

Stern Review – response from Friends of the Earth

March 2006

We welcome the opportunity to respond to this consultation paper. Please also refer to our earlier response to the first consultation of this review¹, and our earlier correspondence to Sir Nick Stern in August 2005 which we feel are still relevant to this second stage of questions. Our response here focuses on your questions regarding:

- 1) The issues of uncertainty, which we believe mean that conventional cost-benefit analysis cannot be an effective policy-tool to tackle climate change, and needs to be replaced.
- 2) The potential impacts of policies on growth and competitiveness. We advocate that the review team commission research into the positive effects of action on climate change on competitiveness and growth.
- 3) Measures and financing for adaptation
- 4) Future International Climate change regime
- 5) Stabilisation levels
- 6) Mitigation

1) Uncertainty

There are vast uncertainties over the damages from climate change. These uncertainties make conventional economic appraisal – particularly cost benefit analysis (CBA)- inappropriate. The most appropriate approach is instead to set precautionary and equitable carbon budgets for the UK and other economies, and use cost-effectiveness analysis to determine the policies to keep economies within these budgets.

We are deeply concerned about the continuing use of a single central number for the “social cost” of carbon (SCC), and its use in cost-benefit analysis as a major policy tool for climate change. This has been policy in recent years (using £70t/C), and the recent AEA paper for Govt² suggests that a similar single central figure should continue to be used, despite overwhelming evidence - that they themselves cite - that to do so is inappropriate. We believe that this use of a single number and the continuing use of CBA for climate change is bad policy, underestimates the scale of the threat from climate change, and threatens to be extremely inequitable in its impacts. This is a key issue. As Paul Ekins states³, *“calculations of the SCC are not just an intellectual exercise. If the valuations are believed and acted on by policymakers, they will lead to more or less mitigation of climate change (and therefore lower or higher climate change costs for future generations), and to adaptation efforts that seek the maximum benefit from adaptation per unit of*

expenditure on it (a calculation which may suggest that real estate in London or New York should be preferentially protected to land and lives in Bangladesh)”.

Two major drawbacks with this CBA approach are:

- **Uncertain figures**

We do not need to rehash figures here – but there are three orders of magnitude difference in the various SCC estimates, depending on core assumptions on discount rates, equity weighting etc etc. The recent AEA report for the Government notes these problems and then says “but policy requires a number”. First, this is not the case - as cost-effectiveness analysis can obviate such a need. Second, its approach to providing a number is highly flawed – it averages the results from an SCC approach and a marginal abatement cost (MAC). The MAC approach itself has huge uncertainties, but in any case it is simply bogus to state that the simple averaging of two completely different methodological approaches, both with wild uncertainties, can be used to give a policy-effective single figure.

- **Underestimation of figures.**

The single figure they do come up with, like the £70t/C figure before it is a major underestimate. First, they use assumptions which are – in our view – simply invalid. These include the use of too high discount rates – for example the use of a figure for > 0 for the PRTP component of SRTP¹. We would stand by a PRTP as 0 as being necessary for protecting the interests of future generations – it is ethically indefensible to have policies based on discriminating against future generations simply on the grounds that they are not here now. PRTP at zero, and SRTP at around 1.5% gives far higher (over double) values for SCC. The paper by Professor Ackerman to your inquiry provides detailed argument for why lower discount rates are needed⁴.

However, we accept that which discount rate to use is a contested issue. But the second reason for the invalidity of the £70t/C and newer single figure is not contested – it is that these figures are based on only a small proportion of the impacts of carbon. The AEA report is explicit about this. Their literature review of 28 studies assesses the coverage of impacts using the following matrix of impact categories:

¹ Discount rate SRTP=PRTP + μ .g



		Uncertainty in Valuation 		
		Market	Non Market	(Socially Contingent)
Uncertainty in Predicting Climate Change 	Projection (e.g. sea level Rise)	Coastal protection Loss of dryland Energy (heating/cooling)	Heat stress Loss of wetland	Regional costs Investment
	Bounded Risks (e.g. droughts, floods, storms)	Agriculture Water Variability (drought, flood, storms)	Ecosystem change Biodiversity Loss of life Secondary social effects	Comparative advantage & market structures
	System change & surprises (e.g. major events)	Above, plus Significant loss of land and resources Non-marginal effects	Higher order social effects Regional collapse Irreversible losses	Regional collapse

Figure 2. The SCC Risk Matrix (Source: Downing and Watkiss, 2003)

It sets out the results (below), stating “*very few studies extend beyond the top left hand corner of the matrix and none even has a full coverage of the four boxes that represent market and non-market impacts for the projected and bounded risks of climate change. There are only limited studies that have considered any socially contingent effects or the potential for longer-term effects*” (our underlining).

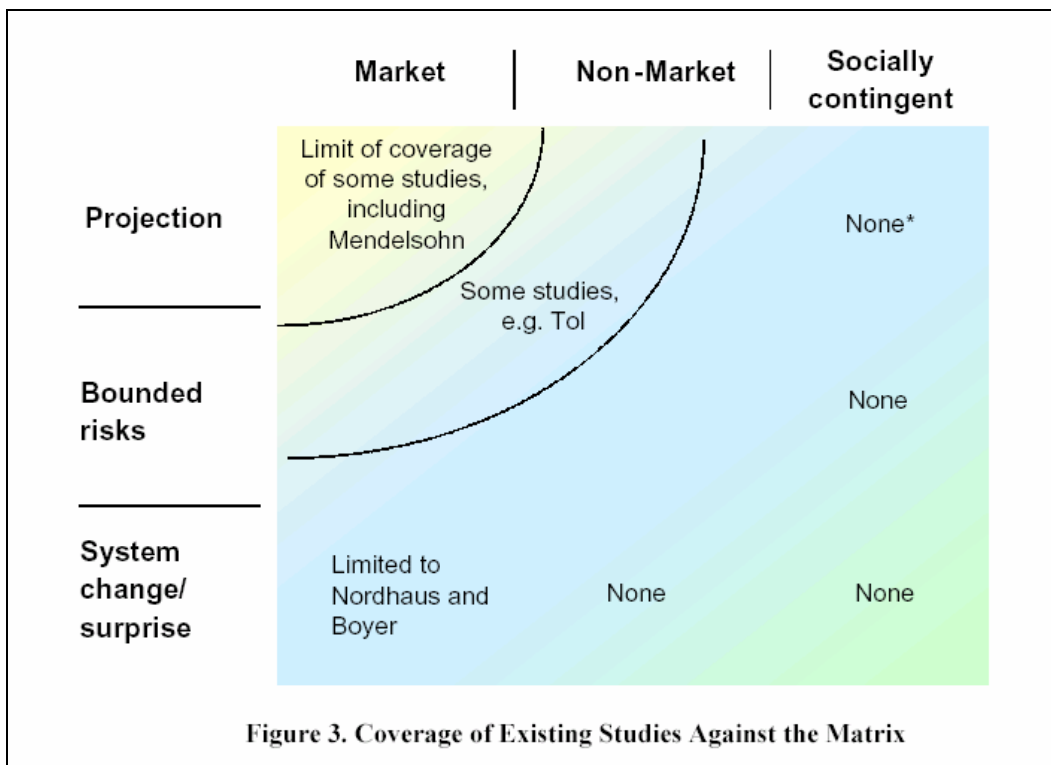


Figure 3. Coverage of Existing Studies Against the Matrix

They do stress that this partial coverage (and resulting lower values) should be borne in mind. However it is clear, through the case studies used, that these non-valued

impacts will continue to be treated as having zero-value– the case studies use the central number with no caveats as to the non-coverage of so many different types of impact.⁵

Overall, the problems of using one central figure are summarised in Professor Ekins' peer-review of the AEA paper⁶. Some other causes of underestimates of the central figure are summarised in Professor Ackerman's submissions to your inquiry⁷

This is not a minor issue: in practice, these inappropriately precise and inaccurately low figures are being used. They are therefore giving policy results which give inadequate weight to the damage from climate change. Three examples are:

- Use in the recent DEFRA waste strategy consultation – the £70t/C is used to determine the policy goal for recycling rates. Higher recycling rates (which have larger carbon savings) are dismissed because the calculations state that the costs exceed the benefits.
- Use in policy deliberations around aviation – the external costs from carbon are estimated at £1.4 billion in 2000, and £4.8 in 2030, using £70t/C increasing by 1t/C a year.
- Use in the recent Code for Sustainable Buildings

Incidentally, these examples show the inappropriateness of this approach in a different way. AEA are clear that, whatever the approach, the sum of all policy appraisal decisions should be to keep the economy within the overall strategy for carbon for the economy as a whole – but the sum of individual decisions using a too low figure will inevitably stop this overall carbon target being met. This is the experience of the last 10 years in the UK – some good individual measures on climate change (eg climate change levy, company car taxation) are heavily outweighed by policy decisions in other areas in which the importance of climate change was downplayed (eg roads project appraisal).

Our main point is that these figures should not be used for policy purposes. The point has been made that “*yes we know there are major problems, but using 70 is better than using zero*”. This is not the case – instead of trying to justify a more accurate number, the policy appraisal approach needs changing – cost-effectiveness analysis is needed instead.

2) Growth and Competitiveness

We note your concern about the potential effects of deep cuts in GHG on growth and competitiveness. We have three general points to make:

- **Exaggeration of competitiveness concerns**

Frequent assertions of damage to “competitiveness” or the economy to justify inaction on environmental issues are often exaggerations. The REACH legislation on chemicals in Europe is a prime example of this⁸, as is the frequent assertion that implementation of Kyoto will cost hundreds of billions or even trillions of dollars.

We note that studies of the marginal abatement costs for carbon show wildly differing results – from net costs to net benefits – as shown in the AEA report. The economic costs or benefits of measures to cut carbon are also entirely dependent on the economic frameworks in place – on tax, subsidies and regulation. Although many measures are cheap, or even with net benefits, it may well be that some measures are expensive now, because economic systems are set up which do not benefit energy saving, and do not penalise pollution. As these systems change (and they should – even on solely economic grounds just to remove externalities) so the costs of abatement will lower.

We also believe that the capacity for innovation to lower costs is also often significantly underestimated.

Finally, even if one sector is adversely affected, this is not reason not to proceed with a particular policy. There can be benefits to other economic sectors from the same policy, and it is the overall effect on the economy which should be considered.

- **Action on climate change can be good for the economy and competitiveness**

This is an under-analysed area, and we hope that the Stern review team will commission research to assess the potential for synergistic actions which benefit both the economy and environment, in line with the Government’s Sustainable Development Strategy. In short, there are four broad areas where action on climate change can be good for the economy

- **Innovation/new technology**

Tackling climate change will require the development of many major new technologies – this is a major innovation and competitiveness opportunity for the UK economy.

- **Reduces exposure to volatile world energy markets**

Cutting carbon and diversifying our energy portfolio will mean the UK is less reliant on imports of fossil fuels, and less vulnerable to swings and spikes in global energy markets.

- **Prevents economic costs**

Action on climate change will reduce the future need for both defensive spending (eg on extra flood defences) and reactive spending (eg actual storm or flood damage, dealing with “socially-contingent” effects).

- **Positive effects on other areas of competitive advantage**

A key area for competitive advantage for cities and regions (and countries) is quality of life⁹. Measures to reduce carbon emissions very often also involve reductions in other pollutants (eg sulphur dioxide, nitrogen oxides) – cutting carbon can often result in improvements in local environmental quality. Many European cities have a very high local quality of life because of transportation systems based on tram or light rail rather than being dominated by cars and car-parks as is far more often the case in the UK. This helps make these European cities more attractive for inward investors. In addition, high-carbon developments often detract from the quality of life at a regional level – for example large road infrastructure investment.

- **Competitiveness is not more important than having a functioning climate**

Competitiveness is essentially about ensuring GDP growth – but GDP growth has to be of the type that does not damage other essential political or societal goals. This is clearly set out by the Treasury when they state that “*The Government’s central economic objectives are the promotion of high and sustainable levels of growth and high levels of employment. By that we means that growth must be both stable and environmentally sustainable. Quality of growth matters, not just quantity*”¹⁰. The United Nations Human Development Programme takes this further and argues that all countries should pay much more attention to the quality rather than the quantity of growth. It identifies “*five damaging forms of growth:*”¹¹

- jobless* growth which does not translate into jobs
- voiceless* growth which is not matched by the spread of democracy
- rootless* growth which snuffs out separate cultural identity
- futureless* growth which despoils the environment
- ruthless* growth where most of the benefits are seized by the rich

Good economic policy should promote this integrated, “quality” growth – indeed this is now explicit in the new 2005 United Kingdom Sustainable Development Strategy¹² which states that economic and environmental and social goals must not be traded off but integrated.

A competitive economy is not the goal at the expense of critical environmental limits – such as climate change. Instead it is something to be achieved whilst ensuring that it does not cause dangerous climate change. The challenge is to create the economic framework to allow this to happen.

3) Adaption - Measures and Financing

Friends of the Earth is an active member of the climate change and development coalition who have produced the ‘*Up in Smoke?*’ reports¹³

These reports and the unprecedented coalition behind them address the critical issue of equity and climate justice – how climate change is disproportionately affecting the world’s most vulnerable people, those who have done least to contribute to the problem. We feel these reports contribute directly to the fundamental questions set out by the review.

The Third Assessment Report of the Intergovernmental Panel on Climate Change sets out: “*The impacts of climate change will fall disproportionately upon developing countries and the poor persons within all countries, thereby exacerbate inequities in health status and access to adequate food, clean water and other resources.*”

‘*Up in Smoke?*’ recommended, amongst other things:

- Effective and efficient arrangements to respond to the increasing burden of climate-related disaster relief;
- Development models based on risk reduction and incorporating community-driven coping strategies in adaptation and disaster preparedness.

It is critical that the development assistance and relief that government provides, whether in the shape of specific projects or policies, have the consideration of climate impacts at their heart. Rather than regarding climate change as a separate, isolated issue, we need to see it as integral to the thinking and design of these programmes. Successful development which will bring people out of dire poverty needs to integrate tackling climate change as part of its policies. A critical test for all these projects should be: Are they increasing or decreasing human vulnerability in the face of climate change? We must also act to facilitate the grassroots, community based approaches and responses to climate change to ensure that these programmes are proving effective on the ground.

An understanding of what the impacts of climate change are likely to be, and where, is essential to successful development policies. The Commission for Africa report, released last March, recommended that donors should give in the region of US\$100m over the coming 10 years to improve climate observation, through the Global Climate Observing System which the UK Government is now helping to fund. However governments must also look to the local level to work with those communities with greater knowledge and experiences of their changing weather patterns. Some of these significant funds, as recommended by the Commission, may be better spent investing in some of the affected countries already in desperate need of assistance and money in order to cope with changes already being felt.

Given that ‘dangerous’ climate change is already happening, it is widely accepted that the current levels of funding for adaptation is inadequate to meet the overwhelming need. During COP/MOP in 2005, Bangladesh on behalf of the Least Developed Countries openly raised the issue of “*compensation for damages due to unavoidable adverse impacts of climate change*”, as well as suggesting that “*if voluntary*

contributions are not working then binding commitments may be need to be considered to secure adequate funds". The Adaptation Fund, sourced from a levy on the CDM may itself require additional funds, from alternative sources. Benito Muller has questioned if it would be more rational and reasonable to place such a levy on the polluting activities themselves¹⁴ ('Montreal 2005: What Happened and What it Means'). Up in Smoke has suggested that '*Commensurate new funds and other resources be made available by industrialised countries for poor country adaptation, bearing in mind that rich country subsidies to their domestic, fossil fuel industries stood at \$73 billion per year in the late 1990s.*' This question of funding streams for adaptation also sits under the work and remit of the Department for International Development.

It is important that funding should be new and additional to existing funds, and seen not as aid but as an obligation of the rich countries who created the problem. To date, US\$34 million has been committed to the Least Developed Countries Fund (LDCF), with a further US\$34.3 million pledged¹⁵. This compares to an estimated cost of protecting the coastline of Dar es Salaam, capital of Tanzania against sea level rises of US\$380 million¹⁶.

International Energy Issues

The main energy issues in rural and many urban areas in Africa, Asia and Latin America are the accessibility and affordability of clean, modern energy services. Some 1.6 billion people in the world, more than a quarter of humanity, have no access to electricity and 2.4 billion people rely on wood, charcoal or dung as their principal source of energy for cooking and heating. Smoke from such sources is linked to 1.6 million deaths a year. Lack of access to adequate, affordable, reliable, safe and environmentally benign energy is a severe constraint on development.

As Development Secretary, Hilary Benn rightly pointed out in his speech on 23 February 2006, reliance on foreign oil imports does little for a developing country's energy security or economic growth. Sustainable, affordable energy can help to address climate change whilst driving poverty reduction and sustainable growth. Many of these regions enjoy an abundance of natural resources, but these are often either under-used, badly exploited or exported to rich countries. These countries need the means to develop local solutions using local resources to meet local needs and increased access to clean, sustainable energy to support health and education services, households and enterprise. We should switch our support and investment to sustainable energy strategies in developing countries, remove obstacles to technology access, and the limitations of intellectual property rights and adopt targets and timetables to achieve those objectives.

Some of the older and less efficient fossil fuel led technologies, promoted and installed in power plants in the South pose the most immediate threat both in terms of local and global environmental impacts. Modern, cleaner and more efficient versions of these conventional fuels are available and can avoid some of these environmental impacts. According to the G8 Renewable Energy Task Force Report¹⁷ from 2001, the barriers to the deployment of renewable energy are not technological, but financial and political. Yet over the coming 20 to 30 years, investment in the world's energy

infrastructure is estimated to amount to some 16 trillion dollars. Decisions are being made now on where that investment will take place and for what energy sources.

As a new, long term role for the World Bank on climate change becomes clear in the forthcoming months, so too must its guidance and leadership on financing and mobilising investment for low and zero carbon sustainable energy solutions. The World Bank alone is responsible for financing over \$25 billion in fossil fuel based projects since 1992, when the UN Climate Convention was first signed. Support for renewables amounts to just 6 per cent of the Bank's current energy portfolio. While the World Bank is only one source of investment into energy and development in the south, their leadership in this area could raise the threshold and stretch the innovation for others to follow. The Bank's new role in the clean energy investment framework certainly gives this opportunity which has yet to be embraced: the Bank fell far short of its own target for increasing financial support for renewable energy and energy efficiency. The Bank increased funding by only 7 per cent, or \$14 million in fiscal year 2005 – less than half its already unambitious target of a 20 per cent increase annually over the next five years. The roles of the other bilateral and multilateral banks are equally crucial.

With renewable technologies providing the step change to reducing emissions and energy security, the UK Government should use this review to address the barriers to their wider deployment. This can be done by creating the right enabling environment for innovation and enterprise, with targets that are supported by sufficient incentives for investors, policies aimed at commercialising technologies and adequate capital across the whole value chain.

4) Future International Climate Regime

The UK Government has a leading role in the UN climate negotiations. The next two to three years sees some important negotiations on the climate framework for the time beyond 2012 after the first commitment period ends. Negotiations in Montreal launched this process. Tony Blair has rightly acknowledged the significance of this process in ensuring protection against global runaway climate change.

The existing Kyoto framework is based on the principle of common but differentiated responsibilities – that on the basis of equity, those countries which have polluted most, must take the strongest action. We believe the existing architecture of Kyoto can support a post 2012 regime. However, the negotiations for this future framework should aim towards flexibility, innovation and integration of the range of capacities to act. The Review is predicted to be announced in the autumn. The content and recommendations as set out by the Review is likely to feed directly into and prepare the ground for crucial UN climate negotiations in Kenya in November. We will need to take additional measures to follow through in two areas:

- to ensure that developing countries can proactively engage in these negotiations so that all needs are reflected, and
- to support and encourage some key developing countries to participate in a strengthened and expanded Kyoto.

In order to develop a regime that has something in it for everyone, and therefore all Parties can sign up to, addressing adaptation needs will have to form part of the final package.

Friends of the Earth International is an active member of the Climate Action Network. We support the Climate Action Network's Global Future Framework¹⁸ for the post 2012 regime. This framework is based on scientific and socio-economic research which establishes three parallel tracks as the basis for future action:

- The first track, **the Kyoto track** follows the basis of the Protocol with much deeper absolute targets for the current list of Annex 1 countries.
- The second, **decarbonisation track** involves the larger developing countries embarking on a lower emissions pathway toward sustainable development and meeting climate change, poverty, energy security and development goals. Commitments should be based on a set of equitable criteria and undertaken in a step by step, sector led basis. The least developed countries would not be asked to make such commitments.
- The third, **adaptation track** where the most vulnerable countries to climate change must be given support and funds to be able to adapt to the consequences of the warming that we are already committed to.

The Montreal negotiations resulted in three parallel processes being agreed, two under Kyoto (Article 3.9 on future action by industrialised countries and the wider Article 9 review) and the Convention dialogue. This combination offers a very interesting dynamic. It will allow the EU and other Annex I countries to take on deeper cuts, but conditional on certain levels of commitment from some non Annex I countries.

Similarly, non Annex I countries may be willing to come forward and sign up to some kind of actions to reduce or limit their emissions when they can see the industrialised world agreeing to further legally binding commitments. Such a transparent process is crucial to build and demonstrate the levels of trust and confidence that became apparent in Montreal. Furthermore, it will become increasingly difficult for the US Administration to continue to oppose a commitment on domestic mitigation when other Parties, and more importantly key developing countries are engaged. With all the main competing economies committed to climate change mitigation, opposition to future targets on the basis that it would hurt the US economy would be difficult to sustain.

5) **Stabilisation Levels**

Discussions are ongoing on what level of action is required to meet the ultimate objective of Article 2 of the UNFCCC. Both the Prime Minister's open letter to Stop Climate Chaos on 28th February and the Secretary of State for International Development's public speech on 23rd February have referred to the need to agree stabilisation levels of greenhouse gas concentrations and global temperature levels to a "safe" level. Friends of the Earth are surprised that both failed to mention that the global temperature rise must be kept below the widely accepted danger threshold of 2°C (already an agreed EU level). Many argue that this 2°C limit is now out of date, in terms of the impacts and damages that we are already seeing and in terms of the levels of warming we have already committed ourselves to. We believe it is clear

however, that to avoid the worst extremes, global greenhouse gas emissions are required to be on a permanent downward path by 2015.

The concentration levels that are associated with staying below the 2°C limit are extremely varied. Defining such a stabilisation level is full of uncertainty. Friends of the Earth are concerned to hear recent comments made by Sir David King, Chief Scientific Adviser that a “reasonable” target for stabilising carbon dioxide in the atmosphere was 550 parts of carbon dioxide per million parts of air. It would be “politically unrealistic”, he said, to demand anything lower. This flies in the face of what scientific evidence is telling us. The required stabilisation levels would be far below 550 - peaking at 450 ppm. Recent scientific reports suggest that in order to stay below the maximum 2°C temperature rise target with reasonable certainty, it would require global CO₂ cuts of 50% by 2050. Industrialised countries will have to cut their CO₂ emissions by 80% at least by that time, and 30% by 2020.

The UK represents only 2 per cent of global emissions. However as one of the richest and most developed nations in the world we have a moral and historical responsibility to tackle climate change by reducing our domestic climate footprint. We can take an active role in this by helping to establish a UK carbon budget to deliver an average reduction in total UK carbon emissions of 3% per year. Internationally, the UK Government must do all it can to ensure that the global greenhouse emissions are falling irreversibly by 2015.

Unless we can show falling emissions at home, we could risk losing our leading international reputation on climate change – and be in the difficult position of having to convince other countries to do as we say, but not as we do.

6) Engagement in Mitigation from the Developing World

While emissions in developing countries are low on a per capita basis, significant mitigation efforts are needed in developing countries, particularly as countries invest in energy and transportation infrastructure. The success of the post 2012 negotiations will depend on the effective participation of the key rapidly industrialising countries: China, India, Brazil, Mexico and South Africa.

The G77 block also includes some key states, such as South Korea, Taiwan and Singapore with high per capita emissions and with strong economic growth. They may be ready to consider taking on legally binding commitments. On an equitable basis, a key question will be, what kind of commitments can be expected from these key developing countries? We would expect there to be a range of commitments, all housed under an expanded Kyoto Protocol.

The key challenge will be to find innovative ways to engage and incentivise key developing countries in climate mitigation that encourages low emission development. Limitations on emissions must not sacrifice sustainable development. Rapidly developing countries have been facing issues such as serious local air pollution, human health hazards, high energy cost and rapid urbanization. In this context many mitigation measures will be beneficial to solve local environmental problems and contribute to sustainable development.

Mitigation measures such as an improved CDM (for example allocating a certain percent to renewables and efficiency measures), sectoral emission reduction/limitation targets, Sustainable Development Policies and Measures, avoided deforestation efforts (the proposal by the governments of Papua New Guinea and Costa Rica have sparked imaginations) have all been proposed. The Chinese Government is already showing signs of action with a renewable energy target and a goal of halving the energy intensity of its economy by 2020, as agreed at the EU China Summit last September. What is crucial is that the negotiations are both fair and adequate in how responsibilities are distributed. Furthermore, negotiations will need to move forward on both adaptation and mitigation.

ENDS.

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- ⁴ http://www.hm-treasury.gov.uk/media/E79/EB/climatechange_tufts_1.pdf
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