Friends of the Earth Europe

“Each Party included in Annex I shall, by 2005, have made demonstrable progress in achieving its commitments under this Protocol.”*

How the European Union responds to the global threat of climate change. An assessment by Friends of the Earth Europe; Brussels, June 2005

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Printed in Belgium. Available for download at http://www.foeeurope.org/climate.

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* Article 3.2. of the Kyoto Protocol. See http://www.unfccc.int

1. Preface

The Kyoto Protocol, which all European Member States have ratified, requires that parties have, by 2005, "made demonstrable progress" in fulfilling the Protocol's requirements to cut emissions, which are a joint reduction of 8% for the existing fifteen EU Member States (prior to 2004) and 6% or 8% for most of the ten new Member States. Whilst setting this target is one thing, meeting it is quite another. A different matter again is using the opportunity to put Europe on a low-carbon development path that enables far deeper cuts in the mid- and long-term.

This report gives a brief overview on EU policies to help avert climate change. With the aim to be brief and digestible for the readers, many details have been left out. The key message from this assessment is that Europe must to a lot more in all policy areas to fully face up to the challenge of climate change. This also means a shift in perspective, seeing climate change not as an isolated environmental problem but as a threat to the very fundaments of our society as we know it today.

Most European leaders deliberately overlook the need to cut emissions by at least 30% by 2020 and by 80% by 2050 in order to avoid irreversible and highly destructive climate change. Europe refuses to acknowledge its 'climate debt' towards poor countries that suffer from climate change caused by emissions for which such countries were not the source. Europe runs the danger of loosing its global leadership role in the battle against climate change. Europe is failing to put its economy on a low-carbon path.

Europe is not even on track to meet the meagre targets of the Kyoto Protocol.

Facing the current slowdown in some parts of the European economy, an often-heard argument against committing to effective action on climate change is that Europe cannot afford to lose more on competitiveness in the context of globalisation. It is true that certain industry sectors will have to change (and some others will have to disappear altogether); and therefore it is understandable that some businesses fear for their profits. But governments should be looking at the economy as a whole rather than at individual companies and sectors. The economy can only win if in particular the cost of inaction is fully accounted for.

The European Commission has stated recently that it "does not expect any major negative competitiveness impacts from EU climate policies"[1] and has estimated that the costs of reducing emissions by an annual 1.5% between 2012 and 2025 (leading to roughly minus 25% in emissions compared to 1990, if current Kyoto commitments are met) would reduce the GDP of the EU-25 by about 0.5% compared to taking no further action[2]. In a moderate growth scenario[3] that would mean Europe would get slightly more than 60% richer not on 1 January 2026 but instead just three months later, on 1 April during the same year -- nobody could seriously argue that this is too high a price[4]. The costs would turn into

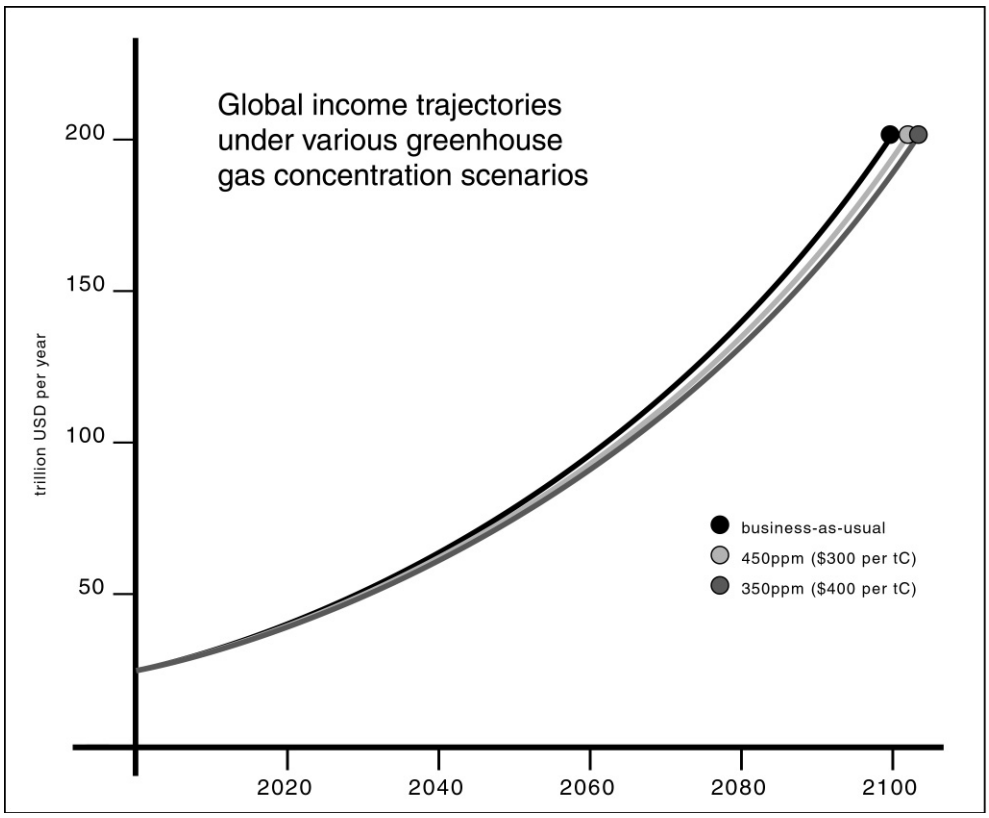
[1] Reply by trade commissioner Peter Mandelson to the oral question H-0123/05 by MEP Caroline Lucas, March 2005 in the European Parliament.

[2] see footnote #21.

[3] Assuming 2.5% GDP growth per year in the EU-25, using 2003 GDP figures from Eurostat.

net gains if the calculation is made to include the avoided costs of climate change, such as increased flood defences, crop losses and other costs of increased extreme weather events, or the external costs of conventional energy that would not be needed due to increased energy efficiency or being replaced by renewable energy options.

Climate change is the biggest threat to our economy, and without effective action it is a threat that will continue to grow over time. Any sensible economic strategy must have a plan how to avoid catastrophic global warming. Europe has the knowledge, the technology and the economic strength to revolutionise the way we produce and consume our energy. EU governments should make Europe the most energy efficient economy in the world. In a world that is slowly waking up to the challenge of climate change and that will need increasingly to look for low-carbon and highly efficient technologies, this would become Europe's most competitive advantage in the future, benefiting employment and economic development and the well-being of European citizens at the same time -- and help avoiding catastrophic climate change.



Source:
Azar and Schneider, see footnote #4. This graph illustrates the effect of different climate mitigation scenarios (with different abatement costs) on expected global income, not including the environmental benefits of progressive action. The main conclusion to be drawn: even a 350ppm greenhouse gas concentration would only delay by a couple of years the expected ten-fold increase in global income over the course of this century.

[4] The argumentation above is derived from Azar and Schneider, who show that stabilising the global climate, even if pessimistic mitigation cost estimates are used, will not prevent the world to become about ten times richer by 2100 but only lead to a delay of a couple of years to reach that spectacular income increase. See "Are the economic costs of stabilising the atmosphere prohibitive?"; Christian Azar, Stephen H. Schneider; Ecological Economics 42 (2002) 73-80.

2. Summary

Man-made climate change is the biggest environmental threat facing our planet. The world is heating up, due mostly to the excessive burning of coal, oil and gas, in order to feed our huge demands for electricity, heating, industrial production and transport. The consequence: Weather extremes such as floods, droughts, storms and heat waves, will continue to increase both in number and intensity. Floods in Mozambique, forest fires in Indonesia, hurricanes in South America, the melting Arctic or heat waves in Europe are adding to an increasing pile of evidence. Sea levels rising up to 1m over the next century will potentially be the most catastrophic effect of global warming, also threatening over 70 million Europeans.

The next chapter looks at the international response to the threat. The Kyoto Protocol, the international treaty to avert climate change, requires the industrialised countries to ensure that during the period 2008-2012 their annual greenhouse gas emissions are 5% lower than 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. Yet, the European Union is not on track to meet the targets set out in the Kyoto Protocol. Also, Europe must continue to take the lead in the international climate negotiations for the future regime after 2012, when current provisions of the Kyoto Protocol end. Eventually, reductions for at least 30% by 2020 and 80% by 2050, compared to 1990 levels, are needed in industrialised countries.

This leads to the question of the level of engagement of developing nations in the future regime to curb global warming. Climate change is to a large part the result of the affluent, resource intensive and energy intensive lifestyles of people in the industrialised world, both historically and in the present. Yet the impacts are mostly affecting the poor people of developing countries, both in the form of direct negative impacts such as more and more intense floods and droughts, but also indirectly, through undermining development opportunities for the poor.

Global energy scenarios predict a massive increase in energy demand in poor countries to foster their development, which the rest of world cannot deny them. However, if we are to avoid catastrophic climate change, developing nations cannot follow the same model as the industrialised countries did, based on excessive use of fossil fuels with massive increases in emissions. It is important to note that it is the rich countries' bankrupting of the global greenhouse gas budget that has put the poor countries into this position. The rich and industrialised countries have accumulated a 'Carbon Debt' towards the rest of the world, which is the sum of the industrialised world's responsibilities in climate change impact damages, adaptation needs and lost development space as a consequence of climate change. It derives from there that industrialised countries must take much more responsibility in enabling developing countries to choose climate-friendly technologies to meet their development needs.

Moving back to the European scale, the following chapters look at the various policy areas where the EU has introduced measures to reduce greenhouse gas emissions. The most prominent piece of legislation is probably the Emissions Trading Scheme, where companies are being allocated emission permits that they can buy and sell on a European carbon

market. However, too generous allocation of these permits will most likely not lead to an absolute reduction of emissions, at least in the first trading phase.

Next, the transport sector is one of the most problematic sectors with regard to climate change. While the emissions from all other sectors have gone down, absolute emissions from the transport sector grew by 22% between 1990 and 2002 and constitute about one third of all EU greenhouse gas emissions. Yet the obvious solutions such as binding rules on car efficiency or detectable policies to shift transport services from road to rail are not in place. Within the transport sector, aviation remains one of the primary concerns. While demand and emissions are rising dramatically, that mode of transport is still being kept artificially cheap compared to more sustainable alternatives, e.g. through tax exemptions.

Saving energy remains an area where EU policies have achieved very little so far. In some areas, more than 50% of primary energy is being wasted, due to e.g. old and inefficient equipment or bad insulating of buildings. The Buildings Directive, which aims to increase the energy efficiency of buildings, is too weak to fully tap into the huge potential; other measures to increase the efficiency of domestic appliances are still not in place.

Similarly, EU policies on renewable energy are lacking teeth. The Renewables Energy Directive aims to achieve 12% of primary energy demand by 2010 from renewable sources, but sets only non-binding targets for the EU Member States. Also, the current trend indicates that the EU will miss this target. More ambitious policies are needed, such as a directive on heating and cooling from renewable energies; also, a long-term target of e.g. 25% share by 2020 would give the necessary perspective for companies when planning investments.

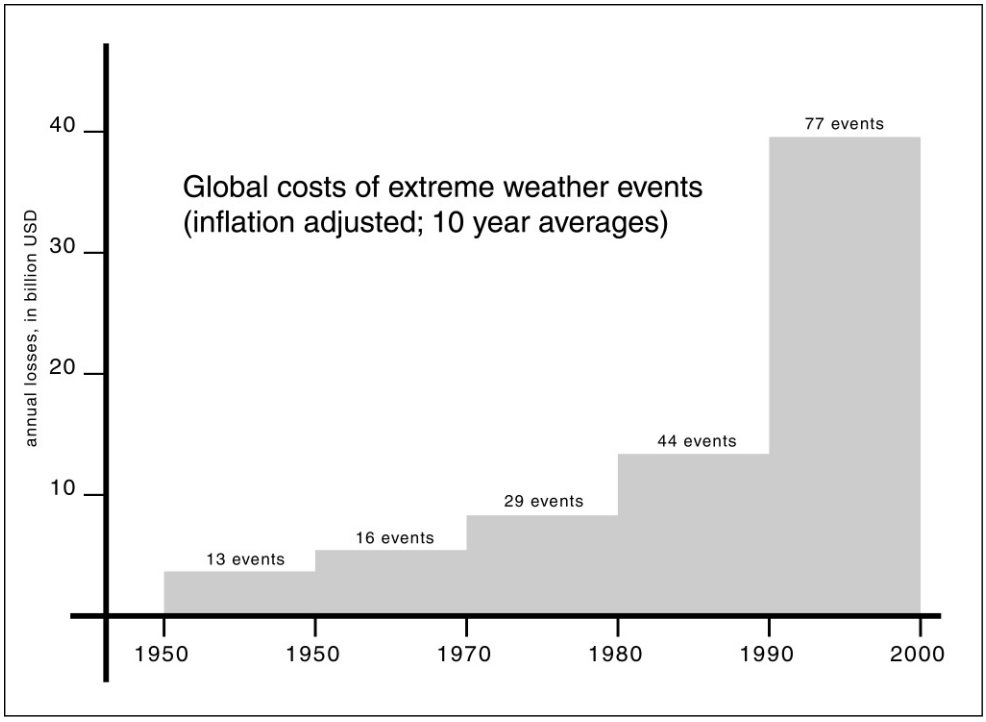
The following chapter looks at the various areas where taxpayers' money is still supporting unsustainable energy or transport systems. The EEA reports that the fossil fuel industry receives €22 billion subsidies every year and greatly benefits from the fact that the additional costs of producing energy from fossil fuels is still being externalised to society. At the same time, public banks such as the European Investment Bank continue to allocate lending for fossil fuel projects and new motorways rather than supporting public transport systems and renewable energies. Similarly, the record of the EU regional policy on climate change has so far been a complete failure: the four countries, which have so far most benefited from the Structural and Cohesion Funds (Greece, Ireland, Portugal, Spain) have witnessed by far the greatest increases of greenhouse gas emissions in the EU.

Finally, we take a quick look at EU European trade policy that may well be trading away climate change objectives in the midst of the WTO's bargaining process. There is evidence suggesting that climate change will be the main environmental impact of liberalisation due to an increase in transport and energy demand as well as exacerbated deforestation. This will not only jeopardise the EU's attempts to reduce greenhouse gas emissions but also prevent the transformation of the global economy to low-carbon.

3. Introduction: The Urgency of the Problem

Man-made climate change is the biggest environmental threat facing our planet. The world is heating up because we release too much of the gases that trap the sun's heat into the atmosphere. Scientists agree[5] this is due mostly to the excessive burning of coal, oil and gas, in order to feed our huge demands for electricity, heating, industrial production and transport. Intensive agriculture, the clearing of forests and the use of fluorinated gases emit additional huge amounts of greenhouse gases.

As a consequence, the global average temperature has risen already by almost 0.7°C over the last century[6]. This is a rate greater than at any time in the last 10,000 years. According to the UN Intergovernmental Panel on Climate Change (IPCC), global average temperature may, as a result of human activities, rise up to 5.8°C by the year 2100[7]. This may not seem a great deal, but it is enough to seriously disrupt the many careful balances in our natural environment. Global warming will not mean nicer weather for us. On the contrary it will fundamentally change the environment we live in, directly threaten the lives of millions, force hundreds of millions from their homes and trigger an unprecedented global economic, social and environmental disaster.



Source: IPCC 2001

[5] The broad consensus had been subject to a study in late 2004, where out of 928 research papers published between 1993 and 2003 not a single one disagreed with the consensus. 75% explicitly endorsed the consensus view that human activity was in fact significantly influencing the climate system. The remaining 25% looked at methodology and the historical paleoclimate record and didn't touch the question of human influence on the climate system. See http://www.sciencemag.org/cgi/content/full/306/5702/1686

[6] see footnote #21.

[7] Third Assessment Report: Climate Change 2001; IPCC 2001; see http://www.ipcc.ch.

Weather extremes such as floods, droughts, storms and heat waves, will continue to increase both in number and intensity, even though it will remain difficult to clearly link individual freak weather events to man-made climate change. However, floods in Mozambique, forest fires in Indonesia, hurricanes in South America, the melting Arctic or heat waves in Europe are adding to an increasing pile of evidence. Sea levels rising up to 1m over the next century will potentially be the most catastrophic effect of global warming, causing whole countries like the Maldives to disappear and putting other low-lying countries at risk, also threatening over 70 million Europeans[8].

The 2003 summer was the hottest summer in Europe for the last 500 years. The heat wave killed 33,000 people and cost €10-17 billion in economic damages. Gigantic forest fires in the south of Europe have destroyed large areas of land - about 5% of Portugal's surface area has been burnt down - with serious effects on the tourism sector. A study by the German re-insurer Munich Re shows that between 1994 and 2003 there were almost three times as many weather-related natural disasters than in the 1960s[9]. The German government has estimated that in 2050 economic costs of unabated climate change in Germany alone will by far exceed €100 billion a year[10].

However, the impacts of 2003 European heat wave or the central European floods are tiny compared to what developing countries are facing, when climate change hits full scale. Their already precarious situations will get significantly worse, not least because their people's livelihoods are much more dependent and vulnerable to natural misfortunes. More and more people will die from droughts, mudslides, storms or floods and suffer tremendous economic losses. Food security, public health and freshwater supplies will be at risk. Africa is experiencing a pronounced drop in rainfall over the last decades, coinciding with a rise in the surface temperature of the neighbouring Indian Ocean. The United Nations estimate that extreme droughts may affect up to 3 billion people by 2050. South Africa predicts a four-fold increase of cases of Malaria by 2050. Development organisations estimate that, leaving human suffering aside, disasters attributable to climate change could cost developing countries more than €6-10 trillion over the next 20 years[11].

All this is particularly iniquitous because climate change is mostly a result of greenhouse gas emissions by the resource-intense and energy-wasting lifestyles of the rich, industrialised countries. Today, the average European accounts for six times more greenhouse gases than the average Indian[12].

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[8] see footnote #21.

[9] see Munich Re climate change statistics at http://www.munichre.com.

[10] Die Zukunft liegt in unseren Händen -- 21 Thesen zur Klimaschutzpolitik für das 21. Jahrhundert; Umweltbundesamt, February 2005; available at http://www.umweltbundesamt.de/klimaschutz/download/thesenpapier.pdf.

[11] see footnote #27.

[12] K Bauert, J Pershing: Climate Data: Insights and Observations; Pew Center on Global Climate Change; December 2004.

Evidence

Four recent additions to the pile of evidence

Earth's land surface is drying up: A new analysis of the US National Center for Atmospheric Research (NCAR)[13] reveals that, as a result of climate change, over the past 30 years the proportion of Earth's land area stricken by serious drought more than doubled from the 1970s to the early 2000s. The analysis finds that the fraction of global land experiencing very dry conditions rose from about 10-15% in the early 1970s to about 30% by 2002.

The Arctic is melting away: The recent Arctic Climate Impact Assessment[14], a first thorough assessment of the warming trend in the Arctic indicates the region is undergoing drastic changes, including retreats of glaciers and sea ice, thawing of permafrost, and shifts in ocean and atmospheric conditions that are likely to disrupt native communities, wildlife and economic activities. The report, while noting that conditions in the far north have varied naturally in the past, says the current trends match longstanding scientific projections that the Arctic should be the first place to feel the effect of global warming.

A quarter of world species to disappear: A recent study has warned that rising temperatures will trigger a global animal and plant species extinction of unprecedented proportions. A quarter of known animal and plant species may eventually die out over the next 50 years, causing a major threat to the human population since we rely on nature for our survival.[15]

Runaway climate change: There are increasing indications that time is running out if we are to avoid catastrophic irreversible damage. It seems that even if the world would stop emitting greenhouse gases today a global average increase of 1.3°C will become unavoidable, as a result of the gases already locked into the atmosphere. An international climate change task force[16] set up by UK Prime Minister Tony Blair predicted a fast-approaching "point of no return" for runaway climate change -- possibly in as little as 10 years -- after which the crisis and its symptoms will become irreversible.

[13] The analysis looks at linear trends in the Palmer Drought Severity Index from 1948 to 2002. This index is a measure of near-surface moisture conditions and is correlated with soil moisture content. It shows drying across much of Canada, Europe, Asia, and Africa and moistening across parts of the United States, Argentina, Scandinavia, and western Australia. More information is available at http://www.ncar.ucar.edu.

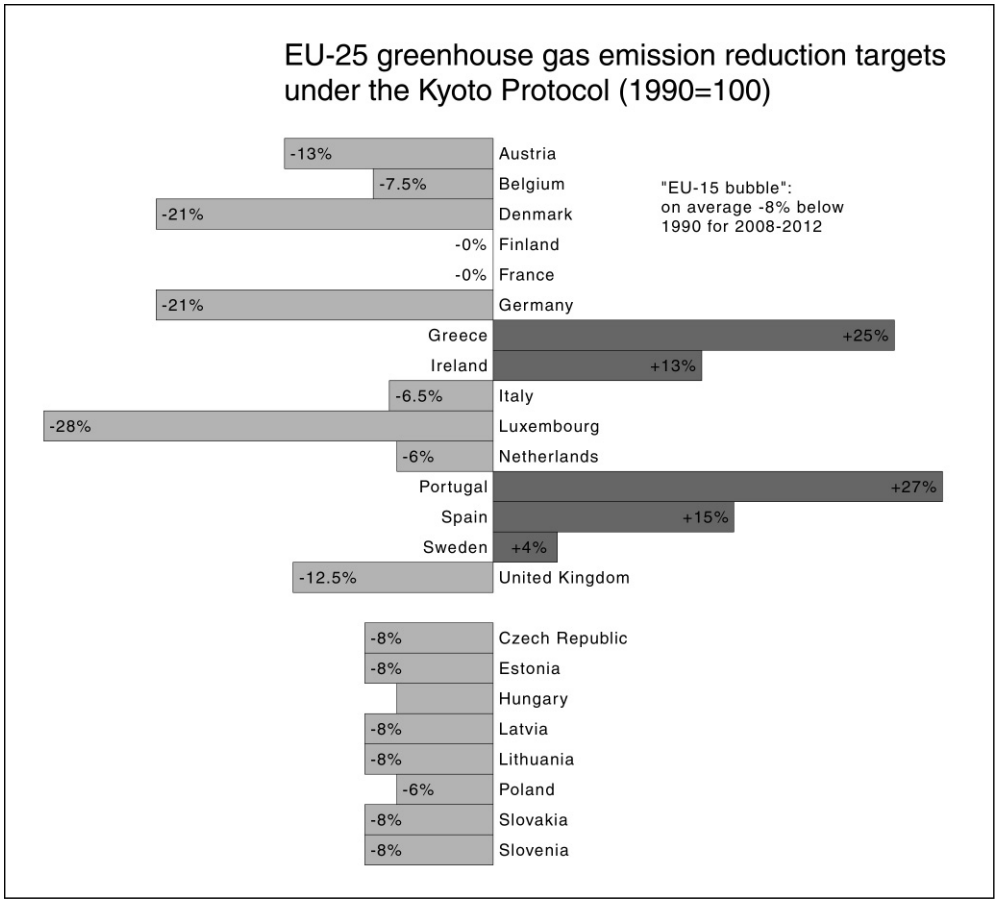
[14] Arctic Climate Impact Assessment; see at http://www.acia.uaf.edu.

[15] Extinction risk from climate change; Thomas et al.; Nature 2004, vol. 427.

[16] Meeting the climate challenge; International Climate Change Taskforce; January 2005.

4. Europe and the Kyoto Protocol

In order to avert global warming, the international community agreed the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, and subsequently the Kyoto Protocol in 1997. The latter requires the industrialised countries to ensure that during the period 2008-2012 their annual greenhouse gas emissions are 5% lower than 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. More of this action is needed to meet the ultimate goal of the UNFCCC, to achieve "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system". There is abundant literature on what the word 'dangerous' in this context may mean, but there is increasing consensus that the threshold between *relatively acceptable* and *catastrophic* climate change corresponds to an increase of the average global temperature by no more than 2°C. In order to stay below this limit with reasonable certainty, the world's greenhouse gas emissions need to fall to approximately 50% of 1990 levels by 2050[17], which in turn translates into an 80% cut for industrialised countries and a mid-term target of at least minus 30% by 2020. Compare this to the meagre 5% the industrialised countries agreed to cut until 2008-2012.

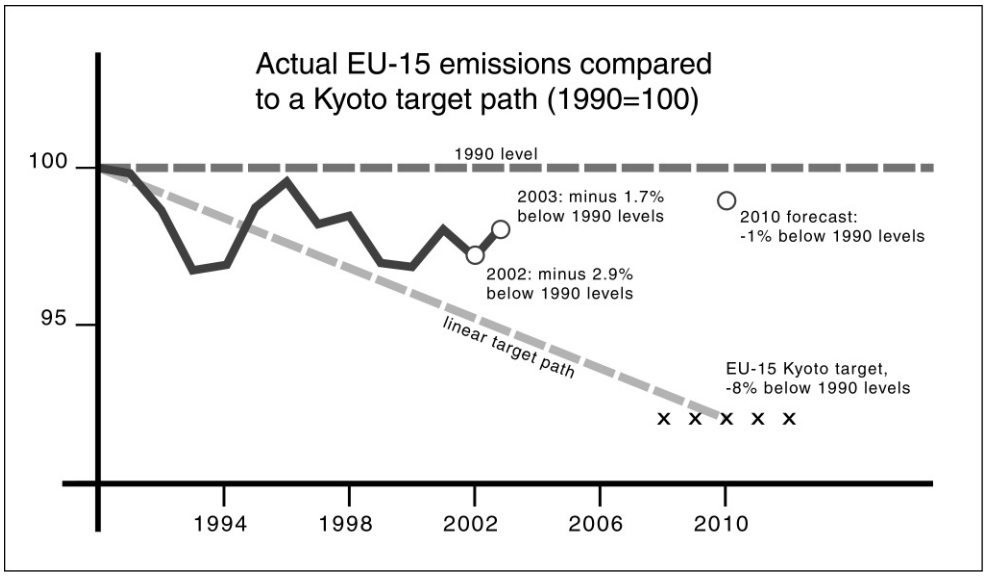


[17] This corresponds to a stabilisation of global greenhouse gas concentrations at 400 parts per million. As a rule of thumb, the EU is often referring to a concentration of 550 parts per million, which, as recent science suggests, has a 75% chance of exceeding the 2°C threshold. See also: Malte Meinshausen, Swiss Federal Institute of Technology in Zurich. International symposium on the stabilisation of greenhouse gases. Hadley Centre, Met Office, Exeter, UK; February 2005.

In 1997, the European Union with its then 15 Member States (EU-15) accepted an overall reduction target of minus 8%, sometimes called the 'EU bubble', with some Member States reducing more, others less and some being allowed to even increase their emissions. 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.

In order to meet the targets set out in Kyoto, the EU launched a number of legislative initiatives, both on the EU level as well as on the Member State level, addressing energy efficiency, renewable energies and other sectors. The most prominent measure is the EU Emissions Trading Scheme, which began operating on 1 January 2005. Many more measures are under discussion or in the planning stage.

The European Commission reported 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. End of 2004, the European Commission estimates that with existing measures the EU-15 will achieve a reduction of only minus 1% rather than the minus 8% as agreed under Kyoto.[18] These predictions do not yet include the effects of the EU emission trading that, however, in its first trading phase (2005-2007) will most likely not lead to an absolute decrease in emissions in the participating sectors, due to an over-generous allocation by the Member States in their national plans.



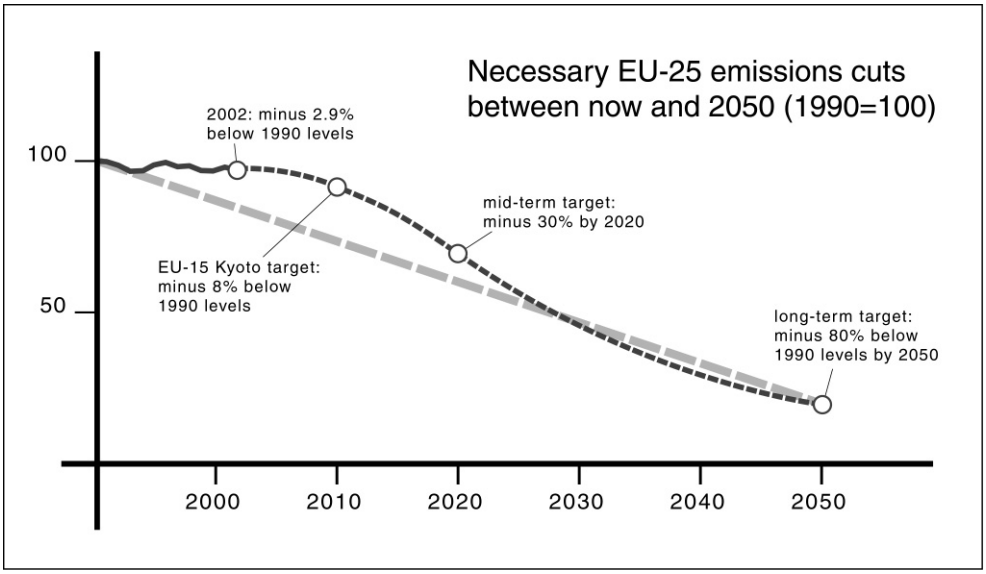
Source: Greenhouse gas emission trends and projections in Europe 2004; EEA 2004 with updated figure for 2003

These figures illustrate a complete failure of existing EU energy and climate policy that should put Europe's economy to a low-carbon highly efficient development path. Instead, reductions achieved so far e.g. in Germany are mostly a result of the economic breakdown of Eastern Germany after the Reunification. Similarly, the reductions achieved in the UK are to a large part the result of switching from coal to gas in the 1990 -- since

[18] The European Environment Agency estimates that with "additional measures" (that still have to negotiated) it is well possible that the EU-15 would meet its Kyoto targets, although that estimate does not yet include new data (March 2005) that shows that the UK might miss their Kyoto target if current trends continue.

then, emissions continue to rise in Europe; the real low-carbon transformation has not begun.

Later in 2005, the official negotiations on the next phase of the Kyoto Protocol will begin, discussing action after 2012. It is crucial that the European Union renews and strengthens the leadership role it has shown in the past and ensures that new binding targets for industrialised countries are agreed at these negotiations. The European Union has set for itself the objective to not exceed a 2°C global average temperature increase, but so far both the European Commission and the Member States are failing to acknowledge the enormous practical and political challenges associated with this target. The EU Heads of State concluded at their 2005 Spring Summit that industrialised countries will need "reduction pathways for the group of developed countries in the order of 15-30% by 2020"[19]. They failed to agree a long-term target for 2050, silently ignoring the aim of reducing emissions by 70% in the long term as outlined in the EU's 6th Environmental Action Programme[20].



The European Commission has noted that the benefits of not exceeding a global average temperature increase of 2°C will clearly outweigh the costs of abatement policies[21]. Yet, the fear for competitive disadvantages for the EU economy is probably the greatest barrier to progressive action to fight climate change, mixing the interests of individual industry sectors (that are externalising the costs of climate change to society) with the interests of the economy as a whole. The European Union should integrate its Lisbon Strategy into the fight against climate change rather than keeping the two issues at odds. This lesson has however still to be learned, and the Commission has recommended to make

[19] 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.

[20] Sixth Environmental Action Programme, Article 2: Principles and overall aims; Decision 1600/2002/EC of the European Parliament and the of the Council, 2002. See http://europa.eu.int/comm/environment/newprg/index.htm.

[21] Winning the battle against global climate change, COM(2005) 35 final; February 2005; available at http://europa.eu.int/comm/environment/climat/pdf/comm_en_050209.pdf.

the EU's commitments for emission cuts after 2012 dependent on what other countries are willing to do. [22]

This is a dangerous dead-end strategy, as it means nobody will move until someone else moves. It is also in contrast to what EU ministers agreed only two months before, emphasising "that developed countries should continue to take the lead in mitigating greenhouse gas emissions"[23]. Letting go the leadership role will also undermine Europe's economic strength with regard to investment and business opportunities in the field of efficient and renewable technologies on the European and the global market. It would also mean to ignore the forecasts for future negative economic impacts of not taking action, when climate change begins to hit full scale. As Sir David King, the UK government's chief scientific adviser, has put it: *"Delaying action for decades, or even just years, is not a serious option."* The longer Europe waits the less time it will have for the emission cuts that are necessary. The cuts themselves we will not be able to go around.

Kyoto & beyond: what we need.

In the context of the negotiations of a future Kyoto Protocol, the EU must

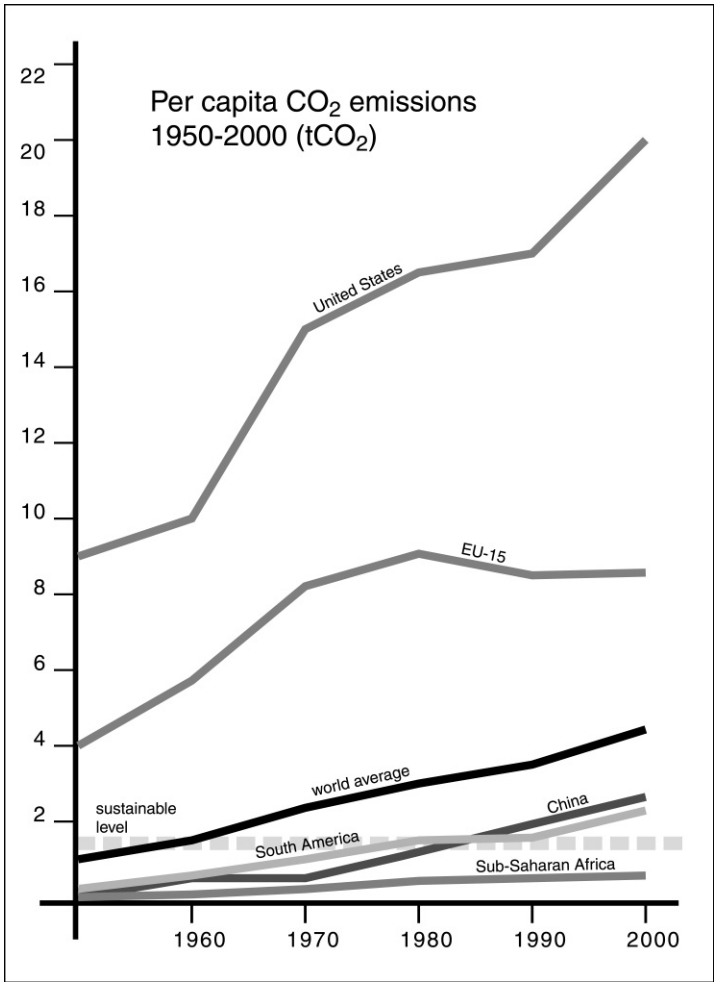
+ secure a mandate at the next UN Climate Conference in Montreal, Canada, to launch negotiations under the Kyoto Protocol for options for the post-2012 commitment period, which should directly follow the first commitment period, i.e. begin in 2013;
+ commit to take on legally binding greenhouse gas reduction targets for the periods after 2012, which are in line with achieving emission cuts of at least 30% by 2020 and 80% by 2050; the future regime should ensure a low-carbon development path in poor countries with financial support from the industrialised countries.
+ Translate the above targets for industrialised countries into an annual reduction pathway of minus 2-3% per year, providing long term predictability that businesses need when planning investments;
+ develop a strategy setting out which additional measures are needed to ensure the EU meets its Kyoto commitments, ensuring that measures are designed in a way to deliver a long-term low-carbon economy;
+ seek to establish the target of not exceeding a global average temperature increase of 2°C as a common objective of all UNFCCC parties.

[22] There are some positive signals on the national levels. The United Kingdom has set itself a target of minus 60% by 2050, and Germany plans to reach 40% by 2020, if a corresponding EU wide target can be agreed. The latter has, however, to be seen in light of the German target of minus 25% by 2005 that was unglamorously abandoned in 2003.

[23] Conclusions of the Environment Council; December 2004, 16298/04; available at http://register.consilium.eu.int/pdf/en/04/st16/st16298.en04.pdf.

5. Equity in the Greenhouse

Climate change is to a large part the result of the affluent, resource intensive and energy intensive lifestyles of people in the industrialised world, both historically and in the present. Yet the impacts are mostly affecting the poor people of developing countries, both in the form of direct negative impacts such as more and more intense floods and droughts, but also indirectly, through undermining development opportunities for the poor.

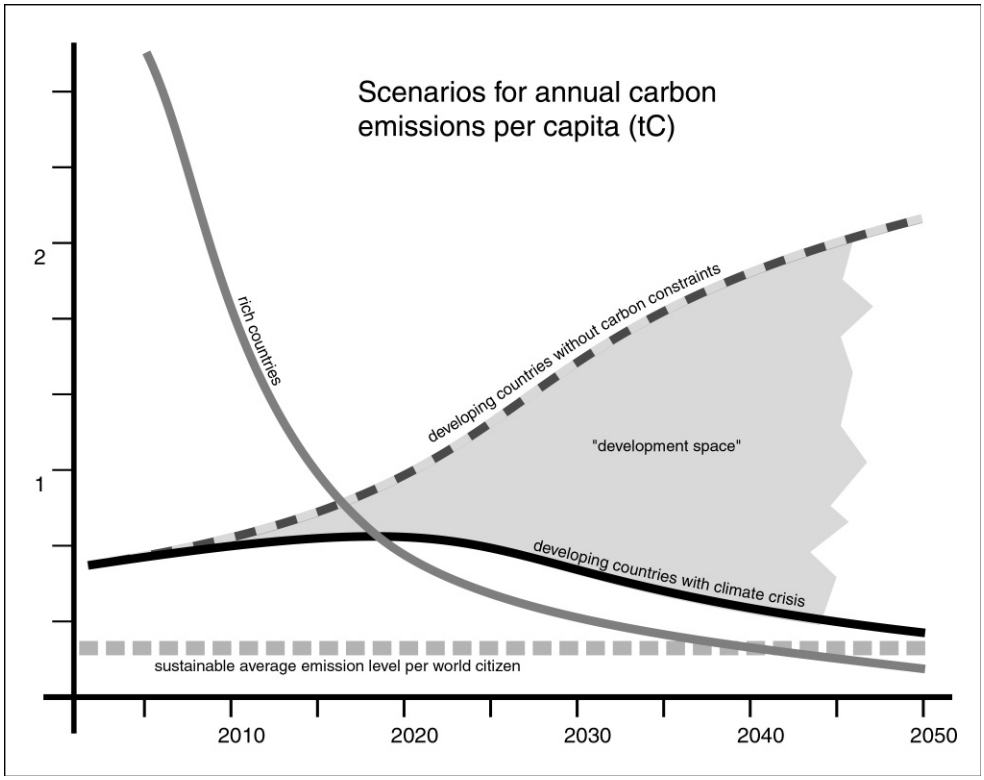


Source: Climate Analysis Indicators Tool (CAIT); World Resource Institute 2005. Data excludes LUCF emissions.

Equity and responsibility are at the heart of the UN Climate Convention, which says "the Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities". This is largely the reason why developing countries did not get targets under the Kyoto Protocol, giving instead priority to their development needs.

Global energy scenarios predict a massive increase in energy demand in poor countries to foster their development, which the rest of world cannot deny them. While in Europe growing energy demand has little to do with increasing the *well-being* of Europeans (which in fact has only marginally improved since the 1970s, while energy demand grew by roughly 50%), developing countries face a completely different situation, with two billion people lacking access to even basic energy services.

However, if we are to avoid catastrophic climate change, developing nations cannot follow the same model as the industrialised countries did, based on excessive use of fossil fuels with massive increases in emissions. On the contrary, even if rich countries' emissions would drop to zero over the next decades, developing nations would have to begin cutting emissions long before they have achieved a comparable level of income for their citizens. It is important to note that it is the rich countries' bankrupting of the global greenhouse gas budget that has put the poor countries into this position.



If the climate wasn't being wrecked by the industrialised world, developing countries could happily generate well-being by increasing emissions. Since this is not an option in a carbon constrained world, the European Union must show more responsibility to reclaim the lost 'development space' -- by enabling poor countries to choose climate friendly technologies.

The European Commission, in its recently proposed strategy for future action to protect the global climate[24] rightly stressed that developing countries will need to engage in some or another form in the global climate regime. However, the report also notes: "Developing countries will be more likely to adopt climate policies if these are designed to contribute to wider development goals".

Friends of the Earth believes meeting development needs in a carbon-constrained world must be at the heart of the future negotiations of the global climate regime. The South must be motivated to decarbonise its emerging economies as rapidly as possible, but the North must pay for it. Through their historical and ongoing over-use of the atmospheric capacity, the rich and industrialised countries are undermining the development space of the poor countries, accumulating a 'Carbon Debt' towards the rest of the world, which is the sum of the industrialised world's responsibilities in climate change impact damages, adaptation needs and lost development space as a consequence of climate change.

[24] see footnote #21.

The imbalance began 150 years ago with the emerging industrialisation in the developed world, whose wealth is, historically but also presently, built on burning coal, oil and gas. If you add up all emissions since 1850, the dawn of industrialisation, the industrialised countries are responsible for about 77% of the cumulative greenhouse gas emissions[25].

In order to discharge this debt, the EU must therefore acknowledge a much greater responsibility to enable developing nations to choose climate-friendly technologies as well as to provide finance for the decarbonisation of developing countries' (emerging) economies as much as their development is hampered by the need to limit global warming and the historical and ongoing role of the EU in causing it.

In the context of the Kyoto Protocol, governments agreed that developing countries need support for adaptation and mitigation activities and so established various funding schemes. The funds that the EU is making available "to assist non-Annex-I parties in addressing climate change, including adaptation" are less than €300 million per year[26]. A thousand times higher is what development organisations estimate to be the annual costs of climate-related disasters in poor countries over the next 20 years, or about €300-500 billion[27].

The World Bank's "Development Economics Research Group" has estimated the necessary annual transfers from the industrialised countries to the developing world in order to keep greenhouse gas concentrations at certain levels while allowing development at the same time. If extrapolated to more recent research on concentration ceilings in order to limit the global average temperature increase to 2°C, the needed transfers may lie anywhere within €35-190 billion[28]. This should be compared with the world-wide annual €180 billion[29] direct or indirect subsidies for the use of fossil fuel, a figure that does not yet include the external costs such as environmental damages or health cost (e.g. through respiratory diseases from pollution). In the European Union, these external costs amount to €60-90 billion[30], not including the costs of climate change.

Deploying sustainable technologies in developing countries faces formidable financial, knowledge-related and legal obstacles. Poor countries cannot afford these technologies on their own, but assistance from industrialised countries must not come under

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[25] The figure would change if emissions e.g. from deforestation activities were included; however the magnitude of the imbalance would not. See "Climate Data: Insights and Observations"; Pew Center on Global Climate Change; December 2004.

[26] Climate Change in the Context of Development Co-operation; Conclusions of the General Affairs and External Relations Council; November 2004.

[27] World Disasters Report 2001; International Federation of Red Cross and Red Crescent Societies; Geneva 2001.

[28] The World Bank has estimated that for a 450ppm target, annual North-South transfers of US$20-130 billion would be necessary; and US$3-68 billion for a 550ppm target. In order to stay below a 2°C global average temperature increase, we will rather need a 350ppm target, as recent science indicates, to which the figures in the text have been extrapolated, admittedly a very rough calculation -- but this will be the order of magnitude.

[29] The price of power: Poverty, climate change, the coming energy crisis and the renewable revolution; New Economics Foundation, June 2004; available at http://www.neweconomics.org.

[30] Energy subsidies and renewables; EEA Briefing 2/2004; available at http://reports.eea.eu.int/briefing_2004_2/en.

the heading of charity or aid, but rather as compensation for impacts and endangered development opportunities that are being imposed on the poor.

The Clean Development Mechanism (CDM), which is meant to be a cost-effective tool for climate change mitigation while delivering sustainable development, will most likely not strike the deal. The evidence to date is, that most industrialised countries are using the CDM merely to reduce the costs of complying with their Kyoto targets and as such are searching for projects that deliver large volumes of cheap credits, rather than investing in clean energy projects. A report from CDMWatch notes that, for example, renewable energy projects sum up to less than 10% of the total credits generated through projects in the pipeline, energy efficiency projects even less, and only 4% of the credits will be generated in Africa, the continent that needs development more than any other[31].

To be clear: in the long run, the industrialised world will not get away without acknowledging their Carbon Debt towards the developing countries as well as their responsibility to secure development rights for the poor and to enable that development in a carbon-constrained world. Only then will the developing countries actively engage in the climate change regime.

Equity: what we need.

When negotiating post-2012 climate action the EU must

+ provide finance for the decarbonisation of (emerging) economies in developing nations, accepting the obligation of industrialised countries to ensure poor countries' right to development as much as it is hampered by the need to limit global warming.
+ accepts the obligation to compensate climate victims in developing countries, acting according to the polluter pays principle.
+ put pressure on international financial institutions to phase out funding for the extraction of fossil fuels in developing countries, starting with those projects aimed for export markets.
+ promote a reform the criteria of the CDM so that they primarily lead to sustainable decarbonisation in developing countries rather than simply providing an excuse for lack of domestic action in the EU. That would mean that either credits from CDM projects must fulfil the Gold Standard[32]. That would also mean that forest plantations or nuclear power stations get permanently excluded under the CDM.

[31] Market failure: Why the CDM won't promote clean development; CDM Watch, November 2004; available at http://cdmwatch.org/files/market-failure-2004.pdf.

[32] This means, for example, the exclusion of nuclear power, large hydro or tree plantations and makes projects conditional to informed consent of affected local communities. A full list of the Standard's requirements is available at http://cdmgoldstandard.org.

6. Emissions Trading

The European Union's Emissions Trading Scheme (ETS) is its most prominent piece of legislation in the fight against climate change. The corresponding Directive aims at directly reducing greenhouse gas emissions from industrial installations by limiting the emissions allowed per installation. Companies will have to buy additional allowances if they overshoot, or pay fines. Those below target can sell surplus quotas. Nearly 12,000 installations from the electricity, oil refining, steel, cement, glass, ceramics and paper industry, with roughly 40-50% of the EU's total greenhouse gas emissions are covered by this scheme.

An integral part of the ETS are the National Allocation Plans (NAPs) that assign greenhouse gas emission allowances to each participating industry installation (e.g. a power station) in a given trading period. Trading is divided into five year trading periods, except the first one, which is from 2005 to 2007 and is often seen as a test phase.

The success of the ETS depends on whether member states will limit CO2 emissions from energy and industrial sectors through reducing the allowances issued, and thereby create incentives to choose climate-friendly technologies while contributing to the overall idea of reducing emissions at the lowest costs.

However, most of the EU member states have too generously allocated emission permits to companies, i.e. either not demanding emission cuts or even conceding increases. For the period 2005-2007, the total allowances given out to EU-25 industry are 5-8% above base-year levels[33], meaning companies are allowed to increase their emissions. If this keeps the price for emission permits in the lower range, a company will find it usually cheaper to buy additional permits rather than moving to alternative options, delaying the necessary transformation of the European economy. When evaluating the ETS, the prime question must therefore be whether the ETS and its inherent flexibility approach actively contributes to meeting the Kyoto targets and the need to put Europe's economy on a low-carbon path in the long term. Eventually, the ETS is a tool to achieve, and not to avoid, greenhouse gas emission cuts.

Another major shortcoming of the ETS is that parts of the chemical industry are not included as well as the buildings sector or the transport sector that is responsible for about a third of total EU emissions[34].

The ETS allows companies to buy and sell credits generated from projects under the provisions of the Clean Development Mechanism (CDM) and Joint Implementation (JI) of the Kyoto Protocol. Again, this will delay (EU jargon: add flexibility) the shift away from excessive fossil fuel use in Europe. Instead, companies will be able to buy large amounts of cheap credits from projects that often do not contribute to sustainable development in their

[33] Policies and measures to achieve the target (at the medium as well as long term), some preliminary findings; presentation by Dr. Felix Chr. Matthes, Öko-Institut; January 2005 at the European Parliament.

[34] However it remains to be seen whether, from an environmental perspective, it would be overly clever to include the aviation sector in the ETS. The sector would most likely be a net buyer, also because demand is growing faster than efficiency gains. This will increase the pressure on other participating sectors who would call for relaxing the ceilings -- eventually undermining the effectiveness of the ETS. See also chapter 7 on transport policy.

host countries[35]. Excluded are credits from nuclear power (until at least 2012) and tree plantations (so far until 2007). Also, Member States are asked to respect the recommendations of the World Commission on Dams when approving hydroelectric power production projects whose capacity exceeds 20MW. It is left up to Member States to set limits on the amount of credits that could be used in compliance by any one installation.

Emissions trading: what we need.

When reviewing the ETS in 2006, the EU must ensure that

+ a thorough assessment is made to evaluate whether the ETS and its inherent flexibility approach actively contributes to reducing greenhouse gas emissions under the Kyoto Protocol and beyond.
+ the industry sectors which are not yet part of the ETS as well as the buildings sector and the transport sector should become part of the emissions trading.
+ permits assigned under the National Allocation Plans are auctioned and not grandfathered, recycling the generated revenues into a low carbon economy, e.g. supporting renewable energies and energy efficiency measures. For the second trading period, 2008-2012, Member States should make use of auctioning to the full extent to which it is possible under the emissions trading directive.
+ Member States significantly reduce the permits they issue to participating companies by at least 10% for the next trading period. Also, the European Commission should set an overall budget for allowances in the scheme at a European level that is in line with the EU's Kyoto budget and a long-term emissions path of the participating sectors, consistent with the EU's objective to limit the global temperature increase to 2°C.
+ the use of CDM/JI credits under the ETS delays the transition to a low-carbon economy in Europe. Consequently the installation-level cap on such credits should be set at zero.
+ As part of the National Allocation Plans, Member States deliver climate change strategies for all sectors of their economies, consistent with the Kyoto targets. The complementary instruments for the building sector, transport sector and efficient energy use must be mandatory and sufficient to reach long-term climate targets. Voluntary agreements are not acceptable.

[35] CDMWatch reports that current projects under the CDM are failing to deliver sustainable development in developing countries, as requested under the Kyoto Protocol. Instead projects aim for large amounts of cheap credits, and less than 10% of the total volume are aimed at renewable energies and even less for energy efficiency projects. See http://www.cdmwatch.org.

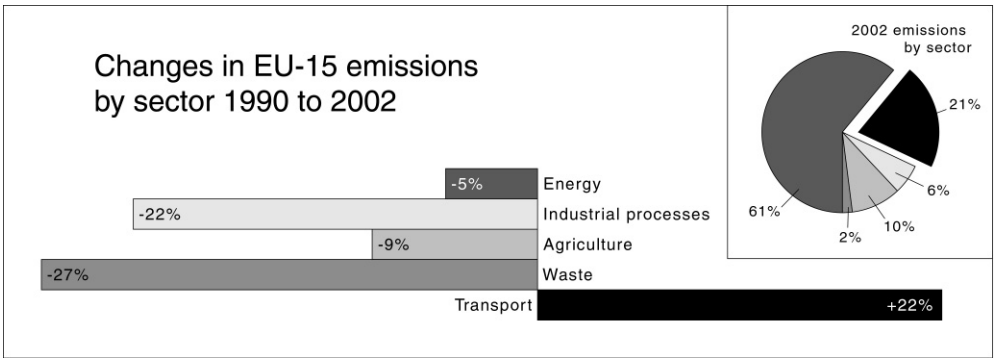
7. Transport Policy

The transport sector is one of the most problematic sectors with regard to climate change. While the emissions from all other sectors have gone down, absolute emissions from the transport sector grew by 22% between 1990 and 2002[36] and constitute about a quarter of all EU greenhouse gas emissions.

This comes as no surprise, since in the past many Western European countries were oriented towards cutting back public transport and massive road sector and individual car use developments in order to foster economic growth. However, some countries use three times less transport than other countries to earn the same income[37]. Studies show that there is no automatic link between GDP growth and transport growth, and that breaking the cycle of ever increasing transport growth could benefit rather than harm economies.[38]

The transport sector has enormous costs for society. Health related costs from noise, accidents or pollution, but also economic losses from regions paralysed by congestion as well as environmental damages, including the costs of climate change, are still being externalised to society. This keeps transport pricing artificially low. The OECD found out that in 1995 these external costs in Central and Eastern Europe were 14% of the region's GDP[39], which indicates that the transport sector has been evolving to actually hampering economic development.

The belief that building roads helps regenerate poorer regions has yet to be proven; in fact the reverse can be true, as new roads can suck away economic activity as the area can be served from a larger distance (roads work in two directions): "The substantial regional, national and international development effects commonly claimed by project promoters typically do not materialise, or they are so diffuse that researchers cannot detect them"[40].



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

[36] Catching up with the Community's Kyoto target; European Commission, COM(2004) 818 final available at http://europa.eu.int/comm/environment/climat/pdf/report.pdf.

[37] Indicators for the integration of environmental concerns into transport policies; OECD 1999; available at http://www.olis.oecd.org/olis/1998doc.nsf/LinkTo/ENV-EPOC-SE(98)1-FINAL.

[38] See, for example: The Standing Advisory Committee on Trunk Road Assessment (SACTRA); "Transport and the Economy", DETR, London., August 1999 or "Strategic competition with public infrastructure: Ineffective and unwelcome?", CPB Netherlands Bureau for Economic Policy Analyses, The Hague 2002.

[39] External costs of transport in Central and Eastern Europe; OECD 2003; available at http://www.olis.oecd.org/olis/2002doc.nsf/linkto/env-epoc-wpnep-t(2002)5-final.

[40] Megaprojects and Risk: An Anatomy of Ambition Flyvbjerg, N. Bruzelius, W. Rothengatter; Cambridge University Press 2003-

The Sixth Environmental Action Programme[41] acknowledges that public transport is an extremely crucial asset especially in the new and future Member States, where extensive railway networks and good public transport systems exist, compared to the EU average. Yet, the transport solutions chosen in all 25 Member States are often limited to increasing road infrastructure, which brings about clashes with environmentally valuable areas, more car use and increasing emissions. The EU should promote a shift of passenger and freight transport back to the railways and focus on improving public regional transport possibilities.

In the new Member States, the EU actively supports the contrary, by prioritising the extension of the Trans-European Transport Network (TEN-T) to the Central and Eastern European region in its assistance programs -- a policy also supported by the lending priorities of public banks such as the European Investment Bank or the European Bank for Reconstruction and Development. The result: The length of motorways in the region doubled over the 1990s; the length of the railway network increased by less than 1%[42]. The European Commission has now proposed to dramatically increase the funding for large transport infrastructure projects (cf. roads or high-speed rail, neglecting local transport links).

The Sixth Environmental Action Programme also called for reducing emissions from transport, but the policies put in place so far lack teeth. No binding targets for transport emissions have been set, neither absolute or relative e.g. on car efficiency -- like for example in China[43] or California[44].

Instead, the Association of European Automobile Manufacturers (ACEA) satisfied the European Commission with a voluntary commitment to bring down emissions per kilometre down to 140g CO2 per km for their fleet of new passenger cars sold in the EU by the year 2008. Similar agreements were made with carmakers from Japan and Korea. Yet in 2003, cars were only 4% more efficient than they were a decade ago -- due to increased weight, engine power and the use of air-conditioning[45].

Consequently, the European Commission should begin drafting binding legislation on car efficiency, following the recent request by the European Parliament, "urgently to put forward proposals for binding CO2 limits for new vehicles"[46]. Such legislation must be

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[41] Environment 2010: Our Future, Our Choice: The Sixth Environment Action Programme of the European Community; see http://europa.eu.int/comm/environment/newprg.

[42] TERM 2002 - Paving the way for EU enlargement - Indicators of transport and environment integration; Environmental issue report No 32; EEA 2002; available at http://reports.eea.eu.int/environmental_issue_report_2002_24/en.

[43] The World Resources Institute (WRI) reports that the new Chinese fuel economy standards will force carmakers to improve fuel efficiency in order to safeguard their position in the Chinese market. See http://business.wri.org/newsrelease_text.cfm?NewsReleaseID=304.

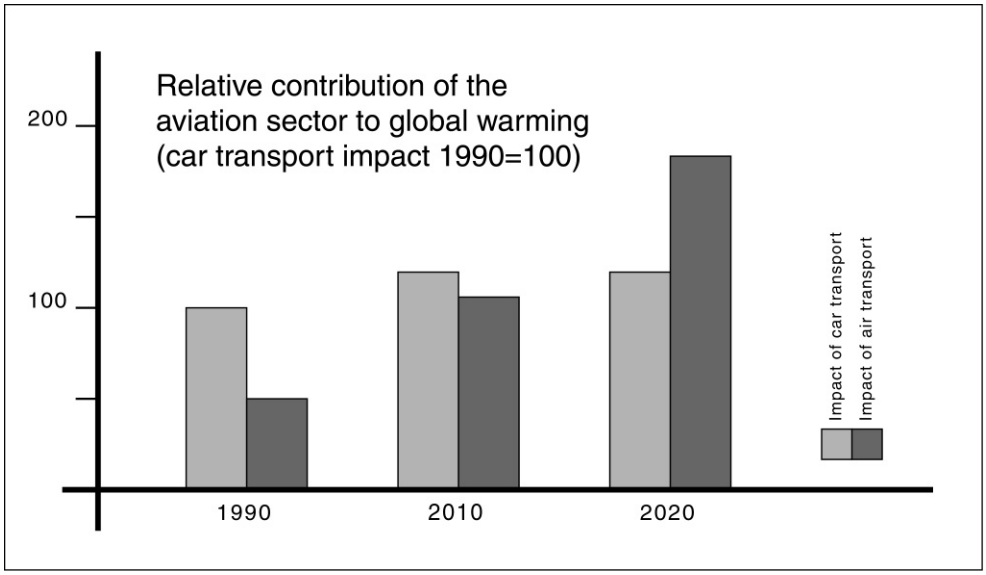
[44] According to the new law in California, car makers are requested to reduce specific emissions from new cars and light commercial vehicles by up to 25% until 2012 and by up to 34% by 2016. Carmakers, including the European companies BMW, DaimlerChrysler, Porsche and Volkswagen filed a legal complaint against the law because they fear to loose market shares to more advanced car makers.

[45] Sense and Sustainability: Smart thinking to restart European transport policy; European Federation for Transport & Environment 2004; available at http://www.t-e.nu.

[46] Resolution P6_TA(2005)0005 of the European Parliament; January 2005.

based on best available technology and bring down specific emissions to at least 120g CO2 per km by 2010, as originally envisaged by the European Commission. It should also set the framework for Member States to tax cars according to CO2 emissions rather than cubic capacity, as it is now the case in most Member States.

Within the transport sector, aviation deserves special attention. Emissions from the aviation sector happen mostly in high altitudes, where they have a much stronger greenhouse effect than if emitted as sea level, e.g. through the generation of condensation trails (*con-trails*). Today, air transport is the fastest growing source of greenhouse gas emissions. Currently, aviation is responsible for about 6-7% of the EU's impact on global warming (while it roughly contributes only 1% of GDP), a figure that is expected to double to 15% by 2030[47].



Source:
OECD 2000

Yet the international air transport sector is not covered by the Kyoto Protocol. Instead, the International Civil Aviation Organisation (ICAO) has been asked to bring a solution, but the ICAO is studying the issue ever since and blocking any attempt to reduce greenhouse gas emissions from air transport.

Amazingly, jet fuels are exempt from taxation; and international air transport is not subject to VAT. This keeps air transport artificially cheap compared to other modes of transport. Also, external costs -- such as the costs of climate change, but also environmental damages or health costs from air pollution or noise -- are currently paid for by taxpayers, including those who fly very little or not at all.

It is crucial that air travel pricing both reflects the true costs of flying as well as levels the playing field compared to more sustainable modes of transports. That would e.g. make short-haul flights always more expensive than alternatives such as rail.

The introduction of an EU-wide kerosene tax would be the most straight forward measure, but this will also be extremely difficult to achieve, as it requires unanimous agreement between Member States. The EU Energy Taxation Directive[48] allows Member

[47] International Civil Aviation Organisation; December 2004.

[48] See http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_283/l_28320031031en00510070.pdf.

States to introduce kerosene tax for domestic flights and for flights between two or more EU countries, provided the relevant countries agree. The Netherlands have introduced such a tax on domestic flights within only two months. Other countries should follow. A recent legal study commissioned by the German government shows that a country could apply a tax on fuel used for domestic flights no matter where the fuel was purchased, thus avoiding 'tankering' by foreign carriers that buy the fuel they use for a domestic flight from a country without taxation[49].

An alternative to introducing kerosene taxation would be to put a price on emissions per kilometre while flying into or within EU air space. Such en-route charges differ from taxation insofar as non-EU carriers cannot buy their fuel outside the EU in order to avoid the charge, since it is not based on fuel use but on emissions in EU air space. Also, the introduction of en-route charges would be possible with majority voting among transport or environment ministers, rather than unanimity.

While Friends of the Earth believes that en-route charges are environmentally more effective and politically easier to introduce, both options should be considered. The revenue gained from either measure could be recycled back into the economy, promoting sustainable transport alternatives.

Another idea on the table is to include the aviation sector in the European Emissions Trading System (ETS). Friends of the Earth believes that this will not help a lot to cut emissions from the aviation sector but may instead lead to higher burden for other sectors in the ETS, as the aviation sector will be a net buyer. Consequently, governments will, in order to protect their national industries, try to relax emission ceilings under the ETS. An alternative could be to introduce a closed, sectoral emissions trading system for the aviation or transport sector only or a semi-closed system, allowing to buy only a certain amount of emission permits from other sectors.

Transport: what we need.

With the aim to cut emissions from transport, the EU should ensure that

+ EU funds and public lending mechanisms help reducing road freight transport and strengthen regional and urban public transport infrastructure and not individual car use;
+ lending for transport projects through the EIB or the EBRD is made available primarily for projects that promote a shift from road to rail and improve public transport systems;
+ any decision on EU spending on transport is based on a transparent and audited cost-benefit analysis that takes into account the long-term environmental costs, including the costs of climate change;
+ the aviation sector contributes its share to the necessary overall cuts, i.e. at least 30% by 2020 and 80% by 2050;

[49] The main argument of the study is that domestic flights are not subject to ICAO regulations that prohibit taxation of fuel brought into a State. The same situation arises when e.g. both France and Germany agree on taxation, but then e.g. a non-EU company flies between Paris and Berlin with fuel bought outside the EU. Available at http://www.umweltbundesamt.org/fpdf-l/2853.pdf.

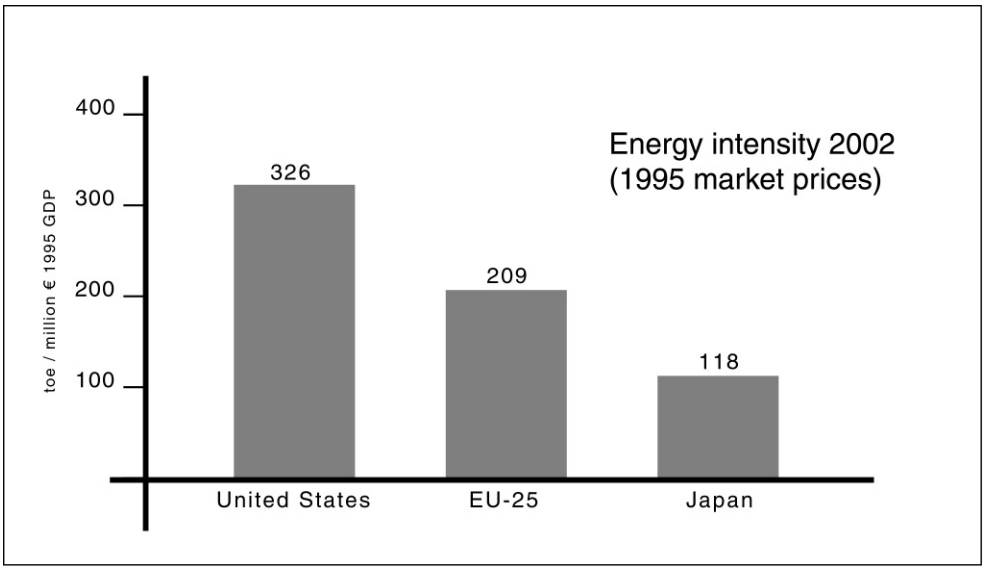
Transport: what we need.

+ en-route emissions charges, kerosene taxation or both are introduced, ideally on an EU-wide scale, but possibly starting with only a few progressive countries. Such charges/taxes should be set with a view to achieve the emissions target above.
+ binding legislation is put in place, requiring carmakers to reduce CO2 emissions from cars to at least 120g CO2 per km by 2010. This should be combined with a framework for Member States to tax cars according to CO2 emissions.

8. Energy Efficiency and Energy Demand

We use too much energy too inefficiently. Most electrical appliances have energy efficiency improvement potentials of 40-60%. What is needed is a drastic increase of energy efficiency in all sectors from refrigerators over cars and thermal insulation to industrial motor drives and district heating. The International Energy Agency has identified energy efficiency measures as the most cost effective way to reduce greenhouse gas emissions.

The European Commission has said that 20% of EU-15 energy consumption can be saved at no cost, through increasing efficiency[50]. The UK government believes that potential to be around 30% in the UK, with reduced costs for consumers of about £12 billion annually[51], and in the new Member States this figure is even higher as average energy intensity per GDP in Central and Eastern Europe is double that in the older member states.[52] This huge potential has largely been left aside when preparing the new Member States for accession to the EU. Negotiations on energy market reforms have focused mainly on liberalisation and market-opening. Also, Structural Funds in the new Members States have been made available for investments in new infrastructure, electricity and gas interconnections but not for energy efficiency. This is to a large extent a missed opportunity, as efficiency measures benefit Europe's security of energy supply, private households' budgets and economic competitiveness; it has been estimated that e.g. in Slovakia 10,000 new jobs could be generated through energy efficiency measures[53].



Source: OECD 2002; dividing gross inland consumption by gross domestic product at 1995 market prices

[50] EC Final report on the Green Paper Towards a European Strategy for the security of energy supply, COM(2002) 321 final, EC 2002.

[51] The *technical* potential is more than 55%. Working paper "Energy Efficiency Strategy" to "The Energy Review"; UK Cabinet Office, Performance and Innovation Unit; UK 2002.

[52] European energy and transport trends to 2030; EC 2003; available at http://europa.eu.int/comm/dgs/energy_transport/figures/trends_2030/index_en.htm.

[53] Ending wasteful energy use in Central and Eastern Europe: an essential step for climate change policy in a competitive EU-25; WWF 2004; available at http://www.panda.org/downloads/europe/endingwastefulenergyincentraleasterneurope.pdf.

The European Commission has proposed an Energy End-Use Efficiency and Energy Services Directive, which is still being discussed. The proposal requires Member States to achieve annual energy savings equal to 1% of the amount of energy distributed and/or sold to final customers in the private sector, and 1.5% in the public sector. Introducing a target that sets out a linear path for cuts in energy is a good strategy. However, the proposed targets are far too weak. Overall greenhouse gas emissions need to be cut by about 3% per year, in order to achieve the necessary reduction of 80% by 2050 -- and this must be reflected in a corresponding target in the new Directive. Some Member States have already agreed similar figures nationally, e.g. the Czech Republic, that aims to annually save up to 3.5%, or Hungary that set a target of 7-8% covering fifteen sectors[54].

In order to increase the efficiency of power generation, the Co-generation Directive, agreed in early 2004, aims to promote the simultaneous production of electricity and heat ("co-generation"). Combining heat and power greatly increases efficiency and can lead to significant cuts in greenhouse gas emissions. The effective efficiency of co-generation can be 80% or higher, compared to about 35% for an average coal-fired electricity power plant and 50-60% for a modern gas-fired power plant. However, the Directive fails to quantify targets for EU member states and only asks them to observe and evaluate their national potentials without demanding any action to actually promote cogeneration. Also, a key prerequisite for exploiting the full potential of cogeneration is a modern district heating infrastructures. In Central and Eastern Europe, up to 40% of the households are connected to district heating, compared to only 10% in the EU-15[55]. These networks need modernisation and maintenance, for which EU funds should be made available.

The 'residential and tertiary sector' accounts for 40% of the EU's energy needs and thus offers the largest single potential for emission cuts in Europe. The Energy Performance in Buildings Directive, in force since 2002, aims to increase energy efficiency and energy demand for public, commercial and private buildings. However, this legislation does not tighten minimum standards but mainly introduces labelling and auditing measures. Neither binding nor indicative targets for emission cuts from the building sector are to be met through these efficiency standards. Also, the Directive covers only new buildings and existing buildings with more than 1000m2 floor space that are subject to substantial renovation. This constitutes only a fraction of the savings potential in the buildings sector, as most emissions come from smaller, existing buildings. If the Directive would cover *all* buildings, the potential of CO2 savings would be *five to ten times* higher, using existing and readily available technology[56].

Another huge potential, which is still largely untouched, lies in tackling energy efficiency of domestic appliances, which account for over a quarter of total electricity use and constitute the sector with, after private car use, the highest growth rates in energy use[57]. Replacing old and inefficient equipment in households could easily decrease energy

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[54] see footnote #53.

[55] see footnote #53.

[56] Mitigation of CO_2 - Emissions from the Building Stock. Beyond the EU Directive on the Energy Performance of Buildings; EURACE 2003; http://www.euroace.org/reports/R_160204.pdf.

[57] Energy Labels and Standards; International Energy Agency and OECD 2000; available at http://www.iea.org/textbase/nppdf/free/2000/label2000.pdf.

consumption by 40-50%[58]. Recently, the EU adopted the framework Eco-design Directive, that aims at making energy-using products more environmental friendly and efficient. Unfortunately, the directive lacks clearly defined, compulsory efficiency standards and sound verification mechanisms of voluntary agreements by industry. The vague provisions will now have to be translated into concrete measures for specific product groups, but it remains to be seen if this will lead to impressive efficiency improvements in this sector.

Efficiency: what we need.

In order to increase energy efficiency, the EU should ensure that

+ the energy savings in the proposed Energy End-Use Efficiency Directive complies with the ultimate objective to limit global warming. Therefore, the directive should set binding, annual targets for energy savings in Member States of at least 2.5% per year and 3% for the public sector.
+ product standards following the adoption of the eco-design directive must be base on best available technologies, forcing inefficient products from the market and giving priority to highly efficient applicances.
+ the scope of the Buildings Directive is expanded to *all* buildings, existing and new. The Directive should also set binding targets for emission cuts, exploiting the full potential of the housing sector.
+ finance for energy efficiency measures becomes a priority under the Structural and Cohesion Funds, including in the public housing sector and for district heating systems.

[58] Energieeffizienz statt Steinkohlesubventionen; Oeko-Institut 2005.

9. Renewable Energy

As highlighted in the previous chapter, Europe needs a revolution in how we consume energy -- but even more so in how we produce it. The potential is huge. It has been estimated that by 2050 more than 50% of global primary energy demand could be met from renewable energy sources[59]. This would not only significantly contribute to the reduction of greenhouse gas emissions but also decrease the dependence on fossil fuel imports -- and create hundreds of thousands of sustainable jobs: In Spain, Denmark and Germany, progressive legislation has already created about 250,000 new jobs in the renewable energy industry. [60]

The EU Renewables Directive aims to increase the share of electricity produced from renewable energy sources in the EU to slightly over 22% by 2010, which translates to 12% of total energy consumption. Non-binding targets are set for the Member States who shall take appropriate steps to encourage greater production of electricity produced from renewable energy sources. It is vital that both these targets are made legally binding and a long-term target is agreed, meeting at least 25% of primary energy consumption from renewable sources by 2020[61].

Over the last three years the share of renewable energy in the energy mix of the EU has stagnated at slightly over 5%[62]. It is no surprise that the share of renewable energies is growing in those Member States that have introduced progressive legislation to support these technologies, such as the feed-in law in Germany. Relying on existing measures at national level in the Member States, the EU will not meet its target but achieve only about 9-10% instead of the 12% target[63], and this only if Member States implement all measures put in place so far. However, the absence of progress e.g. on the biofuels directive in transport, which aims to increase the share of biofuels in all transport fuels to 5.75% by 2010[64], shows there is little optimism that the target will be met.

The European Commission has estimated that additional investments of about €10-15 billion per year are necessary to achieve the 12% target[65]. This is about half of the annual €22 billion in subsidies that the coal, oil and gas industry in Europe receives in the form of direct money flows or tax breaks, compared to only €5.7 billion for renewable energies, e.g. in the form of feed-in tariffs or quota-based support schemes, which other

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[59] Germany has made this a national target, as Environment Minister Trittin stated at his opening remarks of the 2004 international renewable energy conference, see http://www.bmu.de/english/renewable_energy/doc/3909.php.

[60] "9 Steps to Make Kyoto a Success"; WWF briefing; February 2005; available at http://www.climatenetwork.org/docs/Kyoto_9_steps.pdf.

[61] as suggested by the WWF Energy Intelligent Scenario. See http://www.panda.org/epo/climate.

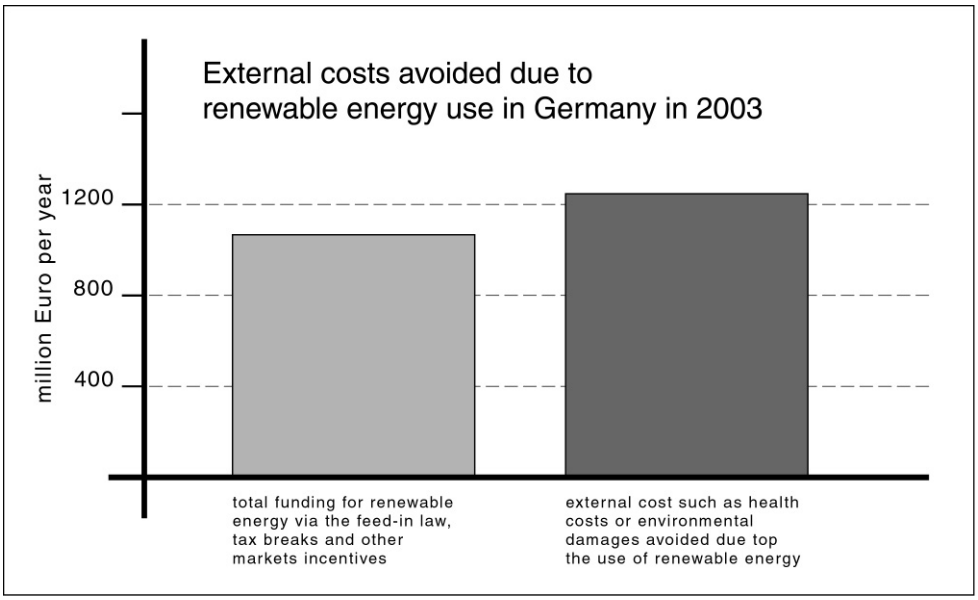
[62] EurObserv'ER: 2004 European Barometer of Renewable Energies; Paris 2004; at http://www.energies-renouvelables.org/observ-er/stat_baro/barobilan/barobilan4.pdf.

[63] Own calculations based on EurObserv'ER: 2004 European Barometer of Renewable Energies; Paris 2004; at http://www.energies-renouvelables.org/observ-er/stat_baro/barobilan/barobilan4.pdf.

[64] EU governments are largely failing to comply with the directive's requirements as the EC reported in March 2005 -- 19 out of 25 Member States had not yet transposed the directive into national law by end 2004, as required by the directive. EC press release IP/05/318.

[65] The share of renewable energy in the EU; COM(2004) 366 final; European Commission 2004.

countries have also put in place[66]. The bias towards fossil fuel use becomes even greater when including the external costs of producing energy from fossil fuels (see also Chapter 9). A calculation from Germany shows that support mechanisms for renewable energies actually save money for both public and private budgets: in 2003, the money spent for all support mechanisms for renewable energy -- such as feed-in tariffs or other market incentives -- was lower than what taxpayers would have paid for environmental damages or increased health care costs, if that energy had been generated from conventional and not from renewable sources. [67]



Source:
See footnote #67.

Wind energy remains the leading candidate for growth in the renewable energy sector. The global market more than doubled over the last five years[68] and has been estimated to increase six-fold over the next ten years[69]. European companies dominate 90% of the current market.

Especially in the Southern countries there is a large potential for solar energy. A new law proposed in Spain aims to increase solar thermal capacity and photovoltaic electricity on roofs on new or renovated buildings tenfold. If adopted, the new law would affect nearly half a million dwellings each year, covering up to 4.5 million square metres by 2010.

The costs of generating energy from renewable energy sources have dropped significantly over the last 20 years. As more and more energy is being produced from renewable energy sources, the generation costs will drop by another 30-80% over the next decades. Already today, electricity produced from wind is often cheaper than fossil alternatives -- even more so if the external costs from fossil fuels are included in the calculation.

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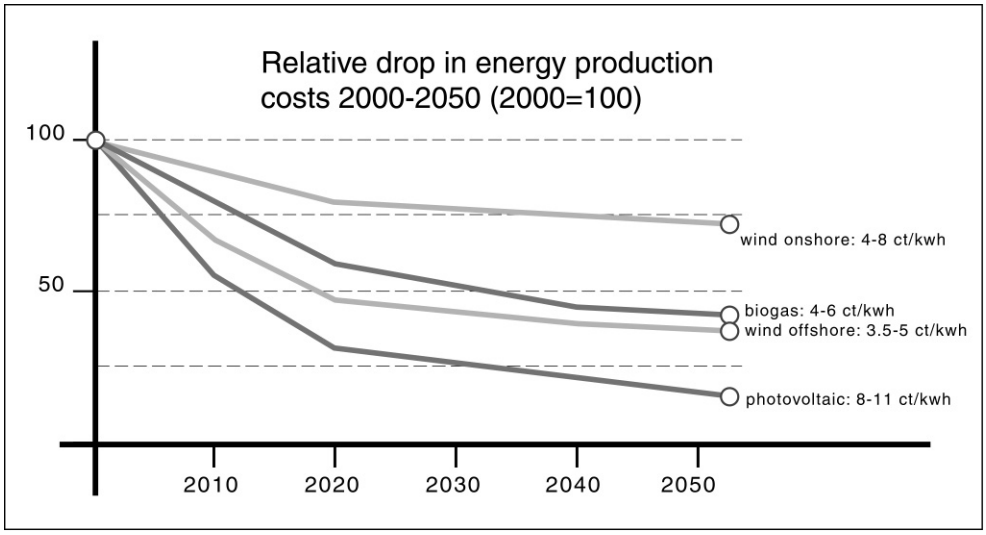
[66] Energy subsidies and renewables; EEA Briefing 2/2004; see http://reports.eea.eu.int/briefing_2004_2/en.

[67] About €1.1 billion compared to about €1.2 billion. Wolfram Krewitt, Joachim Nitsch; German Aerospace Centre: Forecast scenarios for the Potential Role of Renewable Energies, presentation available at http://www.europarl.eu.int/workshop/renewable/addocs/krewitt-en.pdf.

[68] 15.8% per year over the last five years, according to Danish consultancy BTM, Reuters; April 2005.

[69] Clean Energy Trends 2005; Clean Edge briefing; March 2005.



Source:
See footnote #67.

A large potential to further increase the use of renewable energies is the heating and cooling sector, from where nearly half of the European energy consumption originates. A large part of the demand could be met by renewable energies. For example, the technical potential for solar thermal energy has been estimated to correspond to about 30% of the oil imports from the Middle East, or 6% of total energy consumption of the EU-15. [70] Consequently, the renewable energy industry alongside with environmental groups are calling 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[71].

Renewables: what we need.

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, and 50% by 2050 is agreed, meeting the long term planning needs for large scale investments.
+ the additional costs of producing energy from fossil fuels, such as health costs or environmental damages, are internalised into the production costs, so that the real costs of producing energy becomes more transparent.
+ framework measures to secure market access and investor security, such as feed-in tariffs, are implemented in all Member States, based on the principle to internalise the external costs of producing energy from fossil fuels.
+ 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.
+ 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.

[70] Sun in Action II – A Solar Thermal Strategy for Europe
http://estif.org/fileadmin/downloads/sia/SiA2_Vol1_final.pdf.

[71] A proposal for such a directive, which is supported by Friends of the Earth Europe, has been prepared by EREC and is available at http://www.erec-renewables.org/publications/RES_heating_cooling.htm.

10. Public Spending: financing climate change

Every year, the European Union, through its Member States and the EU institutions, is spending billions of Euro to directly or indirectly support dirty technologies or unsustainable developments, which then lead to increasing emissions and delay the shift away from fossil fuel use. The spending policies of the EU or national governments or the lending policies of public banks can have a huge influence over where private investments are made and consequently their undermining nature with regard to progressive action is often underestimated.

For example, public banks such as the European Investment Bank (EIB) or the European Bank for Reconstruction and Development (EBRD) have substantial international lending programmes for economic transition in Central and Eastern Europe. Instead of promoting sustainable development, both the EIB and the EBRD are allocating billions of Euro for fossil fuel based energy projects or unsustainable transport systems.

EBRD lending for fossil fuel based energy projects between 1993 and 2003 totalled to €1.6 billion, compared to only €285 million (less than a fifth) that went into renewable energies[72]. Such investments not only keep our societies dependent on dirty technologies but also come with a lot of economic and social problems, e.g. the Sakhalin II Oil and Gas Project or the Baku-Tbilisi-Ceyhan pipeline that are financially backed by the EBRD, despite human right abuses, damages to ecosystems or pollution of drinking water sources[73]. The EBRD usually rejects responsibility despite the fact that most of these projects would not haven been begun without the bank's money.

The current review of its energy and natural resources policy is a great chance that the EBRD refocuses its agenda in the pursuit of sustainable development. Friends of the Earth believes that must result in replacing the financing of coal, oil and gas as well as nuclear projects with projects on energy efficiency and renewable energies. [74]

At the European Investment Bank -- the EU house bank -- the situation is no better. Between 1998 and 2003, approximately €7.7 billion[75] loans were granted to the transport sector in Central and Eastern Europe. Less than a fifth (17.5%) was used for the railway sector, and urban public transport received 7.5%[76] -- more than 40% of that money was used to built new roads. In the EU-15, in the same period about half of the €42.3 billion was used for expanding roads, motorways and air transport[77]. Money granted to the railway sector often came under severe conditions, often insisting to cut back public service,

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[72] Suggested Revisions to the Energy and Natural Resources Policies of the European Bank for Reconstruction and Development; WWF 2004.

[73] For example, see http://www.sakhalin.environment.ru/en/sakhalin2/msakhalin.html and http://www.bankwatch.org/issues/oilclima/baku-ceyhan/mbaku.html.

[74] NGO demands for the review of the Energy Policy of the EBRD, January 2005; available at http://www.foeeurope.org/climate/download/EBRD_demands_NGO.rtf.

[75] see footnote #81.

[76] Online database of the European Investment Bank at http://www.eib.org/projects/loans/regions/list.asp and calculations from the CEE Bankwatch Network.

[77] EIB group: Projects financed in 2003 and statistics; European Investment Bank 2004; available at http://www.eib.org.

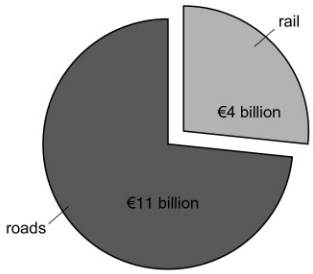
increase fares and close important parts of the railway lines. The result: A rapid decline in passenger numbers, as bus and rail fares become more expensive, encouraging increased car use especially in regions where lines were closed[78].

In June 2004 the EIB announced to increase the share of renewable energy projects to 50% of the total energy budget by 2010. Also, through the EIB's 'Global Loans' scheme, €300 million also to be set aside for renewable energy projects. However, recent NGO research was not able to find one single loan (sic!) for renewables energies granted through this scheme -- which admittedly may also be a result of the lack of transparency at the EIB.

Similarly, the record of the EU regional policy on climate change has so far been a complete failure: the four countries, which have so far most benefited from the Structural and Cohesion Funds (Greece, Ireland, Portugal, Spain) have witnessed by far the greatest increases of greenhouse gas emissions in the EU. Unless funding priorities are massively shifted towards the three areas of energy efficiency, renewable energy and sustainable transport, the trend is likely to be repeated in the new Member States, which will now become the main recipients of the EU funds. The 2005 negotiations on the strategic guidelines for the use of the EU funds 2007-2013 will show how serious these countries and the EU as a whole is about addressing climate change and fostering sustainable development paths in poorer and disadvantaged regions of Europe. The current picture is bleak. In the 2000-2006 period, only €12 billion is being spent on transport projects other than roads or airports, and €788 million[79] is being spent on renewable energies and energy efficiency, out of the total of €212 billion of the Structural and Cohesion funds.

Supporting energy efficiency is key in the new Member States, where energy intensity is twice as high as in the rest of the EU. This is not only constituting an environmental problem but is also hampering economic progress and local household welfare. The cost-effective energy savings potential has been estimated to be twice as high as in the EU-15 and the technical potential reaches more than 55% in some countries[80].

2007-2013 EU Structural and Cohesion funds: transport sector allocation by mode



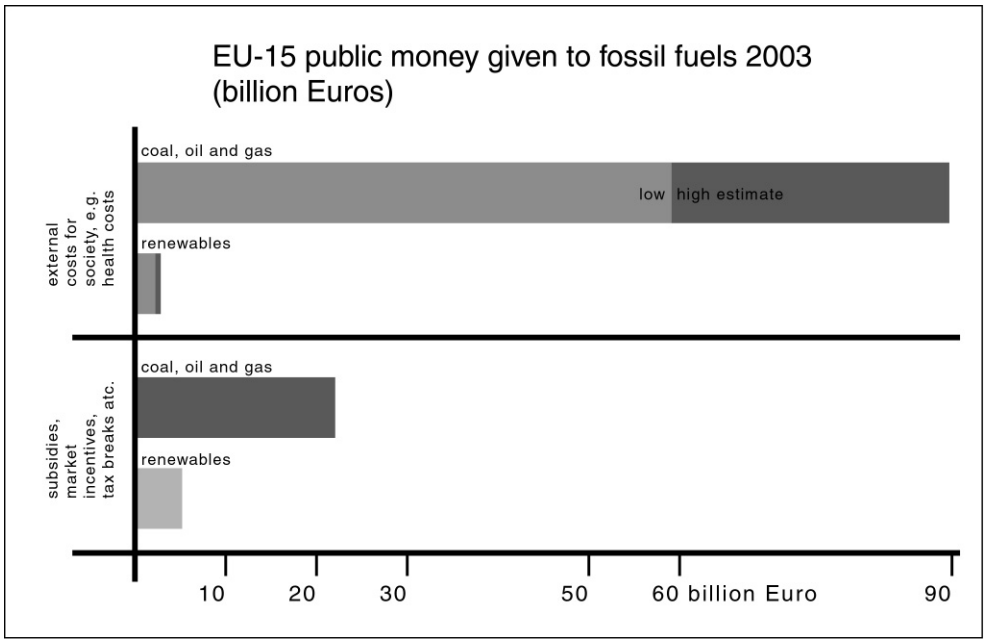
In the transport sector, funds could help upgrade the existing railway networks, renew regional roads and improve urban public transport – rather than being ploughed into thousands of kilometres of new motorways. However, the example of Poland shows that

[78] For example in Slovakia. See: Sense and Sustainability: Smart thinking to restart European transport policy; European Federation for Transport & Environment 2004; available at http://www.t-e.nu.

79 Funding the environment via the EU Regional Funds; European Commission, presentation by DG REGIO/DG ENV, January 2005.

[80] see footnote #53.

politicians often still follow the outdated model of simply building more roads: Of the €15 billion earmarked for transport projects in the period 2007-2013, €11 billion have been earmarked for roads and only €4 billion for railways, despite the EU's official aim of shifting transport from roads to rail. The whole region seems to be undergoing the contrary: between 1997 and 2001, rail passenger transport dropped by e.g. 49% in Bulgaria or 38% in Latvia; road freight transport increased by e.g. 38% in Lithuania or 25% in Poland[81]. The public transport sector suffers from unstable financial conditions and a serious backlog in investments for infrastructure renewal and maintenance. Where EU money has been allocated to public transport, national governments feel encouraged to exploit the opportunity to concentrate their own investments on road construction[82].



Source: Energy Subsidies in the European Union: A brief overview; EEA 2004

Finally, a key area where urgent action is required is the phase out of environmentally harmful subsidies. The fossil fuel industry is constantly attacking progressive support schemes for renewable energies. Yet the subsidies that the fossil fuel industry is receiving in the form of direct money flows or through tax breaks dwarfs that which renewable energy options receive, putting them at a competitive disadvantage. The European Environment Agency has reported that in 2003, EU member states subsidised coal, oil and gas with an annual €22 billion -- compare to only €5.7 billion for renewable energies[83]. Over the period 2006-2012, Germany alone will subsidise its coal industry with €15.9 billion.

Producing energy from fossil fuels has a lot of additional, external costs such as environmental degradation or increased public health care costs as a result of pollutants (e.g. respiratory diseases). It is estimated that in Europe these costs amount to about €60-90

[81] Heading down dead ends. Transport sector financing in Central and Eastern Europe; Bankwatch 2004; available at http://www.bankwatch.org/publications/studies/2004/dead_ends-transport_study_09-04.pdf.

[82] e.g. in Hungary as it is the case in Hungary, see Sense and Sustainability: Smart thinking to restart European transport policy; European Federation for Transport & Environment 2004; available at http://www.t-e.nu.

[83] Energy subsidies and renewables; EEA Briefing 2/2004; available at http://reports.eea.eu.int/briefing_2004_2/en.

billion[84] every year, not yet including the costs of climate change. These costs are not paid by the polluters (i.e. the energy companies) but by society -- effectively constituting another huge subsidy, again keeping the price of dirty energy artificially low compared to renewable energies.

Global trade: what we need.

The EU should ensure that

+ by 2010, Member States phase out all kind of direct or indirect subsidies as well as tax breaks for fossil fuel use.
+ all external costs of fossil fuel based technologies are fully internalised, e.g. through introducing EU wide eco-taxes, who could be implemented in a revenue neutral way, recycling the income back into the economy, e.g. shifting taxes from labour to energy use. As this will further support the spread of energy efficiency measures and renewable energies, such an internalisation would also take off pressure from public budgets such as healthcare systems.
+ the priorities for the Structural and Cohesion Funds are substantially shifted towards increasing energy efficiency -- including in the public housing sector and for district heating systems -- and the use of renewable energy as well as promoting sustainable transport, in order to e.g. reduce road freight transport and strengthen regional and urban public transport infrastructure.
+ lending through the EIB or the EBRD is made available primarily for projects that reduce climate impacts, such as improving energy efficiency and increasing the use of renewable energies as well as promoting public transport and a shift from road to rail, and that contribute to setting economies of target countries to a low-carbon path.
+ it puts pressure on the World Bank to increase its energy investment portfolio for renewables from the existing 6% to 100% by 2010, complying with the recommendations made in the Extractive Industries Review.

[84] See footnote #83.

11. European Trade Policy: fuelling climate change

Whilst the European Union is addressing climate change in a number of areas on the European and national level, it completely fails to integrate these concerns into its global trade policy. By pursuing the liberalisation of environmentally sensitive sectors within the negotiations at the World Trade Organisation (WTO), the European Commission is clearly undermining climate change objectives, ignoring the principle of environmental integration of the 1997 EC Treaty, which reads: "Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities [...], in particular with a view to promoting sustainable development."[85] Not only equal attentions needs to be paid to all three pillars of sustainable development – environmental, social and economic – but their effectiveness will be dependant exclusively on the degree of coherence of the overall policy approach. However, sustainable development is made-up of three interdependent pillars – environmental, social and economic – and consequently, its effectiveness will depend on the degree of coherence of the overall policy approach.

In the past, global transport networks have grown in tandem with the trade they help to facilitate.[86] Growing evidence suggests that the European Union's trade policy will increase transport related emissions even more, fuelling climate change. Recently released studies funded by the European Commission on the impacts of trade negotiations on the environment, have found that climate change will be a major result of liberalisation due to the increase in transport, deforestation and greenhouse gas emissions.[87] Transport related greenhouse gas emissions from Central Europe, for instance, are expected to double by 2030 from their 1994 levels. [88]

Although the consistency between the EU's policy on climate change and international trade has not been assessed systematically, there are reasons to believe that the negotiating position of the EU within the bargaining forum of the WTO will trade away climate change concerns. The EU's ambitious emission-reduction targets may well be compromised by its pro-trade liberalisation agenda for many environmentally sensitive sectors, such as energy and transport.

Indeed the EU's approach to multilateral trade negotiations has been characterised by two distinct elements: the general liberalisation across a wide range of sectors (including the energy sector); and the removal of domestic regulation, which often means imposing limits on governments' ability to regulate in the interest of the environment. The most remarkable examples are offered by the "General Agreement on Trade in Services" (GATS) and the "Non-Agricultural Market Access" (NAMA) agreement currently under negotiation within the WTO. The EU is a fervent supporter of both agreements, despite that

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[85] Article 6 of the Treaty establishing the European Community, consolidated text, Official Journal C 325 of 24 December 2002. See http://europa.eu.int/eur-lex/lex/en/treaties/dat/12002E/pdf/12002E_EN.pdf

[86] UNDP, 1997, Human Development Report 1997, Oxford University Press, New York.

[87] Institute for Development Policy and Management University of Manchester, Overall Project Final Report For Sector Studies: Agriculture, Distribution Services, Forests, April 2005, http://www.sia-trade.org/wto/FinalOverallApr05.pdf

[88] New Economics Foundation, 2000, Collision Course: Free trade's free ride on the global climate, p. 4. New Economics Foundation, UK.

both these agreements could jeopardise governments' ability to achieve their emission-reduction targets.

The General Agreement on Trade in Services (GATS) is notable for the wide range of industries and service operations it covers under its broad definition of "services". This has allowed the inclusion of sectors that touch virtually on every aspect of the natural world and the environment, with many of these sectors – such as energy extraction and production, electricity, transport, construction, power generation, etc – being a major contributor to climate change.[89]

The EU, together with the Unites States, has pushed systematically for the inclusion of energy services within the GATS. The EU has specifically demanded the inclusion of the full range of energy and fossil fuel operations – exploration, development, extraction, production, generation, transportation, transmission, distribution, marketing, consumption, management, and efficiency of energy, energy products, and fuels – to undergo complete liberalisation, despite the well documented adverse environmental impacts this industry brings. Oil exploration and extraction, pipeline construction and transport, fuel refining and electrical power generation, are well know to cause environmental damage such as deforestation and greenhouse gas emissions – both major caused for climate change. The expansion of energy service operations as a result of liberalisation brought by the GATS will worsen these impacts.[90]

Also the GATS can restrict or remove a country's ability to maintain regulatory measures to protect the environment and the public interest, including quantitative restrictions on services operations. Under the GATS, regulations must "not be more burdensome than necessary to ensure the quality of the service". In other words, a country would not be able to simply adopt a reasonable regulatory approach, but would have to thoroughly analyse all alternatives instead with a view of implementing the one least trade restrictive. With reference to the example of the energy sector, GATS disciplines could restrict governments' ability to place new quantitative environmental restrictions on fossil fuel exploration and drilling, extraction facility construction, and petroleum pipeline construction and operation.

Within the framework of the Non-Agricultural Market Access (NAMA) negotiations, all natural resources are effectively on the table for either partial or complete liberalisation. Proposals have been made to include all raw materials, such as oil and forest products despite the awareness of the over-consumption that will result from the liberalisation of such resources.[91] It is the EU's position to include all sectors, including environmentally harmful ones, such as forests, oil, gas and mining. In addition, it is the

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[89] Friends of the Earth International, Stop the GATS! WTO's general agreement on trade and services will undermine social and environmental sustainability, position paper, December 2004, http://www.foeeurope.org/trade/StopTheGatsdec04.pdf

[90] Friends of the Earth International WTO's general agreement on trade and services will undermine social and environmental sustainability, position paper , December 2004, http://www.foeeurope.org/trade/StopTheGatsdec04.pdf

[91] Friends of the Earth International , What you need to know about 'NAMA': Why the WTO's non-agricultural market access negotiations threaten both environment and development, position paper, October 2004, http://www.foeeurope.org/trade/NAMA%20position%20paper%20October%202004.pdf

EU's to expand the operation of European manufacturers in developing countries, which in turn could impact seriously on climate change.

Similarly to the GATS, NAMA foresees the removal of trade restrictions – known as non-tariff barriers or NTBs – including measures designed to protect the environment. At present a number of NTBs have been notified to the WTO for scrutiny, including energy efficiency standards, levies on fuel emissions, engine size requirements, etc.[92]

what we need:

With the aim of promoting a fair and sustainable trading system, the EU must ensure that:

+ GATS and NAMA negotiations aiming to liberalise trade in natural resources, such as oil, gas and mining, as well as forests, are halted in order to conduct a comprehensive assessment to examine the expected environmental and social impacts with a special view to the impact on climate change mitigation efforts;
+ any services related to energy or the extraction or collection of energy fuels, timber, and other natural resources are excluded from the GATS disciplines;
+ distinctions between different types of energy technologies and sources based on their environmental impacts are allowed in the GATS, thus favouring the use of renewable energies and energy efficiency measures;
+ governments maintain the authority over tariffs and non-tariff barriers genuinely intended to develop sustainable development and the sustainable management of natural resources;
+ Multilateral Environmental Agreements, including the Kyoto Protocol take precedence over trade rules and strengthen international environmental governance, including by upgrading the United Nations Environment Programme (UNEP) to a United Nations Environment Organisation.[93]
+ the Kyoto Protocol is ratified by countries prior to their accession to the WTO in order to ensure and improve the balance between multilateral environmental agreements and trade rules.

[92] For a detailed listing and analysis of the NTBs currently notified by WTO members to the WTO please see Friends of the Earth International "Analysis of Notifications of Non-tariff barriers in Non-agricultural Market Access (NAMA) negotiations of the World Trade Organisation" , the "Database of selected notifications", and "Additional Information about EU standards being challenged", available respectively at:
http://www.foeeurope.org/publications/2005/NTBsanalysisrev3.pdf;
http://www.foeeurope.org/publications/2005/NTBs2003-2005.xls;
http://www.foeeurope.org/publications/2005/NTBsEuropeanrev2.pdf.

[93] Strengthening International Environmental Governance, Friends of the Earth position paper; FoEI 2004; see http://www.foei.org

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