



Action on Climate Change Post 2012

A Stakeholder Consultation on the EU's Contribution to Shaping the Future Global Climate Change Regime

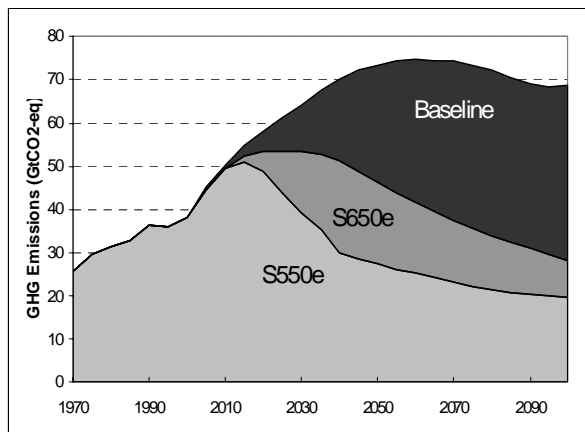
1. Introduction

This paper provides a background to the stakeholder consultation on the EU's contribution to shaping the future global climate change regime. It outlines a range of elements and issues on which stakeholders may wish to comment, and lists a set of questions that stakeholders may wish to answer in their submissions. The elements and options set out in this paper aim to stimulate discussion and do not necessarily represent the Commission's position. More information on the stakeholder consultation can be found at:

http://europa.eu.int/comm/environment/climat/future_action.htm

2. The Climate Challenge

The aim of the United Nations Framework Convention on Climate Change (UNFCCC) is set out in its article 2.¹ Based on the UNFCCC the EU has decided (e.g. in the 6th Environmental Action Programme)² that our policy goal should be to limit average global temperature increases to no more than 2°C of pre-industrial levels. The EU has thus far assumed that reaching the 2°C target would translate into a long-term greenhouse gas (GHG) concentration level of 550 ppm CO₂ equivalent. The resulting global reduction challenge is shown in the graph. Such a



concentration level would translate into a global reduction of GHG emissions of 15 – 20 % by the year 2050 compared to 1990 emission levels or by 50 – 60 % compared to a “business as usual” scenario. However, these figures are subject to uncertainty and new scientific knowledge may become available in the future.

¹ “The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.”

² For more information: <http://europa.eu.int/comm/environment/newprg/index.htm>.

It is important to consider what these figures imply for EU policy. In 2001, the EU Sustainable Development Strategy stressed that the EU should aim to reduce atmospheric GHG emissions after 2012 by an average of 1 % per year over 1990 levels up to 2020.³ Since then, several Member States have conducted additional model analyses and have outlined specific proposals for future national targets, e.g. the United Kingdom (- 60 % by 2050), Germany (- 40 % by 2020) and France (-75% by 2050).

Any model-based analysis is based on a set of assumptions and focuses on a number of scenarios⁴ as regards country participation and the sharing of reduction efforts. For instance, most model results assume that all industrialised countries will participate and that developing countries will gradually enter the system. A recent study⁵ that looked at options for a future climate change regime reported also results of several scenarios of stabilisation at 550 and 650 ppm CO₂ eq. (550 ppm CO₂ eq. is equivalent to around 470 ppmv CO₂ only, 650 ppm CO₂ eq. is equivalent to around 550 ppmv CO₂). Based on this study, EU emission reductions would have to be in the range of 30 – 45 % in 2025 and 70 – 90 % in 2050 compared to expected business-as-usual emissions if the EU was to make a contribution to a 550 ppm CO₂ eq. concentration level under different effort sharing regimes analysed.

3. Competitiveness and the likely impact of new EU targets

Any analysis of the benefits and costs of a policy, including its competitiveness impacts, will need to carefully balance the costs of action but also costs of inaction. To ensure that such balance can be made, further steps in climate policy will need to continue to be underpinned by feasibility studies to ensure that proposals are economically viable.

The Third Assessment Report of the Inter-governmental Panel on Climate Change (IPCC)⁶ stated that in order to achieve a long-term concentration target of 450 ppmv CO₂ the average annual GDP growth rate would be reduced by 0.06% in the period 2000 – 2100 compared to a scenario without mitigation. Similarly, the United Kingdom predicts that reaching its own target, and assuming wider international engagement, would cost in the order of 0.5 – 2 % of GDP in the year 2050. This would translate into a 0.01 – 0.02% reduction of an assumed GDP growth of 2.25 % per year. At the same time, the United Kingdom's GDP in 2050 would be three times higher than today.

In order to enable EU leaders to take well informed decisions on future climate policy, it will be necessary to develop such analyses for the whole EU and also to take global competitiveness into account. At present we do not have all of the necessary data. For example, modelling studies usually look only at the direct costs of reducing GHG emissions and neglect direct and other potential ancillary benefits, such as avoided costs in terms of

³ Commission Communication, A Sustainable Europe for a BetterWorld: A European Union Strategy for Sustainable Development, COM(2001)264, 15 May 2001, available through: http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001_0264en01.pdf.

⁴ Distinguish between assumptions and scenarios. Assumptions are things like population growth, economic growth, availability of energy sources, technological options. Scenarios are alternative state of the world analysed by a model in a “what if” fashion – so what if all or only x countries participate.

⁵ CNRS/LEPII-EPE (France) – RIVM/MNP (Netherlands) – ICCS-NTUA (Greece) – CES-KUL (Belgium). Greenhouse Gas Reduction Pathways in the UNFCCC process up to 2025. October 2003. (Full version can be found at <http://europa.eu.int/comm/environment/climat/studies.htm>).

⁶ Available through: <http://www.ipcc.ch>.

climate impacts and adaptation to climate change. Very few integrated assessment models attempt to integrate climate impacts, adaptation and emission reduction policies.

Competitiveness has many facets and is used in many contexts. Defining and measuring competitiveness effects is challenging as they can arise at the level of countries, industry sectors or even individual firms. Any climate policy – as do many other changes induced by policy or not - will inevitably lead directly or indirectly to changes in relative prices favouring less GHG emitting production processes and modes of consumption. The advantage of market-led climate policies like emissions trading is that they will achieve their environmental objective at least cost. However, any change in relative prices generates distributional effects which are more transparent than in the case of technical regulation. In the political process potential losers tend to be more outspoken than the winners, and therefore they often influence the political decision making process more strongly than the potential winners. More work is needed in order to be able to weigh the future net benefit to society against the near-term costs to certain sectors of society.

4. Other issues to be addressed inside the EU

4.1 Adaptation

Climate change is already happening. Atmospheric CO₂ concentrations have reached a record high of 379 ppm at Mauna Loa in March 2004. This concentration level will, in the long run, lead to an additional 1 °C temperature increase. Even the current average increase of 0.6 °C is having a significant cost and societal impact in the EU. Insurance premiums for extreme weather events are set to increase drastically and certain areas or damages are becoming uninsurable. The damage caused by natural disasters is never fully covered, making public emergency aid schemes such as the EU solidarity fund necessary.

To date, EU climate policy has focused on mitigation, but this will not be able to avoid all climate change impacts in the short, medium and longer term. There is a need to anticipate and deal with the consequences of a changing climate while at the same time working to achieve long term reductions in GHG emissions. It seems clear that the magnitude of the long-term adaptation challenge is directly proportional to the reduction in GHG emissions the world will achieve over the coming decades.

There are two sets of issues to be dealt with:

- minimise the impact of climate-related disasters through better preparedness and early warning systems;
- adapt in the long run, integrating increasing climate impacts in our decision making.

While on the first topic research is done and improvements in national administrations take place (e.g. flood⁷ and forest fire forecasting systems, disaster action plans, improved coordination between different civil and military players) on the latter, which will become increasingly important, very little knowledge exists. One reason is that such an analysis has to be conducted at the regional and local level. In a few Member States, detailed case studies have been made (such as the UK Climate Impacts LINK project⁸). Adaptation to climate

⁷ See for instance the Commission's recent Communication on flood risk management COM(2004)472: <http://europa.eu.int/comm/environment/water/index.htm>.

⁸ See: <http://www.cru.uea.ac.uk/link>.

change should become an integral part of any planning process, for instance, as part of strategic environment assessments.

Further work is also needed on the relevance of “abrupt climate change”. Scientists have identified quite a number of such events around the world, for example, the weakening or collapse of the Gulf Stream or the melting of the Greenland ice shield. Common characteristics of abrupt climate change are that the risk is very small but their impact would be catastrophic.

4.2 Developing existing instruments and policies - expanding the current EU Emissions Trading Scheme

The EU Emission Trading Scheme (EU ETS)⁹ is set to be the main instrument of current EU climate policy and will remain so over the coming years. In future, when the carbon constraint will become more stringent, this policy instrument is expected to demonstrate how powerful it really will be in finding least-cost options for GHG reductions.

In future, it will be desirable to broaden the carbon market by including more GHGs, more sectors, and linking it to schemes emerging in other countries. One opportunity for identifying new options will be in 2006, when the Commission will undertake a review of the EU ETS. This review will shape the post-2012 EU ETS. At present, the EU ETS covers power plants in different sectors representing a large share of the EU’s primary energy production. In future, the carbon price should be the main economic driver for changing the energy mix towards less carbon emitting fuels and technologies.

The International Energy Agency points out that there are huge energy investment decisions to be taken up to 2030, that will determine the mix of energy technologies and the magnitude of GHG emissions well into the second half of this century. In Europe alone around 700 GW of electricity generation (equivalent to the currently installed capacity and of which 50 % constitutes the replacement of old plants) needs to be installed by 2030 (investment cost: € 1.2 trillion). Planning for these decisions will be done some 5-10 years ahead and must be based on long term climate change scenarios. The central pillar of any future energy strategy for the EU must be cost-effective energy efficiency improvements and energy savings. Estimates show that in the EU-15 it would be economically feasible to realise energy savings of up to 15 % over the coming 10-15 years. Technically up to 40 % of energy could be saved.

Renewable energy technologies will have to play a much larger role in the future. A recent Commission report on the performance of renewables policies in Europe shows clearly how pro-active policies can stimulate their adoption. Furthermore, in the medium term, the role of carbon capture and storage as well as nuclear energy will have to be determined.

A number of sectors are currently not directly covered by the EU ETS, notably transport. EU transport emissions have grown by 20 % in the period 1990-2001. Emissions from shipping and aviation alone increased by 44 % in the EU-15 within the same period. Apart from the voluntary agreement with the car industry, transport emissions were not subject to any new measure at Community level under the European Climate Change Programme (ECCP)¹⁰. At the level of Member States, there are some interesting experiences with new approaches to

⁹ For more information see: <http://europa.eu.int/comm/environment/climat/emission.htm>.

¹⁰ For more information see: <http://europa.eu.int/comm/environment/climat/eccp.htm>.

curb transport emissions and to move towards more sustainable modes of mobility such as on road pricing in urban areas. However, such policies need to spread much more quickly and widely in order to address the dramatic and continued rise in emissions from road transport.

5. What do we expect from the rest of the World?

5.1 The global adaptation challenge

Climate change is not only an environmental problem, but clearly also a development problem. Its adverse affects will disproportionately affect developing countries with the most vulnerable populations and the least adaptive capacity, *i.e.* those that have so far contributed the least to the problem. Within developing countries, the poorest, living on marginal land and most reliant on their direct natural environment, will be most at risk of climate change impacts such as droughts and floods.

Until now, the international effort has been ad-hoc and largely focussed on establishing funding mechanisms (Special Climate Change Fund, Least Developed Countries Fund, Adaptation fund) to support, amongst others, adaptation activities. The Delhi Declaration, agreed at the 8th Conference of the Parties to the UNFCCC in December 2002 in New Delhi, further emphasises the importance of adaptation, especially for the least developed countries and small island states.

In any future climate regime, adaptation will be a key issue to ensure global participation. It will need to be approached as a cross-cutting theme in issues related to commitments, research, capacity building, technology transfer. In addition, the issue of adaptation needs to be integrated in the broader area of sustainable development. The size of the adaptation challenge is not known yet as it will directly depend on the level of ambition of the future global GHG reduction policies.

5.2 The global mitigation challenge

In 2000, the EU contributed 14 % of total world GHG emissions, showing that climate change cannot be solved by the EU alone, but that it is a truly global problem. The political challenge of the low carbon scenario becomes obvious when one looks at the geographical distribution of GHG emissions under a business as usual scenario. Today, a small number of industrialised countries are responsible for more than 50% of global emissions. On average, per capita emissions of industrialised countries are more than 5 times higher than those of developing countries. However, in the coming decades, GHG emissions are projected to increase much faster in developing countries. In the medium term, they will exceed those of developed countries in absolute terms. This means that the low carbon scenario is not compatible with unconstrained growth of emissions in developing countries.

The international community has to strive to develop an equitable global response to a common problem. Historic and current GHG emissions come disproportionately from industrialised countries. They are better placed to pioneer the technologies and to develop the institutional frameworks necessary to mitigate climate change. In addition, the adverse effects of climate change will disproportionately affect the poorest, and least emitting, countries that do not have the financial and technological resources to deal with them.

6. What do we expect from the industrialised countries?

Following the principle of common but differentiated responsibilities, industrialised countries will need to continue to lead the effort over the coming decades. Clearly, the United States as the largest emitter as the other developed countries must be part of a truly global regime.

Under the low carbon scenario described above, industrialised regions (Europe, Japan, North America, Community of Independent States, and Oceania) would need to reduce emissions between 20 to 45% in 2025 with respect to 1990, depending on the region and the effort sharing principles of different commitment schemes. In 2050, the world's developed countries would need to have the ambition to cut GHG emissions by 60 to 80%.

7. The global mitigation challenge for developing countries: A Staged Approach

Without the participation of developing countries, the objective of stabilising atmospheric GHG concentrations at a safe level cannot be achieved. The timing and level of their involvement will need to vary in accordance with their sustainable development needs, capacity and level of development. The EU needs to be clear about what kind of participation it seeks from developing countries and to be willing to accept different timescales and methods for their contribution to the global reduction in GHG emissions. Given their different situations a differentiated approach is called for:

- Already, there is a group of developing countries that have a per capita income and per capita emissions that are above those of some of the EU Member States. There will increasingly be a case for such countries to assume their responsibility in terms of reducing their emissions growth and, subsequently, to achieve absolute reductions.
- Other developing countries may not have a high average per capita income and emissions, but due to their size, their growing population and their rapidly evolving economies, particularly when creating growing segments of comparably affluent consumers, will contribute a large and growing part of the global emissions. The challenge will be to find ways of limiting their emissions growth while allowing them to continue on a sustainable development path.
- The group of least developed countries cannot be expected to commit to absolute reductions. Still, the international community must increasingly make climate change objectives a cornerstone of its support for the sustainable development of these countries.

A future framework needs to integrate sufficient incentives for developing countries to step up their efforts. Incentives for such efforts could be given through the further elaboration and implementation of the Kyoto Protocol's flexible mechanisms.

8. What kind of international commitments?

Over the past decade, different types of instruments have been developed by various parties. This includes absolute and relative emission ceilings, sectoral targets, voluntary targets, policies and measures, including spending targets for technology research programmes. Each type of commitment has its own set of characteristics as regards what it will deliver in terms of achieving the ultimate objective of the UNFCCC, what it means in terms of cost-effectiveness, its impacts on international competitiveness, how easy it is to negotiate, what it means in terms of monitoring and whether it will be enforceable. A future climate change regime will need to build upon the lessons learned from the implementation of these

instruments. It will need to expand instruments that have proven to be effective, and find further innovative way to improve and expand the total set of instruments available.

9. Technology transfer – opportunities not to be missed

Not only in the EU, but also worldwide considerable investments in energy infrastructure will be needed in the coming decades. This provides a huge opportunity for promoting sustainable development that will put a minimal burden onto the global climate. The past decade has seen an unprecedented growth in fossil fuel imports in developing countries. Recently, China has become the second largest oil importer worldwide after the United States. Without significant advances in energy efficiency high GDP growth rates cannot be sustained in the future.

The analysis of existing financial channels reveals that international loan, export credit guarantees and grant facilities often favour investments into fossil fuel intensive energy infrastructure. These might be missed opportunities as recipients are “locked in” for many decades on carbon intensive paths. The financial envelope of the Global Environment Facility which covers the incremental costs of investments resulting from preserving the global commons is not sufficient to realise all the GHG reduction opportunities that exist. The Kyoto Protocol’s Clean Development Mechanism may not be able to fill this gap either. Furthermore, pursuing energy efficiency and air quality objectives might be more attractive for accelerating technology transfer for many developing countries.

10. Questions

The box below contains a list of questions that stakeholders may wish to address in their submissions to the Future Action on Climate Change Web Forum.

Questions:

1. Is it important for the EU to continue to show leadership on addressing climate change?
2. On the basis of the EU’s 2°C long-term objective, what objectives should the EU set for global and EU climate change policy (including targets, timeframes and pathways for emission reductions)?
3. What type and level of participation should the future climate change regime seek from developed countries and developing countries, what should be the timeframe for such participation and what should the contribution from the EU and other countries?
4. Which technological solutions should be allowed or promoted (e.g. renewable energy, nuclear energy, carbon sequestration, carbon capture and storage)?
5. Should the future global climate regime will maintain the key elements of the Kyoto Protocol, including the Kyoto mechanisms (joint implementation, the clean development mechanism and emissions trading) and what other elements should such regime contain?
6. What are the costs of taking further action on climate change, including competitiveness impacts, and how can/should impacts be addressed?
7. What are the benefits of taking further action on climate change, including avoided damages, competitiveness impacts and ancillary benefits, and how can/should these be encouraged or optimised?
