



INPUT FROM ENVIRONMENTAL NGOS AT THE START OF THE NEXT ROUND OF THE EUROPEAN CLIMATE CHANGE PROGRAM (ECCP)

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Summary

The Kyoto Protocol entered into force in February 2005. Negotiations on the future of the international system are scheduled to start at the UN climate summit in Montreal in late November of this year. The impacts of climate change are showing around the world and scientists emphasise the urgent need for action. There are now just two years left until the start of the five-year period in which the Kyoto targets need to be met and the latest emissions data shows that significant gaps remain to be filled in most EU Member States.

The European Climate Change Program (ECCP) was initiated in 2000 to provide a coherent and interactive framework for deciding on a range of policies that would enable the necessary Kyoto emissions reductions. It is now high-time to assess the extent to which the measures adopted so far under the ECCP are delivering what they promised.

The current NGO assessment of progress in EU climate policy calls for the following set of actions that the ECCP needs to consider:

- Strengthen national implementation of existing policies to ensure they realise their emissions reductions potential.
- Strengthen and speed up adoption of legislative proposals that are still in process to maximise their emissions reductions.
- Urgently adopt additional measures to compensate for emission increases in some sectors or unrealised reductions from other policies.
- Ensure overall sustainability of EU climate policy and avoid locking Europe into high-carbon or high-risk technologies.
- Critically evaluate the volume of external credits to be used for Kyoto compliance to ensure the vast majority of reduction obligations are met through domestic action.
- Look at policies to meet necessary emissions reductions for 2020 (at least 30% domestic reductions compared to 1990).

1. Introduction: the past, present and future of the ECCP

Preventing dangerous climate change is a political priority for the countries of the European Union. Europe's citizens demand political action to stop the emissions of harmful greenhouse gases.¹ The scale and the urgency of the problem are becoming more and more apparent through advances in the science on climate change and observations of the impacts it already has today. Global action to meet this challenge has begun under the auspices of the United Nations through the Framework Convention and the Kyoto Protocol. This needs to be continued with a stronger system and more ambitious reduction objectives to stop climate chaos.

The EU and its Member States have been active and vocal, if sometimes timid, proponents of ambitious coordinated, multilateral efforts to stop climate change since the problem was recognised at a political level in the late 1980s. EU countries, along with other developed countries, have always acknowledged their historical responsibility for global climate change, a principle that was enshrined in the United Nations Framework Convention on Climate Change in 1992. By international agreement, their responsibility as major contributors to the problem entailed the obligation to start reducing emissions of these gases. Concrete quantitative targets were agreed under the Kyoto Protocol, which was adopted in 1997 and entered into force in February 2005.²

An EU-wide strategy to comply with Kyoto targets

In the European Union, the question was never *whether* one should comply with the Kyoto targets, but *how* this should be done. EU Member States had long agreed that, in addition to national action, it would be beneficial to adopt EU-wide reduction policies to ensure cost-effectiveness and reduce competitive distortions from fragmented national efforts. The European Commission, therefore, initiated the European Climate Change Program (ECCP) in March 2000 - a process that was meant to identify the best policy options - in close consultation with Member States and a variety of other stakeholders, including environmental organisations and industry associations. A selection of measures were identified that addressed all sectors of the economy, and that could potentially deliver more than twice the reductions required by the Kyoto Protocol at a cost of less than 20 Euros per ton of CO₂.³

Since 2001, a number of these policies have been adopted; some are already in place and others are still going through the legislative process. These include among others support for renewable energy in many forms (section 3 of this paper), measures to improve energy efficiency (section 4) on the supply and demand side and reducing emissions from big industrial sources through the emissions cap-and-trade system (section 5). Furthermore, measures have been proposed to reduce the production and leakage of highly potent fluorinated industry gases (section 6) and efforts are underway to cut emissions from transport (sections 7 and 8). Traditional energy technology is also being proposed by some as part of an EU climate change policy (sections 9 and 10).

Assessing progress of the ECCP to date

At present, the success of the ECCP in terms of emissions reductions is difficult to determine. Current data (as of 2003) shows that emissions trends are not in line with Kyoto targets in a number of EU countries and some sectors show increases that could nullify

¹ See 2004 Special Environment Eurobarometer "Attitudes of Europeans towards the Environment" at <http://europa.eu.int/comm/environment/barometer/>

² Kyoto Protocol to the United Nations Framework Convention on Climate Change (1997) Full text of the treaty at http://unfccc.int/essential_background/kyoto_protocol/items/1678.php.

³ For more documents and more information, please consult the European Commission's DG Environment's webpage at <http://www.europa.eu.int/comm/environment/climat/eccp.htm>

achievements in other areas (section 2). The reductions expected from the ECCP are not yet evident in the figures as the first policies were only adopted in 2001, but an analysis of the design of these policies and current progress in their implementation goes a long way to assessing their effectiveness in reducing emissions.

With the Kyoto commitment period only two years away, it is high time to make ensure that sufficient domestic reductions are being made. This requires a thorough assessment of the actual reductions and the reductions potential from the current set of ECCP policies. It needs to be undertaken now through a review in the new round of the ECCP - inaugurated at the Brussels conference on the 24th of October 2005. This paper has been prepared by Environmental NGOs as an initial contribution that should inform this assessment. Some clear conclusions can be drawn from the current state of progress in the various policy areas that are presented in the following sections of this paper. The ECCP should concern itself with:

Stronger implementation and filling the gaps

The NGO assessment of the existing set of ECCP policies paints a mixed picture. While it is welcomed that a wide range of instruments have already been put in place, their design has not always been drawn up to ensure the maximum level of climate protection. In addition, progress in national implementation of existing policies is unsatisfactory in many countries. As a general rule, the ECCP review needs to find ways of strengthening the implementation of existing policies to ensure that their emissions reductions potential is fully utilised. This applies to, among others, the Directive to support Renewable Electricity and the EU Emissions Trading System.

A number of measures listed as priority items for implementation in the first ECCP communication in 2001, have not yet been adopted, threatening their contribution to the necessary emissions reductions. Furthermore, they could be significantly strengthened from their current state, for example through mandatory targets. This applies in particular to the measures aimed at improving energy efficiency and the effort to stop the emissions of fluorinated gases.

An assessment of existing policies and the emissions trends in different sectors shows that there are serious gaps in the current set of ECCP measures that endanger the overall success of EU climate policy. Most notably, the increase in emission from transport on roads, in shipping and aviation could eat up the achievements in other sectors. New and additional policies need to be agreed to stop this growth and put these sectors' emissions on a downward trend.

As part of the discussions on EU climate policy, there are many actors that demand that advances in conventional energy technology should be the main sources of emissions reductions. A credible EU climate policy needs to be based on the overriding principle of sustainability and cannot rely on a large-scale continuation of fossil fuel combustion and expansion of high-risk technology such as nuclear power. Research and development of climate-friendly technology for the future should be clearly focused on reducing energy consumption and boosting renewable sources of energy.

Domestic reductions versus external credits

To supplement domestic emissions reductions and ensure compliance with the Kyoto targets, many EU Member States have indicated that they will use taxpayers' money to purchase carbon credits from the mechanisms established under the Protocol. These can be in the form of credits bought from other countries and they can be created from project activities - through the Clean Development Mechanism (CDM) in developing countries and

Joint Implementation (JI) in countries with reduction targets. At present, EU countries have indicated a desire to buy up to 140 million credits every year in 2008-12.⁴

While most environmental groups acknowledge the validity of market-based mechanisms as a climate policy instrument, there are serious concerns over a potential over-reliance on external credits. The main reasons for these are the potentially dubious environmental quality of these credits, a decrease in the signal for technological innovation in Europe and the impact on the credibility of EU climate policy in the eyes of Europe's international partners. Developing countries will see failure to make emissions reductions in the EU as breach of the principle that those historically responsible should reduce emissions first, and will be less inclined to start taking up concrete reduction action themselves in the future. Similarly, developed countries outside of Europe will watch closely if the EU manages to make domestic reductions at low cost. This is a matter of fulfilling promises as well as proving the concept that climate policy does not prevent prosperous societies.

The EU needs to develop a framework to ensure that the use of external credits is only supplementary to domestic emissions reductions, as stipulated by the Kyoto Protocol. It is up to the Member States concerned to take up the opportunity provided by the ECCP policies to cut their emissions.

A credible strategy for 2020 targets

In addition to renewed and stronger efforts to make reductions in the period 2008-12, the ECCP should look at the reduction potential for the deeper cuts that are needed in the longer term. EU heads of State agreed in March 2005 that developed countries should "explore pathways" that would reduce emissions by up to 30% by 2020 (compared to 1990).⁵ It would only be logical for the ECCP to look into a set of policies to achieve at least those 30% of reductions in the EU. European policy-makers should adopt this as a mid-term future target as soon as possible to demonstrate their continued leadership.

Most of the current ECCP policies are already designed for the long run. The review of the ECCP should look at how those policies can be extended and strengthened to make them deliver beyond 2012. New and more ambitious targets for renewable energy for 2020 and longer-term reduction targets for the industrial sector covered by the Emissions Trading System are the obvious and straightforward items. Additional policies will be needed, especially in the transport sector to ensure long-term downward emission trends.

The international dimension of the ECCP

The success of domestic EU climate policy is of crucial importance to a viable international regime to stop global climate change. Global emissions need to peak within the next 15 years to allow the world to limit human induced climate change to two degrees Centigrade on average, a warming that will mean much higher changes of 3-5 degrees in Europe. At this level of warming, serious impacts will already be felt around the world. Failure to achieve this limitation could wreak havoc in certain parts of the world, with more economic damage, human suffering and loss of biodiversity and ecosystems.

EU decision-makers need to be aware of the resonance that a determined, ambitious EU climate policy strategy will have abroad. Other countries will view success in implementing measures to reduce emissions as proof that the European Union is serious about its leadership role on climate change and that political will can clean up and change our unsustainable ways. This will serve as an immensely positive stimulus to the negotiations on the future of the international climate change regime under the United Nations.

⁴ This figure is based on information collected from national members of Climate Action Network Europe

⁵ Presidency conclusions of the Brussels European Council, 7619/05; March 2005; available at http://ue.eu.int/ueDocs/cms_Data/docs/pressData/en/ec/84335.pdf

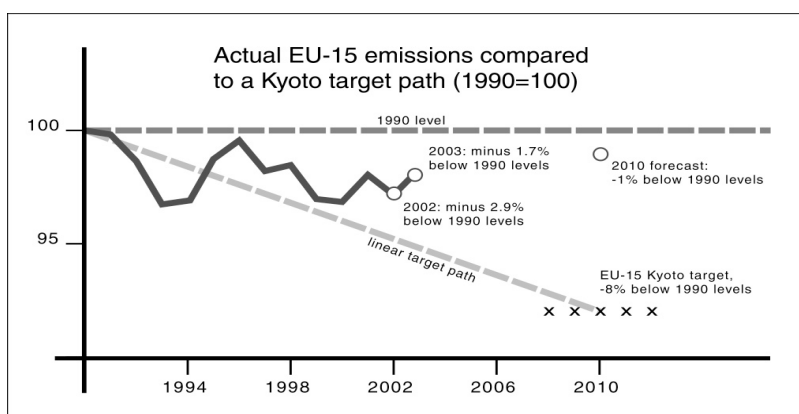
2. The situation to date: EU-25 greenhouse gas emissions

The Kyoto Protocol requires the industrialised countries to ensure that during the period 2008-2012 their annual greenhouse gas emissions are 5% lower than what they were in 1990. This is nowhere near what is needed, but it is a start, acknowledging that climate change is a global threat and needs joint action.

In 1997, the European Union with its then 15 Member States (EU-15) accepted an overall reduction target of minus 8%, meaning that the average annual emissions over the first commitment period 2008-2012 have to be 8% below what they were in 1990. This 8% is sometimes called the 'EU bubble', with some Member States reducing more, others less and some being allowed to even increase their emissions. These targets range from a minus 28% cut for Luxembourg to a 27% increase in Portugal, and the overall reduction of the EU-15 will be minus 8%.⁶ The ten new Member States all have a reduction target of minus 8%, with the exception of Poland and Hungary that agreed to minus 6%, and Cyprus and Malta that have no targets. The EU, as an international body remains responsible for the achievement of the overall target.⁷

The European Environmental Agency reported⁸ that in 2003 emissions of the EU-15 were 1.7% below 1990 levels, while they should have been at minus 5.2% if compared to a linear reduction path in order to meet the requirements of the Kyoto Protocol. EU-15 emissions rose by 1.3% between 2002 and 2003. The countries with the relatively worst performance are Austria and Denmark (both must cut their *current* emissions by about a quarter in order to meet Kyoto) as well as Italy, Luxembourg, Finland and Spain.

At the end of 2004, the European Commission estimated that with existing measures the EU-15 will achieve a reduction of only minus 1% by 2010 rather than the minus 8% as agreed under Kyoto⁹. The European Environment Agency believes that with "additional measures" (not implemented yet but in planning) it is well possible that the EU-15 comes closer to meet its Kyoto targets and hopes to fill any remaining gap with credits from the Kyoto mechanisms Joint Implementation and the Clean Development Mechanisms.



Source:
Greenhouse
gas emission
trends and
projections
in Europe
2004; EEA
2004 with
emissions

⁶ Burden Sharing Agreement: Austria -13%, Belgium -7.5%, Denmark -21%, Finland and France 0%, Germany -21%, Greece +25%, Ireland -13%, Italy -6.5%, Luxembourg -28%, Netherlands -6%, Portugal -27%, Spain +15%, UK -12.5%

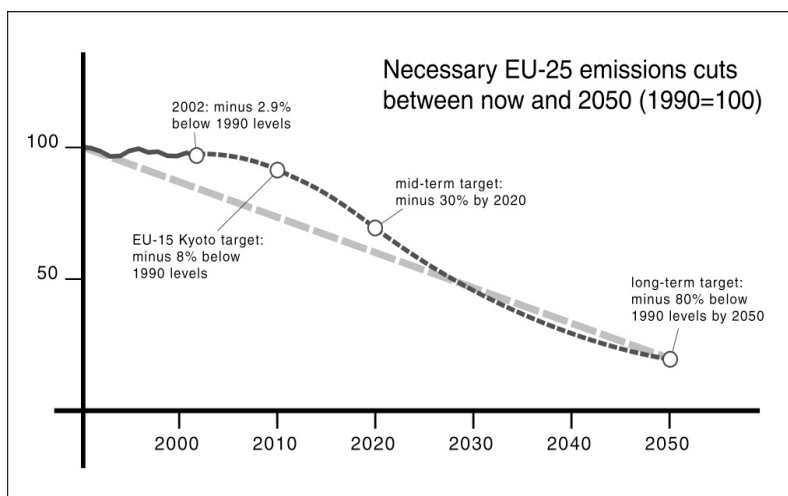
⁷ In addition to the Kyoto targets, some countries have set stronger national emissions targets for themselves, such as the UK (-20% of 1990 CO₂ levels by 2010) and Sweden (-4% by 2010).

⁸ EEA Technical Report No 4/2005, Annual European Community greenhouse gas inventory 1990-2003 and inventory report 2005; EEA June 2005, available at http://reports.eea.eu.int/technical_report_2005_4/en

⁹ European Commission COM(2004) 818 final, Catching up with the Community's Kyoto Target; EC December 2004

Through these mechanisms, EU-15 countries are currently planning to possibly acquire around 140 million credits, of which about half (69 million) would come through Italy and another 20 million each from Spain and the Netherlands.¹⁰ It should be noted that these 140 million credits constitute about half of the gap between current emissions and the EU-15 Kyoto target.

The EEA 2010 predictions do not yet include the expected effects of the EU emission trading system and of other ECCP policies. While the ETS is judged to lead to a reduction in emissions in the participating sectors over national emissions forecasts already in its first trading phase (2005-2007), the emission caps set by Member States have not generated reductions over historic levels. Few EU countries have indicated what limits they will set for the period 2008-12, so the overall impact of that policy is still to be determined.



The situation is quite different for the New Member States, which due to economic changes in the 1990s require almost no effort to achieve their targets. Emissions levels range from -23.4% (Czech Republic) to -66.2% (Lithuania); with the notable exception of Slovenia whose emissions in 2003 were at -3.9% above what they should be if compared to a linear target path in order to meet Kyoto.

The figures illustrate that EU energy and climate policy is not yet up to speed to put Europe's economy on a low-carbon, highly efficient development path. Measures put in place by 2003 are clearly insufficient to deliver the urgently needed greenhouse gas emission cuts. The blame goes mostly to national economy and industry ministers, who block attempts to introduce mandatory targets for renewable energies, energy efficiency rules or fuel consumption standards for cars. On the basis of currently available data the conclusion is that emissions continue to rise in Europe; the real low-carbon transformation has not begun.

At the same time, the EU has set for itself the objective to not exceed a 2°C global average temperature increase and acknowledged that "reduction pathways for the group of developed countries in the order of 15-30% by 2020"¹¹ are needed. This gives a strong indication of the long-term commitment and the understanding that current targets and the policies under the ECCP are but the start of a decarbonisation of our economies.

¹⁰ This figure is based on information collected from national members of Climate Action Network Europe

¹¹ Presidency conclusions of the Brussels European Council, 7619/05; March 2005; available at http://ue.eu.int/ueDocs/cms_Data/docs/pressData/en/ec/84335.pdf.

3. Renewable Energy

The goal of the first phase of the European Climate Change Program (ECCP) was to identify and develop all the most environmentally beneficial and cost-effective additional policies and measures enabling the EU to meet its –8% GHG reduction target under the Kyoto Protocol, equivalent to 336Mt CO₂eq. In the area of energy supply the ECCP identified an emission reduction potential of approximately 150Mt CO₂eq in proposed or implemented measures (RES-E Directive and proposals for directives on transport bio fuels and Combined Heat and Power) equivalent to roughly half of the EU Kyoto target.¹²

The Energy sector is by far the largest contributor of CO₂-emissions in Europe. It is therefore crucial to include the perspectives and solutions for this sector, renewable energies and energy efficiency, in the new phase of the ECCP as an essential part of the strategy to prevent dangerous climate change. The European Commission has clearly stated that accelerated progress is required on renewables, in order to meet the Kyoto targets.¹³

Recent studies have shown that a fundamental reform of the energy sector in the European Union can reduce the EU's annual CO₂ emissions from about 3,600 Million tonnes in 2000 to 1,020 million tonnes in 2050, with a phase-out of nuclear power included.¹⁴ To achieve this reduction of emissions, half of the EU's total energy use has to come from renewable sources in 2050.¹⁵ At the same time, a growing share of renewable energy sources would decrease the dependence on fossil fuel imports and create hundreds of thousands of sustainable jobs. In Germany alone, progressive legislation has already created about 150,000 new jobs in the renewable energy industry.¹⁶

The 1997 White Paper on renewable sources of energy set out a target of 12% for the share of renewables in total energy supply by 2010. This overall target was translated into an indicative target of 21% of the EU 25's electricity use to come from renewable sources by 2010, which was adopted in the directive on the share of renewable energy sources in the electricity sector (2001/77/EC). Non-binding, indicative, targets are set for the Member States who shall take appropriate steps to encourage greater production of electricity produced from renewable energy sources. For the transport sector a bio fuels directive has been adopted, setting an indicative target for member states of 5.75% for the share of bio fuels in 2010.

In spite of these steps in the right direction, with the existing measures in the Member States, the EU will only achieve a share of 8-10% of total energy supply for renewables, instead of 12%.¹⁷ This is due to the absence of European legislation for renewable energy use in the heating and cooling sector and to the poor implementation and compliance with the existing directives on renewables in the electricity and in the transport sector.

The heating and cooling sector accounts for nearly half of the European energy consumption. Instead of significant fossil fuel use, more than 50% of the EU's demand could be met by renewable energies and the use of cogeneration in decentralised renewable en-

¹² European Commission, Second ECCP Progress Report

http://europa.eu.int/comm/environment/climat/pdf/second_eccp_report_xsum.pdf

¹³ Presentation by Jos Debelke, DG Environment, *EU efforts towards Kyoto*, 20 May 2003.

¹⁴ Greenpeace, *Energy Revolution: A sustainable pathway to a clean energy future for Europe*, <http://www.eu.greenpeace.org/issues/energy.html>, September 2005. Wuppertal Institute, *30% reductions of GHG emissions by 2020 – a meaningful contribution to stay below 2 degree global warming*, forthcoming 2005.

¹⁵ Greenpeace, *Energy Revolution: A sustainable pathway to a clean energy future for Europe*, <http://www.eu.greenpeace.org/issues/energy.html>, September 2005

¹⁶ Bundesumweltministerium, *Ausbau der Windkraft auf hoher See bringt enormes Potenzial an Investitionen und Jobs*, 20.09.2005, <http://www.bmu.de/pressemitteilungen/pm/36041.php>

¹⁷ European Commission, *The share of Renewable Energy in the EU*, COM (2004) 366 final, 26.05.2004, http://www.europa.eu.int/comm/energy/res/legislation/country_profiles/com_2004_366_en.pdf.

ergy plants by 2050.¹⁸ In order to make use of this enormous potential, the ECCP should support the renewable energy industry's call for a Directive that would introduce a legally binding target of meeting 25% of the EU's heating and cooling demand from renewable energy sources by 2020 and urge the Commission to take the initiative as soon as possible.¹⁹

In order to ensure compliance with existing legislation and enhance the member states' efforts to meet the objectives of these policies, renewable energy targets in all sectors have to be legally binding. Targets have proven to be a vital instrument to trigger policy measures, define political directions and create investors' confidence. The positive experience of some countries in expanding the use of renewable energy in the electricity sector has shown that ambitious targets can be achieved, if adequate policies are implemented. The share of renewable energies in the electricity sector is growing significantly in those member states that have introduced progressive legislation to support these technologies, such as Germany, Denmark and Spain. Other countries, however, are far behind in achieving their renewable electricity targets and instead of the targeted 21% by 2010 for the EU; only an 18-19% share of renewable energies in the electricity sector is expected unless additional policies are put in place.²⁰ In the transport sector progress on the biofuels directive is even slower.²¹

Apart from making the 2010 targets mandatory, long-term targets for 2020 are required in the electricity, heating & cooling and transport, in order to emphasize the European Union's commitment for renewable energies and create long-term investor confidence.

To achieve the 12% target for 2010, the European Commission has estimated that additional investments of about €10-15 billion per year are necessary.²² This is about half of the annual €22 billion in subsidies that the coal, oil and gas industry receives in Europe in the form of direct money flows or tax breaks, compared to only €5.7 billion for renewable energies.²³ The bias towards fossil fuel use is even greater, when the external costs of producing energy from fossil fuels are included.

Wind energy remains the leading success story in the renewable energy sector. In 2004 alone, the global wind power industry installed 7,976 megawatts (MW), an increase in total installed generating capacity of 20%. Europe continued to dominate the global market in 2004, accounting for 72.4% of new installations. On current trends, wind energy can save more than 100 million tonnes of CO₂ p.a. across Europe by 2010, delivering more than 30% of the EU's total Kyoto Protocol obligation.²⁴ In the long term, photovoltaics will play a major role in electricity generation and could achieve a capacity of 180,000 MW by 2050.²⁵

Biomass is the third largest under-utilised source of renewable energy in Europe, offering a great potential for energy generation. The European Commission is currently working on a Biomass Action plan to enhance its use. We demand effective measures for the promo-

¹⁸ Greenpeace, *Energy Revolution: A sustainable pathway to a clean energy future for Europe*, <http://www.eu.greenpeace.org/issues/energy.html>, September 2005

¹⁹ EREC, *Joint declaration for a European Directive to promote renewable heating and cooling*, http://www.erec-renewables.org/publications/RES_heating_cooling.htm

²⁰ European Commission, *The share of Renewable Energy in the EU*, COM (2004) 366 final, 26.05.2004, http://www.europa.eu.int/comm/energy/res/legislation/country_profiles/com_2004_366_en.pdf

²¹ Ibid.

²² Ibid.

²³ EEA briefing 2/2004, *Energy subsidies and renewables*, June 2004 http://reports.eea.eu.int/briefing_2004_2/en.

²⁴ EWEA, *Global Wind Power Continues Expansion*, 04.03.2005, <http://www.ewea.org/documents/0304-Global%20Wind%20Energy%20Markets%20-%20FINAL.pdf>.

²⁵ Greenpeace, *Energy Revolution: A sustainable pathway to a clean energy future for Europe*, <http://www.eu.greenpeace.org/issues/energy.html>, September 2005

tion of biomass; including standards ensuring that biomass imports and domestic production comply with sustainability requirements.

In order to increase the share of renewable energy, the EU should ensure that:

- A long-term target of producing at least 25% of primary energy demand from renewables by 2020 is agreed.
- Under the overall target legally binding sectoral targets for the share of renewable energy in electricity, heating and cooling and in transport are agreed.
- A new Directive for Renewable Heating and Cooling is agreed, aiming to meet 25% of all heating and cooling energy needs from renewables by 2020, broken down into binding national targets for each Member State.
- Adequate measures are implemented in the Member States to promote technological diversity of renewable energy sources and guarantee priority access to the grid.
- The additional costs of producing energy from fossil fuels, such as damages to human health and the environment are internalised into the energy price so that the real costs of producing energy are reflected.
- The advancement of clean and renewable energy technologies becomes the priority for the Research & Development funds made available under the Financial Perspective 2007-2013 of the European Union.
- The advantages of decentralised renewable energy production are reflected in the investments in the electricity grid.

4. Energy Efficiency

Improving energy efficiency levels both in the supply and demand side is essential in order to attain an absolute reduction in energy consumption and a significant reduction of CO₂ emissions in Europe. Therefore it is crucial that this is integrated into all areas of the forthcoming ECCP review to ensure that the link between energy efficiency, energy conservation and climate change policy is made where possible.

As shown in a new WWF study²⁶, EU greenhouse gases emissions can be reduced by at least 30% by 2020 and energy efficiency plays a major role in all sectors and in all Member States. In order to reach this objective a wide-ranging policy package is needed, involving a comprehensive set of sectors and technologies. To obtain substantial results, energy efficiency measures and programmes need to be coordinated and be part of a broad policy framework, providing the structural support for the development and diffusion of energy efficient technologies and products. If increased energy efficiency levels are not linked to specific policies and measures aiming at steadily reducing absolute energy demand, the European Union will lose a unique opportunity to fight climate change and enhance the security of its energy supply.

Evaluation of new legislation:

Eco-design of energy using products²⁷

The directive was approved in April 2005 and it entered into force in August. It is difficult to foresee the impacts of the directive before the implementing measures are in place. The implementation phase will be key: if properly implemented, it could save up to 13% of domestic electricity consumption if appliance manufacturers will design products with lower energy losses when they are on “stand-by”. This alone would avoid the need for constructing several large power stations around Europe, avoiding significant local pollution and emissions into the atmosphere. It would also reduce imports of fossil fuels, with benefits for our economies and by reducing the “peak load” (the peaks of electricity demand at various times of the day), it would also contribute to reducing the risk of blackouts.

When setting the implementing measures, international best-practice and best-available technology (BAT) benchmarking should be taken into account in order to guarantee the promotion of the best technologies and the best practice to the European consumers and to ensure that the efficiency thresholds imposed at the EU level are as ambitious as the thresholds existing internationally. In order to fully exploit the potential of the Eco-design directive, though, the excessive emphasis on voluntary agreements (recognised as alternative to the adoption implementing measures) should be reduced²⁸ and priority should be given to regulation. Absolute energy consumption standards should be introduced in order to retire the most inefficient products from the market²⁹ and minimum energy performance standards (MEPS) for a large range of products should urgently be set.

²⁶ “30% reductions of greenhouse gas emissions in EU by 2020 – a meaningful contribution to stay below 2 degree global warming. Policies and measures to reduce EU-25 Greenhouse Gas Emissions”, in cooperation with Wuppertal Institute, October 2005. Available at: www.panda.org/climate/EUtarget2020

²⁷ 2005/32/EC

²⁸ A study from the Fraunhofer Institute of Germany on energy efficiency policy showed that while voluntary agreements can be useful in some cases, regulation is what tends to have a relevant impact. The OECD also recently issued a report analysing voluntary agreements for environmental policy making that have been negotiated around the world, concluding that often they tend not to go beyond business as usual.

²⁹ For instance refrigerators consuming more than X kWh/y, cars – of any size and feature- emitting more than 200g CO₂/km or stand-by mode consuming more than 1W.

Energy performance of buildings³⁰

In the European Union, 40% of energy is used in the building sector. According to the European insulation manufacturers association (EURIMA), bringing existing buildings up to current standards for thermal insulation could cut the energy consumption related to buildings by half.³¹ Space heating and hot water production are responsible for approximately 2/3 of the energy demand in dwellings. The directive on the energy performance of buildings was adopted in 2002 and entered into force in January 2003. The directive gave Member States three years for implementation, but as this deadline approaches in January 2006, a revision of the current text is already needed, mainly it currently does not apply to existing buildings with a surface area smaller than 1000m². Energy efficiency in buildings, especially addressing the existing stock of buildings, presents a unique opportunity for large scale, local employment. In France alone, tapping the existing energy saving potential in old buildings (built before 1975, date of the first national building codes) could generate 120 000 jobs³². Therefore, the European Commission should closely monitor the implementation by every Member States and ensure a correct and strict application of the directive. When suitable, infringement procedures against non-complying MS should be put in place as soon as possible.

Directive on Combined Heat and Power

The growth of plants employing cogeneration of heat and power (CHP) technology - together with renewable generation and other measures to promote energy efficiency both on the demand and on the supply side - is crucial so as to promote a sustainable energy economy. Cogeneration can lead to considerable fuel savings through the simultaneous production of electricity and heat (which are conventionally done separately) and therefore also enables considerable reductions in CO₂ emissions. In most liberalised markets, cogeneration has suffered considerably in the past few years, especially because the drop in electricity prices has made it uneconomic compared to other less efficient and more polluting forms of energy³³. Compared to best technology of electricity-only production (efficiency is close to 50% in case of natural gas powered combined cycle gas turbine) public and industrial cogeneration has even a much higher potential to reduce CO₂ emissions with efficiency of up to 90%. The agreed directive is very weak. The existing directive on cogeneration³⁴ doesn't mention any specific mandatory or even indicative national targets (a target of 22% was only included in the Commission Communication): in order to achieve concrete results and seriously promote co-generation, clear targets and incentives need to be set. In addition, heat production could be included in the cap and trade system, since CHP plants are currently disadvantaged compared to normal power plants.

Energy end-use efficiency and energy services directive

This directive is still in the legislative process and en route to its second reading in the European Parliament. It has a high potential to cut energy use in the building sector, but also in the light and electric appliance manufacturing industry. It could be a cornerstone for a sustainable energy system prioritising energy conservation and efficiency, by promoting energy efficiency in buildings and the purchase of highly efficient appliances and equipment. The directive sets annual energy savings targets to be reached through energy efficiency measures and programmes and identifies a target for the public sector and one for the private sector for a period of 6 years. The European Parliament and the Coun-

³⁰2002/91/EC

³¹Eurima's comment on the Green Paper on Energy efficiency.

³²www.negawatt.org

³³The same could also happen in other energy markets around the world that experience liberalisation.

³⁴COM(2002) 415 final

cil have expressed different positions regarding the key provisions to be included in the final text: the nature of the target (mandatory vs. indicative); the differentiation between public and private sector (the need for a higher target for the public sector has been questioned by the Council); the early measures to be taken into account when measuring the energy savings and the methodology to be applied (bottom-up approach vs. top down approach). Generally, Member States are unwilling to accept any obligation to save energy through energy efficiency programmes and measures, while the European Parliament recognises the importance of setting the same obligation to every Member State, even if measures previously adopted will be taken into account when setting the targets.

Member States' current position is quite deceiving: climate change and security of energy supply (high energy cost and dependence on energy imports) are recognised as major threats to the well-being of citizens and economic growth and jobs in Europe. National governments publicly state their commitment to invest in energy efficiency and increase national energy savings, but they do not put it into practice. The Energy Services Directive could capture the vast existing potential of energy efficiency but the final is expected to be disappointing in its level of ambition.

Green Paper on Energy Efficiency

CAN-Europe and its members urge the European Commission to include the following recommendations both in the forthcoming Energy Efficiency Action Plan and in the ECCP review:

- highlight the link between energy efficiency, energy conservation and EU climate change policy;
- adopt the target of at least 20% reduction of today's energy consumption by 2020 as proposed in the Green Paper on Energy efficiency;
- provide specific financial instruments to favour energy efficiency from research to application (special funding in EU 7th framework research programmes, EU regional funds allocated to energy efficiency projects, specific loans and funding allocated to energy efficiency projects by international financial institutions);
- recognize the leading role of public authorities in fostering energy efficiency, through green public procurement and education programmes;
- strongly implement and monitor existing legislation (i.e. Eco-design directive, energy end-use efficiency and energy services directive, energy performance in building) and revise old and outdated legislation (i.e. energy labelling directive);
- adopt new policies in favour of energy efficiency in transport (efficiency in cars, road passenger transport, road freight transport and aviation);
- introduce new energy taxes and ecological financial reform, thereby creating more incentives for energy conservation;
- stop funding fossil fuel and nuclear energy related projects, but support lending for energy efficiency and renewable energy projects, create energy efficiency funds and promote innovative financing schemes and contractual tools;
- provide incentives to improve energy efficiency in buildings (especially rented accommodations and buildings not covered by the Energy performance of buildings directive);
- integrate energy efficiency in the EU relations with third countries (both developing countries and neighbour countries) and include energy and climate policy in the priority agenda;

Green Paper on Security of Energy Supply

A new Green Paper on Security of Energy Supply will be published early next year. The link between the security of energy supply and energy conservation as a key instrument to fight climate change needs to be clear and properly outlined. The new Green Paper should include a specific part on energy efficiency and incorporate energy efficiency measures among the expected solutions. Furthermore, the impact of climate change caused by fossil fuel combustion should be listed among the main reasons explaining the need for enhanced security of supply.

Outlook for the future

Looking at the current initiatives to improve energy efficiency, the conclusion of environmental NGOs is that a review of the European Climate Change Programme should recognise and emphasise the central role of energy efficiency as one of the most effective instruments currently at the disposal to fight climate change. We urge the European Commission to include a working group on energy efficiency in the ECCP review process.

A broad and comprehensive energy efficiency policy should be one of the strongest outcomes of this revision process. Therefore, the Commission should attentively follow the current discussion on the Green Paper on energy efficiency and integrate the outcomes of the public consultation in the second phase of the ECCP.

5. The EU Emission Trading Scheme

The EU Emissions Trading System (ETS) for carbon dioxide (CO₂) from large industrial point sources started operating on the 1st January 2005. The EU ETS aims to reduce GHG emissions in energy intensive industry sectors such as energy generation and manufacturing, making it a cornerstone of EU climate policy. Its success is vital to ensure a significant level of domestic emissions reductions towards the EU Kyoto target and for the long-term transformation to a low-carbon industry sector.

The principal rules of the EU ETS are set in the 2003 Emission Trading Directive.³⁵ The instrument was a focus of discussions in working group one of the first phase of the ECCP and the initial proposal from the Commission was presented alongside the ECCP communication in October 2001. It is one of the ECCP policies that have already moved to national implementation, which is where its real value for the climate is being determined.

The first trading period of the ETS runs from 2005 until 2007, the next period is set in parallel to the time-frame for the Kyoto Protocol targets, which have to be met in the years 2008-12. National Allocation Plans (NAPs) prepared by each Member State identify the number of allowances per country, sector and installation as well as the methodology used to set the allocations. Recommendations for drafting the NAPs are set in the special guidelines prepared by the European Commission and the requirements for monitoring and reporting are set in the Guidelines for Monitoring and Reporting. Despite those legal requirements and recommendations, Member States have had a large degree of freedom to decide upon the total limit of allowances and the methodology applied for allocation of the allowances.

Until the final approval of the NAPs by the Commission, a long process of preparation, negotiation and adoption of this document takes place. Preparation of the NAPs 2005-07 lasted from several months to 1 year in different EU Member States. Evaluation and negotiation processes of the NAPs 2005 – 07 by the EC lasted more than 1 year after the deadline of the NAPs submission to the EC (April/May 2005). The NAPs for 2008-12 shall be submitted to the EC by the 1st July 2006, however only certain countries, in particular, the UK, Ireland and Germany, have already started the preparation process for the NAPs 2008 -12.

Evaluation of progress

Only two of the 25 Member States require reductions by the year 2007 against the base years' period. Loose caps decrease the prices signal to business to invest into cleaner technologies. Considering that around half of the EU 25 countries are not on track to meet their Kyoto Protocol emission targets, such lax implementation of the ETS is unacceptable. The rules of distribution of allowances, limit the extent to which the ETS will trigger investment into cleaner processes and technologies. Member States must ensure that their individual allocations reward installations that use cleaner technology and fuels that produce fewer emissions. EU countries that still need to make reductions towards their Kyoto targets must make ambitious emissions reductions from their energy intensive industries during 2008-12.

The NAP methodologies applied and the consultation processes have not been sufficiently transparent. Only a few countries conducted two rounds of public consultations on the NAP and opened the process to civil society organisations - as demanded by the European Commission - not just industry associations. Furthermore, various data sources

³⁵ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community

employed in the NAPs were not accessible and therefore unverifiable. In particular, the use of sectoral projections on economic development and emissions provoked many questions, which remain unanswered. Policies and measures to reduce GHG emissions in other sectors were often ignored to justify higher emissions.

Member States need to disclose the data that underpins the essential decisions in the NAPs and allow independent verification to create trust in their integrity. The process for developing the NAPs for 2008-12 must be open to the public and involve civil society and industry in equal parts from the beginning.

Future developments

In the views of European environmental organisations, the implementation of the European Union Emissions Trading System (ETS) in the first trading period 2005-07 is disappointing. An analysis of the NAPs shows the failure to realise the positive environmental potential of the ETS. Major improvements are necessary in the national allocation plans for 2008-12, such as the need to set stricter emission limits, the improvement of the allocation rules and the improvement of the transparency of the process and the underlying data. Only then will the EU ETS really deliver on its promise to help achieve the EU Kyoto targets and start the necessary long-term industrial transformation in the most cost-effective manner.

In the short-term (2008-12) it is not likely that there will be significant structural changes in the EU ETS directive in the form of amendments to the legislation. In the long-run, after 2012, significant reductions over current levels of GHG emissions are required in all EU Member States and this could be spelled out more explicitly in a changed directive: Furthermore it is necessary to include, auctioning as the main means of allocating allowances; more harmonisation on the requirements for new entrants and a definition of combustion installations.

Implementation of the EU ETS should lead to the adoption of other instruments for sectors not covered by the ETS to ensure a comparable effort in all sectors. Environmental NGOs welcome the proposal by the European Commission to also cover the aviation sector with a cap through inclusion in the EU ETS, at the same time highlighting that this needs to be part of a package to deal with the many climate impacts of aviation.

In the ETS sector, priority should be given to the GHG reductions in the Member States. Member States should set installation-level caps on JI/CDM credits low enough to ensure that domestic action in the EU continues to be the main means through which reductions are achieved; taking into account their own purchases of external credits. Only high-quality JI/CDM credits should be eligible for use by companies in the ETS.

Member States need to improve transparency and public involvement significantly. Sources of information and the methodology on the basis of which target-setting is being done must be transparent and data must be independently verified. Member States should acknowledge the importance of common guidance from the European Commission and apply it thoroughly.

6. Phasing out fluorinated gases

The industrial fluorinated gases (also known as 'F-gases'): hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆) are extremely potent greenhouse gases because of their high global warming potential. Although they account for a small proportion of overall emissions today, their emissions are projected to rise, hence making them increasingly significant for reaching long-term climate goals.

The 2005 IPCC Special Report on Safeguarding the Ozone Layer and the Global Climate System found that large amounts of F-gases are being stored in existing equipment such as chemical stockpiles and other products (e.g. refrigerators, air conditioners and foam insulation). According to the report, HFC emissions stored in these so-called banks were about 1 GtCO₂-eq in 2002 but are projected to reach about 5 GtCO₂-eq in 2015, a 400% increase. Once the products containing F-gases are decommissioned, it is expected that significant volumes of the gases will be released to the atmosphere, with the largest emissions expected to occur after 2015.

The expanding use of F-gases will make an increasingly significant contribution to global warming in the absence of mitigation measures. The current EU Regulation, which is currently being finalized by the institutions, is based on containment and improved handling, rather than restricting the use of these gases. A recent report³⁶ has found that there are a number of uncertainties in the assumptions of the Regulation, which was based on the Dutch STEK model of containment. The report found that real leakage rates are likely to be in the range of 6.9% to 12.7% rather than 4.5%. This could push the cost-effectiveness of the choice of containment much higher than estimated, from approximately €20 per tonne of CO₂ equivalent to €50 per tonne and reduce the abatement of F-gases in the EU.

It is clear that containment, as an option to reduce greenhouse gas emissions is inferior to phasing out the use of these gases. The phase-out and replacement of F-gases should be the priority for national governments. Trying to contain emissions by keeping track of them and making sure technicians are qualified is a losing battle, given the impossibility of complete leak-tightness and the increasing use of these substances.

Since so many F-gas applications work on slow replacement cycles (refrigerators, air conditioners and foams) and that switching to alternatives requires time and investment, it is imperative that we switch away from F-gases as soon as possible. There are alternatives available for most applications at competitive prices (either currently or in the near future); the reality is already a step ahead. The EU market for domestic refrigerators is dominated by the climate-friendly hydrocarbon technology (Greenfreeze) and major commercial equipment users like Coca-Cola, Unilever and McDonalds have committed to promoting and adopting F-gas free technologies.

Policy makers need to make sure that we do not bestow onto future generations a legacy of F-gases that could slowly leak out into the atmosphere causing serious problems to the climate system. We need to ensure that the F-gas sector is not getting a free pass to continue emitting some of the most powerful greenhouse gases in the world.

³⁶ Anderson, J (2005) 'Is STEK as good as reported? Uncertainties in the concept underlying the proposed European Regulation on fluorinated gases' IEEP, Brussels.

7. Reducing the climate impact of transport

It does not take a lot of introduction to make the point that the transport sector is without a doubt Europe's worst Kyoto performer. While non-transport sectors managed to reduce their GHG emissions by 8% between 1990 and 2003, CO₂ emissions from the transport sector increased by 27%. Transport's share in energy use was 34% in 2003, a figure that is still rising. Passenger cars take more than half of energy; vans and lorries a quarter; ships and aircraft each some ten per cent, and a few per cent goes to inland shipping and rail.

The obvious trends towards more air and road, larger cars, and longer distances indicate clearly that transport's climate impact has not been the highest priority - neither of the EU institutions nor the different Member States. The new phase of the ECCP provides an opportunity to correct this. The ECCP should lead to the urgent adoption of emissions reductions policies for all transport sectors.

Europe's transport system needs changing. Many possibilities exist to move towards sustainable transport. The following three elements form the basics of sustainable mobility:

1. A decoupling of social welfare and economic growth from transport. This is one of the two transport objectives set by the Sustainable Development Strategy and one of the pillars of the Common Transport Policy.
2. A shift towards more environmentally friendly modes of transport. This is the second transport objective set in the Sustainable Development Strategy and one of the key pillars of the Common Transport Policy.
3. An improvement of the climate efficiency within each mode. No objectives have been defined in this field.

Decoupling of transport growth from economic growth

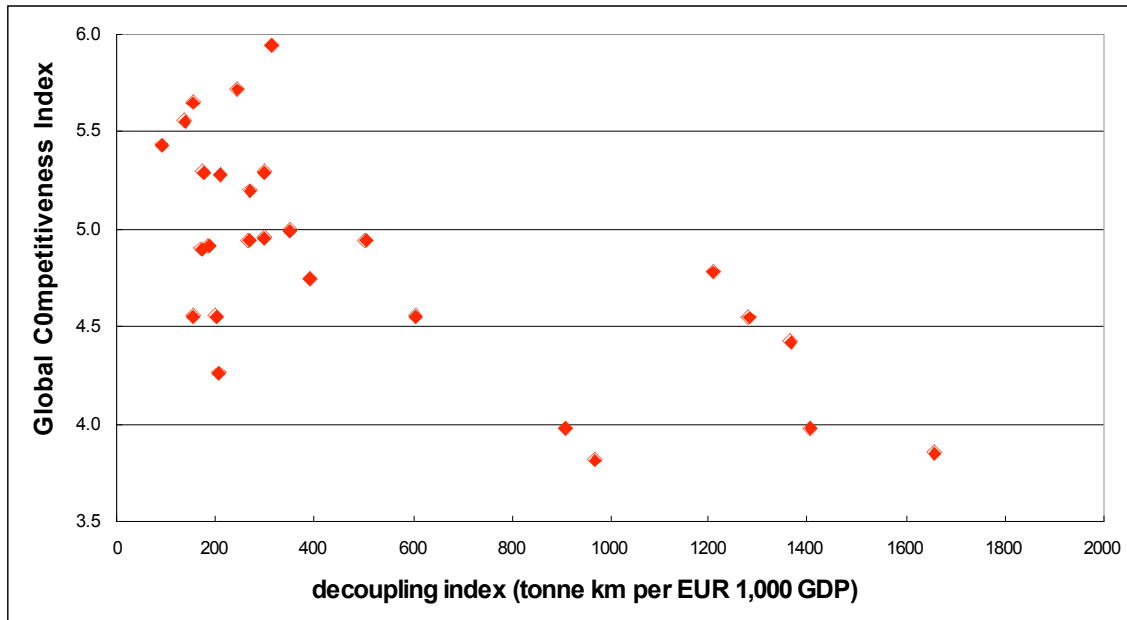
According to data of the European Environment Agency, both in passenger and in freight transport, decoupling of economic growth from transport growth has not taken place. Growth has generally been in line with GDP. However, closer analysis of different countries and regions within the EU show a wide variation of transport intensities per unit of GDP. In the graph below, freight transport intensity of different countries has been put against the country's score on the Global Competitiveness Index. It shows clearly that countries that have a good score on the competitiveness index are generally very transport-efficient. In fact, transport is in many ways comparable with energy efficiency. Every dot in the graph represents a country.

Therefore, Europe's approach to transport policy should be based on the guiding principle that the EU should become the most transport-efficient economy in the world. There is an analogy with energy efficiency here - transport use and energy use are alike in many ways. Both are indispensable to any modern economy and both are a means to an end, rather than an end in themselves. Both are not external effects in themselves but rather an important cause of external effects. But crucially both in the end are huge costs to society and should be used as sparsely as possible.

At the beginning of the 1970s there was a generally held consensus that economic growth and growth of energy consumption inevitably go hand in hand. The Club of Rome used this argument to forecast *ecological* disaster; while right-wing hardliners used it to 'prove' that attempts to break the link (i.e. to save energy) would lead to *economic* disaster. Although energy consumption is still on the rise, it is now, thankfully, clearly nonsense to view energy saving as a bad thing.

Thirty years on, transport policy makers have some catching up to do. There is abundant scientific and empirical evidence that reducing transport can have numerous positive consequences (better traffic flow, improved safety, reduced environmental and health impacts) – especially when transport prices are too low, as they generally are. Therefore, the next section deals with getting the prices right in transport.

Graph: Transport efficiency and global competitiveness



Right prices for all transport services

The legal framework on transport pricing is very incomplete at European level. This has the unfortunate effect of providing the perfect excuse for every individual mode to point at the – perceived or real – unfair way in which it is treated vis-à-vis its competitors. The European Commission should therefore propose as soon as possible a comprehensive framework on infrastructure charging for all transport modes. Such a framework should reduce existing distortions between different modes of transport and give clear incentives to better use of existing infrastructure capacity and improved environmental and safety performance. In the meantime, the negotiations on the Eurovignette Directive should take external costs into account.

Focus on Aviation

Aviation is the fastest-growing source of greenhouse gas emissions. The EU's CO₂ emissions from international aviation have increased by 73% between 1990 and 2003. By 2020, aviation emissions alone will account for 8-24% of the total climate impact of the EU, depending on the growth of air travel, reduction in emissions from other sectors, and the 'multiplier' on CO₂ emissions.

Aviation provides not only the most climate intensive connection between two places; it also leads to growing distances between the departure and destination of a trip. The growth of aviation is not just a virtue of the aviation sector itself. On numerous occasions, attention has been drawn to the fact that a range of subsidies – whether open, hidden, direct or indirect – that distort competition have played a big role as well. Besides the di-

rect subsidies and special loans to airports and aircraft manufacturers (Airbus/Boeing case at the WTO!), there is massive indirect support in the form of a tax exemption for kerosene, exemption of VAT on international tickets, e-shopping on flights from and to the EU. Apart from the abolition of duty-free shopping for intra-EU flights in July 1997, which was relatively insignificant, the EU has not taken any initiative to correct this. Aviation is the fastest growing energy consumer in the EU. Energy use and CO₂ emissions are rising by 3% per year. The ECCP should establish a dedicated working group to discuss the swift implementation of measures to reduce the climate impact of aviation.

Reducing the climate impact of air travel requires a package of different activities and measures:

1) Including aviation into the European Emissions trading system (EU ETS)

The European Commission in its Communication on Reducing the Climate Change Impact of Aviation has recently suggested this as the way to curtail the impacts of aviation. NGOs have welcomed this as a first step but have always stressed the need for a package of measures to combat the climatic impact of the sector and to level the playing field in transport. Essential elements of this inclusion are:

- The allocation of permits to the aviation sector should be in line with those of other sectors, i.e. -8% compared with 1990 levels for 2008-2012 and -15 to -30% compared with 1990 levels for 2020. Allocations should be set centrally at EU level, as no individual member state will have any incentive to put an effective ceiling on the sector.
- The geographic scope should be as wide as possible. All flights from and to EU airports should be included in the system, which would give a coverage of some 360 MT of CO₂ by 2020, in contrast with only 80 MT for intra-EU flights.
- Permits should be auctioned, not grand-fathered. Aviation is a highly dynamic sector with many new entrants. In addition, auctioning would partly make up for the lack of fuel taxation.
- Non-CO₂ effects should ideally be dealt with through ancillary measures such as a NO_x emissions charges, at airports to start with, and changes in Air Traffic Management to prevent formation of contrails and cirrus clouds. As long as such ancillary measures are not in place a multiplier on CO₂ emissions should be used to ensure the environmental integrity of the scheme.

2) Kerosene taxation or en route charging remain a necessity

The inclusion of aviation into the EU ETS will give the aviation sector incentives to reduce its CO₂ emissions, but these incentives will remain relatively limited. Prices in the EU ETS are likely to stay in the EUR 10-30 range, which is unlikely to lead to strong reduction efforts in the aviation sector. In addition, aviation still enjoys a zero-tax rate for fuel, with a few exceptions (domestic flights in Norway, Netherlands). This distorts the transport market. A kerosene tax on intra-EU flights is legally possible. As a recent European Commission paper (*'New sources of financing for development'*, April 2005) correctly points out, *'a kerosene tax on intra-Community and domestic flights could be implemented by making it mandatory while allowing for the possibility to exempt all carriers on specific routes where non-EU carriers operate and benefit from exemptions under unchanged Air Service Agreements'*. Ongoing re-negotiation of ASAs would then gradually allow for the taxation of third country carriers on intra-EU flights. Fortunately, the aviation market is not yet very open and non-EU carriers only execute a small share (less than 5 per cent) of intra-EU flights. In October 2005 some 15 bilateral air service agreements of the EU with third countries have been re-negotiated and the fuel tax exemption struck through.

3) Ticket taxes to make up for VAT exemption

There is no justification to keep the VAT privilege that the aviation industry has enjoyed for decades. Introducing ticket taxes may turn out to be easier than the factual introduction of VAT on international air tickets, and the purpose is more or less identical. There is unlimited policy freedom in this area – some Member States have already introduced such taxes.

4) Aviation subsidies

All other EU, national, regional and local subsidies which directly or indirectly promote aviation should be abolished.

Focus on shipping

Shipping and aviation have a lot in common. Both are highly global modes of transport, playing an important role in international trade and relations. Both are rapidly growing modes of transport. Typical forecast growth rates of global shipping are 3% per annum, ranging from 1-2% for oil cargo and some 8-9% for container shipping. Both aviation and shipping are modes that are used most of the time out of human eyesight. Over the last years, ships have increased their average speed, and therefore their CO₂ emissions. This “speeding on the sea” is only possible, because ships can use cheap fuels, mostly residual products from the refineries. A rising demand for energy is here linked to air quality problems in coastal areas. What we do not realise is that about 70% of shipping occurs within a distance of 400 kilometres from the shoreline.

For the climate, the following steps are necessary:

- Preparation of an IPCC Special Report on Shipping and the Global Atmosphere, analogous to the Special Report on Aviation and the Global Atmosphere. Only once a broadly accepted estimate of the impact is published, real action can start
- Adoption of a new global maritime environmental policy. Now that Annex VI to the Marpol Convention has been ratified, the floor is open to talk at international level about broader environmental responsibilities for the global shipping sector. This should include turning IMO’s initiative of voluntary ship CO₂ indexing into a binding instrument and start discussions on its use for policy instruments
- Develop the Framework Directive on transport infrastructure charging as promised in the 2001 White Paper on the Common Transport Policy, and apply it to inland and maritime waterways. A European system of differentiated fairway dues for all inland and maritime waterways should reflect environmental performance, safety risks and infrastructure use.
- Introduce a speed limit on all EU waterways.

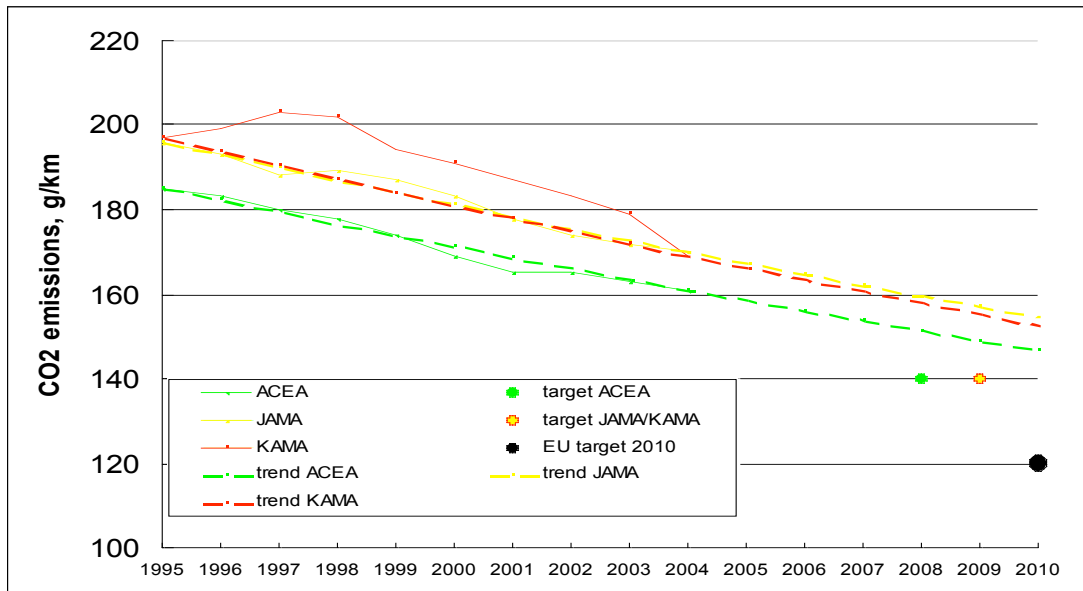
Focus on cars

Road transport generates more than one fifth of all CO₂ emissions in the EU, with passenger cars and vans being responsible for 15 per cent. Total passenger car CO₂ emissions in the EU have been rising by on average 1% per year.

The commitments of the European, Japanese and Korean car manufacturers' associations to reduce CO₂ emissions to 140 g/km by 2008/2009 are the first pillar of the EU's strategy to reduce CO₂ emissions from passenger cars. The other two pillars are consumer information (fuel efficiency labelling), and fiscal incentives. On average, CO₂ emissions from new passenger cars sold in the EU-15 decreased by some 13% in the first nine years of the commitment. In the remaining 4-5 years a 14% reduction will be needed (See

the graph below). The trend lines are based on a constant year-on-year improvement in relative (i.e. percentage) terms.

Graph: Developments and targets of voluntary commitment with carmakers



It is certain that all three associations still need to make major additional efforts to increase the average annual reduction rate and reach the 140g CO₂/km target by 2008/9, let alone the target of standing EU policy for 2010, which is 120g/km.

Because of the non-committal nature of the agreement and the incomplete monitoring by the European Commission, it is very difficult to know the reality of the results of the industry's efforts under the agreement. It is, e.g. practically impossible to see which car-makers have done well over the years and which have not.

What we do know is no reason for optimism about targets being met under present circumstances. New cars grow heavier every year, with 12 kilograms on average. The power of their engines increases correspondingly. Thus, the fuel efficiency gains that have been made by technological innovation of engines, have been offset by more power and higher weight, not to mention more energy consuming gadgets in the average new car sold. This trend must be broken, if not reversed. The 2003 official joint Commission/industry monitoring report states that ACEA is no longer confident that it can meet its target of 140g/km.

As for the realisation of the 120g/km target, the industry says that the cost of applying the necessary technology to new cars is prohibitive. This is in serious conflict with the findings of the most comprehensive study on the topic so far, which shows that the average cost per vehicle to achieve the 120 g/km target by 2012 would be €577.³⁷ Also based on this study it can be concluded that the 120g/km target for CO₂ emissions from new cars through technological means (i.e. better fuel efficiency) is, from an economic point of view, a 'no regret' measure of climate policy. The benefits from fuel savings are very likely to exceed the costs of better technology.

³⁷ This is an IEEP/TNO/CAIR study (July 2005) that can be found on http://europa.eu.int/comm/environment/co2/pdf/cars_ia_final_report.pdf. The study assesses and synthesises all previous studies on the topic so far, notably from Ricardo; DLR; the Joint Research Centre and Arthur D. Little. The study is the only one so far to recognise the importance of the quality of policy options, in particular their degree of flexibility, in relation to the costs. The more flexible the policy is, the lower the average cost per car.

Europe should therefore move as quickly as possible to legally binding fuel economy standards, just like the other important economic regions like the US, Japan and China. Such fuel economy standards should respect the following principles:

- They should give manufacturers an incentive to improve the fuel efficiency of every model sold, not just to those that do not meet the standards.
- They should be framed in such a way that they do not give incentives to make cars heavier, powerful, wider, or higher because such incentives are counterproductive.
- They should reward both early action and year-on-year improvement.

In addition, a range of other EU-wide measures can be identified to curb CO₂ emissions from passenger cars:

- Change the tax base of both registration and circulation taxes to CO₂ (and not abolish registration taxes as the recent Commission proposal says).
- Improve and harmonise the car energy label so that it gives colour codes and fuel costs per year.
- Adapt the test cycle to include energy use by electrical equipment such as air conditioning, during more dynamic and higher speed driving.
- Extend CO₂ standards to light commercial (N!) vehicles, better known as vans.
- Fit equipment to improve in-use fuel efficiency such as a gearshift indicator and fuel consumption and tyre pressure monitors.
- Introduce tyre energy labels and prohibition of the least energy-efficient tyres.
- Supply vouchers for driver training when a car is purchased.
- Implement a code to refrain from advertising top speed power and to avoid positive associations with these qualities; and to spread advertising budgets equally across the product range rather than on high-CO₂ cars.
- Include mandatory fitting of Intelligent Speed Adaptation (ISA) in the type of approval procedure for cars that links to local speed limits. This regulation should enter into force as soon as maps covering speed limits in the EU are available. This process is now well under way, driven by commercial aspirations or mapping companies, and is likely to be completed in 2009.

The ECCP should as a matter of urgency address the growth of emissions in all sectors of transport and discuss the introduction of the measures outlined above.

8. Carbon Capture and Storage (CCS)

Burning fossil fuels to generate electricity is the largest single source of human-made greenhouse gas emissions, accounting for 37%³⁸ of worldwide emissions and 39% of Europe's. Coal is the most carbon intensive fossil fuel, producing 70% more CO₂ emissions for the same energy output as natural gas. Reductions in greenhouse gas emissions in the order of 80% by 2050 are needed, but clearly can only occur as a result of fundamental changes away from conventional use of fossil fuels.

Europe must build a sustainable energy system that can power its energy needs without harmful social and environmental impacts. This will require significant increases in energy efficiency and swift deployment of renewable energy technology. Climate policy cannot wait for any one technology – we need a package of mitigation options to reduce the impact of climate change. In fact the recent IPCC report on Carbon Capture and Storage (CCS) highlighted in the Summary for Policy Makers, that no single policy option will provide all the emission reductions needed³⁹. Particularly over the next decades when Europe will need to undertake a gradual transformation of its energy supply the onus is on governments to ensure that we do not lock into an energy system based on dirty coal-fired power stations with high greenhouse and environmental pollution for decades to come.

The Commission has presented the option of carbon capture and storage (CCS) - capturing the CO₂ emissions and storing them in geologic reservoirs – as a low-carbon technology. However, CCS faces daunting technical, regulatory, economic, environmental and public acceptance hurdles.

The most significant technical hurdle concerns the risk of re-release of CO₂ from underground storage into the atmosphere. Leak rates need to be extremely low or the benefits of CCS are negated. Although CO₂ injection is common in oil field operations, it has never been conducted on such a scale or with long-term integrity as a key goal. More research and practical experience is needed on issues including the selection of suitable reservoirs, injection methods, reservoir integrity, long-term monitoring, and remediation of leaks. CCS will never deliver zero emission fossil fuels.

Large scale CCS would also need a new regulatory and legal framework to implement best practices. One key policy issue is the assignment and enforcement of liability for any subsequent release of CO₂.

CCS would inevitably be more costly than conventional combustion of fossil fuels. The Commission's communication on climate change highlighted that billions of dollars⁴⁰ are spent annually to subsidise fossil fuels, the most significant contributor to global warming. Governments should not divert public resources away from renewable energy technologies and energy efficiency to support CCS. The costs of capturing and storing CO₂ will include: capturing the pollution, transportation to suitable locations and monitoring and verification to ensure the permanence of the stored CO₂. This technology is currently not a cost-effective option and will not 'fill the gap' to stabilise greenhouse emissions.

The Commission's staff working paper highlighted the issue that CCS could be used to "prolong the life time of fossil-fuel-based technologies"⁴¹. NGOs are particularly concerned about this statement, if Europe is serious about protecting the climate it needs to be serious about transforming the current energy system from an unsustainable one based on

³⁸ World Coal Institute, (2003); International Energy Agency, (2003)

³⁹ International Panel on Climate Change (2005) 'IPCC Special Report on Carbon Dioxide Capture and Storage.'

⁴⁰ COM (2005) 35 Commission Communication 'Winning the Battle Against Climate Change' – In 2004, the European Environmental Agency estimated annual energy subsidies in the EU-15 for solid fuels, oil and gas amounted to more than € 23.9 billion and for renewable energy to € 5.3 billion.

⁴¹ Commission Staff Working Paper (2005) 'Winning the Battle Against Climate Change: Background Paper', p.45.

fossil fuels to a sustainable one based on renewables and energy efficiency. Relying on CCS as a solution to climate change ignores the significant environmental and social impacts associated with extraction, transportation and burning of fossil fuels.

CCS will also face hurdles of public acceptability and will require an informed public debate. This includes not only siting and operating storage reservoirs, but also the other environmental impacts of fossil fuel extraction and use.

CCS must not be researched and developed at the expense of other environmentally sound, available, technologically feasible solutions to climate change. Global warming policy must include a robust and diverse portfolio of mitigation measures. Even if CCS can overcome its many hurdles, it is by no means adequate on its own. We need aggressive deployment of renewable energy and efficiency to meet global energy needs. Technology development must be coupled with strong policy frameworks that help drive CO₂ emission reductions. This means binding limits on emissions. Without these signals, it is not guaranteed that emissions will be reduced.

9. Hydrogen and Nuclear Energy

Hydrogen

Hydrogen fuel could play a long-term role in solving the problems of global warming and energy security if it is developed in the context of a sustainable energy system using high-efficiency, non-polluting fuel cells and if it is produced from non-polluting energy sources. There are two key issues to bear in mind: firstly, hydrogen is only an energy carrier not an energy source, therefore the role that hydrogen can play in a sustainable energy system will be the extent to which it is produced from non-polluting sources. Secondly, even optimistic predictions for hydrogen expect that significant application is two decades away or even further into the future. Short and medium-term strategies are needed to improve the efficiency and reduce greenhouse gas emissions. We cannot afford to wait twenty years or more. In the long-term, we need a diversified portfolio for R&D, and cannot assume that the “hydrogen economy” is the best or only strategy. If Europe decides to develop hydrogen and fuel cell technology as one element of a sustainable energy system it has to guarantee that hydrogen will be produced from renewable sources of energy.

It is clear that if we do nothing to stop the threat of climate change or reduce Europe’s oil dependency until a hydrogen economy is ready, these problems will be impossible to solve. A responsible, sustainable European energy policy that effectively addresses both climate change and energy security must include: a strong analysis of the research needs and the related elaboration of research recommendations for renewable energy based hydrogen production; an effective management system for the transition to renewable energy based hydrogen production and policies to devise higher targets for energy efficient technologies.

Nuclear energy

Nuclear energy is dangerous, expensive and unnecessary. The risk of nuclear accidents, the production of highly radioactive waste and the issue of nuclear weapons proliferation are but a few reasons why nuclear power needs to be phased out.

In the context of EU policy-making, priority must be given to addressing how the decommissioning of existing nuclear installations and the management of radioactive waste is financed. Recent state aid cases have demonstrated the failure of many nuclear generators to make sufficient provisions from electricity sales, in order to cover the costs after reactors have closed down. In particular, a new internal market law is required in order to ensure that recent large subsidy schemes are not repeated.