WWF-UK Submission to Stern Review – December 2005

WWF RECOMMEND THE STERN REVIEW -

- Seek to quantify in economic terms the true cost of climate change, particularly the devastating human and environmental consequences for developing countries, therefore providing the impetus for governments to take the necessary urgent decisions based on long-term sustainability.
- Put the power sector at the centre of the review, and provide the analysis and evidence needed to create momentum behind a wholesale shift in the way we produce and use energy – away from fossil fuels and towards energy efficiency and renewables.
- Put the concept of a 'One-Planet-Budget' at the heart of Treasury policy, drawing on WWF expertise in analysing the energy and material flows in the economy, alongside regular financial analysis.

INTRODUCTION

As one of the largest and most experienced independent conservation organisations, with 5 million supporters and a global network active in over 90 countries, WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans can live in harmony with nature. WWF complements its conservation work in the field with activities which address the underlying drivers of environmental decline.

Our biennial *Living Planet Report*[i] has charted the global decline in biodiversity and the increasing ecological footprint of human society. A crucial yardstick for measuring the total burden of humanity on the natural environment, our ecological footprint continues to grow beyond the sustainable limits of the planet. The most threatening manifestation of our unsustainable consumption of resources, with potentially devastating consequences for biodiversity and humanity, is our burning of fossil fuels and resulting climate change.

With urgent action required to tackle climate change, it is appropriate that the UK, through the Stern Review, takes a lead role in assessing the costs of doing so, the consequences and costs of inaction and the best paths to a low-carbon economy. The UK has a large influence in global markets and geopolitics, and should be a driving force in showing that things can be done differently throughout the world.

Given the consensus that we must move towards a model of lower carbon consumption and sustainable development, the Stern Review must assess the most economically efficient routes of getting there. Any costs incurred on route will essentially be insurance policies against much greater costs of inaction, and the Review should seek to quantify such costs of inaction not just in narrow economic terms, but in human, social and environmental terms as well. It is also important to ask what are the opportunities, as well as the costs, of moving to a low carbon economy? And how do we move beyond the short-termist and stifling debate of whether action to tackle climate change will have a negative impact on economic development?

This submission reflects WWF's relevant expertise from environmental projects in the field in developing countries, to our work with the power sector in Europe. WWF is the leading NGO working on the effect of embodied carbon within an ecological footprint and has developed a body of expertise in the UK in footprint analysis and new ways of tracking the flow of energy and material resources within the economy. This submission aims to highlight the policy areas which WWF believe should be central to the Stern Review, to suggest the key questions the Review should be addressing and to set the scene for further engagement with the Review team, on areas in which WWF has expertise.

WWF believes that the long-term prosperity of all societies across the world are inherently dependent on sustainable use of environmental resources and therefore welcomes the Stern Review, which we hope will add impetus to the current debate and lead to the wide-ranging and urgent actions by government and international institutions.

IMPACTS OF CLIMATE CHANGE

Staying below 2 degrees C

Scientists suggest that we have a window of opportunity of only 10 years in which to act if we are to ensure the rise in average global temperature stays below the crucial tipping point of 2 degrees Celsius above pre-industrial levels. Beyond this point, climatic feedbacks send the system into dangerous and unknown territory.

As a widely recognised threshold (IPCC 3rd Annual Report 2001), acknowledged by the European Council, WWF recommends the Stern Review frame all analysis in line with staying below this critical point. Whilst adaptation measures are necessary to offer some protection to vulnerable communities, maximum efforts should be made to mitigate carbon emissions in order to avoid the most dangerous impacts of climate change which would result from reaching the 2 degrees point.

True Costs of Climate Change

Climate change threatens people and nature across the globe. Evidence is gathering that the following impacts are already taking place due to climate change:

- Decline in species and ecosystem biodiversity
- Loss of agricultural land and salt water incursion leading to food and water shortages, loss of livelihoods and civil conflicts
- Melting of ice caps, increased sea level and loss of land and property due to flooding
- Increase in extreme weather events, such as storms, hurricanes, droughts and heat-waves
- Spread of diseases such as malaria
- Displacement of people due to a range of factors above

Should the 2 degrees tipping point be reached, such impacts will escalate in severity due to positive feedbacks inherent in the climatic system. For example, the ability of the ocean to act as a sink, removing CO_2 from the atmosphere, decreases with increasing temperature. Hence increasing ocean temperatures due to atmospheric warming could have effects that increase CO_2 and exacerbate climate change.

The impacts above result in a variety of costs to both humans and the natural environment. Furthermore many of the impacts on humans have a feedback effect on the natural environment, leading to further degradation – such as increased pressure on agricultural land in developing countries. Central to the Stern Review should be an attempt to quantify the costs of inaction on climate change – to analyse the consequences of allowing climate change to go unchecked in a range of IPCC modelling scenarios.

In some areas, sophisticated attempts have been made to analyse the costs of climate change. The high number of tropical storms worldwide pushed insured weather losses in 2004 to a record 32 billion euros[ii]. Projections for the UK alone, from the Association of British Insurers suggest that by 2050 the annual cost of weather claims will double to 3.3 billion euros, while an

extreme year might cost 20 billion euros[iii]. In a joint report with WWF, Allianz emphasised the significant costs that climate change creates for the financial industry, with the potential of property damage increasing at a rate of 2-4% each year[iv].

The social and environmental costs of not tackling climate change are harder to quantify and have not been properly factored into cost benefit analysis in the past. The heatwave which Europe experienced in summer 2003 was responsible for 35,000 deaths[v]. This type of extreme weather event is consistent with the predicted impacts of climate change, but this is rarely factored in to analysis. In another study, scientists revealed that climate change could result in more than a million terrestrial species being on the path to extinction within the next 50 years[vi]. The social and ecological impacts do have related economic costs, for example in the cost to health systems in the first example, and the cost to fishing communities' livelihoods in the second, but they are clearly much harder to quantify.

A challenge for the Stern Review is to seek to analyse such 'true' impacts of climate change and to take into account their wide-ranging life-changing nature and to attempt to quantify these in economic terms. If the review is able to meet this challenge, the evidence will bolster political decisions to tackle climate change and demonstrate clearly the urgent need to act now, in order to prevent devastating consequences – human, environmental and economic – in the future.

Equity

At a time when Africa and the developing world is receiving an unprecedented level of attention from politicians, the media and the public through the UK's G8 Presidency and the surrounding campaign work, a critical factor in development policy is largely being overlooked. Because ironically, climate change will have the greatest consequences for the world's poorest people, despite the developing world emitting the least CO_2. In June 2005, a unique coalition of development aid and environment groups published its second report *'Africa: Up in Smoke?'*, which makes clear that the efforts to alleviate poverty in Africa will ultimately fail unless urgent action is taken to halt dangerous climate change[vii].

Similarly dire consequences for Africa are warned of in WWF's report *'The Economic, Developmental and Livelihood Implications of Climate Induced Depletion of Ecosystems and Biodiversity in Africa'* by Dr. Anthony Nyong, which also argues that climate change threatens to undo decades of development and poverty-reduction efforts, particularly threatening the likelihood of achieving the Millennium Development Goals set out in 2000[viii]. Nyong showed that those most vulnerable to climate change are the poorest groups, because they live in areas more prone to flooding, and droughts, and because they have little capacity to adapt to such shocks. They are often heavily dependent on climate-sensitive sectors such as fisheries and agriculture, and have limited national capacities - financial, institutional and human capacity to anticipate and respond to the direct and indirect impacts of climate change. For example, it is estimated that climate change will place an additional 80-125 million people at risk of hunger by the 2080s, 70-80 percent of whom will be in Africa[ix].

To many politicians and decision-makers, the dangers of climate change are seemingly marginal compared to the pressing issues of poverty alleviation, hunger and health in the developing world. Yet entire populations are threatened by climate change. Standard cost benefit analysis has simply not factored in the cost of millions of people losing their homes and livelihoods, in

Bangladesh for example, and should be part of the calculation when analysing the economic consequences of both action and inaction on emissions. The Stern Review should seek to take such costs into consideration and in doing so reinforce the linkages between development and environment, and forge a consensus around the need to view the two as interdependent.

THE ROUTE TO A LOW-CARBON ECONOMY

Technological solutions to energy needs

As a third of CO2 emissions in the UK, and a similar proportion worldwide, come from the power sector, any strategy to mitigate the impacts of climate change must have a low-carbon energy strategy at its core. Despite being a carbon-intensive sector, vast potential exists to produce energy with little or no carbon emissions and for this reason WWF has chosen to focus recent climate change campaigns throughout Europe on the power sector.

WWF recommends the Stern Review carry out an assessment of costs, risks and benefits of all the main low-carbon alternative energy technologies available. We believe, based on independent analysis from Ilex Energy Consulting[x], that sufficient technological mitigation options are available to reach atmospheric carbon stabilisation levels compatible with the 2 degrees threshold, without the need for new nuclear power. Such technologies, centred on renewable energy and energy efficiency, are available today between commercial scale and the demonstation stage. Factored in to the Stern Review's analysis of technological options, must be an acknowledgement that the capabilities of the renewable sector, such as wind power, are improving year on year. These efficiency gains should compared and contrasted with the inertia of nuclear technology through their life-cycle once plants have been built. A comparison of efficiency in 2020 will yield different results to one today. The Review team are also well placed to assess the subsidies given to different elements of the energy sector and to factor these into an analysis of the most economically efficient ways to cut emissions.

WWF's submission to the Environmental Audit Committee inquiry 'Keeping the Lights On' set out our vision of a low-carbon energy sector[xi]. The UK, with largely untapped renewable resource potential, should be a global trailblaizer, transforming our energy sector from a centralised, high-voltage, fossil-fuel and inefficient reliant structure, to a locally-produced, more efficient, renewable system. The Stern Review has the opportunity to further this debate, by adding the additional rigourous analysis needed to create momentum behind a wholesale shift in the way we produce, transport and use energy.

Governmental, regulatory and fiscal measures

Government has a central role to play in defining the route to a low-carbon economy. Left unchecked, the market will not deliver the emissions reductions needed to avoid the most severe impacts of climate change. However, with a stable investment climate, long-term predictability and a level regulatory playing field, businesses can play their part in reducing carbon emissions.

On the global scale, this is best exemplified by the need for legally binding targets for emissions reductions in the developed world, which creates certainty for businesses to plan investment decisions, helps foster innovation and drives the technological solutions needed to combat

climate change. Technology and targets are two sides of the same coin, and attempts to push technology, without the pull of targets, is futile. WWF recommends the Stern Review analyse the pace of technological change in countries with firm renewable or low-carbon technology obligations and sets out a best-practice guide for Government to foster innovation in their economies. A quantification of the impacts of targets on the pace of technological change would be invaluable.

Legally binding, mandatory emissions-reduction frameworks like the Kyoto protocol enable certainty for regional schemes like the EU Emissions Trading Scheme (ETS) to be established. WWF is a strong supporter of cap and trade systems, which if they are working properly, deliver economically efficient ways of reducing emissions with win-win scenarios for both business and the environment. WWF recently commissioned two comprehensive independent reports on the EU ETS, which analysed the failings of Phase 1 of the scheme and suggested solutions which would bring both economic and environmental benefits in Phase 2[xii]. WWF would welcome suggestions from the Stern Review on how to further improve the environmental and economic efficiency of emissions trading schemes.

WWF believes it is no longer sufficient for national governments to pursue economic growth and stability based on the presumption that these will automatically lead to improved quality of life for all. Each policy instrument needs to be tested against its overall consequence for the quality of life of different groups within society, today and in the future, and also against what we know about environmental limits. Only if it achieves progress with both at the same time can it be considered a contribution to sustainable development. The resulting policies and strategies should look very different from those that emerge from trade-offs between the advocates of "competitiveness" and "environment" within government.

The UK economy needs to diversify away from carbon-intensive revenue sources, and price carbon in a manner which can deliver investment in renewable alternatives. Reliance on North Sea Oil revenues and UK corporate oil profits is not sustainable as production declines, nor is it compatible with scenarios to stabilise global temperatures. WWF encourages the Stern review to develop proposals to break this cycle of perpetuating fossil fuel dependence through its energy investments both in the UK and through multilateral funding mechanisms such as the World Bank.

WWF is working with partners such as BIFFAward and the Stockholm Environment Institute to create the Ecological Budget UK[xiii]. The outcome will be one rigorous dataset – "the real national accounts" – which can be used as a basis for future scenario planning and policy analysis at national, devolved, regional and local levels. We believe that this and other, complementary work should be taken up by mainstream government institutions such as the Environment Agency or the National Audit Office so that future decisions about our Global impacts rest on a firmer base. The Ecological Budget UK provides the necessary information on whether the UK is becoming more sustainable on a global level, or simply shifting our own environmental impact to another part of the world. This is an important first step toward a 'One Planet Economy' – a sustainable pattern of production and consumption which does not lead to deterioration of the global environment. WWF believe the Stern Review could contribute to this debate through further analysis of the impact on carbon reductions of the transfer of manufacturing to Asia.

The UK government has yet to take up the challenge of breaking the link between GDP growth and quality of life in the UK. This should be an explicit goal of the UK to recreate government policies and actions in a way that promotes quality of life for all, while breaking our dependence on unsustainable GDP growth. The Stern Review should examine the best way to integrate one-planet economics into UK fiscal policy and suggest a range of fiscal measures to ensure externalities are internalised, low-carbon technology incentivised, the polluter punished and the cleaner rewarded.

Long term behaviour change – communities and consumption

If everyone on the planet were to consume natural resources and generate carbon dioxide at the same rate as we do in Europe, we would need three planets to support us. The challenge that faces us all is how to ensure that people everywhere enjoy a high quality of life, within the carrying capacity of one planet. One Planet Living is a partnership between WWF and BioRegional that will show how this is possible by establishing One Planet Living communities in Europe, the US, China, South Africa and Australia. Each community will include homes, schools, factories, health and leisure facilities, transport and food links.

Our homes and communities have significant impacts on the environment, both during their construction and occupation. Homes are responsible for around 30 per cent of the UK's CO_2 emissions and are intensive consumers of natural resources such as water, timber and aggregates. In addition, the way in which homes and communities are developed determines our lifestyle decisions and our overall 'ecological footprint' - the impact we make on the natural world and its resources. For example, providing easy access to local amenities, public transport, local food links and recycling facilities enables residents to choose more sustainable options and reduce their ecological footprint - and in many cases also improve their quality of their life.

We believe a paradigm shift in ways of doing things – the breakthrough or "switch point" – can only be found by bringing together many different ideas and choices at the level of people's lifestyle and day to day experience. Our own experience with sustainable homes makes the point. A new development (BedZed) empowers its inhabitants to make a whole set of different choices about how to live in a way which is stylish, practical and affordable. When all the sectoral ideas are combined in one place, a revolution in attitudes and behaviour looks possible which could never be achieved by scattering the individual components in isolation.

WWF recommends the Stern Review should assess ways in which government can strengthen its action on reducing consumption, and suggest ways in which the UK can lead by example in reducing its 'carbon footprint'. The key challenge for the Stern Review is to provide guidance which prevents government taking decisions which are environmentally damaging and also economically inefficient in the long-term. For example, decisions such as not incorporating high standards of energy efficiency into the Building Schools for the Future programme, in order to save a relatively small amount of money in the short term, which would have reaped economic and environmental reward in the long-term. WWF believes the Stern review should seek to quantify the long-term cost to the taxpayer, or GDP equivalent, of not setting in place policy based on One Planet Living.

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