WRITTEN SUBMISSION FROM WWF SCOTLAND

WWF Scotland welcomes the opportunity to provide evidence to the Transport, Infrastructure and Climate Change Committee on this important legislation, the Climate Change (Scotland) Bill. Almost 20,000 people submitted responses to the Scottish Government's consultation on the Bill backing WWF calls for a strong Bill last year. This year, more than 5,000 individual actions have been taken by people across Scotland actively supporting WWF's key recommendations for strengthening the Bill, for example by writing to or visiting their own MSP.

Climate change is the biggest threat facing humanity and we are presented with a closing window of opportunity in which to tackle it. This Bill has the potential to be the strongest climate change legislation in the world and act as both a catalyst for further international action and demonstrate what a developed nation can do in response to climate change. The Bill has the potential to provide a strong framework, but it needs to be strengthened in a number of critical areas if it is to actually lead, deliver and ensure Scotland plays its full part in tackling climate change.

WWF Scotland is a member of the Stop Climate Chaos Scotland (SCCS) Coalition, therefore positions are shared with this coalition of more than 30 organisations campaigning together to tackle climate change. As WWF supports all of the written evidence submitted by the Coalition, rather than duplicate the evidence which has been developed across the membership, WWF's evidence complements it with supplementary evidence in some key areas.

Stop Climate Chaos Scotland is a coalition of more than 30 organisations campaigning together to tackle climate change. The coalition members include environment and development NGOs, faith groups, trade unions, community councils, student societies, women's organisations, a mental health charity, and many others. In Scotland, the members have a combined supporter base of over 1.5 million people.

**The Stop Climate Chaos Coalition Scotland priorities for the Climate Change (Scotland) Bill are that it must:**

1. Set out a framework that will achieve *at least* an 80% reduction in greenhouse gas emissions by 2050.
2. Establish in statute annual emission reductions of *at least* 3% year-on-year from the start, not just from 2020, compatible with a fair and safe cumulative budget identified by the advisory body (see 4).
3. Include emissions from all sectors in the framework and targets set out in the Bill, including those from international aviation and shipping, from the very start.
4. Establish a Scottish advisory body, a Scottish Climate Change Commission, in the primary legislation to support delivery of the Bill when it is enacted.
5. Ensure that at least 80% of the effort to cut emissions takes place in Scotland.
6. Establish duties on all public bodies to reduce greenhouse gas emissions in line with the national target.
7. Set in place robust, transparent reporting measures so the Scottish Parliament is well informed on progress in meeting targets and Government is held to account on mitigation and adaptation.
8. Ensure that strong enforcement measures are set in place in statute.
9. Ensure Scotland counts all its emissions and reports on those produced by products and services we consume as well as emissions produced domestically.
10. Be explicit that sustainable development is core to the purpose and delivery of the statute in relation to mitigation and adaptation.

In December 2009 Copenhagen will host the UN climate change talks to forge a new global deal intended to deliver the emissions reductions we need to prevent dangerous climate change. The timing of Scottish Climate Bill means it has the opportunity to show what is possible and lead other nations down the path to a safe climate; if it falls short of this it risks setting a dangerous precedent at a time when the world is looking for leadership.

## 1. The 2050 Target

WWF supports the SCCS position that the Bill should include a 2050 target of at least an 80% reduction in all greenhouse gas emissions.

There is an increasing body of scientific evidence that shows this must be the minimum level of our ambition[1]. Scientific research on climate change published since the deadline for the latest assessment report from the Intergovernmental Panel on Climate Change (IPCC) is revealing that global warming is accelerating, at times far beyond IPCC 2007 Fourth Assessment Report forecasts.

- The Arctic Ocean is losing sea ice 30 or more years ahead of the projections presented in the Fourth Assessment Report (Stroeve et al, 2007).
- Floating tide-water glaciers in the Antarctic Peninsula are losing ice faster and are making a greater contribution to global sea level rise than reported in the Fourth Assessment Report (Pritchard and Vaughan 2007).
- Since 1990, global sea level has been rising one and a half times faster than forecast in the IPCC's Third Assessment Report (published in 2001) (Rahmstorf et al 2007).
- The actual emissions growth rate since 2000 has been greater than any of the scenarios used by the IPCC in either the Third or Fourth Assessment Reports[2].

## 2. Annual targets of at least 3% reductions per year

WWF Scotland supports the SCCS position that the Bill must require statutory annual greenhouse gas emission reductions of at least 3% year-on-year from the outset, not just from 2020. The rate of emissions reduction determines the total volume of greenhouse gases that Scotland will emit between 2010 and 2050.

WWF has carried out some preliminary analysis of the various emissions scenarios provided to the Committee by the Scottish Government.[3] The different volumes of greenhouse gases are set out in the table below.

| Scenario | Meets the UKCCC Interim Target 2020 | Meets the UKCCC Intended Target 2020 | Total emissions 2000-2050 $MtCO_2$ equivalent |
|---|---|---|---|
| Scenario 1 | × | × | 2,010 |
| Scenario 3[4] | ✓ | × | 1,990 |
| Scenario 4 | ✓ | × | 1,940 |
| Scenario 5 | ✓ | × | 1,895 |
| Scenario 6 | ✓ | ✓ | 1,870 |
| Manifesto Promise | ✓ | ✓ | 1,826 |

It is apparent from this analysis that only Scenario 6 and delivering on the SNP Manifesto Promise would be sufficient to hit the 'Intended Target' of a 42% reduction by 2020 recommended by the UK Committee on Climate Change. However, if the Climate Change Bill is to limit Scotland's emissions to a safe and fair cumulative budget, calculated as approximately 1,470 $MtCO_2$ equivalent between 2000 and 2050[5] the manifesto commitment of annual reductions of at least 3% must be the absolute minimum emissions reduction required by the Bill. Anything less than this will mean the Scottish Bill fails to deliver on the First Minister's commitment that "in every respect the legislation will be more ambitious than the Labour Government legislation [at Westminster]."[6]

In addition to dictating the maximum volume of emissions allowed by the Bill annual reductions of at least 3% from the very start are also vital to ensure the Bill delivers on the scientific requirement for urgent action now. The climate change models used, for example, by the IPCC, the UK Committee on Climate Change, The Hadley Centre and the Tyndall Centre all describe how global emissions must peak in the next 5 – 8 years and then begin a steep reduction curve. If the world is to avoid the worst consequences

1 See http://dl.klima2008.net/ccsl/wwf_science_paper_october_2008.pdf for a full account of recent scientific evidence of the impacts of climate change on food, agriculture, health, and ecosystems.
2 Raupach, M.R., Marland, G., Ciais, P., Le Quéré, C., Canadell, J.G., Klepper, G. and Field, C.B. 2007. Global and regional drivers of accelerating CO2 emissions. Proceedings of the National Academy of Sciences, 104(24), 10288-10293.
3 TECHNICAL NOTE: Climate Change (Scotland) Bill: Greenhouse gas (GHG) Emissions, Annual Reductions and Targets http://www.scottish.parliament.uk/s3/committees/ticc/inquiries/documents/ScottishClimateChangeBill-technicalnote.pdf
4 Scenario 2 is almost identical to Scenario 3 and so is not covered separately in this analysis.
5 See SCCS briefing http://www.stopclimatechaos.org/files/docs/SCCS-Briefing2-3pc-annual-targets_F1.3.pdf
6 http://www.scottish.parliament.uk/business/officialReports/meetingsParliament/or-08/sor0903-02.htm Sept 2008

of climate change Scotland, and all other developed nations, must commit to immediate reductions of at least 3%.

The importance of early and significant annual reductions was identified when Lord Turner and David Kennedy, the Chair and Chief Executive of the Committee on Climate Change, gave evidence to the Environmental Audit Committee on the 4th February. Mr Kennedy said "the 50 per cent global emissions reduction with 2016 peaking requires a four per cent annual emissions reduction globally".

### 3. Emissions from international aviation and shipping

WWF Scotland supports the position of SCCS that all emissions for which Scotland is responsible, including international aviation and shipping, are included in the Bill from the very start. This is probably the most important area where Scotland can show international leadership. As it was introduced to the Scottish Parliament the Bill simply provides that Ministers *may* include these emissions and even then, it would require secondary legislation to do so.

Scotland has reported on its emissions from both international shipping and aviation since 1990 according to the most robust and accurate methodology set out by the relevant IPCC working group. While this methodology will almost certainly be refined over time such potential future revisions should not be seen as justification to exclude these emissions from the very outset. Indeed, methods of data collection for any other source of emissions, such as land use, may be amended over time and the Bill has the capacity to adopt such changes without excluding the source from the start.

When accounting for emissions from international aviation and shipping the Bill must make allowance for the extra impacts that aircraft emissions have compared to ground emissions; burning 1kg of aviation fuel at ground level has less climate change impact than burning that fuel in an airplane engine at altitude.

**The importance of including an aviation multiplier**

Emissions of nitrogen oxides, water vapour and particulates at altitude generate a number of chemical processes that combine to amplify the climate change effect of aviation. The following table provides a summary description of the range of figures applied as an 'emissions multiplier' to ensure a more complete description of the contribution aviation makes to climate change.

| Reference | Suggested multiplier |
|---|---|
| IPCC 1999[7] | 2 - 4 |
| RCEP Special Report on Aviation and Climate Change (2002)[8] | 3 |
| UK Treasury [9] | 2.5 |
| UK Government written answer to PQ[10] | 2 |
| Department of Transport (2008) [11] | 1.9 |
| EU TRADEOFF research programme[12] | 1.9 |

Although the final figure from the EU TRADEOFF research programme represents the best scientific understanding, the calculation of an aviation multiplier remains the focus of scientific research. In particular it is necessary to establish a better understanding of the role of aviation in generating contrails and cirrus clouds both of which have a warming effect on the atmosphere. The Bill should include the aviation multiplier but also allow it to be amended to reflect improvements in understanding.

### 4. Focusing on domestic reductions

WWF supports the view of SCCS that the Scottish Climate Change Bill must require that *at least 80% of the effort* to cut emissions should take place in Scotland**.**

7 Aviation and the Global Atmosphere, Intergovernmental Panel on Climate Change, Cambridge University Press, 1999.
8 http://www.aef.org.uk/uploads/RCEP_Env__Effects_of_Aircraft__in__Flight_1.pdf
9 HM Treasury. (2006). 2006 Pre Budget Report: Investing in Britain's potential – Building our long term future. HM Treasury. London. 06/12/06.
10 http://www.theyworkforyou.com/wrans/?id=2007-05-02c.134036.h
11 http://www.dft.gov.uk/pgr/aviation/environmentalissues/aviationemissionscostassess/aviationemissionscost.pdf
12 The EC TRADEOFF project (Aircraft emissions: contributions of various climate compounds to changes in composition and radiative forcing – tradeoff to regulate atmospheric impacts) involved ten European scientific organisations, including Manchester Metropolitan University. The project completed in 2003 (Sausen et al, 2005).

The question of what proportion of the emissions reductions should be achieved in Scotland, rather than be met through international offsetting, is fundamental and will determine whether Scotland becomes a low carbon economy or remains dependent on fossil fuels. Currently the Bill contains no legal requirement that any of the emissions reductions should be achieved in Scotland.

The Bill must require that domestic emissions reductions form the vast majority of the total emissions savings. We can not expect the existing EU ETS cap and trade system to provide sufficient incentive to achieve the vitally important transformation of Scotland's energy sector. It is clear that the carbon price under the ETS will not in the short to medium term be high enough to drive all the investment required to reduce Scotland's emissions in time. In the meantime, decisions made now before the carbon price has matured could 'lock' Scotland into long-lived, high-carbon infrastructure for decades.

WWF's own analysis has shown there must be a decarbonised power sector by 2030 if other technologies in the transport and heating sectors are to contribute their full potential to emissions reductions.[13] This conclusion has also been made explicit in the recent report by the UK Committee on Climate Change which also highlighted that this would not be delivered by the ETS on its own and there is a pressing need for market mechanisms to be 'buttressed' with domestic policy.

The table below describes the actual reduction in Scotland's emissions with varying levels of access to international credits. It is clear that if Scotland is to actually reduce its emissions by at least 80% by 2050 it must limit the use of offsetting.

| Reduction target for 2020 | % domestic reduction effort | Actual emissions reduction |
|---|---|---|
| 50% | 80 | 40% |
| | 50 | 25% |
| 42% | 80 | 33% |
| | 50 | 21% |

## 5. Reporting

WWF believes it is critical that this Bill establishes a strong scrutiny process so that the Scottish Parliament is able to hold the Scottish Government to account on delivery.

It must be a robust and transparent process, as outlined in the SCCS evidence, informed by independent advice from a Scottish advisory body, see the evidence on the Scottish Climate Change Commission below and in the SCCS evidence as well.

## 6. Consumption

WWF believes Scotland should count all its emissions and reports on those produced by products and services we consume as well as emissions produced domestically.

The Scottish Climate Change Bill includes a target to reduce our emissions by at least 80% by 2050. This target is to be based on Scotland's territorial emissions, all those emissions *produced* within Scotland plus those from our share of international aviation and shipping. This is the correct target, however, these are not the total emissions Scotland is responsible for; our *consumption* of goods and resources generates emissions that are not counted under a production-based reporting system.

Scotland interacts with many different countries, importing and exporting goods around the world, the net effect of which has been to shift our production-based emissions abroad. A requirement to report on

13 A joint report by WWF, the RSPB and the ippr entitled 'The 80% Challenge', shows that the 80% reduction target is technically feasible, economically affordable and sustainable. http://www.wwf.org.uk/filelibrary/pdf/80percent_report.pdf The report also shows that a decarbonised power sector is central to efforts to reduce emissions. This is because low carbon technologies in the power sector are more mature than in others and because other solutions – such as electric heating and electric vehicles – will contribute more with a clean energy supply.

consumption-based emissions, or our carbon footprint, *alongside* territorial emissions, would provide a clear understanding of our impact on global carbon dioxide emissions.

This information can be used to ensure that while territorial emissions fall, Scotland does not 'off-shore' its responsibility for greenhouse gas emissions to other countries. After all, we import cars, televisions, and food which have created carbon emissions in their production somewhere else in the world. Only by understanding our global impact can we reduce it.

**7. Scottish Climate Change Commission**

WWF believes that the Bill should establish a Scottish advisory body, a Scottish Climate Change Commission, in the primary legislation to support delivery of the Bill when it is enacted.

It is critical that Scotland has an advisory body that can advise on the distinctive Scottish targets, is well informed on Scottish data, understands the policy and institutional landscape of Scotland, is plugged into Scottish networks (e.g. academic, public, voluntary and private sector) and is visible to the people of Scotland. This should not be delayed, but set in place through the primary legislation – the Climate Change (Scotland) Bill – itself.

The preferred model is that outlined in the Stop Climate Chaos Scotland submission, a Scottish Climate Change Commission that retains some independence from Government and supports Parliament in its scrutiny of delivery of this legislation.

**8. Duties on public bodies**

WWF believes the Bill should establish a general duty on public bodies to ensure they address the impact of climate change in all their decisions and to pursue, in a manner based on sustainable development principles, reductions in greenhouse gas emissions in line with national targets. This should also apply to adaptation work.

Public bodies are in a unique position to help reduce Scotland's greenhouse gas emissions through their service provision and in making their own operations more energy efficient. Local authorities working with their community planning partners can also have significant influence over the emissions from their communities, though land-use planning, community planning and community leadership. And, of course, local authorities will be in the front-line in adapting and responding to climate change impacts.

While some local authorities and other public bodies are innovative and ambitious in their emission reduction plans, existing guidance and voluntary measures are not enough – as can be seen by the recent publication of progress against the Scottish Climate Change Declaration, now two years old. Time is of the essence, and a duty should be given now to the public sector, giving them the flexibility and powers to act

**9. Energy Efficiency**

WWF welcomes the recognition the Bill gives to the role energy efficiency will play in driving down emissions and closing any future energy gap. With immediate measures it would be possible to reduce our total energy consumption without restricting economic growth. As currently drafted, there are several areas where this section of the bill could be strengthened:

- The bill should refer to 'improving' rather than 'promoting' energy efficiency wherever possible, maximising devolved powers in this area while respecting what is reserved. At the least, language from the Housing (Scotland) Act 2006, section 179 (duty of Scottish ministers to prepare strategy for improving the energy efficiency of living accommodation) could be echoed here.

- The Energy Efficiency Action plan should be published as soon as possible given that such a plan has now been promised for six years. The Plan should include targets on energy efficiency, and progress reported in terms of reduced energy demand, reduced emissions, and increase in microrenewables as part of the Annual Report set out in Part 3 – Reporting Duties.

- The Bill offers the opportunity to enable a range of fiscal incentives to help achieve the rapid uptake of energy efficiency measures. Such incentives include local tax incentives and loan schemes.

- The Bill should include enabling clauses to enhance Energy Performance Certificates for domestic buildings (as it does for non-domestic). Existing homes account for a third of Scotland's carbon emissions. 85% of today's homes will still be homes in 2050. It is clear that existing homes must be part of any solution to address Scotland's climate emissions. WWF Scotland's Carbon Countdown for Homes report calls for a Scottish retrofit strategy which can achieve at least 35% reduction of emissions from homes by 2020 and 80% by 2050.[14]

- We welcome government's stated commitment to introduce a requirement for a Renewable Heat Action Plan at the second stage. The plan should include targets, based on a proper assessment of Scotland's renewable heat potential. In addition to targets, strategic drivers will be needed, such as those in the German Heat Act which introduces an obligation to use renewables for heat requirements, market incentives and provision for local heat grids.

WWF is a member of the Steering Group for the Member's Bill on Microgeneration and Energy Efficiency and has welcomed the Parliamentary support for provisions proposed within that Bill to be addressed in the Climate Change (Scotland) Bill.

**Conclusion**

WWF Scotland is pleased to support the Stop Climate Chaos Scotland evidence, which contains further detail on the ten key issues outlined by the Coalition. See www.stopclimatechaosscotland.org for more information or www.wwfscotland.org.uk/holyrood for more information on WWF's work on the Climate Change (Scotland) Bill.

14 http://assets.wwf.org.uk/downloads/retrofit_1.pdf