From: [redacted] **On Behalf Of** Stern, Nick
Sent: 19 June 2006 19:10
To: Chancellor's, Action
Cc: Jacobs, Michael; [redacted] Stern Review Distribution List
Subject: Review on the Economics of Climate Change: emerging storyline
Please see attached from Nick Stern.
Thanks
[redacted]

SUB CX
19-06-061.doc

From: **Sir Nicholas Stern**
Date: **19 June 2006**
Extn: [redacted]
Room:

Chancellor

cc: See list at end

Review on the Economics of Climate Change.

At our meeting on 6 June, you asked for advice on the opportunities to follow-up publication of the Review with policy announcements and initiatives. This note sets out the headline messages from the Review and potential initiatives for you to consider as a way of taking these issues forward. We would be very grateful for your guidance on the basic direction and priorities for further work.

Building the narrative on climate change

2. The key messages from the Review are likely to build on the narrative that you have set out in your speeches on climate change in March 2005 and April 2006, and to underline that a multilateral response is the only way to tackle climate change. The emerging storyline from the review is:

i. **Climate change is central to the objectives of achieving growth and justice with environmental care**. Recent scientific evidence on the risks of climate change strengthens the case for action – as the world's understanding of climate change continues to grow, so will the realisation that the future will be more carbon constrained. Co-ordinated global action will be essential to manage the transition to low carbon economies. Our assessment of the evidence suggests that if the transition is managed well, then growth can be maintained in both developed and developing countries ie. we can be "green and grow".

The UK economy, with its flexibility and strong science base, is well placed to adjust to a low carbon world and to move into new sectors, generating new opportunities and jobs.

ii. Building **international collective action** is essential for **an effective response**. This will need to promote both mitigation (the reduction of emissions) and adaptation (changing in response to climate change), and to do so in a way that brings in the fast growing economies such as [redacted]. We believe that global emissions will need to peak and start to decline within the 10 – 15 years. This will necessitate early action by both developed and developing countries.

iii. **Adaptation is essential**, given the substantial changes to which past and present emissions have already committed us. The impacts will be felt earliest and most severely in developing countries.

iv. **Mitigation requires a "two-legged" strategy**, with:

a) measures to address the greenhouse gas externality and create incentives for action, through carbon pricing/trading, supplemented where necessary by regulation (as appropriate in different sectors), and

b) policies to overcome other market failures (in the generation and use of ideas and technologies), to increase the availability of a broader portfolio of cost-effective low carbon technologies.

v. The most cost effective paths to a low carbon economy include action on a broad range of issues such as **energy efficiency,** reducing

deforestation, and limiting emissions from agriculture. Deeper cuts will be achieved only by developing and deploying lower carbon technologies for **power generation and transport**. In the longer term, International Energy Agency (IEA) analysis suggests that even with accelerated deployment of nuclear and renewable technologies, it will be impossible to stabilise emissions from the energy sector without **carbon capture and storage**.

vi. **Carbon Trading** has a particularly important role to play to:

a. deliver carbon reductions cost effectively – by establishing broadly uniform carbon incentives across sectors and countries and,

b. engage the major developing economies.

vii. The **future direction of the EU ETS** is therefore critical. Developing a robust scheme will bring significant challenges, [redacted]

Opportunities for follow-up

3. In looking for opportunities to follow up the Review with policies and initiatives, it is important to focus on how far UK actions can help to move the EU and international agenda forward (the UK itself contributes only 2 percent of global emissions). There are four key areas to develop the international response:

- Building a shared understanding and an effective international framework to bring about change.
- Expanding the role of trading and the EU ETS.
- Expanding the portfolio of low carbon technologies.
- Mainstreaming climate change in development. The DFID White paper will address this.

4. [redacted]

5. The attached paper sets out the detail of our initial proposals for specific initiatives that you might want to consider – including within the EU and with the IFIs. We are continuing to work on the detail, in close cooperation with the relevant teams in HMT, and would appreciate your guidance on those areas you feel warrant further thought. For ease, the more significant potential initiatives are summarised below at the Global, EU and UK level.

Possible Global Initiatives:

- Launch the Review on the Economics of Climate Change **in the UK, ahead of the Mexico Ministerial on 3- 4 October.** [redacted]

- Active support for the World Bank and Regional Development Banks in developing the Energy Investment Framework.

- Launch a global debate on how to bring forward action to avoid deforestation, supporting large-scale pilot projects designed to make significant carbon reductions and support local development objectives.

- Host a high level meeting to learn from the EU ETS and draw attention to nascent trading schemes in the US, Canada, Australia, Japan and the growth of the CDM, and the opportunity for linking schemes.

- Press for the linking of the new National Institute of Energy Technologies to other centres of excellence around the world, working with organisations such as the International Energy Agency.

- Encourage commercialisation of new technologies by linking the Carbon Trust with other public/private bodies investing in environmental technologies in the US, Canada, EU and Asia Pacific, to promote faster diffusion of promising technologies in wider markets.

- Active support for the Energy Investment Framework proposal that the Consultative Group on International Agricultural Research (CGIAR) should lead a major research initiative to establish drought and flood resistant crops within the next 10 – 15 years.

- Ensure that ongoing discussions about streamlining the UN system take account of the additional pressures likely to be created by climate change, and that climate change is seen as part of core UN business, including by the UNDP.

Possible EU initiatives:

[redacted]

- Push for better use of the existing EU R&D budget. This totals 50 bn euro over the 2007-2013 period, with about 6 bn euro specifically targeted on environmental and energy research that could help to tackle climate change, and a further 800 mn euro on nuclear fission. Subject to agreement it would be possible to redirect spending priorities through the mid-term review of the R&D budget in 2010.
- Develop further content for EU and UK partnerships on climate change with [redacted] to support their growth and poverty reduction ambitions, and facilitate investment in clean energy, including beyond 2012.

Possible UK initiatives.

- Consider active engagement with [redacted] to establish more effective and transparent procedures for Phase II of the EU ETS, and for an ambitious scale and scope of Phase III, as well as to prepare the ground for ECOFIN initiative.

Handling

6. The report will underline that climate change is a serious and urgent issue, and this could give rise to increased expectations that the Government would bring forward new UK policy measures or targets.

7. The report will argue strongly that effective action against climate change requires a multilateral response, and that national policy should be seen in the light of its contribution to generating effective international action. The focus of our recommendations will be on options for global and EU action, not on unilateral UK policy measures.

8. The UK policy context is being covered by the Energy Review. We have worked closely with the Energy Review – in particular in stressing the international context within which domestic decisions should be made. We have no reason to believe that our analysis will not be broadly consistent with its report.

Nick Stern

cc:

Annex A: Areas for possible initiatives

1. International collective action

International collective action requires a shared analysis of the scale of the challenge, ways to assess mutual effort in its many dimensions, and an understanding that there are indeed sets of acceptable policies that provide for an adequate response.

1.1 Building an effective international framework for action

2. There is no shared vision amongst the major emitters about the scale and timing of action needed on climate change, on its economic costs and benefits (the avoided costs of climate change), or on the role of market mechanisms, technology and trading to achieve emission reductions. Such a vision will be crucial to developing an effective multilateral framework within which the UK can make an appropriate contribution beyond 2012.

3. Bringing all the major partners into a framework beyond 2012 will require a stronger consensus on the economics of climate change, based on a shared analytical base. This review presents an important opportunity to present and disseminate analysis on this to the international community.

4. Our analysis suggests that future frameworks will need a more sophisticated and flexible approach, and that there are opportunities to move this very difficult international debate forward by broadening its scope. [redacted] Creating transparency about – and mutual recognition of - the full range of policies and incentives that will help to tackle climate

change, should help to facilitate sensible discussion about different players' approach to climate change.

5. In the near term – the next decade or so - energy efficiency has an especially important role to play. Best practice needs to be disseminated effectively, and a deeper understanding is required of the potential obstacles that limit the implementation of best practice.

6. [redacted].

7. This review is seen internationally as a key input to the debate on the economics of climate change, and the report could form an important part of the UK's diplomatic efforts to secure a multilateral agreement. Presentations on this Review at the informal Mexico ministerial on 3-4 October, and at the formal UNFCCC Convention Dialogue in Nairobi in November would help to set the agenda for the coming years.

Possible Global initiatives:

- Launch the Review on the Economics of Climate Change **in the UK**, ahead of the Mexico Ministerial on 3-4 October.
- This could also be explicitly linked to engaging Finance Ministries in the way forward, including through G7, G20, ECOFIN etc., and possibly asking them to consider ways to assess the full range of mutual efforts that will contribute to tackling climate change.

[redacted]

1.2 Building commitment in the developing world

8. [redacted]

9. In the short term, there is a particular problem that uncertainty about the shape of the post 2012 Kyoto agreement (and Phase III of the EU ETS) is hindering the flow of private sector Clean Development Mechanism (CDM) funding for projects in developing countries that deliver carbon reductions beyond 2012.

10. This pre-2012 period – where the uncertainties are greatest – is critical. Countries such as [redacted] are building new coal fired power stations at a pace that will make any future retrofitting daunting and costly. [redacted] Thus, as you flagged in your New York speech, we might want to consider ways of ensuring that transfers that will deliver carbon reductions beyond 2012 do not begin to dry up. This would help to lay the foundation for the very substantial, largely private sector flows that will be required in the medium term.

11. The need to secure the carbon-trading environment is accompanied by a need for a scaling-up of investments in energy efficiency, including through lending and through addressing specific barriers – for example, providing back-up capacity in power generation to enable the least efficient power stations to be upgraded.

12. Existing mechanisms such as the Clean Development Mechanism are already channelling some OECD private and public sector capital flows into carbon reducing initiatives. But the flows will need to be very substantially scaled up in the medium term. The IEA estimate that from 2003-2030 up to $ 8trillion will be invested in energy infrastructure in developing countries. Annual private sector flows of at least $40 bn per annum are likely to be necessary to finance the incremental cost of ensuring this energy investment is "clean".

13. The proposed Energy Investment Framework (led by the World Bank and RDBs) creates a mechanism to leverage large-scale investment using private sector resources and unused non-concessional lending capacity at the IFIs into energy efficiency. It also provides an opportunity to combine carbon finance with other instruments to facilitate energy efficiency. There are clear synergies on this point between initiatives such as the Clean Development Mechanism (CDM) and the Energy Investment Framework. In the long term, carbon finance revenues will generate a revenue stream for EIF projects. However, in the short term whilst uncertainty about the future of carbon trading exists, up-front concessional finance for investment in energy efficiency may be needed.

Possible global initiatives:

- [redacted]
- [redacted]

Possible UK and EU initiatives:

- Develop further content for UK and EU partnerships on climate change with [redacted] to support their growth and poverty reduction ambitions, and facilitate investment in clean energy, including beyond 2012.
- Initiatives to strengthen EU ETS (described below)

1.3 Tackling emissions from deforestation

14. Emissions from land-use change (primarily deforestation) currently make up 18% of total anthropogenic emissions (those emissions that are attributable to human activity). Reducing these emissions is essential to stabilise greenhouse gases, and in many cases can be done at much lower cost than the deployment of some new energy technologies. Maintaining forest cover also has significant benefits for local development (including flood protection, air quality, soil protection, traditional medicine) and for biodiversity.

15. There are a number of proposals emerging for ways to provide economic incentives to avoid deforestation, although there is not yet a consensus on the best way to do this. However, there is a strong case for bringing forward action in this area. The relatively low cost of preventing deforestation and the potential for it to flood the market tends to favour tackling this through special mechanisms, rather than through general market instruments such as the Clean Development Mechanism (CDM). [redacted]

Possible global initiative:

- Consider launching a substantive debate on how to bring forward action to avoid deforestation, supporting large-scale pilot projects designed to make significant carbon reductions and support local development objectives. This would require further work, including to explore the funding options that may be available from the IFIs / GEF / some form of partnership with private sector investors. (The review may be able to suggest some country specific approaches at a later stage).

2. The role of trading and the EU ETS in delivering carbon reductions

16. Trading carbon quotas will be critical to deliver carbon reductions cost effectively by establishing broadly uniform carbon incentives across sectors and countries. And to generate the flow of funds needed to make clean energy generation a reality in countries such as [redacted]. We can extend the range of trading schemes across three dimensions – sectors, time and countries.

17. The EU has a pivotal role to play here. The EU ETS is the first and largest trading system in the world, and is one of the main drivers of clean energy investment flows – such as the Clean Development Mechanism - to the developing world. The first phase has highlighted some key design issues – in particular the potential for distortions of the internal market and impacts on competitiveness arising from the decentralised allocation process, and for price volatility arising from lack of transparency and liquidity. The UK can play a very strong role in promoting effective EU leadership on these issues.

18. To date, the EU ETS has created "carbon assets" worth between £10 – 45 billion per year, and £1 – 5 billion in the UK alone[1]. In the first phase, only 0.5% of these allowances were auctioned (none in the UK). In Phase II, an upper limit for auctions has been set at 10 percent, but it is not clear what individual member states plan to do. The remainder is grandfathered to the energy and industrial sectors in the scheme.

Possible Global Initiative:

- Host a high level meeting to learn from the EU ETS and draw attention to nascent trading schemes in the US, Canada, Australia, Japan and the growth of the CDM.

[1] The value of the "carbon assets" was calculated by multiplying the size of the EU ETS emissions cap by the value of the permit. In phase I of the EU ETS (2005-2007), the emissions cap was 2.2 GtCO2 per annum (0.2 GtCO2 in the UK). The value of a permit has fluctuated significantly since the EU ETS started operating, from a high point of 30 euros/tCO2 to a low point of 10 euros/tCO2. This explains the wide valuation of the carbon assets.

The meeting could consider ways to take forward the linking of regional schemes and the use of the mechanism such as the CDM.

Possible EU initiative:

- [redacted] Tackling climate change is ultimately about managing the transition to a low carbon economy in a way that supports growth. It is about good macro-economic management – core Finance Ministry business. [redacted]

[redacted]

- [redacted]

Potential UK initiative:

- [redacted]

[redacted] Co-ordinated action is much more powerful than isolated unilateral action, and also addresses concerns about the potential competitiveness impacts on particular industries.

3. Increasing investment in Research Development & Deployment (RD&D) for low carbon technologies

19. Globally, the energy supply mix will need to include renewables, nuclear power and decentralised generation as well as Carbon Capture and Storage. In particular, IEA analysis (the Accelerated Technology Scenario, due to be published on 22 June) shows that without widespread deployment of CCS by 2050, it will be impossible to stabilise emissions from energy use.

20. Mitigation requires a "two-legged" strategy, with measures to address the greenhouse gas externality – for example through carbon pricing and trading – and policies to correct market failures in both basic R&D and, in the energy sector, deployment: reducing the uncertainties surrounding the viability and costs of key future technologies.

21. A co-ordinated global increase in energy RD&D would help to bring forward this wide portfolio of technologies. In addition, agricultural RD&D will be essential to reduce the sizeable carbon emissions from agriculture.

22. Our analysis suggests that there is a case for co-ordinated global action to promote policy interventions to support innovation, in addition to a carbon price. Some R&D initiatives are costly – for example, Carbon, Capture and Storage (CCS) demonstration projects cost up to several hundred million pounds each, and it may therefore be more effective to provide direct support to these initiatives.

23. Very careful design of policy is needed to avoid a simplistic approach to "picking winners" and to avoid the creation of unnecessary rents. Globally, it is important to consider the scale of R&D and deployment support that could be required, particularly for CCS. Major coal-using economies should discuss the scale and scope for specific agreements on the use of CCS, which could include roadmaps or milestones for bringing down the costs of CCS technology, regulatory issues, liability, and funding for developing countries.

24. You have announced a range of UK initiatives in this area recently - targets to increase RD&D spending, the Energy Research Partnership established in 2005 and the National Institute of Energy Technologies announced in 2006.

Possible Global Initiatives:

- Press for the linking of the new National Institute of Energy Technologies to other centres of excellence around the world. For example, you could consider working with the IEA's new initiative on Networks of Expertise in Energy Technology (NEET) – (eg by offering to co-host conference in 2007 on extending R&D cooperation with developing countries).

- Encourage commercialisation of new technologies by linking the Carbon Trust with other public/private bodies investing in environmental technologies in the US, Canada, EU and Asia Pacific, to promote faster diffusion of promising technologies in wider markets.

Possible EU Initiative:

- Push for better use of the existing EU R&D budget. This totals 50 bn euro over the 2007-2013 period, with about 6 bn euro specifically targeted on environmental and energy research that could help to tackle climate change, and a further 800 mn euro on nuclear fission. This could be linked to the ECOFIN initiative above, to prioritise

climate change research within existing spending plans. Subject to agreement it would be possible to redirect spending priorities through the mid-term review of the R&D budget in 2010.

Possible UK initiative:

- Continue to use the Technology Strategy Board as the vehicle to promote new technologies and determine how it links to into the Institute of Energy Technologies.

4. Climate Change and Development.

25. As you outlined in New York, it is now clear that economic development in poor countries is going to take place in the context of a changing climate, that underdevelopment and environmental neglect go hand in hand, and that climate change will potentially undermine our poverty reduction ambitions. Future development strategies are going to have to adapt to meet this challenge.

26. Access to clean energy for development in middle income countries, and adaptation to the effects of climate change in poor countries are technically separate from mitigation.

[redacted]

27. The impacts of climate change will be felt most severely by poor people, and will place an additional strain on the resources of least developed countries, including ODA flows, by raising the cost of poverty reduction. This underlines still more strongly the importance of the delivery of the 2005 G8 Pledge. Adaptation should be mainstreamed into many aspects of development, as the forthcoming DfID White Paper will propose.

28. Much of the response to the risks posed by climate change will be about supporting growth and reducing vulnerability. For example, investing to limit existing vulnerability to current climate variability will bring dividends today, and help to prepare for future climate change. In a similar vein, progress towards eradicating malaria will bring immediate benefits and substantially reduce one of the major health threats posed by climate change.

29. But there will be areas where preparing for climate change will impose an incremental cost that goes above and beyond existing development efforts. For example, the World Bank and others are developing tools to assist in identifying climate risk for major infrastructure investments, and the incremental costs associated with developing these projects in a way that takes account of climate change.

30. In addition to adaptation activity being mainstreamed within bilateral development programmes, and by the international institutions, there is some direct international funding for adaptation. This is currently delivered through three funds - the Least Developed Countries Fund, the Special Climate Change Fund, and the National Communications Programme (totaling about US $ 180 mn).

31. In the longer term, innovative financing initiatives will need to be explored if the incremental costs of climate change are to be funded from sources beyond ODA. There are UNFCCC proposals to use a 2 percent levy on emissions trading under the CDM to finance an Adaptation Fund (to finance adaptation projects and programmes).

Possible Global Initiative:

- Active support for the Energy Investment Framework proposal that the Consultative Group on International Agricultural Research (CGIAR) should lead a major research initiative to establish drought and flood resistant crops within the next 10 – 15 years. Ensuring this happens could be linked to action on disaster preparedness by reducing vulnerability to current and future climate variability.

Possible EU initiative:

- The Commission are currently examining their strategy for adaptation. It may be worth considering whether there are opportunities to channel EU funds to strengthen

adaptation measures with partner countries. We should be able to update you on this in coming weeks following meetings with Commission officials.

4.2 Strengthening the impetus for reform of the Global Humanitarian and Emergency Response System.

31. The OECD DAC estimates that "emergency and distress assistance" from donors has risen from an average of 4.8% of total ODA in 1990 – 1994, to 7.2% in 1999 – 2003 within a rising budget, and in 2003 itself reached 7.8% of ODA (more than $6 billion). Climate Change will exacerbate these trends and place a real premium on DFID's current drive to reform the humanitarian system, and to press ahead with streamlining the current UN system to ensure it is more effective, and able to respond quickly and flexibly. Climate change will add further weight to the need to ensure the Central Emergency Revolving Fund (CERF) is properly financed.

32. Climate change also emphasizes the importance of shifting our focus to prevention wherever possible. As above, this will bring dividends both today and into the future.

Possible Global UN / Humanitarian Initiative.

- Ensure that ongoing discussions about streamlining the UN system take account of the additional pressures likely to be created by climate change, and that climate change is seen as part of core UN business, including by the UNDP.