we use our land to reduce carbon while producing food and biodiversity amongst other benefits; how we decarbonise heat, transport and electricity while maintaining secure, reliable supplies at a fair and affordable cost; and how the transition to a low carbon economy can be positive for society, the economy and the environment.

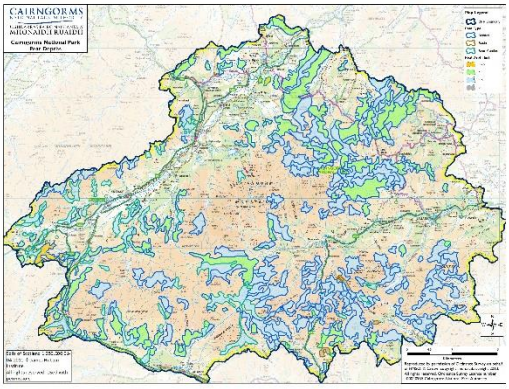
9. This paper attempts to help CNPA Board Members to think about what we can do to address these challenges and support the transition to a net-zero economy, whilst maintaining resilient communities, businesses and nature.

Cairngorms Context – Current Work

10. The Cairngorms has some distinct challenges and opportunities in ceasing its contribution to, and living with the effects of, climate change.

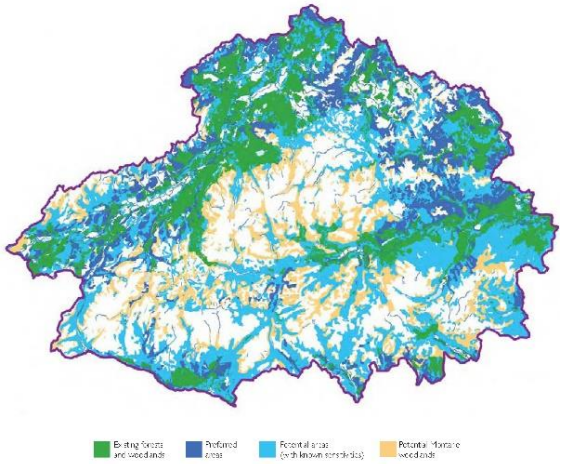
11. The Cairngorms are ideally placed to capitalise on the country's requirement for nature-based solutions such as peatland restoration and woodland creation. Currently it is estimated there are 91,000ha[5] of degraded peatland emitting an estimated 0.77 million tons[5] of carbon dioxide equivalent every year in the National Park and the 16.8% of woodland cover is below the Scottish average of 18% (and well below the European average). There is much good work already underway as shown below and in Table 1 but this will need to be scaled up across the National Park in order to meet the newly recognised emergency.

[5] Based on JHI peat depth data assuming 20% is actively eroding, 20% drained, 40% is modified, 10% is near natural and 10% is pristine using the condition categories and emission values from Smyth et.al. (2015) "Developing Peatland Carbon Metrics and Financial Modelling to Inform the Pilot Phase UK Peatland Code."



Peat Depths in the CNP

Peatland Restoration



Potential Woodland Expansion Areas CNP

Woodland Planting

Active Travel - Speyside Way Extension

Active Travel – E-Trike

Cairngorms Context – Future Work

12. The NLHF have recently asked for expressions of interest in their new Heritage Horizons fund. The CNPA have submitted an EoI and will find out whether it has got through this first stage in the next few weeks.

13. If successful the NLHF funding will help create landscape-scale demonstrations of climate-ready landscapes supporting communities that have been involved in, and directly benefitted from, the change. The proposal is to work Park-wide, delivering 4

major objectives, across three different land-use models of 'conservation', 'sporting' and 'mixed land-use' to:

a) Complement Scottish Government funding by trialling new land-use models and collaborations.
b) Build community capacity to work with local natural assets for improved climate resilience
c) Reconnect people with nature, inspiring support for the change needed in all areas of society.
d) Create an international showcase for inclusive and equitable land-use transformation

14. We are already experiencing the impacts of climate change with hotter dryer summers, warmer wetter winters, more intense rainfall and more flooding. More frequent extreme weather events such as heatwaves and floods are likely to cause disruption across the National Park.

15. There will be a need for the Cairngorms to adapt to the changing climate and to ensure that we have a robust approach to flood prevention, wildfires etc.

16. Table 1 summarises some of the main opportunities and challenges across key areas of work and research the CNPA is aiming to take forward to ensure the underpinning evidence is in place for the next National park Partnership Plan (NPPP) 2022 – 2027.

CNP Future Policy Context

17. The current National Park Partnership Plan contains a lot of work that is helping to deliver net-zero by 2045. 2020 will see the CNPA start to develop the evidence base for the next NPPP (2022 – 2027). This will include work to establish what targets should be set for the Park to provide our contribution to net-zero in Scotland by 2045.

18. The CNPA have already commissioned three pieces of research to help provide the best data for the next NPPP. These are included in the table below. The first report is on Snow Cover and Climate Change in the Cairngorms National (see para 20).

19. This paper provides the first step in developing our thinking about the next NPPP. It is likely that the next NPPP will look to 2045 as its time horizon.

Snow Cover and the Cairngorms National Park

20. The CNPA has worked with ClimatexChange to commission the James Hutton Institute to look at 'Snow Cover and Climate Change in the Cairngorms National Park'. This report is attached at Appendix A. It is crucial that the assessment of snow cover is considered as part of the wider work on climate change. There are implications for water supplies and quality, salmon fishing, snowsports, flora and fauna. This in turn will have a big impact on residents in the Park and visitors to the Park.

21. The report acknowledges that limitations in the data and suggests a number of potential next steps. The CNPA will consider these as part of the research for the next NPPP. The CNPA will also use the information in the report to inform its policy considerations on a number of issues in the National Park, including the masterplan work for Cairngorm Mountain, currently being led by HIE.

Table 1 – Initial assessment of current work being carried out by the CNPA and key research to inform action to achieve net zero.

Sector	Overview of challenges	Overview of opportunities	Current Work	Climate Change Research for next NPPP
Power	Funding to help support small-scale renewables and link to community ambitions. Development of resilient grid and power connections in the NP	Support development small – scale renewables throughout the National Park. Wind, solar, hydro, biomass including potential for circular economy	Policies in both LDP and NPPP support the development of small-scale renewables. Significant installed capacity already in place.	Research – Update information on the most appropriate places for small scale renewable development in the NP.
Transport – visitor and resident	Increasing electric vehicles (EV) use in National Park. Rapid development and placement of infrastructure such as EV charging points. Funding applications for active travel through Sustrans need rural proofing, with requirement for 50% match funding on active travel projects difficult to secure outside urban areas.	Significant potential around e-bikes for commuting (will need the right infrastructure). We are still a long way behind continental Europe (Denmark, Holland on infrastructure and ambition.) Encourage investment in active travel infrastructure such as paths and off-road routes near to where people live and work	TICK Project - The TICK project seeks to identify and address obstacles with public and active travel provision in the rural areas of Kilkenny (Ireland) and Cairngorms. The Cairngorms LAG is working with partners HITRANS, Highland Council, CNPA, Cycling UK Scotland and Badenoch & Strathspey Transport Company on active and carbon-neutral travel solutions for both residents and visitors in the Aviemore and wider Badenoch & Strathspey area. Capital investment will include e-bikes, an all-electric wheelchair accessible vehicle and a real-time transport information hub to support and enhance existing and future provision for the area. Total investment from Cairngorms LEADER is £222,298.	Research – Map the future charging points needed for EV cars and e-bikes within the CNP. Research – To map all existing off road cycle/walking paths and key gaps in provision within National Park Research – To look at initiatives in UK and Europe that have both improved NMU infrastructure and regular usage (lifestyle change)

Sector	Overview of challenges	Overview of opportunities	Current Work	Climate Change Research for next NPPP
			Active Aviemore – Issues around match funding for this project but in discussions to try and resolve. A9 NMU – Transport Scotland progressing Stage 2 (approved & costed) design for an NMU linking Aviemore to Carrbridge but currently no formal commitment to construct. Communities of Laggan, Kingussie and Dulnain Bridge have secured Sustrans funding for design of better NMU provision with financial support from 'Grantown Distillery' for an NMU link from Grantown to Dulnain. Initial 'desk based' estimates suggest that a further 6 km of NMU construction (additional to above work) could link all the communities of Badenoch & Strathspey by NMU and 'quiet roads'. Speyside Way – Completion of route by Spring 2020 Deeside Way - Planning permission in place for first section	
Housing and development	Decarbonising Scottish heating will be particularly challenging and will need	Domestic renewable energy and heat systems are becoming more efficient and cheaper for	LDP – Sets out the policy context for development in the National Park	Research - Modelling of access to services to inform location of new development

Sector	Overview of challenges	Overview of opportunities	Current Work	Climate Change Research for next NPPP
	transformation of current heating supply. Specific challenges for Cairngorms relate to lack of mains gas, reliance on heating oil and the construction of traditional buildings that are difficult and costly to insulate effectively. Fuel poverty could become an increasing issue and increase pressure on affordable housing. The increasing effects of climate change, including the consequences of more intense rainfall events will put existing and planned built development and infrastructure at risk.	new build and retrofit applications. New and existing developments can use nature based solutions to improve resilience. Changes to housing regulations should force energy efficiency improvements and extended permitted development rights may reduce need for planning permission for domestic renewables.	NPF4 – The Programme for Government contained a number of climate specific issues for planning and building control. NPF4 is being developed in 2020 and the CNPA will feed in views. Project on Circular Economy with CBP as set out in Cairngorms Economic Action Plan Community housing projects investigating additional new affordable housing.	Research/Evidence – scoping exercise to estimate regional cost of energy improvements to existing properties in CNP.
Land and Water Management	Land use is already being affected by climate change and increasingly unpredictable with 'hotter dryer summers, warmer wetter winters and more flooding'. Uncertainty over shape and size of future rural funding support. Funding has traditionally come through	How land is used has an essential role to play in the transition to a net zero carbon economy as well as building resilience to a changing climate. Promoting nature-based solutions for example through peatland restoration, woodland expansion and	We have created a 'Woodland Challenge Fund' to help us to achieve our annual 1,000ha woodland creation target. The fund helps with the costs of preparing applications to the Scottish forestry Grant scheme. We are also in direct communication with a number of estates in key locations and who have shown an interest in woodland creation. This is helping us to reach our target of	Research - Review national woodland expansion targets (both current, proposed & potential) to inform future target figures for the Cairngorms National Park to help deliver net-zero by 2045. April 2020. Research - Peatland internship to map extent of degraded peatland

Sector	Overview of challenges	Overview of opportunities	Current Work	Climate Change Research for next NPPP
	government, and there is a need to look at bringing in carbon funding from private business on top of government funding. Need to consider impacts of existing land uses on carbon e.g. muirburn, deer management, existing farming practices	managing flood risk through 'natural flood management' is crucial to this. Supporting low carbon and high nature agriculture will be key to delivering a net-zero agricultural sector.	5000ha over the 5 year period of NPPP. Since 2017 2,948.43 ha of woodland have been created though planting or regeneration. Our two Peatland Action officers co-ordinate and prepare funding applications for peatland restoration and have been leading work to map and prioritise areas of degraded peatland for future funding. In 2017-18, Peatland Action funding supported restoration management across 848 hectares of peatland on nine sites. In 2019 we are likely to deliver a further 657 hectares of peatland restoration management in 2019 with 1170 hectares planned for 2020. There are significant challenges in delivering restoration work due to a lack of qualified contractors plus other issues relating to access, winter weather and a long grant approval process. We continue to concentrate efforts with deer management groups to tackle deer grazing in key locations to allow habitat recovery and improved carbon sequestration.	in order to inform future targets and policies for restoration. March 2020 Research - Woodland internship to map isolated fragments of woodland and regeneration to inform management. March 2020. Research - Review existing research on carbon budgets of contrasting habitats with a particular focus on carbon released by muirburn to inform policy approach within CNP. Dec 2020 Research - National Park Deer Count and habitat impact assessments 2020/21 to inform deer management requirements. May 2021 Research - Assessment of future potential wildfire risk and review of existing data providing guidance on the relative combustibility of contrasting habitats in the CNP. Dec 2020

Sector	Overview of challenges	Overview of opportunities	Current Work	Climate Change Research for next NPPP
			The East Cairngorms Moorland Partnership continues to be a vehicle for achieving more sustainable moorland management. Catchment Management Partnerships continue to be valuable groupings of partners for enabling riparian planting in the upper catchments, river and floodplain re-naturalisation and green engineering works that reduce the impacts of flooding. Work has started discussing potential future support for agriculture in the Park and the link with carbon management.	Research - The CNP now hosts the first eddy covariance flux tower monitoring CO_2 emissions from an upland eroded peatland. JHI aim to compare CO_2 emission from a pre-restoration site and through to the site being restored. A PhD student at JHI is also looking at the hydrological functioning of the catchment of the site pre and post restoration.
Biodiversity	The impacts of on biodiversity include risks to habitats and species due to inability to respond to changing climate; risks to freshwater species from higher water temperatures; risks to agriculture, forestry, landscapes and wildlife from pests, pathogens and invasive species; and opportunities for new species colonisation.	Areas with high biodiversity value constitute better functioning ecosystems with higher natural capital and opportunity to sequester carbon and provide ecosystem services High biodiversity systems are more resilient to change and less susceptible to risks and perturbations.	The Cairngorms Nature Action Plan identifies priorities and focusses action for the habitats and species in the Park that will deliver significant benefits and overall increase in biodiversity. Partners are investigating the impacts of climate change on less mobile and highly threatened species e.g. alpine bryophytes and the opportunities for translocations and assisted colonoisation.	Research - Cairngorms National Park - State of Nature Report 2020. An audit of habitats and species in the Park providing a baseline of biological data alongside environmental data to capture the biodiversity and natural capital value of the Park, establishing a starting point to monitor trends associated with key drivers of change and National Park policies.

Sector	Overview of challenges	Overview of opportunities	Current Work	Climate Change Research for next NPPP
Climatic Changes	The changes in the climate will impact on the CNP. This will impact on businesses, residents, infrastructure, water quality and wildlife.	The CNP will need to adapt to these changes and make sure that investment is climate proofed to ensure long term sustainability.	Working with James Hutton Institute and other partners to help predict future extreme weather patterns.	Research - anticipated changes in Snow Cover and Climate Change in the Cairngorms National Park. Nov 2019 Research - implications of extreme weather events and climate change on key species and habitats. Dec 2020

CNPA Corporate Context – Zero Direct Emissions

22. The Authority has adopted an environmental management key performance indicator (KPI) around reducing our estimated carbon emissions from business operations for over 10 years. Our baseline is taken from our modelled emissions in 2007/08 of 150 tonnes of equivalent CO_2 emissions (tCO_2e) modelled in that year. Our KPI adopted is a "directional" target of achieving an annual reduction in emissions of between 2% and 3%.

23. Our aim in monitoring the Authority's climate impact has been to use a robust modelling tool which is consistent from year to year and which can therefore reliably show the Authority's performance and trends in managing and reducing our climate impact, while being sufficiently administratively simple to be delivered within existing resources. We have adapted our modelling tool since adoption of the KPI to adopt a revised modelling tool promoted by Scottish Government. We have remodelled all prior year data since adoption of the new modelling tool in 2016 to give consistent trend data.

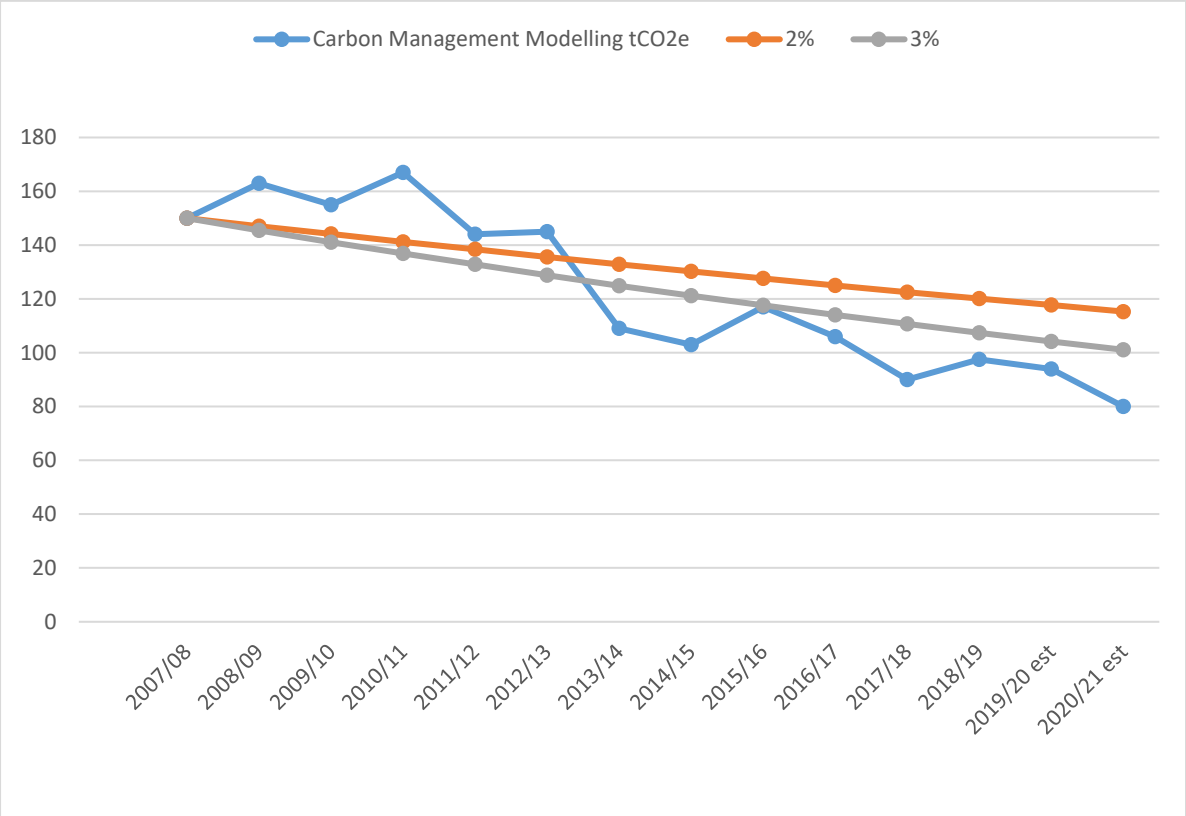
24. Our most recent target range for the year ended 31 March 2019 was between 107.4 tCO_2e and 120.1 tCO_2e, whereas our actual performance was 97.5 tCO_2e, some 10 tCO_2e (9.3%) ahead of the lower of the target range for the year.

25. Moving into the next year, 2020/21, we expect a step-change reduction in emissions to an estimated 80 tCO_2e. The actions taken supporting this expectation are covered in the following section.

26. Our estimated modelled emissions of around 80 tCO_2e in the year to March 2021 is based on the impact of the following investments and assumptions:
    a) Switching 4 vehicles in the pool car fleet by end of 19/20 to hybrid vehicles from diesel;
    b) Switching 2 vehicles in the pool car fleet by end of 19/20 to electric vehicles from diesel;
    c) Reduction in short haul flights;
    d) Refresh and update of the travel and subsistence policy which will promote a reduction in emissions;
    e) Changes in Board meeting schedules and associated downturn in Board travel;
    f) A broadly stand still staffing complement.

27. Figure1 shows delivery against CNPA KPI target range since 2007/08 and forecast through to 31 March 2021.

Figure 1: Cairngorms NPA Modelled Carbon Emissions – Final Figures 2007/08 to 2018/19 and Forecasts 2019/20 to 2020/21



28. The modelled position does indicate our best estimate of our position regarding climate impact through emissions from business activities on the basis of the Authority's present scale of operations. We can expect to be at a level of generating about 80 tCO_2e by 31 March 2021, with some reasonable expectation of adaptations being able to reduce that level by a small annual percentage. As technology and infrastructure improves, further step changes in vehicle transport emissions will also be possible.

29. The current consultation from Scottish Government proposes that all public sector bodies have to set a date by which they intend to achieve 'zero direct emissions'. The CCC scenario for net-zero has all sectors at zero, or virtually zero, emissions except agriculture, some parts of industry, and international aviation. The CNPA cannot offset its emissions in this scenario and so we will have to work with partners to look at over what timescale we can achieve zero direct emissions and reduce indirect emissions. This will require time to consider the implications but we will come back by December 2020 with a timescale setting out the likely date for 'zero direct emissions' from the CNPA based on best current evidence.

Next Steps

30. While the global climate emergency presents profound challenges, the evidence shows that Scotland can achieve net zero emissions by 2045, and that technological, behavioural and nature-based solutions will all be essential in ending Scotland's

contribution to climate change, whilst maintaining resilient communities, businesses and nature.

31. The Cairngorms has significant natural assets, and an opportunity to set out an ambitious vision and programme of action to lead the way to a low carbon future, that ensures a nature-rich future that benefits resilient local communities and that contributes to a thriving and forward-looking, prosperous National Park. This will be at the core of the next National Park Partnership Plan.

32. The CNPA will be hosting a climate conference on 9 March 2020 in Aviemore. The speakers include Roseanna Cunningham, Cabinet Secretary for Environment, Climate Change and Land Reform and Chris Stark, CEO, Committee on Climate Change amongst others. This is about raising the profile of the issues in the Cairngorms and providing a platform as we develop the policy responses within the Cairngorms to contribute to Scotland's target of being net zero by 2045.

33. Following the conference in June 2020 there will be a follow up board paper on climate change. This will set out the work on future peatland and woodland targets for the National Park and further work being undertaken in other areas identified in the table.

Annex 1 – Snow Cover and Climate Change in the Cairngorms National Park