CLIMATE OPTIONS FOR THE LONG TERM

COOL Europe

EU Climate Policy

Short-term and Long-term Perspectives

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INTRODUCTION

Climate change has become one of the most salient environmental issues in the past decade. A broad consensus is emerging within the scientific community that there is a discernible human influence on global climate. The growing international concern is reflected in the 1992 UN Framework Convention on Climate Change and the 1997 Kyoto Protocol, the first binding agreement on emission reduction of greenhouse gases.

The main aims of this report, written within the framework of the COOL Europe project, are twofold. First, it has the ambition to provide a general overview of key issues and actors in EU climate policy and together with a historical background of the development of EU climate policy. These issues are addressed by *Magnus Andersson, Arthur Mol and Willemijn Tuinstra* (all from Wageningen University in the Netherlands) in the first paper of this report.

The second aim is to discuss the long-term climate policy challenges for Europe. It is clear that the EU has leadership ambitions in the process towards entry into force of the Kyoto Protocol. However, thus far, relatively little is known about its strategy for the second and third commitment periods and beyond. The question then arises: how could the EU become a fruitful climate policy platform for the medium and longer term?

Marianne Wenning, deputy head of the Climate Unit at DG Environment of the European Commission, points out that for the long term emission reduction will have to amount to 50-70 per cent of global carbon dioxide emissions in order to stabilize the carbon dioxide in the atmosphere of the level of 1990. What was achieved in Kyoto, -8 per cent for the EU, does not come close to this figure. According to Marianne Wenning, the discussion of long-term options is a vital element of a climate strategy that offers hope for a sustainable future.

Under what precise conditions would the private sector commit itself to undertake radical emission reductions? Among other things, this is likely to depend upon the structure of the future investment regimes. In his contribution, *Konrad von Moltke* (Dartmouth College, US and Institute for Environmental Studies, Amsterdam) argues that the climate regime is essentially an investment regime. In his view, virtually all strategies for emission reduction, whether undertaken by individuals, households, corporations or public agencies have the character of investments. To promote a consistent transition from more greenhouse gas emitting technologies to less-emitting technologies requires that the risk/return ration for the latter must be notably better than for the former. Von Moltke argues that the central issue for any international investment regime is its ability to balance the interests of private actors against public goods in a manner that is equitable and non-discriminatory. That is a goal that is currently beyond the reach of most international regimes, with the possible exception of the EU. The challenge that faces international society is the creation of institutions capable of achieving this balancing in an appropriate manner.

Graham Bennett (Syzygy, the Netherlands) analyses driving key driving forces for long-term institutional change of particular relevance for climate control measures in Europe. In Bennett's view, EU enlargement will have three important consequences for EU institutions. First, it will increase even further the already substantial degree of diversity within the EU, with a concomitant decline in Community cohesion. Second, the greater number of actors will complicate even further Community decision-making procedures and the allocation of competences. Third, the Union will face even greater challenges in ensuring that Community measures are appropriately, consistently and promptly implemented across a greater number and a more diverse family of member states. The greater diversity, institutional complexity and implementation challenges that are the inevitable consequences of enlargement will drive EU policy-making towards an emphasis on framework measures

that lay down the targets for a particular policy object while allowing the member states a greater degree of discretion in how the objectives are achieved and which instruments are applied for that purpose. This infers a shift towards longer-term policy-making and a greater need to develop policy frameworks, mechanisms and instruments that are effective in establishing and securing long-term goals and objectives – an essential requirement for effective climate control measures. Groups of member states may also establish forms of flexible co-operation, for example with regard to the use of economic instruments for climate policy.

Wageningen, June 2001

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EU CLIMATE POLICY - AN OVERVIEW

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1. Introduction

This paper, devoted the hitherto development of EU climate policy, has the following structure. Section 2 deals with greenhouse gas emissions in the EU. Section 3 presents the key institutions involved in EU climate policy. Section 4 looks at the development of EU climate policy. Section 5 analyses EU climate policy from a member state's perspective. Section 6 is devoted to sectoral perspectives. Section 6 discusses obstacles and bottlenecks to an effective EU climate policy.

2. Carbon dioxide emissions in the EU

The fifteen EU countries account for approximately 15 per cent of global carbon dioxide emissions (Collier, 1996). The EU is responsible for nearly 25 percent of the industrialised nations' greenhouse gas emission (Forum Umwelt & Entwicklung, 1999).

Carbon dioxide emissions vary considerably among the member states of the EU. This is mainly a result of differences in economic development and fuel choices in the energy sector (Collier, 1996). Six countries in the EU – France, Germany, Italy, the Netherlands, Spain, and the United Kingdom – cover more than 85 per cent of the carbon dioxide emissions of the EU (Aaheim and Bretteville, 1999).

The burning of fossil fuels accounts for the majority of EU carbon dioxide emissions. Energy transformation and distribution was responsible for 35 per cent of the EU's carbon dioxide emissions in 1990 (Forum Umwelt & Entwicklung, 1999).

Transport accounts for 30 per cent of all energy consumption in the EU and is responsible for 26 per cent of total EU carbon dioxide emissions. Road transport in particular consumes over 80 per cent of transport-related energy and is responsible for 75 per cent of all transport-related carbon dioxide emissions. In the past two decades a significant decrease of the energy intensity of vehicles has occurred. However, this improvement has been counteracted by an increasing number of cars, a higher share or larger cars, and an increase in kilometres travelled per capita (European Environmental Agency, 1995). In the EU, carbon dioxide emissions from transport are estimated to increase by 39 per cent between 1990 and 2010 in a business-as-usual scenario, due to increases in travel, especially air travel and freight transport (European Commission, 1998a).

In the first part of the 1990s, the economic downturn in the former GDR, the fuel shift to natural gas in several member states (particularly in the UK), the moderate economic growth and various policies in the energy and industry sectors were events that brought down the carbon dioxide emissions in the EU considerably. However, since 1994 carbon dioxide emissions are increasing again, largely due to the rapid increase in passenger and freight transport. Without additional policy measures, EU carbon dioxide emissions are expected to increase by some 6 per cent in 2010 from 1990 levels (European Commission, 1999).

3. The role of the European Institutions

The European Union is a political grouping of (since 1995) fifteen member countries. Below follows a presentation of the central institutions involved in the formulation, adoption, and implementation of EU climate policy.

The European Commission

The European Commission has the official and unique right to initiate legislation. The Commission acts as a defender of the three treaties - Euratom, the European Coal and Steel Community, and the European Community - that constitute the foundation of the European Union. (European Community is the legal entity representing the European Union.) The Commission must defend Community interests and avoid favouring any particular Member State (EU Committee, 1997).

The European Commission has the overall responsibility for preparing a proposal for ratification of the Kyoto Protocol by the Community (European Commission, 1999). The Commission consists of more than twenty Directorate-Generals (DGs). It is the climate unit of DG Environment (formerly DG XI) that co-ordinates the climate-related work of the Commission. The Kyoto Protocol has provided an incentive for a broader involvement of the DGs in the European Commission. The Commission has developed a number of Communications and Directives in the field of climate, energy, and transport policy.

Within the recently established European Climate Policy Programme (ECCP), managed by the European Commission, various policy-makers, scientists and stakeholders meet to identify policies and measures which will help the EU to implement the GHG reduction target set by the Kyoto Protocol.

EU Council of Ministers

The Council of Ministers represents the governments of the fifteen member states of the European Union, within the Union's decision-making structure. The foreign minister is usually a country's main representative for major decisions, but a government may send any one of its ministers depending on the subject of the meeting, for example, finance ministers to financial affairs and environmental ministers to environmental affairs meetings. Meetings and deliberations of the Council of Ministers are organized by the Committee of Permanent Representatives (COREPER), which is composed of diplomatic representatives from the member states. COREPER is an important link between member states' national governments and the Community institutions. The General Secretariat provides the Council with assistance in its work. The Secretariat of the Council is made up of ten Directorates-General, each with specifically appointed responsibilities. Environmental affairs are handled by the Directorate-General for Environment, Consumer and Civil Protection. The Council's power to enact legislation is conditional upon the submission of a proposal by the Commission. The Presidency of the Council is held by each Member State in rotation for a six-month period.

The EU Environment Council consists of the environmental ministers of the fifteen member states in the European Union. It meets four times per year. Most questions are prepared by the Environment Working Party. It consists of representatives of the member tates'' Permanent Representations at the European Union. As a rule, they are assisted by experts from the national governments. Three issues are not dealt with by the Environment Working Party: (1) climate; (2) bio-safety (bio-diversity, import and export of genetically modified plants and animals); and (3) persistent organic pollutants. These three issues are dealt with the Working Party on Biosafety, and the Working Party on Persistent Organic Pollutants and the Working Party on Climate Change.

The European Council's Working Party on Climate Change (WPCC) (formerly Ad Hoc Group on Climate Change) is the key forum for EU climate policy. It consists of representatives of all member states and the European Commission.[1] The Presidency has a

[1] Until now, the most active countries in the WPCC tend to be United Kingdom, the Netherlands, and Germany.

key role in setting the agenda for the group. Continuity and co-ordination is ensured by way of so-called "troika co-operation" between the former, present and coming presidencies.

The European Parliament

The Amsterdam Treaty of 1997 gave the European Parliament greater influence over environmental decision-making. The importance of the Parliament was boosted through the extension of the co-decision procedure, which will apply to all environment initiatives. The Parliament can add amend Commission proposals and disagreements with the Council are settled in a conciliation committee (EU Committee, 1997).

Among the three key European institutions, the Parliament has the reputation of being the greenest one. For example, on the integration of the environmental dimension into transport policies the Parliament has always advocated the most radical positions among the Community institutions (Hey, 1997: 183). A plausible explanation of the parliament's green orientation is that green parties traditionally have had a strong representation in the Parliament.

In the past few years, the European Parliament has been advocating a stronger EU leadership in the international climate policy regime. In a Resolution on climate change adopted in December 1999 it called the adoption of an energy/carbon dioxide tax, implementation of national plans for cutting emissions, an early ratification of the Kyoto Protocol, and an enhanced dialogue with Japan, developing countries and the United States (Europe Environment, 2000).

Other institutions

A few more institutions of the European Union deserve to be mentioned in this context. The *Court of Justice* has jurisdiction to settle disputes within the Community. It has also jurisdiction where member states have failed to fulfill an obligation under the Treaty of the European Union. The *European Investment Bank (EIB)* is the European Union's financing institution. Its main task is to provide long-term loans to develop infrastructure such as energy, transport, and telecommunications. Financing of environmental protection accounts for approximately one third of all EIB operations (EU Committee, 1997).

4. The development of EU climate policy

This section outlines the most important developments in EU climate policy in the past decade. It contains a description of the first responses in the early 1990s (including the attempt to introduce a carbon/energy tax), and the preparations and the follow-up of the Kyoto Conference.

The first official EU response to the climate change problem was a Commission Communication to the Council in 1988. In 1989, the Commission formed an ad hoc committee on climate change with representatives of ten Directorates-General (DGs). The following year, 1990, a joint European Council between the Ministers of Energy and the Ministers of Environment proposed to stabilise carbon dioxide emissions in the EC by the year 2000 on 1990 levels (Collier, 1996). This decision implied that the twelve member states of the European Community became the first group of countries in the world to set a specific goal to mitigate climate change (Warren, 1992). The second Commission Communication, of 1992, was entitled "A Community strategy to limit carbon dioxide emissions". Its basic elements were the following:

- a monitoring mechanism for carbon dioxide and other greenhouse gas emissions;
- measures relating to the promotion of energy efficiency (the SAVE programme) and renewable energy sources (the ALTENER programme); and
- a hybrid carbon/energy tax (Ikwue and Skea, 1994).

The first proposal for a hybrid carbon/energy tax had already been made in a Commission Communication to the Council in September 1991 (Collier, 1996). The tax proposal was strongly supported by Belgium, Denmark, Germany, Italy, Luxembourg, and the Netherlands (Ikwue and Skea, 1994). However, opposition against the proposal was strong from the very beginning. Heavy industry representatives claimed that the tax would have a negative impact on international competitiveness. Among member states, the strongest opposition came from Spain and the UK. As a result, the tax proposal was removed from the official EU agenda at the European Council meeting in Essen 1994. The Council stated that the Commission should support those countries which were willing to introduce a carbon and/or energy tax (Huber, 1997). (After this, the Commission has elaborated a proposal for an energy product tax. It is based on an extension of the existing system of excise duties and a gradual increase in levels of taxation.)[2]

The European Commission actively supported the process leading to the adoption of the Framework Convention on Climate Change (FCCC)[3] which was opened for signature at UNCED in Rio de Janeiro in 1992. By October 1998 the Convention had been ratified by 176 Parties, including the fifteen member states of EU and the European Community (Grubb *et al*., 1999).

In preparation for the first Conference of the Parties (COP-1) of the FCCC in 1995 the Commission presented, at the request of the Council, a working paper on the current state of climate policy developments within the EU. The paper also contained proposals for policy options for the period 2005 to 2010. Among these were removing barriers to energy efficiency and renewable and environmentally oriented adjustment of the fiscal systems (Collier, 1996).

The key task of COP-1, held in Berlin between 28 March and 7 April in 1995, was to take the first steps towards an operationalisation of the goals defined by the FCCC. The fact that the United States was reluctant to discuss targets and timetables at this stage implied that the EU turned much of its attention to developing common and co-ordinated policies and measures (CCPM) (Gupta and van der Grijp, 1999). CCPM is the EU's main climate policy instrument. A common measure is supranational while a co-ordinated measure is carried out by an individual member state.[4]

The Second Assessment Report of the IPCC of 1995 gave the impetus for the EU to define its position as regards tolerable increases of the average temperature and the GHG concentration in the atmosphere. At its meeting 25-26 June 1996 the EU Environmental Council concluded that "global average temperatures should not exceed 2 degrees above pre-industrial level and that therefore concentration levels lower than 550 ppmv (parts per million volume) should guide global limitation and reductions efforts." The Council requested member states and the Commission, in the framework of the Ad hoc Group on Climate, further to develop the work started on QELROs.

The 1997 March meeting of the EU Environmental Council was a breakthrough for EU climate policy from several perspectives. Firstly, it endorsed the position that all industrialized countries should reduce emission to 15 per cent below 1990 levels by 2010. (The individual national targets added up to a 10 per cent reduction; it was however unclear how the remaining 5 per cent would be achieved.) Although the March 1997 EU Council

[2] It should be noted that some Member States have introduced energy and/or carbon taxes (European Environmental Agency, 1996).

[3] The Commission's report to UNCED stated that the "Community should make an important contribution to the preparation of an international agreement on climate change" (Gupta and van der Grijp, 1999: 2).

[4] "Common policies and measures refer to actions at the Community level that are adopted by all Member States usually in the form of a Directive or other legal measure. Co-ordinated policies and measures are actions which produce value added to national measures when these are co-ordinated at EC level" (European Commission, 1999).

failed to reach agreement on a reduction target for the year 2005 it could agree that an interim target should be set for that year. Secondly, the EU defined its targets in terms of a basket of three major greenhouse gases: carbon dioxide, methane, and nitrous oxides. Thirdly, the Council proposed a burden-sharing agreement that defined emission targets for each member state. Regard was to be given to: cost-effectiveness, differences in starting points, approaches, economic structures and resource bases, the need to maintain strong and sustainable growth, available technologies and other individual circumstances. The bubble agreement was an internal agreement on sharing out a collective 10 per cent emission reduction between its member states. The EU target-sharing agreement was indicative and not binding. Lastly, the Council underscored the role of common and co-ordinated policies and measures for the fulfilment of the reductions emerging from the protocol negotiations (Grubb *et al*., 1999).

The EU Environmental Council of 19 June 1997 reached agreement on a reduction target for the year 2005. It was set at half the 2010 reduction and without any agreement on its distribution between member states. Moreover, the EU governments reached a compromise on emissions trading. The Council considered that emissions trading to be supplementary to domestic action and common and co-ordinated policies and measures.

EU and the Kyoto Protocol

The first binding protocol on mitigation of anthropogenic greenhouse gases was reached at the third Conference of the Parties (COP-3) in Kyoto, December 1997. The Protocol defines legally binding quantified constraints on greenhouse gas emissions from each industrialized country. In the Kyoto Protocol, Parties belonging to Annex 1 of the FCCC have committed themselves to reduce their greenhouse gases emissions by 5.2 per cent on average over the period 2008-2012 compared to 1990 (Aaheim and Bretteville, 1999). The EU target is 8 per cent. The United States and Japan have committed themselves to slightly lower reduction targets. The Protocol covers a basket of six gases including carbon dioxide, methane, nitrous oxides, PFCs, HFCs, and SF6 (OECD, 1999).

A central feature of the Protocol is the inclusion of various flexible mechanisms for international transfer. These mechanisms offer an opportunity to fashion a new culture of international co-operation. The three Kyoto mechanisms – International Emissions Trading, Joint Implementation and the Clean Development Mechanism – allow for flexibility in the implementation of the emission reduction efforts. The latter two refer to the transfer of emission reduction credits earned on the basis of emission abatement projects in other countries (European Commission, 1999). It ca be noted that there is hardly any experience in the European Union with instruments such as the Kyoto mechanisms.

The EU Environmental Council of 23 March 1998 expressed its regrets that it was not possible to agree upon the inclusion of legally binding policies and measures in the Kyoto Protocol. The Conclusion welcomed the provision relating to aviation and bunker fuels and the provisions for co-operation on and co-ordination of policies and measures. The Council urged the Ad Hoc Group on Climate to continue it work on CCPM. Furthermore, it was underscored that climate change considerations should be integrated in a number of key policy areas. The June EU Environmental Council of 1998 reached agreement on a formal burden-sharing agreement of its member states' commitments under Article 4 of the Kyoto Protocol.

In May 1999 a Commission Communication to the Council and the Parliament, "Preparing for Implementation of the Kyoto Protocol," was published. The Communication concentrated on proposals for policies and measures at Community level but it also called for the EU to consider establishing an emissions trading system by 2005.

Before the EU will be able to ratify the Kyoto Protocol it will have to design a structure of the compliance and the monitoring systems and to further elaborate ideas of the common and co-ordinated policies and measures.

Even if the Kyoto Protocol would not enter into force the European Union has politically committed itself to address the climate change problem. The Fifth Environmental Action Programme of the EU, adopted in 1993, emphasised that climate change abatement

has to be an integral part of all relevant policy areas.[5] The principle of policy integration was already mentioned in the Single European Act in 1987 and was acknowledged in the Treaty on European Union (TEU), signed at Maastricht in February in 1992 (Collier, 1996). The principle was again confirmed by the 1997 Amsterdam Treaty. At the EU summit in Cardiff 1998, heads of State in the EU made clear that climate change is the most obvious example for the need of integration of environmental concerns into other policy areas. The summit identified three priority areas for the integration process: energy, transport, and agricultural policy (Forum Umwelt & Entwicklung, 1999).

4.1 Sectoral perspectives

Energy

EU has launched several programmes to promote energy efficiency and renewable energy sources. SAVE (Specific Action Programme for Vigorous Energy Efficiency) is a programme for the promotion of energy efficiency. The first proposal for SAVE was made in 1990. It serves as a framework directive for measures such as energy labeling for appliances, minimum efficiency standards, and voluntary agreements with industry (Forum Umwelt & Entwicklung, 1999). The member states have a free hand in designing and implementing policies and measures under SAVE (Collier, 1996). JOULE-THERMIE is the European Commission's support programme for the development of new technologies. It is an integrated part of the Commission's strategy to achieve reductions of greenhouse gas emissions. ALTENER is a programme on renewable energy sources launched by the European Commission. It mainly consists of non-binding targets. Partly due to insufficient support from member states the programme has not yielded the expected results (Collier, 1996). It can be noted that the European Commission wants to double the share of renewable energy sources up to 12 per cent of the EU energy mix by 2010.

Transport

A strategy for a Common Transport Policy was elaborated by the Commission in 1992. The document's key recommendation were the following: (1) extension of infrastructures; (2) improving the capacity of existing infrastructures; (3) the liberalisation of transport market for all modes; and (4) internalisation of external costs in transport policy. Concepts such as inter-modality (the co-operation of the different transport modes) and interoperability (the compatibility of different national technological systems) were highlighted. The environmental dimension of infrastructure planning was to be strengthened by the development of, *inter alia*, Strategic Environmental Impact Assessment (SEIA).

In 1995, the Commission issued a Communication concerning a strategy to reduce carbon dioxide emissions from cars. The main pillars of this strategy were the following:

- agreement between the Community and the auto manufacturers involving objectives and provision for monitoring;
- the promotion of fuel efficiency of passenger cars;
- the introduction of a labelling system;
- research and technological development measures to improve the performance of cars in line the with the Task Force on the Car of Tomorrow[6]; and

[5] Liefferink and Andersen (1997) argue that sector integration has been an explicit policy goal ever since the Third Environmental Action Programme (1982-86). They conclude that "progress in this field has been extremely slow" (*ibid*.: 12).

[6] The aim of Car of Tomorrow is to support the development of a competitive clean car not later than 2005 (Geels, 1999).

- promotion of alternatives to road transport (EU Committee, 1997).

In 1995, the European Commission presented a discussion paper on fair and efficient pricing for the internalization of the external costs of transport (Hey, 1997). In July 1998, the European Commission and the European automotive industry – represented by the European Automobile Manufacturers Association (ACEA)[7] – reached an agreement on the mitigation of carbon dioxide emissions from passenger cars. ACEA has committed itself to achieve an average carbon dioxide figure of 140 g/km by 2008 for all its new cars sold in the EU. By 2000 individual car models with carbon dioxide emissions of 120g/km should be brought to the market. A review of the progress made will be carried out in 2003 (European Commission, 1998b). According to the Commission, the agreement with ACEA could contribute about 15 per cent of the total emissions reduction required from the EU under the Kyoto Protocol (European Commission, 1999). In addition to the ACEA-agreement, there are two other pillars in the EU's strategy to reduce carbon dioxide emissions from cars. First, a number of market-oriented measures will be used to influence motorists' choice towards more fuel-efficient cars. Second, a consumer fuel-economy information scheme to raise consumer awareness of fuel economy has been proposed by the Commission (European Commission, 1998b). With respect to freight transport, a few initiatives deserve to be mentioned. The Commission has proposed new rules for rail transport. The agreement on a new Directive on charges and taxes for Heavy Goods Vehicles is an important step towards a more fair and efficient pricing in transport.

In late 1999 the Commission adopted a Communication on air transport and the environment. It takes notice of IPCC estimates on emissions from the aviation sector which show that carbon dioxide emissions will grow at 3 per cent annually up to 2015.

Discussion

The European energy sector is in a period of major transition. Markets for electricity and gas are subject to liberalisation at both the Member State and EU levels. The liberalised electricity markets in the EU imply that expensive power plants will become less competitive. Less capacity will be needed in a united system than in isolated systems. Increased exposure to competition and commercial risk is forcing electricity generators to seek out less capital-intensive forms of generation. This has stimulated investment in gas-fired power. If liberalisation results in lower prices, then energy demand will be higher than it would otherwise have been. In the longer term, it could inhibit the adoption of carbon-free renewable energy. Another possible impact of liberalisation is a decline in research and technological development activity conducted by utilities in the public interest (European Commission, 1998a). The European energy sector is likely to undergo major structural changes in the next 10-20 years. It is imperative that policy signals are sent which facilitate the take-up of climate-friendly technologies, many of which will provide benefits even in the absence of climate change. Otherwise, the capital stock on the sector could become locked into a structure, which entails high emissions of greenhouse gases.

EU transport policies are still very much in the hands of national governments and local and regional authorities. The bottom-up approach of infrastructure planning could be seen as one barrier to the development of integrated and comprehensive transport policies in Europe (Hey, 1997). The complexity of transport infrastructures is a major obstacle to change. Much of the inertia is due to intransigence at the user level, especially amongst car owners with high mobility life styles (European Commission, 1998a).

The close links between the energy and transport sectors are reflected in the recent merger of the DG Energy and DG Transport. For both energy and transport policies the

[7] The following car manufacturers belong to the ACEA: BMW, Daimler-Benz, Fiat Auto, Ford of Europe, General Motors Europe, Porsche, Peugeot Citroen, Renault, Volkswagen, and Volvo (European Commission, 1998b).

Commission intends to develop the trans-European networks, to complete the Internal Market, to reduce the negative environmental impact, to increase co-operation with non-EU countries, to promote technological innovation and to increase the competitiveness of the EU economy. The new DG will refocus the management procedures for projects co-funded by the TEN, SAVE and ALTENER programmes. Five new units are created, one of them being dedicated to the development of clean urban transport (Europe Environment, 2000).

5. European climate policy and the member states

In the European Union decision-making power is still to a major extent with the Council of Ministers, giving the members states considerable influence in policy-making and policy implementation processes. It goes without saying that the diversity of member states in the EU leads to different interests and that policy-making and decision-making in the EU is often a forceful negotiation process between the member states (and also with the other European institutions, the Commission and the European Parliament). Notwithstanding some major institutional transformation in decision-making processes (most notably the majority voting for an increasing number of also environmental subjects) in the Maastricht Treaty, common policy-making continues to be strongly determined by (coalitions of) national interests. This general observation also holds for environmental policy-making and more specifically for EU climate policy.

In EU climate policy there exist a clear tension between the desire to take the leadership in global climate policies vis-à-vis among other the United States of America and Japan on the one hand, and the conflicting interests of member states on the other. The fact that the EU managed to speak with one voice in global climate negotiations in the last couple of years and especially during the Kyoto negotiations and their follow-ups, indicates the strong will (and also internal interests) in formulating common policies on this subject. In understanding the outcomes of EU climate policy - and thus the input of the EU in global climate negotiations - we cannot but pay significant attention to the positions and interests of distinct member states.

Perhaps one of the best ways in understanding the distinct positions of the EU member states in common climate policy is by analysing the issue of burden sharing in the EU. In contrast to the issue of a common energy tax (or eco-tax), on the issue of burden sharing the EU was quite successful in bringing together the various perspectives and interest within the Union and thus to take some leadership position towards other regions in the world.[8] Burden sharing was introduced in EU climate policy to be able to come with a common position in international climate negotiations (especially at Kyoto (COP3) and beyond) on greenhouse gas emission reductions, while at the same time the differences between the member states were taken into account. By analysing the process and outcomes of the EU internal policy-making process we are better able to understand the distinct interest and positions of member states.

Burden sharing towards Kyoto

The EU aimed at a common GHG emission reduction target of 15% in 2010 compared to 1990 emission levels. A major issue in the internal EU policy-making process was how to divide this percentage between the member states, as it was clear to all parties that there existed considerable difference between the member states regarding various dimensions in

[8] We have analysed in detail the distinct positions among some of the front-running nation-states in the field of environment on the issue of energy taxes (cf. Andersen and Liefferink, 1996). Up till now the EU did not succeed to pass a Union-wide energy tax, although in several member states such eco-taxes already exist.

the negotiation process towards the burden-sharing proposal. In making and negotiating a proposal the following differences played a major role:

1. The level of present economic development. It was clear from the outset that the so-called cohesion countries (Spain, Portugal, Greece, and Ireland) should be allowed to have additional economic development possibilities up to the average level of EU economic development. This meant that - given the close link between economic development and GHG emissions - these countries were confronted with less stringent emission reduction targets. (Table 1 nevertheless shows that both within this category of four cohesion countries as well outside them considerable differences in per capita GDP exist.)
2. Technological potentials for CO2 emission reduction between the countries. Here a variety of differences appeared: the actual level of energy efficiency (as those countries with already high energy efficiency level were less able to cut CO2 emission with reasonable costs); the actual level of energy sources (as countries with a heavy emphasis on renewable energies (Italy with hydro power), or on nuclear energy (France), or on plans to phase out nuclear energy (Sweden), have all less low-cost possibilities to cut CO2 emissions), while on the other side countries that stood at the eve of changing coal based electricity production to other sources had major opportunities to lower CO2 emissions (e.g. UK and Germany);
3. The structure of the economy (the division between internationalised industrial sectors, more domestic sectors, services, and agriculture) and the structure of the various sectors. Economies heavily dependent on energy-intensive internationalised sectors (industrial but also agricultural, e.g. the Netherlands) are more vulnerable to major CO2 emission reduction schemes, than economies dependent on service sectors or domestic industries. At the other side, economies that were at the eve of major industrial transformations could take significantly higher emission reduction targets (e.g. Germany with the heritage from East Germany; Luxembourg that was closing a major steel mill).

Table 1 gives the final outcome of the burden sharing between the member states of the EU, as it was presented at the eve of the Kyoto negotiations and as it was negotiated after Kyoto. As a kind of illustration the GDP figure per capita are added to show the relation between level of development and CO2 emission reduction percentages.

Member state	**Emission reduction % in CO2 eq (2010); pre-Kyoto agreement**	**Emission reduction % in CO2 eq (2010); post-Kyoto agreement**	**GDP per capita in 1997 ($)**
Austria	- 25%	- 13%	25 549
Belgium	- 10%	- 7.5%	23 820
Denmark	- 25%	- 21%	32 179
Finland	- 10%	0 %	23 314
France	- 5%	0 %	23 789
Germany	-30%	- 21%	25 470
Greece	+ 5%	+ 25%	11 438
Ireland	+ 5%	+ 13%	21 104
Italy	- 10%	- 6.5%	19 913
Luxembourg	- 40%	- 28%	37 346
Netherlands	- 10%	- 6%	23 280
Portugal	+ 25%	+ 27%	10 184
Spain	+ 15%	+15 %	13 530
Sweden	+ 5%	+ 4%	25 746
United Kingdom	- 20%	- 12.5%	21 740
Total EU	- 15%	- 8%	21 617

Table 1: GHG emission reduction percentages (for 2010 relative to 1990) as negotiated before and after Kyoto, compared with GDP per capita for 1997

After Kyoto

Three major outcomes of Kyoto that directly influenced the internal EU negotiations were the reduced reduction target for the EU (8% emission reduction by 2010 in relation to 1990 figures), the widening of the basket of three gasses to six gasses (including HFKs, PFKs and SF6) and the inclusion of the uptake of CO2 by forests. As the relation between CO2 and non-CO2 gasses that contribute to GHG emissions differs strongly between countries (e.g. Phylipsen *et al.*, 1998), new negotiations were necessary to finalise the internal division of contribution to the joint emission reduction targets (see Table 1). Important relative and absolute changes in the percentages GHG emission reductions can be seen in Table 1, in comparing pre- and post-Kyoto. Not in the last place the Netherlands has reduced its commitments significantly and has been criticised strongly on that. One of the conclusions that was drawn was that being a chairman in the EU prevents a country from being a laggard.

Grouping of countries

The above analysis made clear that the grouping of EU member states in coalitions with more or less similar positions and interest is far from easy and always debatable. Each country and national economy has its own specifics and its own preferences for climate policy. In putting major emphasis on two discriminatory factors, economic development and green political; outlook, Ringius (1999) for instance makes a division into three categories:

- The green and rich countries, such as Germany, the Netherlands and Denmark[9]
- The not so green and rich countries, such as France and the UK
- The less rich countries, such as the cohesion countries: Greece, Portugal, Spain and Ireland

Asbjørn and Bretteville (1999) make a distinction in two groups on the basis of an analysis of potential conflicts that are about to appear in countries: a “low-conflict” group consisting of countries such as the Netherlands, Germany and the UK, having limited difficulties in implementing the final Kyoto targets, and a “high-conflict” group, including France, Italy and Spain, having major difficulties in fulfilling the target negotiated after Kyoto. Here the emphasis in not so much on the economic development and green 'outlook', but rather on the relation between the present and future state of energy production and consumption on the one hand, and the outcomes of the Kyoto negotiations on the other. Although extremely relevant for the short-term analysis of difficulties to implement the Kyoto agreement in Europe, it does not give us a workable basis for the longer-term climate policies.

6. Discussion

Despite the fact that the EU is at the forefront of pressure for stronger action on climate change, it is still far from reaching an emission level that is compatible with sustainable development. In designing and implementing a common climate change policy the European Union faces fundamental obstacles.

Firstly, the institutional structure in EU climate policy is somewhat fragmented and many actors are potential players in the game: the Commission, the Council, the European Parliament, and the member states. Within each of these institutions competencies are not

[9] This category seems to fall together with what has also been labelled the Pioneers in European environmental policy-making (cf. Andersen and Liefferink, 1998).

always clearly delimited. For example, several Directorates-General may cover various aspects of a single policy field.

Secondly, member states have so far been reluctant to cede sovereignty in the areas of energy and tax policies. Unanimity voting in taxation issues makes it possible for single countries to use their veto power to block the introduction of a common carbon tax. The future evolution of climate-friendly economic incentives is partly dependent on changed EU decision-making procedures such as qualified majority voting on tax policy.

Thirdly, the EU climate policy-making process is rather slow, inflexible and introvert. Possible reform options to address these problems are: (a) a reorientation of the focus of the Working Party on Climate Change to increase its strategic capacity and to balance internal and external interaction and (b) an increased role for the EU Commission on climate issues. The possibility of a far-reaching institutional reform, shifting the negotiation competency from the member states to the Commission, is one of the possibilities. Strengthening the Climate Change Unit at DG Environment is a less far-reaching one.

Fourthly, there is a lack of coherent infrastructure planning. As a rule infrastructure planning in the EU is a bottom-up process, in which member states propose infrastructure links to be included into one of the European policies. The EU member states have a discretionary power of infrastructure planning. The EU has few competencies in the early and late stages of the planning process. This is an obvious obstacle for the establishment of a coherent framework for integrated planning of the infrastructure. In Hey's view, (1997: 187), "The fragmented characteristics of European infrastructure policies offer the opportunity to satisfy the needs of each individual country by an additive, bottom-up infrastructure approach. Therefore there is little support from member states to define priorities for environmentally friendly transport in infrastructures or for strong environmental safeguards. The Council is united in defending national infrastructure planning autonomy against the attempts of the European Parliament to formulate some safeguards." There is little scope to change priorities for environmentally friendly transport modes, as long as this is not supported by the respective countries.

Fifthly, the environmental, economic and social benefits of renewable energy and energy saving measures are obvious but these benefits have not yet been sufficiently incorporated into policy areas such as energy pricing, subsidies, and taxation.

One development that will have fundamental impact on long-term climate policy in the EU is the inclusion of countries in economic transition in Central and Eastern Europe. All the candidate countries in this region have committed themselves to emission reduction of GHGs under the Kyoto Protocol. As member states of the EU, they will be included in the EU's burden-sharing agreement. Given the high energy intensity in the former socialist countries, the potential for further reduction of GHG emissions is considerable. Joint Implementation is an instrument that is of mutual benefit for the candidate countries and the EU.

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3

KYOTO AND BEYOND: THE EUROPEAN DIMENSION

Marianne Wenning

As a policy-maker, one is often more interested in short-term options since they seem to be more manageable, and allow for quicker and – very importantly - visible results. However, I believe that the discussion of long-term options is necessary and a vital element of a climate change strategy that offers hope for a sustainable future. I also believe that it is a great challenge. A challenge which lies less in designing these options than putting them into practice.

The EU has a clear wish to see the year of 2002 as entry into force for the Kyoto Protocol. This means that we have to speed up preparations for implementation. The integration of climate change concerns in other policy areas such as transport, energy, industry, taxation and agriculture is of highest priority and was confirmed by the Helsinki Summit early December 1999. In addition to the further strengthening of the integration strategy the Commission has been explicitly requested by the Environment Council in October 1999 to put forward a list of priority action at Community level early 2000. This priority list is an important step in the direction of a long-term climate change strategy which will continue beyond the commitment period of 2008-2012 as laid down in the Kyoto Protocol. It will also be the beginning of a new approach that has been announced recently by Commissioner Wallström.

This approach has at its heart the involvement of all stakeholders be it business, NGOs, the research community, Member States and obviously the Commission services themselves. For the long-term success of a European climate change policy it will be necessary to develop some form of common understanding among affected parties of how and with what instruments we are going to actually reduce the level of greenhouse gas emissions. The European Climate Change Programme is a forum for such stakeholder involvement which was launched in 2000.

At this point it might be useful to remind oneself of the emission reductions which are required if a CO_2 concentration in the atmosphere of the level of 1990 is to be achieved. Reduction would have to amount to 50-70 per cent of global CO_2 emissions. Clearly, what we achieved in Kyoto, the 8 per cent, does not come close to this figure. It is evident that we will have to continue our reduction efforts after the first commitment period. This is particularly unsettling in view of the fact that even the achievement of –8 per cent poses big difficulties to the industrialised world. A look into Europe's emission inventories is not encouraging. Not only do we have insufficient data for many Member States we also see an upward trend in emissions, especially in CO_2 from 1994 onwards.

It is with this in mind that we have to approach any long-term options. Time does not allow an exhaustive discussion of all the issues that are important for a long term greenhouse gas emission reduction strategy. That is not to say that they don't matter in the short-term but it is only in the future that we see their full effect.

(1) One of the main pre-conditions for a successful long-term strategy on climate change is a change in our current energy system. There is little doubt that we need to phase out fossil fuels by increasingly producing and using renewable energy sources. By introducing a target doubling the share of renewables in final energy consumption from 6 to 12 per cent the Commission has made a first important step in that direction. The proposal for a Directive on renewables takes this a step further to concrete action. But let's be clear - in the longer term this will not be sufficient!

So, how can we achieve more? It is not the technologies that are missing. They have been available for some time. It is their so-called 'non-competitiveness' that keeps them out of market reach. But how can something that is relatively new – relative in comparison to oil for example – be competitive from the start? It's like letting a young promising sprinter compete in a 100 m sprint with a highly trained athlete. In order to get the youngster to the top a lot of hard work is needed from both the sprinter and the trainer. Both have to be prepared to invest time and money without expecting immediate return. Without firm belief and commitment however, they will not succeed.

(2) A similar commitment is needed with regard to improving energy efficiency. We have made improvements but 1 per cent per annum is not sufficient. A lot has been written about what is possible. We are talking about factor 4 and even 10. While this sounds still some way ahead it is the direction in which we have to move. In the meantime we need to use technologies such as combined heat and power plants to their full extent. We need to invest in buildings, public and private, to make them more energy efficient. In short, we need to look into all sectors of our economy be it energy, transport, industry or any other, identify the potential improvements which can be made and then do the necessary!

(3) At the same time we have to ask ourselves whether the price system we attach to our energy sources is still appropriate. Appropriate in a time when our common goal is to reduce CO2 emissions. It cannot be correct that those energy sources that threaten our global environment are not only left untouched but are in fact often cheaper than those that are more climate friendly. The price must reflect the environmental costs incurred. Only then will consumers have an incentive to buy them. Fortunately, at national level energy taxation is already widely used – not always to the extent possible – but nevertheless these developments are encouraging. It is a sign that in the long term this instrument will inevitably be applied at Community level.

(4) So far our efforts to reduce greenhouse gas emissions have concentrated on CO2. While this is certainly the most important gas we should not leave aside the other five. There are indications that for a second commitment period with even stricter emission reduction targets these gases will become more important if we want to achieve the reductions in a cost-effective way.

(5) Regarding cost-effectiveness, emissions trading has been identified as one of the instruments that could be beneficial. I know what some of you might be thinking. "No, I am not giving up the position that domestic action will be the main pillar on which we base our climate change strategy." Nevertheless, I am convinced that emissions trading will become an instrument within and outside the Community that we need to take seriously if we want to reach our targets. However, developing this instrument means covering new ground. Currently, we are collecting ideas on how emissions trading could work within the European Union. Pilot projects are likely to follow to gain experience in advance of the first commitment period 2008 – 2012. While we will see the first blossom of an international trading system within that period we will most certainly have to put more energy and thoughts into further refining such a complex system in the future.

(6) Having arrived at the international level – we all know that any long-term strategy on climate change will have to take account of the developing countries. It is there where the bulk of future greenhouse gas emissions will occur! It must be in our interest to assist and support these countries in all possible ways to prepare themselves for the second commitment period in which they will have to be 'members of the club' rather than watching from the outside.

The ‘Clean Development Mechanism’ is an important - though by no means the only - instrument in this context. The Kyoto Protocol allows it to become effective from the year 2000 onwards. I hope that we are able to get some of these projects off the ground soon, but I suspect that, as with emissions trading, it will take a while before we have satisfactorily resolved all the complexities inherent in this approach. We must ensure that it is designed in a way that enables the developing countries not only effectively to combat climate change but to contribute generally to sustainable development.

All these tasks can only be tackled by a concerted effort of all stakeholders. Policy makers at all levels need to be made aware of the policy options available. They need to understand their environmental and cost implications. Only then can they set the right signals for public and private consumers. Public authorities at all levels, industry, NGOs, financial institutions, scientists and researchers have to contribute to this process of clarification, of outlining the options and their ramifications. However, once decisions have been taken their implementation will depend on all these actors working to realise them.

4

INTERNATIONAL INSTITUTIONS FOR INVESTMENTS

Konrad von Moltke

The climate regime poses extraordinary challenges to the institutional structure for international economic management, in the European Union and beyond. Few mitigation strategies for climate change do not require significant new investment. Adjustments to existing facilities can certainly produce some reductions in the emissions of greenhouse gases, perhaps enough to stop the growth in total emissions but certainly not enough to reach the Kyoto targets, let alone any future targets that are implied by what seems to be the emerging scientific consensus on climate change.

Emissions trading permits the purchase of emission rights, an activity that will appear in the accounts of the purchaser – whether a state or a private actor – as a pure expense and consequently will impact the annual profit and loss account rather than entering the balance sheet like an investment. Emissions trading is also the only response to the climate regime that does not have any prospect of offsetting gains, either in enhanced revenue or in reduced expenditures. Virtually all other strategies for emissions reduction, whether undertaken by individuals, households, corporations or public agencies have the character of investments. While they may carry the prospect of offsetting income they also must be seen in relation to other investments and in the context of the overall allocation of the scarce resource capital.

This implies that the climate regime is essentially an investment regime. The investments that are needed will have to compete with other productive investments. The fact that greenhouse-gas mitigation investments can also be productive and can create a reliable offsetting revenue stream is useful but not yet a sufficient inducement to shift the general stream of investments in the desired direction. The central issue is the opportunity cost of such investments, even when they are profitable. The risk/return relationship of greenhouse-gas mitigation investments must be competitive with the risk/return relationship of other investments, in particular those with negative consequences for greenhouse-gas emissions.

There is mounting evidence that the major obstacle to investments in technologies that are desirable from the perspective of greenhouse gas emission reductions is not the potential return but the perception of risk. All other things being equal, faced with the choice between two investments that promise comparable returns on capital, one of which represents established technology with high greenhouse gas emissions and one of which involves innovative technology with lower emissions, an investor is likely to chose the established technology over the innovative one. The reason is the perception of risks associated with new technologies. In other words, to promote a consistent transition from more greenhouse-gas-emitting technologies to less-emitting technologies requires that the risk/return ratio for the latter must be notably better than for the former.

It is worth keeping in mind that the fundamental issue is the opportunity cost of greenhouse gas mitigating investments in terms of the relationship between risk and return. It is possible to improve this relationship either by increasing returns or by reducing risk. Presumably it will be necessary to address both options, and each option requires its own set of institutions.

Most attention has thus far focussed on the opportunities for increasing returns. For example policies have been adopted to provide producers of electricity from renewable sources with guaranteed – and to some degree subsidized – prices for the power they supply to the grid. Investment incentives have been provided for a range of energy-saving measures, including insulation and the installation of energy-efficient burners. The problem with most such

measures, whether adopted domestically or at the international level, is that they function like subsidies, and consequently have the disadvantages of subsidies. They create incentives to undertake activities that would not otherwise be undertaken and entail the risk that these activities will cease after the subsidy is withdrawn, or that other desirable economic measures that would be competitive without subsidy are not undertaken in the hopes of attracting the subsidy as a supplemental source of profits. Moreover subsidies are very difficult to withdraw once they have been awarded, making it likely that they will be continued well beyond their useful life. The institutions for improving returns on investments are well known – they involve public budgets, the disbursement of public funds, or the provision of tax benefits through the tax code. In that sense return improvements do not pose significant institutional challenges.

The scope for improving the risk side of the risk/return equation has not yet been adequately explored. Risk management has become one of the central concerns of those responsible for the allocation of capital. Most of the relevant models utilized in this process do not appear to address the climate change dimension of investment risk one way or another. It is, however, becoming increasingly manifest that the identification and management of relevant risk factors is more important than the calculation of returns in the allocation of capital. As risk is perceived in its fuller dimension the institutional aspects of risk management have evolved and become more complex. They require the participation of both private and public actors. From the climate perspective, they require the development of appropriate models to ensure that the key factors in terms of greenhouse gas emissions enter into the picture.

In the private sector, risk management is primarily the domain of banks and insurance companies. Enterprises undertaking new productive investments almost invariably require a range of related financial and insurance services. To obtain these they are required to quantify risk in a variety of ways. A simple example – from the United States – may serve to illustrate this point. Virtually all home mortgages in the United States are securitized since this permits banks to significantly increase their origination activities relative to their capital base and also perceptibly reduces interest rates available to the borrower. To securitize mortgages, however, banks must meet standardized criteria, one of which is connection to the power grid. In practice this implies that houses built with their own renewable energy supply, and consequently not attached to the grid, are twice penalized: since such loans must remain on the books of the originating bank and no bank has access to significant long-term deposits, such houses cannot be financed with long-term, fixed-rate mortgages. In addition the interest rates charged will be perceptibly higher than that for comparable mortgages.

There is clearly an urgent need to review risk management practices of banks and insurance companies to ensure that they are appropriately sensitized to their climate-change implications. As a rule of thumb, insurance companies will tend to be more sharply focused on specific climate-change impacts while banks will be concerned with the aggregate impact of climate change on investments they finance. This reflects the nature of each institution's business. Taken together, they can provide an effective screen for many climate change-impacts.

It is not widely appreciated that governments also play a major role in determining the risk dimension of the risk/return ratio. Productive investment requires a secure institutional environment, for the simple reason that such investments represent long-term commitments to the location where they are made. The investor acquires rights and obligations, and the future of the invested capital relies in large measure on the stability of its environment. Many government incentives to investment are related to creating physical infrastructure or ensuring adequate investment in human capital to support the specific venture. In addition, investors require functioning markets for services of all kinds, from banking to insurance to water supply or transport. These institutions are not created overnight and always require significant investments from governments.

The international dimension of these activities poses some particular challenges. The central concern is non-discrimination, but its achievement requires elaborate institutional structures to ensure equitable administration of the law, equal access to public services and to the market for private services (banking and insurance in particular), avenues of recourse when problems arise, a judicial system and adequate measures to ensure public safety. In all of these instances the achievement of non-discrimination involves a continuous process of balancing individual rights against public goods, and consequently the potential for discriminatory abuse.

To a certain extent, public authorities in one jurisdiction need not concern themselves with the question whether the institutions of another jurisdiction are effective or adequate from the perspective of investors. If institutions are inadequate, and all investors are exposed to the attendant risks in a non-discriminatory fashion, the essential economic goals have been achieved. Presumably market forces will then operate to determine the appropriate rate of return that is required to attract investment to a troubled jurisdiction. The goal of international economic policy is not the imposition of good economic policy on unwilling countries, it is the stability of the international system and the respect of the principle of non-discrimination. Bad economic policy is not by itself a reason for international action. This attitude changes dramatically, however, when there exists an international public good that requires investment in certain kinds of projects over a large number of countries. In those situations there exists a public interest to improve the institutional environment of the receiving country so as to facilitate the desired investments. This public interest is restricted to the attainment of the overarching public good, not to the general improvement of economic policy in any country. This is the situation the climate regime is currently facing. It is reasonable to ask oneself what kinds of international institutions can help to promote domestic conditions in all countries that will be conducive to making investments that are needed to promote the reduction of greenhouse gas emissions.

The central issue for any international investment regime is its ability to balance the interests of private investors against public goods in a manner that is equitable and non-discriminatory. That is a goal that is currently beyond the reach of most international regimes, with the possible exception of the EU. The challenge that faces international society is the creation of institutions capable of achieving this balancing in an appropriate manner. This challenge is more readily met if there is no attempt to make universal investment rules but to focus on investment rules that can contribute specifically to improving the risk/return ratio of projects that appear desirable from the perspective of climate change.

The institutions that may be needed are actually quite well known. The availability of essential services, international assurances that all relevant rules will be transparently and equitably applied, reliable access to essential factors related to an investment: land, resources, skilled an unskilled labor, markets for the sale of output, transport, the ability to import and export vital inputs and outputs, and judicial recourse in case of conflicts, including access for investors to an international tribunal that can help to protect their rights.

The advantage of focusing on climate-relevant investments lies in the balance that is automatically achieved between the improvement of individual rights (provided by an international investment agreement) and the pursuit of a legitimate international public good (provided by fulfilment of certain requirements grounded in the climate regime). In this manner the otherwise almost insoluble problem of balancing private rights and public goods can be solved structurally by embedding the international institutions of investment in a framework that pursues an international public good by definition.

5

LONG-TERM INSTITUTIONAL CHANGE AND CLIMATE CONTROL MEASURES IN EUROPE

Graham Bennett

Introduction: Institutional Change in a Changing Institutional Context

It is a curious fact that most current debates on the feasibility of securing institutional change in Europe fail to appreciate that the past fifty years have seen two separate and unprecedented institutional revolutions on the continent. The process that started with the establishment of the European Coal and Steel Community in 1952 and progressed through the European Economic Community and the European Community to today's European Union has transformed the economic and political architecture of western European. Then, nearly four decades later, the events of 1989 triggered a complete reordering of the political, economic and social institutions of twenty states in a region extending from the Baltic Sea to the Bering Strait.

Institutional change of such character, scale, magnitude and impact is unique. Moreover, both revolutions are far from spent – witness the current processes of EU and NATO enlargement, the forthcoming EU Intergovernmental Conference on institutional reform and the huge transition challenges still facing the countries of central and eastern Europe. The capacity for institutional change in Europe cannot therefore be questioned, nor the existence of powerful cultural, political, economic, social and technological forces that are driving further change. Unlike the US, where climate policy will develop within a remarkably stable institutional environment, the long-term prospects for climate control actions in Europe are certain to be profoundly influenced by the course of institutional change.

An analysis of institutional change in Europe shows that time and again it is powerful social, economic and political driving forces that determine the course and timing of institutional change rather than the operations of the institutions themselves; indeed, by their very nature, institutions have a vested interest in stabilizing institutional patterns. In other words, given a political or socio-economic critical mass, certain developments take place whether or not formal institutional competences or requirements exist; conversely, in the absence or decay of this critical mass, other developments will not take place, even where these may be legally required. The past 50 years have produced examples enough. For instance, the original Treaty of Rome laid down the primary task of the European Economic Community as the establishment of a common market, a task that was only seriously taken up some 30 years after the Treaty came into effect when economic recession stimulated the member states to embark on the "1992" project. Again, in the period up to 1987, broad social and political consensus on the need to mitigate increasingly conspicuous environmental problems led to the EU adopting some 200 legal measures concerning the environment, despite the fact that the original Treaty of Rome provided no explicit legal basis for the Community to regard the environment as a legitimate object of Community action. Or again, today, thirteen years after Article 130r(2) of the Single European Act required that "environmental protection requirements shall be a component of the Community's other policies", integration remains a major challenge for EU policy-making. Yet again, the more recent "velvet revolutions" in the CEE countries were driven by broad social dissatisfaction with the prevailing political regimes and institutions which, although apparently strongly embedded in the legal, economic and social fabric of all the countries in the region, had failed to generate sufficient credibility to be able to resist the upswelling of popular pressure for fundamental change.

The key issue is therefore how the driving forces behind the continuing institutional revolution in Europe will shape the boundary conditions that largely determine the future course and substance of climate control actions. Consequently, this paper argues from the premise that any assessment of the longer-term institutional context for climate control actions in Europe should focus on the forces that drive institutional change rather than on institution-specific analyses. Over a period of several decades, the most important institutional changes will be the consequence of responses to external needs and pressures rather than to short-term internal dynamics. Reforming voting procedures in the EU Council of Ministers will not significantly influence the course of European climate policy; a crisis concerning the legitimacy of EU governance that leads to a paradigm shift in the democratic accountability of EU institutions will.

Demythologising European Mythology

Before discussing these driving forces, it is worth pausing to reflect on a number of commonly held but largely erroneous perceptions on the character, operation and consequences of certain key European institutional processes. A first misconception is that the complex institutional architecture of the EU operates to obstruct any attempt to develop and adopt effective measures to resolve a "global-commons" problem such as climate change. It is true that the predominantly intergovernmental character of EU decision-making has difficulty in transcending the national interests of the member states; but it is also true that the emergence of an EU institutional culture and the wealth of Community procedures and competences that have evolved over several decades – and which apply to most aspects of environmental policy-making – enable the EU to function on the international stage with a far greater degree of unity, confidence and purpose than other intergovernmental organizations. The agreement to phase out the production of CFCs through the 1987 Montreal Protocol is a prominent example of how the EU can successfully shape global environmental action. Although in this case the original pressure for international action came from the US government, it was concerted action by the EU in support of production limits as the most effective instrument for reducing CFC emissions that persuaded first US environmental organizations, and then US industry and government, of the merits of such an approach in preference to the initial proposal by the US government for controls on CFC use.

It is also widely assumed that Community policies and legislation are invariably uniform with respect to the policy objectives and the formal obligations that are imposed on the member states. Thus, EU environmental directives lay down common protection levels, environmental standards and implementing instruments that apply without exception to all member states. Bound by this straitjacket of uniformity, the more ambitious member states and the policy-making institutions of the EU are constantly forced to accept Community measures that represent the "lowest common denominator" of the fifteen national policies of the member states. But in fact, an analysis of the *acquis communautaire* – and especially EU environmental law – shows there to be not only a remarkable degree of explicit or implicit differentiation in the level of obligations imposed on the member states but also considerable scope for each member state to adapt implementing measures to its own circumstances and requirements. See, for example, the various EU water pollution directives, the Habitats Directive and the EU position on implementing the Kyoto Protocol. This degree of flexibility, in combination with the persuasive pressures that negotiating processes always impose on small minorities, ensures that policy outcomes which represent the lowest common denominator are the exception rather than the rule in the EU.

A tendency in most analyses of policy-making in the Community arena is to focus solely on the role of the most prominent EU institutions: the Council, the Parliament, the Commission, the Court. However, the institutional environment that shapes the way in which the myriad of actors in this arena behave is far more complex and subtle. In reality these actors are

influenced by an enormous number of overlapping institutional footprints: at the international level alone, actors in the EU operate within frameworks developed through, amongst others, the Council of Europe, the CIS, the Benelux, the OECD, the NATO, the UN, the WTO and a range of specific multilateral agreements, in addition to the multitude of cooperative arrangements and interests in the economic sectors – aviation, energy, chemicals, agriculture, banking et al. Europe is an arena characterized by an enormous variety of interlinked institutional constituencies in which the EU, although politically the most prominent and integrated, is increasingly interacting with and becoming dependent on the actions of an interwoven lattice of institutions.

From a western European perspective, it is all too easy to confuse the widespread desire in the CEE countries to enjoy the economic fruits of EU membership with a wish to discard eastern for western culture: citizens in central and eastern Europe are western Europeans in all but name. The perspective from the east is far removed from such simple notions. To be sure, the candidate member states are well aware that they are being offered a binary choice: EU membership or not? A negotiated settlement on the future blueprint of the Union is not on offer, at most an agreement on where derogations from the *acquis* will apply and for how long. But there exists throughout the region a strong cultural preference for strong political institutions as a means to secure social stability and welfare. And in the long term, with the prospect that within a generation CEE countries will comprise about half the total number of EU member states, this cultural factor could prove to be of enormous importance for the future institutional development of an enlarged EU.

A final misconception which in the context of long-term institutional change in Europe merits correction concerns the effect of EU policies. Much has been written on the so-called "implementation deficit" of EU legislation, and particularly environmental directives which in the recent history of the Union have comprised about 40 per cent of all infringement proceedings against the member states. Implementation shortcomings have indeed been a serious problem with EU environmental policy: even after more than 20 years, the majority of member states have still failed to ensure compliance with the Birds Directive, to give just one example. Yet recent years have seen a major improvement in the implementation record of EU environmental directives. Serious enforcement efforts by the European Commission, judgments by the Court of Justice and the provision introduced by the Treaty of Maastricht whereby financial sanctions can be imposed on member states which fail to comply with a ruling of the Court have progressively had their effect. The present-day reality is that compliance with EU legislation is in general relatively good. More significantly, EU legislation is a far more effective policy instrument than other kinds of international agreement, where regimes with the capability to impose effective legal enforcement and, if necessary, persuasive sanctions are generally in their infancy. Moreover – again a point that is poorly appreciated – EU environmental measures are monitored far more rigorously than the provisions of multilateral environmental agreements, with a wide range of Community procedures and agencies ensuring that progress in implementing environmental measures and their effect on the environment is relatively well monitored and reported.

The Driving Forces

Which driving forces might determine the course of institutional change in Europe, especially with respect to climate change actions? Four forces may prove to be particularly influential during the coming decades: globalization, EU enlargement, scientific research on climate change and public values and perceptions. Globalization – the process through which the markets for products, services and investments and the operational sphere of companies become increasingly international in character – is responsible for a major shift in the balance of power and influence from government to market interests. Specifically, the capability of transnational companies and investors to take actions that have an impact on the environment

is outpacing the capacity of governmental institutions to manage the processes that cause those impacts. An "institutional deficit" is evolving as national governments become increasingly constrained in their opportunities to impose environmental controls on companies. These constraints are both legal in character – as more and more competences and environmental policy measures become responsibilities of the Union rather than the member states themselves – and economic, as companies become increasingly capable of shifting production operations away from countries where operating costs are relatively high and expansion opportunities are limited, both of which are adversely affected by strict environmental controls.

These developments are not being matched by a compensatory strengthening of international government institutions. However, companies are becoming increasingly aware of the need to strengthen their relationships with their consumers. Internationally renowned brand names can be worth billions of dollars: the potential economic damage to transnational companies from behaviour that is widely perceived to be socially or environmentally irresponsible is enormous – witness the Brent Spar example – particularly given the fact that the investment required to attract a new customer is on average four to five times that required to keep an existing consumer.

The second key driving force on institutional change in Europe is EU enlargement. A Union with, shortly, 21 member states, in the medium term with perhaps 26 and in the longer term with possibly 35 will impose substantially different needs and pressures on the structure and working of EU institutions. These changing needs and pressures are already the subject of serious attention and analysis – as demonstrated by the forthcoming EU Intergovernmental Conference on institutional reform in Nice. The enlargement will inevitably have three important consequences for EU institutions: first, it will increase even further the already substantial degree of diversity within the EU – cultural traditions and perceptions, political regimes, socio-economic profiles, institutional structures and processes, environmental conditions – with a concomitant decline in Community cohesion; second, the greater number of actors will complicate even further Community decision-making procedures and the allocation of competences; and, third, the Union will face even greater challenges in ensuring that EU measures are appropriately, consistently and promptly implemented across a greater number and a more diverse family of member states.

A third driving force of enormous potential impact is improved scientific understanding of the greenhouse effect – "potential" because it remains to be seen what results further scientific research on climate change will produce. However, it is almost certain that improved atmospheric models will further clarify the relation between emissions of greenhouse gases and climate change. It is also distinctly possible that these models will confirm the current hypotheses on climate change and enable the construction of more detailed and confident prognoses of global and regional climate changes. More interestingly, these scientific advances may be supplemented by evidence that demonstrates a causal link between specific natural disasters and climate change. The probable result would be the formation of a vocal and active constituency comprising the existing and potential victims of climate change and popular opinion that accepts the reality and seriousness of the threat. The "30% Club" and its role in promoting acid-emission control measures is in this respect an interesting precedent.

The final driving force that is likely to have a profound impact on European institutions is public pressure that follows from changing values and pereceptions. The values of European societies are evolving rapidly in response to economic and communication developments: traditional forms of social organization – families, communities, religious groupings, trade unions – are being superseded by common-interest networks which are more specialized, more extensive, more informal, more flexible, more transitory and more consumer-oriented in character. The falling away of the traditional structures through which groups have secured representation and promoted their interests in societal and political processes are being

replaced by a new evolution in civil society in which network interests are being organized and promoted through more direct, focused and flexible means, such as television and the Internet. With a greater proportion and volume of goods and services being provided through competitive markets, citizens are also becoming increasingly aware of their power as consumers. This development can be linked to a growing demand for more responsive democratic institutions which do not necessarily follow the ground rules of traditional government organizations, not least at the European level. In the longer term, these developments will ensure that the way in which societal values impact on those public and private decision-making processes that shape actions which have consequences for environmental quality will operate very differently to current mechanisms.

Institutional Impacts

The impact of these driving forces on institutions in Europe will be profound. The precise impacts, however, cannot be predicted with any degree of accuracy in the medium-to-long term: one of the most important lessons of recent European history is how events that are unexpected and to a large extent unpredictable can transform apparently highly resilient political and socio-economic institutions. (Note that this is not to say that such "surprises" cannot to a certain degree be anticipated.) As a consequence, any perspective on institutional change that measures its time horizon in decades cannot pretend to foresee the details of future institutional structures, competences and procedures. But although details can take on decisive importance in particular cases, it is the broad topography of the future institutional landscape of Europe and the main opportunities and obstacles that this implies for climate control actions that is important for the COOL process.

As a powerful and, by definition, global driving force, globalization will have far-reaching impacts at all institutional levels, across virtually all institutional sectors and on the relation between government and business. It will drive the process of harmonizing the economic policies and legislation of the main trading blocs – the EU, NAFTA and parallel developments in South America, Asia and Africa – and thereby reduce the scope for autonomous EU policy on many environmental issues. But this development is also likely to feed the countervailing needs for, first, more explicit and more elaborate international rules on the scope for local, national or regional differentiation with respect to trade regulations and instruments where this is necessary in the interests of environmental protection and, second, more effective international enforcement regimes. The current proposal to establish a World Environment Organization is a reflection of such a perceived need. To be sure, business will be reluctant to accept a significant degree of regulatory differentiation, but in a parallel development companies themselves will appreciate the advantages of launching initiatives that demonstrate a high level of social and environmental responsibility, thereby strengthening consumer trust in particular brand names and, in the words of an IBM executive, securing a "societal residents permit".

For Europe itself, the greatest institutional impacts during the next two decades will in all probability follow from the EU enlargement process. The greater diversity, institutional complexity and implementation challenges that are the inevitable consequences of enlargement will drive EU policy-making away from the traditional practice of negotiating highly specific and detailed regulations and directives; instead a far greater emphasis will be placed on framework measures that lay down basic rules and targets for a particular policy object but which allow the member states a greater degree of discretion in how the objectives are achieved and which instruments are applied for that purpose. This in turn infers a shift towards longer-term policy-making and a need to develop policy frameworks, mechanisms and instruments that can prove to be effective in formulating and securing long-term goals and objectives. In other words, the achievement of clearly defined and enforceable ends – to an increasing extent in the medium-to-long term – will become a more prominent component

of EU policy-making rather than the precise means by which these ends are to be achieved. For environmental policy, this implies a shift to the formulation of locally or regionally appropriate environmental and ecological quality and performance targets rather than detailed emission or technological standards. Where feasible, groups of member states may establish particular forms of flexible cooperation, for example with regard to the use of certain economic instruments. As in the case of globalization, an important consequence of EU enlargement will be a greater acceptance of more explicit rules concerning differentiated measures that are locally or regionally appropriate.

The impact of scientific research on institutional change is subject to greater uncertainties, in the main because it cannot be predicted how further research will alter our understanding of the greenhouse effect and the role of atmospheric emissions in the process. However, it is probable, if further research were to confirm the more pessimistic viewpoints – and almost certain if a number of conspicuous natural disasters were to be attributed to climate change – that the impact on public and political perceptions will be sufficient to drive changes to those institutions and mechanisms that are associated with the development of climate policies and control measures. That implies a strengthening of international mechanisms for dealing with global-commons problems or the creation of a dedicated and substantive global climate regime. Consumer pressure will also be such as to force business to demonstrate its environmental responsibility through initiatives that reduce the climate impact of branded products through innovations in product design and manufacture.

Perhaps the most interesting and potentially the most volatile driving force for institutional change in Europe is public perception. The unprecedented rate at which individual values, social organization and demographic patterns are changing suggests that the longer-term impacts on institutions could be profound. Some of the greatest impacts could result from the increasing need by individuals, groups and organizations – and, through continuing developments in information and communications technology, their expanding capability – to exert direct and multi-focused pressure on public and private institutions on matters of concern. The way in which two aspects of this process will operate are of special interest and importance. First, an area of potential tension is how these developments will interact with the cultural preference in the central and eastern European countries for strong political institutions, particularly if and when these countries make up a substantial proportion of the number of EU member states. It should not be forgotten that the long road to EU institutional integration and reform will carry two-way traffic: impulses for institutional change will come from the new as well as the old member states. Second, it is instructive in considering the potential for EU institutional change to bear in mind the institutional revolution that is taking place in the countries of central and eastern Europe and the forces that triggered this revolution: the EU as a political entity, and certainly its institutions as a means of formulating and implementing socially relevant measures, have never captured and enthused the public imagination for any prolonged period of time. Indeed, today they fail to command widespread popular respect and support. This makes the institutional constructs of the EU particularly vulnerable to a capricious event that could catalyze public opinion in the same way that the relaxation by the Hungarian government of controls along the Austrian border for citizens of the German Democratic Republic and the subsequent fall of the Berlin Wall inspired popular imagination in 1989. The potential consequences of a crisis in the democratic accountability of EU governance could be enormous – and the eventual outcome in terms of institutional reform is certainly unpredictable.

A final observation can be made on the significance of these institutional impacts for the future of climate control actions. Most of the projected consequences offer new and interesting opportunities for securing mitigating measures. For example, policy harmonization between the major trading blocs will require new global institutional mechanisms – possibly including an enforcement regime – which could be exploited for environmental purposes, particularly if new rules are agreed defining the scope for differentiation in the interests of

environmental protection; companies will better appreciate the advantages of taking voluntary environmental initiatives; EU policy-making will feature a more prominent long-term dimension, will focus more on the definition of enforceable environmental targets and will offer greater scope for flexibility by the member states in the choice of measures appropriate to achieve those targets; credible scientific evidence confirming greenhouse processes, if forthcoming, would lead to greatly increased pressure on government and business to take effective action and develop appropriate institutional arrangements; and changing public perceptions on democratic accountability and the legitimacy of EU institutions could force radical changes in European governance.

To be sure, these are foreseeable opportunities that are likely to be created by the institutional impact of driving forces that show evidence of persisting into the medium term at the very least. In that sense they represent a surprise-free scenario. But Europe's future will not be surprise-free – the continent has for centuries proven to be a remarkably complex and dynamic entity. In this respect, at least, the future holds no surprises, for the process of radical institutional change across the continent will certainly continue well into the 21st century; indeed, it is difficult from the perspective of 2000 to foresee a time when this process will stabilize or to predict the form into which Europe's institutional architecture will eventually evolve. That this process receives so little popular attention can only be accounted for by two factors: that Europeans have become accustomed to institutional change and, particularly in the EU, that citizens are not actively involved in shaping the process, which remains essentially an intergovernmental matter. But, as noted above, it would be naive to assume that both of these conditions will persist indefinitely. When either or both cease to apply, the institutional outcome will be unpredictable and possibly, as so often in the past, chaotic. The importance of developing response strategies as a means of exploiting events that may not be predictable but can at least be anticipated cannot be underemphasized.

Appendix: The EU's positions at COP-6.