

EU action against climate change



Leading global action to 2020 and beyond

2008 Edition

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Global warming must be limited to 2°C

Climate change is happening now.

The world has warmed by an average of 0.76° Celsius since pre-industrial times and the temperature rise is accelerating, according to the 2007 Fourth Assessment Report (AR4) from the Intergovernmental Panel on Climate Change (IPCC)¹. Sea levels rose almost twice as fast between 1993 and 2003 as during the previous three decades. Man-made emissions of greenhouse gases are causing these changes.

Without action to limit future emissions, the global average temperature is likely to increase further by 1.8° to 4°C this century, and in the worst case scenario by as much as 6.4°C., the AR4 projects.

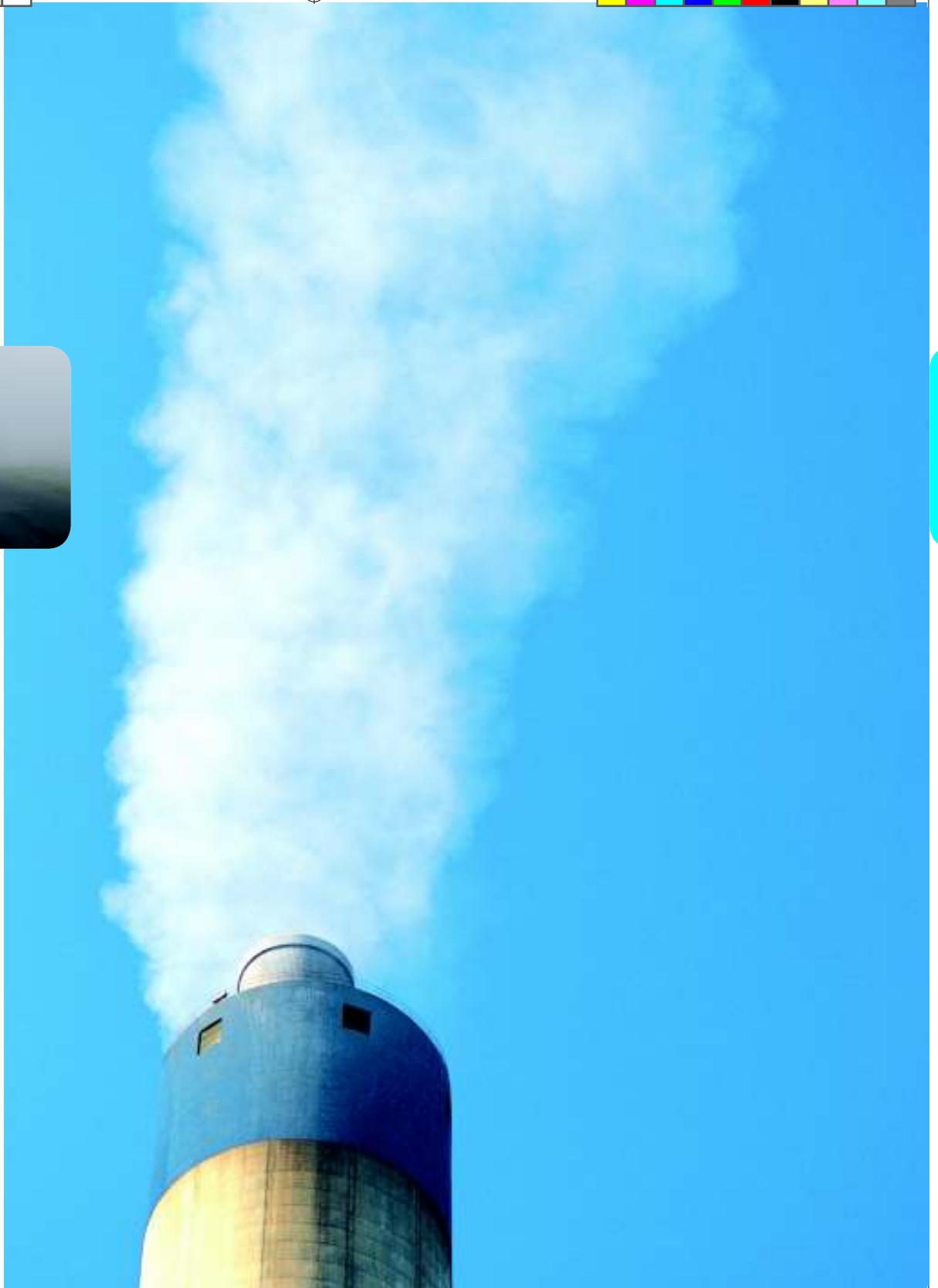
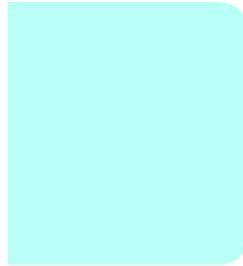
We cannot allow this to happen. The European Union considers it vital to prevent global warming of more than 2°C above the pre-industrial level. There is considerable scientific evidence that beyond this threshold irreversible and potentially catastrophic changes could occur.

In March 2007, EU heads of state and government endorsed an integrated climate change and energy strategy put forward by the European Commission. This sets out the EU's proposals for a comprehensive global agreement to combat climate change after 2012, when the Kyoto Protocol's emission targets will expire. UN negotiations on this agreement are due to be concluded at the end of 2009. They are almost certainly the international community's last chance to prevent climate change from reaching dangerous levels.

The Commission's analysis shows that for the world to have a fair chance of keeping the average temperature rise to no more than 2°C, global emissions of greenhouse gases will have to be stabilised by around 2020, then reduced by at least 50% of 1990 levels by 2050. This ambitious goal is both technically feasible and economically affordable if major emitters act urgently. The benefits of doing so will far outweigh the limited economic costs.

Climate change is a global challenge that can be addressed effectively only through a global effort. This brochure explains the EU's proposals for global action as well as the measures the Union itself is taking.

(1) The IPCC brings together the leading experts from around the world to assess the scientific, technical and socio-economic information relevant for understanding the risk of climate change. Its reports represent the most authoritative global scientific consensus on climate change.



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The high cost of failing to act

The growing evidence of the cost of climate change points to one simple conclusion: we cannot afford to do nothing.

Recent studies, such as the UK government's Stern Review on the economics of climate change, reaffirm the enormous costs of failing to act. These costs – not only economic but social and environmental, too – will fall especially heavily on the poor, in developed and developing countries alike.

Allowing climate change to continue unabated would also have serious regional and global security implications.

The IPCC's Fourth Assessment Report (AR4) shows that climate change is already having strong effects on ecosystems, water resources and coastal zones across the world. It is affecting people in various ways, including higher mortality during heatwaves, water scarcity, and changes in the distribution of diseases carried by vectors such as ticks and mosquitoes.

The Stern Review projects that, in the long term, climate change could cut global gross domestic product (GDP) each year by between 5% and as much as 20% or more if it is not brought under control by cutting greenhouse gas emissions. Taking global action to combat climate change is thus the pro-growth strategy for the longer term. The earlier we act, less costly the action will be.

The European Commission's analysis shows that the investment needed to achieve a low-carbon economy would cost only around 0.5% of world GDP between 2013 and 2030. The emission cuts needed to keep within a 2°C temperature rise would reduce average GDP growth by less than 0.12% points per year up to 2050, the AR4 estimates.

This is a small price to pay to insure ourselves against dangerous levels of climate change. And this figure does not take account of the benefits of cutting emissions, such as reduced damage from avoided climate change, greater energy security, and healthcare savings from less air pollution.



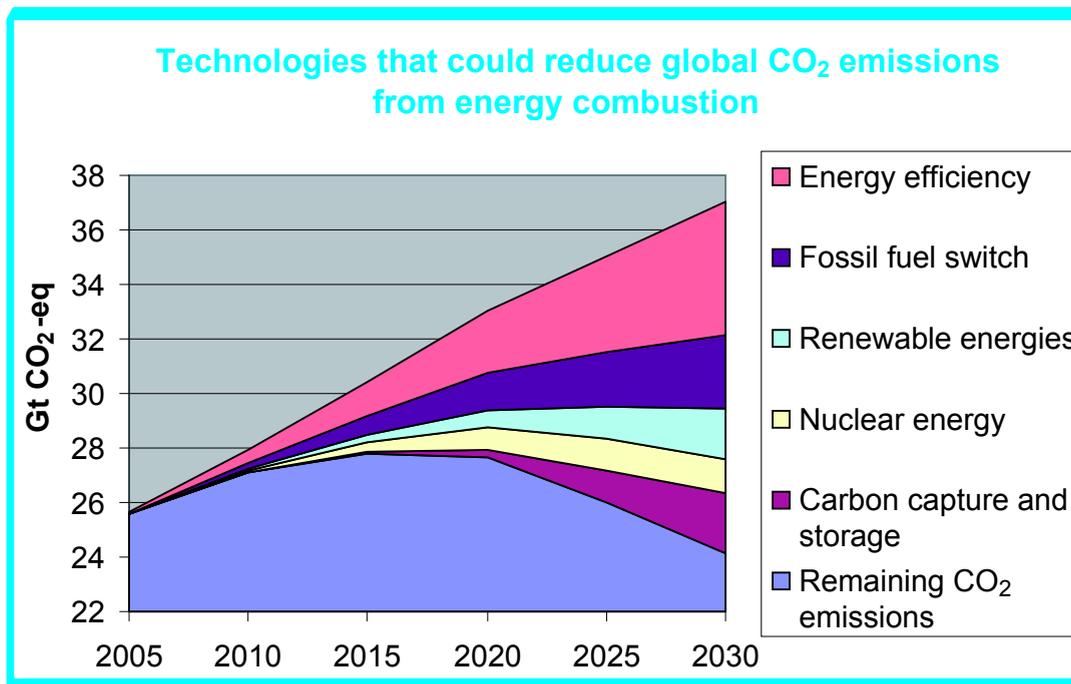
A global challenge that requires global action

The Kyoto Protocol is a vital first step. It has succeeded in putting in place a set of international rules, market-based mechanisms and funds for addressing climate change. It requires developed countries to start reducing their greenhouse gas emissions.

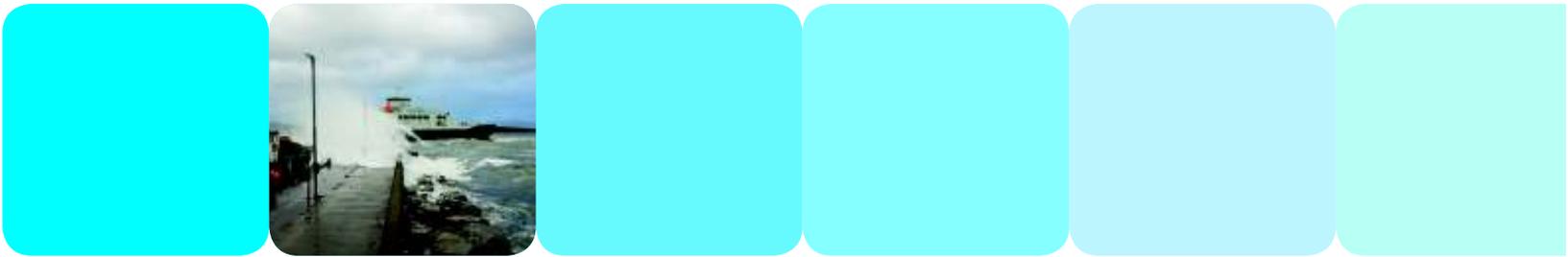
But climate change is a global problem, and it is increasingly clear that only global action can bring it under control. An international agreement covering all major emitters is now needed to succeed the Kyoto Protocol in 2012. The new agreement should build on the structures created by Kyoto but will have to be far more ambitious in order to limit global warming to 2°C.

A global agreement is also important for the business community, which is increasingly calling for a coherent, stable and efficient policy framework to guide its long-term investment decisions. The shift towards a low-carbon global economy is a huge opportunity for business, especially in terms of technological innovation, which can drive economic growth and the creation of new jobs. Europe is determined to take full advantage of this opportunity.

Most of the technologies required to reduce emissions exist already or are well on the way to becoming operational. What is needed now is support from major emitters for a global climate agreement to ensure the deployment and further development of these technologies.



EU initiatives show the way ahead



The European Union is leading global action on climate change, both by setting out what needs to be done internationally to limit global warming to 2°C and by committing to very significant cuts in its own greenhouse gas emissions.

To put the world on track to reduce global emissions by at least half of 1990 levels by 2050, developed countries collectively will need to cut their emissions to 30% below 1990 levels by 2020 and by 60-80% by 2050.

EU heads of state and government made a commitment in March 2007 that the EU will cut its emissions to 30% below 1990 levels by 2020, provided that other developed countries commit to making comparable reductions under the future global agreement. The more economically advanced developing countries also need to commit to making an adequate contribution according to their abilities.

At the same time, EU leaders committed to transforming Europe into a highly energy-efficient, low-carbon economy. They underlined their determination to see the Union gain a 'first mover advantage' by committing the EU to cut emissions by at least 20% of 1990 levels by 2020, regardless of what action other countries take.

These emissions targets are underpinned by three energy-related objectives, which are also to be met by 2020:

- a 20% reduction in energy consumption through improved energy efficiency;
- an increase in renewable energy's share of the market to 20% (from around 8.5% today); and
- as part of the renewable energy effort, a 10% share for sustainably produced biofuels in petrol and diesel in each EU country.

The January 2008 climate and energy package

After extensive economic analysis and consultation with Member States, the Commission in January 2008 put forward a major package of measures to implement these climate and renewable energy targets. This initiative complements ongoing work to improve energy efficiency. EU leaders have expressed their wish to see the proposals become law by early 2009.

Central to the strategy is a strengthening and expansion from 2013 of the Emissions Trading System (EU ETS), the EU's key tool for cutting CO₂ emissions cost-effectively.

The cap on emission allowances for the sectors covered by the system – power generation, energy-intensive manufacturing industry and, from 2011 or 2012, aviation – will be cut by 1.74% annually until at least 2028. This means that by 2020, the number of emission allowances will be 21% below 2005 levels.



By fixing the limits on emission allowances for the medium term well in advance, the EU is providing the investment certainty that will drive the large-scale development and deployment of emission-reduction technologies and low-carbon solutions. Once a global agreement has been reached, the EU cap will be automatically adjusted to a stricter reduction target as necessary.

Broadening the scope of emissions trading

The scope of the system will also be extended to include further big industrial emitters, such as the chemicals and aluminium sectors, and greenhouse gases besides CO₂, such as nitrous oxide from fertilisers and perfluorocarbons from aluminium.

The current system of having 27 national caps on emissions from the ETS sectors will be replaced by a single EU-wide cap. The free allocation of emission allowances to businesses covered by the system will be progressively replaced by the auctioning of allowances from 2013, reaching full auctioning by 2020. However, exceptions to this principle could be made for certain energy-intensive industries if their competitiveness were judged to be at risk.

Auctioning will raise considerable revenues for Member States, and the Commission suggests that at least 20% of these should be earmarked for combating climate change.

Strengthening the EU ETS through these changes will make it a more attractive partner for linking with similar cap-and-trade systems being developed elsewhere in the world at national and regional levels. The development of a network of linked schemes will, in turn, strengthen the global carbon market.

Tackling emissions from non-ETS sectors

Sectors not covered by the expanded ETS – such as transport (except aviation), housing, agriculture and waste – will still account for almost 60% of the EU's overall emissions. The Commission proposes that these non-ETS sectors should, collectively, cut their emissions by 10% of 2005 levels by 2020.



Each Member State will make a fair contribution to this effort by meeting national emission targets that are differentiated according to its relative wealth (measured by GDP per capita). The national targets proposed range from a 20% emissions reduction by the richest Member States (Luxembourg, Denmark, Ireland) to a 20% emissions increase by the poorest one (Bulgaria).

This approach means the less wealthy EU Member States will have room to continue growing their economies but will still need to keep their emissions below 'business-as-usual' levels. It gives practical effect within the Union to the international principle that countries at different levels of development have "common but differentiated responsibilities" in tackling climate change.



The proposals aim to ensure the EU delivers on its commitment to reduce emissions by at least 20% of 1990 levels by 2020. However, they also put in place the necessary arrangements for scaling this up automatically and proportionally in line with any higher international target decided under the future global agreement. In particular, substantially higher amounts of credits from emission-saving projects in third countries would be accepted into the EU ETS under an ambitious international agreement.

National renewable energy targets are also proposed for each Member State. These will contribute to achieving the reductions in greenhouse gas emissions as well as to increasing the EU's energy independence. The package also sets out sustainability criteria that biofuels must meet to ensure they deliver real environmental benefits.

Promoting carbon capture and storage

In addition, the proposals seek to promote the development and safe use of carbon capture and storage (CCS), a suite of technologies that allows the carbon dioxide emitted by industrial processes to be captured and stored underground where it cannot contribute to global warming. The European Commission plans to encourage the construction of 10 to 12 large-scale demonstration plants in Europe by 2015 and to see CCS technology become commercially viable by around 2020.

Revised guidelines on state aid for environmental protection, also put forward as part of the package, will enable governments to support CCS demonstration plants.

The January 2008 package implements the most ambitious set of climate and energy targets anywhere in the industrialised world. It underlines the EU's leadership and shows that making the deep emissions cuts necessary to avert dangerous climate change is fully compatible with continued economic growth and prosperity. Its estimated costs are low, reducing the Union's GDP growth by just 0.04-0.06% points per year between 2013 and 2020.





Measures to address transport emissions

While the EU is successfully reducing greenhouse gas emissions from manufacturing, energy and waste, emissions from transport have continued to grow steadily. Efforts are under way to slow and then reverse this trend.

- Legislation is under discussion in the European Parliament and Council to bring emissions from aviation into the EU ETS from 2011. Emissions from all flights arriving in or departing from the Union would be covered from 2012. The European Commission is also considering ways to address emissions from shipping.
- The Commission has proposed legislation to ensure that the EU's long-standing target of reducing average CO₂ emissions from new cars to 120 grammes per kilometre is met by 2012.
- The Commission has proposed new transport fuel quality standards that would reduce greenhouse gas emissions from the production, transport and use of petrol and diesel by 10% by 2020.

Other measures

For 2007-2013, the EU has substantially increased its research and development budget for environment, energy and transport to €8.4 billion. This will help support the deployment of clean technologies as well as further strengthening knowledge of climate change and its impacts.

The EU is looking into possible policy measures, including trade-related ones, to encourage other developed countries to take effective action to combat climate change.

Since 2006, the Commission has been running an awareness-raising campaign to draw the general public's attention to the climate change impacts of their actions and engage it in efforts to reduce these.



Statement by EU leaders on post-2012 action, March 2007

EU heads of state and government outlined the EU's position on post-2012 global action to combat climate change at their European Council meeting in March 2007. The following are key extracts from their summit statement:

"The European Council underlines the vital importance of achieving the strategic objective of limiting the global average temperature increase to not more than 2°C above pre-industrial levels.

The European Council underlines the leading role of the EU in international climate protection. It stresses that international collective action will be critical in driving an effective, efficient and equitable response on the scale required to face climate change challenges. To this end, negotiations on a global and comprehensive post-2012 agreement, which should build upon and broaden the Kyoto Protocol architecture and provide a fair and flexible framework for the widest possible participation, need to be launched at the UN international climate conference... at the end of 2007 and completed by 2009.

The European Council reaffirms that absolute emission reductions are the backbone of a global carbon market. Developed countries should continue to take the lead by committing to collectively reducing their emissions of greenhouse gases in the order of 30% by 2020 compared to 1990. They should do so also with a view to collectively reducing their emissions by 60% to 80% by 2050 compared to 1990.

In this context, the European Council endorses an EU objective of a 30% reduction in greenhouse gas emissions by 2020 compared to 1990 as its contribution to a global and comprehensive agreement for the period beyond 2012, provided that other developed countries commit themselves to comparable emission reductions and economically more advanced developing countries to contributing adequately according to their responsibilities and respective capabilities. It invites these countries to come forward with proposals for their contributions to the post-2012 agreement.

The European Council emphasises that the EU is committed to transforming Europe into a highly energy-efficient and low greenhouse-gas-emitting economy and decides that, until a global and comprehensive post-2012 agreement is concluded, and without prejudice to its position in international negotiations, the EU makes a firm commitment to achieve at least a 20% reduction of greenhouse gas emissions by 2020 compared to 1990.

The European Council notes the increasing share of greenhouse gas emissions from developing countries and the need for these countries to address the increase in these emissions by reducing the emission intensity of their economic development, in line with the general principle of common but differentiated responsibilities and respective capabilities. The European Council stands ready to continue and further strengthen its support for developing countries in lessening their vulnerability and adapting to climate change."

How reducing greenhouse gas emissions will benefit the EU

Besides helping to avert the most damaging impacts of global climate change, reducing greenhouse gas emissions will bring the EU a range of co-benefits. These include improving energy security, reducing air pollution and its associated health and control costs, and increasing employment.

Improving energy efficiency and security

Security of supply is a growing concern as the EU becomes increasingly dependent on imported energy. With 'business as usual', the Union's energy import dependence will jump from 50% of total Union energy consumption today to 65% in 2030. Reliance on imports of gas is expected to increase from 57% to 84% by 2030, and of oil from 82% to 93%.

There is thus a very strong economic case for making more efficient use of resources, as a contribution towards improving EU competitiveness, even before the associated benefits of cutting emissions are taken into consideration. With implementation of the January 2008 climate and energy package, the cost of oil and gas imports is expected to drop by around €50 billion per year in 2020. This estimate is based on an oil price of US\$61 per barrel, so if prices remain higher the saving will be larger.



Reducing air pollution and health costs

Cutting greenhouse gas emissions will also reduce air pollution, which still causes 370,000 premature deaths in Europe every year. The associated air quality benefits of bringing down CO₂ emissions by just 10% by 2020 would yield healthcare savings of up to €27 billion per year. The reduced need for measures to control air pollution will bring additional savings of €11 billion per year in 2020.

Increasing employment

Eco-industries are one of the most dynamic sectors of the European economy, growing at around 5% a year in response to global demand for green technologies, products and services. They employ some 3.4 million people in Europe and offer particular growth potential. Renewable energy technologies have already created 300,000 jobs, and it is estimated that a 20% share for renewables will take this to almost 1 million by 2020 – and possibly more if Europe exploits its full potential to be a world leader in this field.

Developed countries must continue to lead ...

Developed countries are responsible for 75% of the greenhouse gases in the atmosphere today, excluding those from tropical deforestation. These nations have the most financial resources and the greatest technological capacity to cut their emissions. They should therefore be the ones to make the greatest effort to tackle climate change over the next decade.

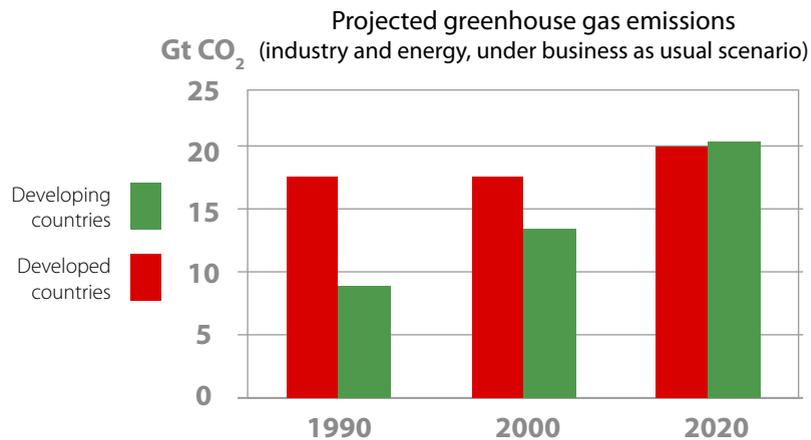
To limit global warming to no more than 2°C above the pre-industrial temperature, the essential next step is for the EU and other developed countries to commit, under a global climate agreement, to cut their collective greenhouse gas emissions to 30% below the 1990 level by 2020.

The future agreement must contain binding rules for monitoring and enforcing the commitments undertaken. In a competitive global market, every country needs to have the confidence that others are playing fair and living up to their pledges.



... But action by developing countries is also essential

While the major effort to fight climate change in the immediate future must come from the developed nations, their actions alone will not be enough to reduce global greenhouse gas emissions.



As developing countries expand their economies their emissions are increasing, and by 2020 these are projected to overtake total emissions from the developed world. It is therefore indispensable that developing countries, and in particular the major emerging economies, start to reduce their emissions growth as soon as possible and begin to cut their emissions in absolute terms from 2020 onwards.

The Bali Action Plan, part of the agreed 'roadmap' that is guiding the UN negotiations on a global climate agreement for the post-2012 period, recognises the need for developing countries to enhance their action to mitigate emissions in the context of sustainable development.

Ending the destruction of tropical forests is also crucial. Deforestation in developing countries generates 20% of global greenhouse gas emissions, more than all forms of transport combined. These emissions need to be stopped and then reversed within two decades. This would also have important benefits for biodiversity conservation and sustainable development.

These actions are perfectly feasible without jeopardising economic growth and poverty reduction. Just as measures to combat climate change will benefit Europe, they are also in the long-term interest of less wealthy countries. Since vulnerable populations are the first to suffer the impact of floods, storms, droughts and the other effects of climate change, developing countries have every interest in joining the global effort.

By 2020, GDP is expected to double in China and India, and rise by 50% in Brazil. The European Commission estimates that taking action to cut emissions would shave just 1% off this GDP growth. In reality, the cost is likely to be even smaller and probably even negative since these estimates do not take into account the benefits of avoiding the damage that would be caused by climate change.

The EU recognises that it has a heavy responsibility to support developing countries and help them combat and adapt to climate change.



The Global Climate Change Alliance

The European Commission has proposed creating a Global Climate Change Alliance between the EU and the developing countries most vulnerable to climate change, in particular the least developed countries and small island developing states.

The intention is to provide substantial resources to address climate change in the countries targeted. These resources will be focused primarily on adaptation and disaster risk reduction, but the developing countries will also receive help to halt deforestation and participate in the global carbon market. The EU will work together with these countries to integrate climate change fully into poverty-reduction strategies.

The Commission has earmarked €50 million for 2008-2010 to launch the GCCA, and it is expected that EU Member States will also provide support.

Many developing countries are already making efforts that are resulting in significant reductions in their emissions growth. There are many policy options available to developing countries where the benefits outweigh the costs. These include:

- Boosting energy efficiency and thus also energy security;
- Implementing policies to promote renewable sources of energy. These policies are often cost-effective, including for rural communities;
- Improving air quality and thereby also public health; and
- Capturing methane from industrial and agricultural sources for cheap energy.

Such policies can be strengthened by sharing good practice. The EU will continue and increase its co-operation efforts in this respect to enable developing countries to play a greater part in global emissions reduction efforts.

There are various ways in which the EU and other developed countries can help developing nations to take further action under a future global climate agreement. The Bali Action Plan provides a solid and balanced starting point for achieving this.

Taking a new approach to the Clean Development Mechanism

The Kyoto Protocol's Clean Development Mechanism (CDM) should be streamlined and expanded. The CDM enables developed countries to offset their emissions by investing in emission-saving projects in developing countries that yield emission credits. The mechanism is generating considerable flows of capital and technology for low-carbon growth in countries hosting such projects.

In future, the CDM will need to build on and support enhanced action by developing countries to mitigate their emissions. The mechanism could be improved by expanding its scope and developing innovative mechanisms to cover entire national sectors rather than single projects as at present. Emission credits would be generated provided that a whole national sector bettered a pre-defined emission standard. This standard could vary according to the circumstances of different host countries.

Improving access to finance for energy infrastructure

Developing countries are going to need investment of more than €130 billion a year in new infrastructure to generate the electricity they require for economic growth. Since power plants remain in use for several decades, it is vital that they make use of state-of-the-art clean technologies that will minimise emissions. This, however, will require an additional investment of some €25 billion annually. Developed countries can help fill the financial gap through a combination of instruments including development aid, innovative funding mechanisms such as the EU Global Energy Efficiency and Renewable Energy Fund (GEEREF), and targeted loans from financial institutions. The earlier this gap can be filled, the less developing country emissions will grow.

GEEREF

GEEREF, the Global Energy Efficiency and Renewable Energy Fund, is an innovative global risk capital fund announced by the European Commission in 2006 to mobilise private investment in energy efficiency and renewable energy projects in developing countries and economies in transition.

GEEREF will help to bring clean, secure and affordable energy supplies to some of the 1.6 billion people around the world who currently have no access to electricity. It will do so by accelerating the transfer, development and deployment of environmentally sound energy technologies. This will combat both climate change and air pollution, and could contribute to a more equitable distribution of Clean Development Mechanism projects in developing countries.

The Commission is putting €80 million into GEEREF over 2007-2010. Additional pledges from several European governments have taken the total to over €110 million. This funding is expected to mobilise additional risk capital of between €300 million and €1 billion in the longer term.

Introducing sectoral emissions trading

Another option is to introduce sector-wide, company-level emissions trading in industrial sectors in developing countries where the capacity exists to monitor emissions and ensure compliance. This would be particularly appropriate for energy-intensive sectors such as power generation, iron and steel, cement, oil refining, and pulp and paper. Such systems would be



either global or national; if the latter, systems in developing countries should be linked with those in developed countries, such as the EU ETS. Targets for sectors covered would be strengthened gradually until they were similar to those set for the same sectors in developed countries.

Taking on binding emission limits as development advances

As they reach a level of development similar to that of developed countries, developing nations should take on binding emission reduction commitments. These should be tailored to their emissions levels and their own technical and financial capacities to limit and reduce them.

Exempting least developed countries from commitments

The least developed countries should not be subject to obligatory emission reductions because their level of emissions is low. These countries will suffer disproportionately from the impacts of climate change, so the EU will further strengthen its co-operation to help them to deal with climate-related challenges, for example through measures to strengthen food security and disaster preparedness. Additional support will be required to allow the most vulnerable to adapt to climate change. The EU and other developed countries should also help the least developed countries to increase the numbers of CDM projects they host.

Energy efficiency standards

An international agreement on energy efficiency standards is needed with the active commitment of countries that manufacture appliances. This will facilitate their access to global markets as well as cutting greenhouse gas emissions.

Further issues a global climate agreement should address



In addition to urgent action by all countries to limit and reduce emissions, the Bali Action Plan includes several other important issues that a future global climate agreement needs to address:

Adaptation to climate change

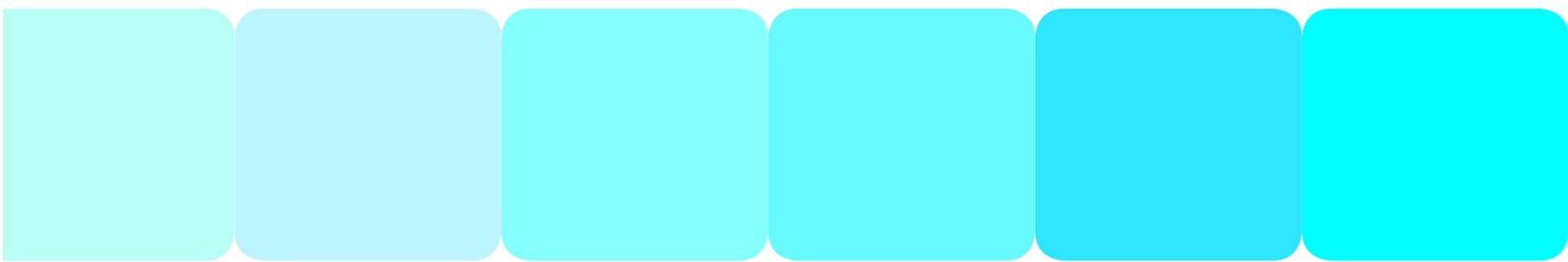
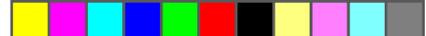
Adaptation to climate change must be an integral part of the future agreement. The particular vulnerability of developing countries to the adverse impacts of climate change means they must be supported in their efforts to develop national adaptation strategies. This is especially necessary for the least developed countries, small island developing states and African countries prone to drought, desertification and floods. The European Union is providing support through the UN's climate funds, the CDM and the GCCA (see box on p. 18). Adaptation to climate change needs to be taken into account in public and private investment decisions.

International co-operation on technology development and transfer

Further co-operation in this field will help speed up the technological change needed to achieve a low-carbon global economy. International research co-operation will increase understanding of the local and regional impacts of climate change and help develop ways to enable populations to combat and adapt to it. The EU should show the way by stepping up its external research and technology co-operation, including setting up large-scale technology demonstration projects, for instance on carbon capture and geological storage and large-scale renewable energy, in key developing countries.

Financial flows and investment for mitigation and adaptation

For both mitigation of emissions and adaptation to climate change there is a need to mobilise the necessary finance and redirect investment flows in a range of sectors in order to put the world on a low-carbon, climate-resilient path. Innovative ways of leveraging finance and investment will need to be developed in the context of the negotiations on a global agreement. The EU is actively engaging in these discussions and has a wealth of experience to share from the formulation of its domestic policies.



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