Climate policy integration, coherence and governance

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PARTNERSHIP FOR EUROPEAN ENVIRONMENTAL RESEARCH

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Foreword

Scientific evidence of a causal relationship between human activity and climate change provides a major challenge to policy-making. Mitigation of climate change impacts and adaptation to them will affect our environment and our societies in many ways. For researchers, the sheer scale and complexity of the interactions between society and the environment are daunting, both from scientific and organisational view points. Major progress in understanding the complex interplay of the processes of global change, mitigation and adaptation measures, and their impacts, can only be made through well-coordinated joint research across national and disciplinary borders.

In November 2007, the Directors of seven of Europe's large environmental research organisations, united in the Partnership for European Environmental Research (PEER), expressed their commitment to this twofold challenge. They decided to implement two joint research projects: 1) A comparison of national adaptation strategies (Swart et al. 2009), and 2) Climate change policy integration, coherence and governance (this report). The rationale for this choice was the fact that, over recent decades, climate change research has focused primarily on the climate system, impacts in general terms, and on mitigation. The recent emergence of climate change adaptation policies in Europe, however, poses new challenges. It must also be recognized that the environmental, economic and social impacts of adaptation and mitigation policies will be affected by many other policies, which makes climate policy integration and coherence essential.

The PEER centres are heavily involved in national and regional research initiatives and in multidisciplinary environmental research programmes funded by the European Commission. This is an excellent position from which to compare the climate policies and coherence challenges of different European countries, using common concepts, methods and data. With this approach, important differences as well as similarities have been identified. Evidence-based conclusions and recommendations to policy makers at EU and Member State level are presented so that the implications for future policy development in the EU can be assessed.

This volume reports on the results of the project: Climate change policy integration, coherence and governance. Based on the conclusions of this study, major tasks are apparent for both policy makers and researchers. Policy makers need to place greater emphasis on climate-related issues than is currently the case in the planning and execution of general and sector specific policies. Annual budgets, impact assessments and spatial planning are examples of existing measures that should integrate climate concerns to a greater extent than they currently do. Addressing climate change and integrating

climate concerns into other policies requires a better understanding of the economic and social processes involved in mitigation, as well as in adaptation. This requires more research specifically focused on these processes and the role of policies within them. In addition, there is a huge need for increased policy and programme evaluation from a climate change perspective. This should provide new insights into how best to implement measures and develop them further.

As PEER chair, it is my great pleasure to introduce our climate change project outputs to policy makers and to our stakeholders in the international scientific community. I acknowledge and thank the many colleagues from various disciplines who contributed to the work, either as members of the two project teams, or by providing the multidisciplinary data in the PEER knowledge bank to support the studies. The lessons learnt in this joint programming of our research activities will be of great value for the future of PEER.

As PEER, we are committed to strengthening our integrated research and providing sound and policy-relevant information to Europe's decision makers. We look forward to contributing to the further development of the European Research Area by sharing and exchanging our expertise and skills with other relevant research institutions. Working together, we can ensure that future decisions will be based on the best information available, minimizing risks and, in some cases, turning threats into opportunities.

Wallingford, U.K., January 21, 2009

Prof. dr. Pat Nuttall
PEER chair

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Climate policy integration matters — Challenges and aims of the study

It is becoming evident that if high-consumption societies are to tackle climate change, significant changes in production processes as well as in consumption patterns will be required. Such transformations cannot be achieved unless climate change is taken into account in the general and sector-specific policies which underlie economic activity and general social development. When industry, energy producers or transport companies take action as a result of climate policies, they are also influenced significantly by other policies. The degree to which climate change issues are considered and integrated into existing policy areas is therefore a key issue, along with climate-specific measures such as emissions trading. This report assesses the extent of climate policy integration in different European countries, policy sectors and in some cases regions and municipalities. The assessment is based on five criteria: inclusion, consistency, weighting, reporting and resources. The report also analyses measures and means for enhancing climate policy integration and improving policy coherence.

Methods and added value

This study is based on several case studies at different levels of governance. The separately published country studies focus on Denmark, Finland, Germany, the Netherlands, Spain and the United Kingdom. In each country, several policies are examined, focusing on one or two policies in particular. In addition, some regions and municipalities are examined in detail. The study is based on the view that analysing and comparing experiences over time and across sectors and countries is beneficial and instructive. However, oversimplified, straightforward comparisons can be seriously misleading. It is essential, therefore, that case-specific characteristics are fully taken into account. By undertaking broad comparative studies with in-depth involvement by researchers with national knowledge and different disciplinary backgrounds, it is possible to maintain a

country- and context-specific understanding. At the same time, all of the new perspectives that emerge as a result of comparison using common concepts and questions can be introduced. This is the obvious added value of a network such as PEER undertaking studies such as this one.

Increased political importance and inclusion

This study shows that climate change is currently one of the most important political issues in Europe and that political support for climate issues is clearly broader than it used to be. Climate change has a more prominent role in governmental programmes than ever before, and it is no longer delegated to just one minister, one ministry or a few institutions. It has become a matter for prime ministers, whole cabinets and entire administrations. The most recent national climate strategies recognise the need for, and are built on, climate policy integration to a much greater extent than was previously the case. At the local level, many large cities, as well as smaller municipalities, have made climate commitments which are often more ambitious than commitments made at a national level.

Local experiences of extreme weather events combined with concrete local mitigation efforts have made it obvious that climate change mitigation and adaptation are matters for multi-level governance. There is a clear political opportunity to address climate change more broadly than ever before. In order to make the most of this opportunity, however, it is absolutely essential to couple climate change concerns and related solutions with other concerns, such as energy security, and with the responses to the economic recession that began following the financial crises of autumn 2008.

More specific policy instruments are required

This report demonstrates that the inclusion of climate change mitigation and adaptation in general governmental programmes and strategies has substantially increased in recent years. Improving the efficiency of climate policy integration does not therefore primarily require its further inclusion in high-level strategies. More than anything else, it requires that the question of consistency be more directly and openly addressed, that climate change is given more political weight, that systematic reporting is undertaken and that resources for integration – both in the form of know-how and money – are made available.

Of even greater importance than incorporating climate policy integration more deeply into policy strategies is ensuring that it is extended more fully to specific policy instruments. This entails adopting new policy instruments, such

as the 2008 Climate Change Act in the United Kingdom, and transforming the way in which well-established instruments are shaped and implemented. For example, the need to incorporate climate policy integration into spatial planning and governmental budgeting is common across the countries included in the study. It is important, however, that it does not become simply a question of reforming planning and budgeting processes – these are just means – but that the climate factor actually brings about a real change in land use plans and that funds are allocated in such a way that mitigation and adaptation by companies and individuals can be achieved.

Multi-level governance is a necessity for successful climate policy integration

Too frequently, both mitigation and adaptation are seen in the context of just one level of governance or, if several levels are concerned, they are viewed as simply a top-down control problem. This study has clearly shown that both mitigation and adaptation concerns all levels from the local to the global, and that the interactions between levels are complex and multidirectional. While adaptation to climate change at the local level is crucial, water management and agriculture are just two examples of policy areas which are essential for adaptation, and which need to be supported by appropriate national and European framework conditions, such as funding strategies and adequate legal frameworks. European mitigation strategies, on the other hand, must be implemented in sectoral measures at the national level supported by decisions taken at the local and regional level that directly or indirectly mitigate CO_2 emissions - for example, from traffic, energy production or energy use.

Reframing climate change as an "economic opportunity"

The study also demonstrates that climate change is no longer seen purely as a problem which entails costs and job losses. Increasingly, climate change is being reframed as an opportunity for innovation, new markets and enterprises. The idea being promoted is that so-called win-win opportunities can benefit industry and the climate alike and result in both mitigation of (or adaptation to) climate change and increased competitiveness. Innovation opportunities are being highlighted in several countries, including Denmark, Finland, Germany, the Netherlands and the United Kingdom. It is frequently the case that the innovation-based climate policy approach is focused solely on technological innovations, largely ignoring social innovations. The current emphasis on win-win solutions and innovation creates

new opportunities, but it may also conceal some trade-offs and cause some new conflicts. This is because, even if conflicts and contradictions often give rise to innovation, not all conflicts can be resolved by technologies or innovation, and the process of innovation can sometimes be very slow.

Reopening old controversies

When climate policy is integrated into an increasing number of policy sectors such as energy and transport, many old controversies and conflicts are reopened and reframed. The extended use of hydropower, and the construction of bridges, roads and waterways have all recently been promoted by arguments related to climate change. One of the main conflicts that has been reframed through climate change is that of nuclear power. Several countries have started to consider new nuclear power plants as an option for producing CO_2-neutral energy; in fact, climate change became a major argument when the Finnish parliament approved an application for a fifth nuclear power plant in 2001. As a consequence of issue-linkage, decision-making on climate policy also needs to manage and resolve technical and political trade-offs and the conflicts latent in public controversies on issues such as nuclear power and mobility. In these cases, the successful integration of climate change will depend largely on the ability to handle general conflicts over ideology and values.

More emphasis on assessment and evaluation is required for learning

The social and economic activities that lead to greenhouse gas emissions or vulnerability to climate change are very complex. Although research can contribute to an increased understanding of these processes, climate policy will always need to be formulated in a context dominated by uncertainty and ignorance. Climate policy integration – at all levels, from the EU to the local – should therefore be reflexive and able to learn from past experience. This means that the processes by which climate concerns are integrated into sectoral policies should be based on careful pre-assessment. In order to develop the policies adopted and implemented, however, policies should also be retrospectively evaluated from a climate perspective to a greater extent than hitherto.

1. Introduction

It is inevitable that any policy aimed at climate change mitigation or adaptation will interact with other policies. Interaction may take place during policy preparation or implementation, but happens in particular when decisions are made by target groups. When industry, energy producers or transport companies take action as a result of climate change policies, their actions are also influenced by other policies. The extent to which climate change issues are considered and integrated into existing policy fields is therefore a key issue to be tackled in the future. Furthermore, if European societies are to become low-carbon societies, and if their ability to adapt to a changing climate is to be enhanced, then the coherence between these policies and climate policy aims should be increased. If the low-carbon vision is to be achieved, it requires a comprehensive climate policy. Within such a comprehensive policy, climate-specific policies, such as emissions trading, should be complemented by general or sector-specific policies which take climate policy aims into account. In other words, annual budgets, financial policies, agricultural, traffic and regional policies would all need to integrate climate policy aims to a greater extent than hitherto in order to give consumers and producers stronger and more coherent signals.

Climate policy integration[1] and coherence should be viewed in the context of multi-level governance. Measures undertaken or suggested at the European Union (EU) level – such as the EU "Climate action and renewable energy package" (2008) and the Green Paper on climate change adaptation (2007) – interact with those originating at the national, regional and local levels. The outcomes of policy integration materialize as concrete actions, taken partly in terms of management or regulation, but mainly in the form of the changed practices of target groups. These actions are normally implemented at the local level.

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[1] Throughout this study we use the term "climate policy integration" and "climate policy" although the terms "climate change policy integration" and "climate change policy" would be more precise. The reason is that "climate policy integration" and "climate policy" are the terms that have become established in the literature and are also more communicative.

This study will first and foremost aim at an increased understanding of the features and conditions for better integrated and more coherent climate policies and governance processes. In addition, the endeavour is not only descriptive and analytical, but also practical – that is, designed to help improve policy performance.

The study's aims are:

- To assess the degree of climate policy integration in different countries and policy sectors (energy, traffic, spatial planning, education, etc.), in some cases at the local level, and to determine key coherence problems between climate policies and other policies at different levels.
- To suggest means – such as institutions, processes (e.g. EIA) or measures – to enhance climate policy integration and improve policy coherence, within the context of multi-level governance.

The study is based on the view that analysing and comparing experiences across time, sectors and countries is beneficial and instructive. Oversimplified, straightforward comparisons may be seriously misleading, however; and case-specific characteristics should be borne in mind. By undertaking broad comparative studies with in-depth involvement by researchers with national knowledge and different disciplinary backgrounds, the country – and context – specific understanding can be maintained at the same time as all the new perspectives that emerge as a result of comparison using common concepts and questions are introduced. Put bluntly, none of the research institutes involved could have undertaken the study in isolation – such a task requires a network.

The study deals with both climate change mitigation and adaptation policies. The Intergovernmental Panel on Climate Change (IPCC 2007, 878) defines mitigation thus: "An anthropogenic intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks." Mitigation policies thus refer to policies that are intended to enhance mitigation, i.e. to reduce greenhouse gas emissions or to promote sinks. IPCC (2007, 869) defines adaptation as, "Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including anticipatory, autonomous and planned adaptation." Adaptation policies are therefore policies that intend to enhance adaptation.

The report is structured in the following way:

- In Section 2 we introduce the key concepts, discuss the multi-case study approach and the materials used in the study.
- Section 3 summarises the findings on climate policy integration undertaken or under way in the countries included in the study.
- Building on the empirical experience and evidence of the country studies, Section 4 analyses the potential of key measures and means for enhancing climate policy integration and improving the policy coherence.
- Section 5 then discusses and summarises the central findings of the study and makes proposals for upgrading the climate policy integration and its coherence.
- The main conclusions of the study are presented in Section 6.

2. Key concepts, approaches, materials

2.1. Key concepts

2.1.1. Policy integration

Based on the definition of policy integration made by Underdal (1980), and environmental policy integration by Lafferty and Hovden (2003), we define **climate policy integration** as:

- the incorporation of the aims of climate change mitigation and adaptation into all stages of policy-making in other policy sectors (non-environmental as well as environmental);
- complemented by an attempt to aggregate expected consequences for climate change mitigation and adaptation into an overall evaluation of policy, and a commitment to minimise contradictions between climate policies and other policies.

In order to evaluate the degree of climate policy integration, one has to focus the evaluation by asking where policy integration should be found. Assuming that there is a political commitment that a policy objective should be integrated into other policies, this needs to be reflected in policy strategies – in general strategies such as government programmes, and in sector-specific ones – as well as in the policy instruments (e.g. laws, taxes, support schemes, information material etc.) by which the strategies are implemented. Since policy integration is designed not just to change bureaucracies but to result in actual climate change mitigation and adaptation, it is essential to extend the examination to include policy outputs[2] and outcomes[3] (Figure 1). If climate change is integrated into educational policies, it should be incorporated into the materials used in

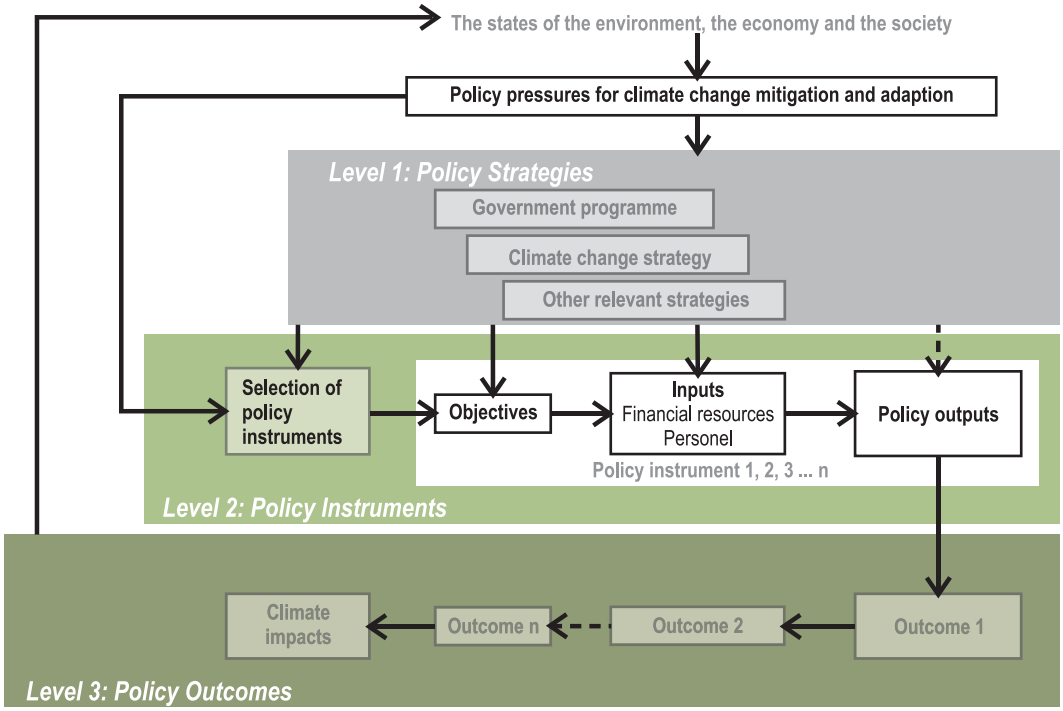

Figure 1. The policy levels at which climate policy integration may take place
(Mickwitz et al. 2008a) Arrows in Figure 1 indicate influence but not unconditional causality, since many other factors usually affect development.

schools, into lessons and ultimately into the knowledge and the daily habits of pupils. If policy integration proves to be a good way in which to promote climate change mitigation and adaptation, the more knowledgeable pupils will behave differently as adults. Furthermore, strategies and policy instruments may be formed at any governmental level, from the global to the local. The conceptual model in Figure 1 is thus not bound to any particular governmental level.

Policy integration can be divided into horizontal policy integration and vertical policy integration within and across governmental levels[4] (Figure 2). Horizontal policy integration refers to cross-sectoral measures and procedures by the government, or a governmental body, e.g. a commission, undertaken

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[2] *Policy outputs refer to "what the administration produces and the target groups are faced with, e.g. a seminar, an environmental permit with detailed conditions or a subsidy paid. It is often easier to distinguish outputs from the internal administrative results if one approaches outputs from the side of the target groups." (Mickwitz 2006)*

[3] *Policy outcomes refer to the actions taken by the target groups in response to the outputs (Outcome 1) and the consequences of these immediate outcomes (Outcome 2 … n). Very rarely is an outcome a result of policy outputs alone; rather it is affected by a variety of other factors as well.*

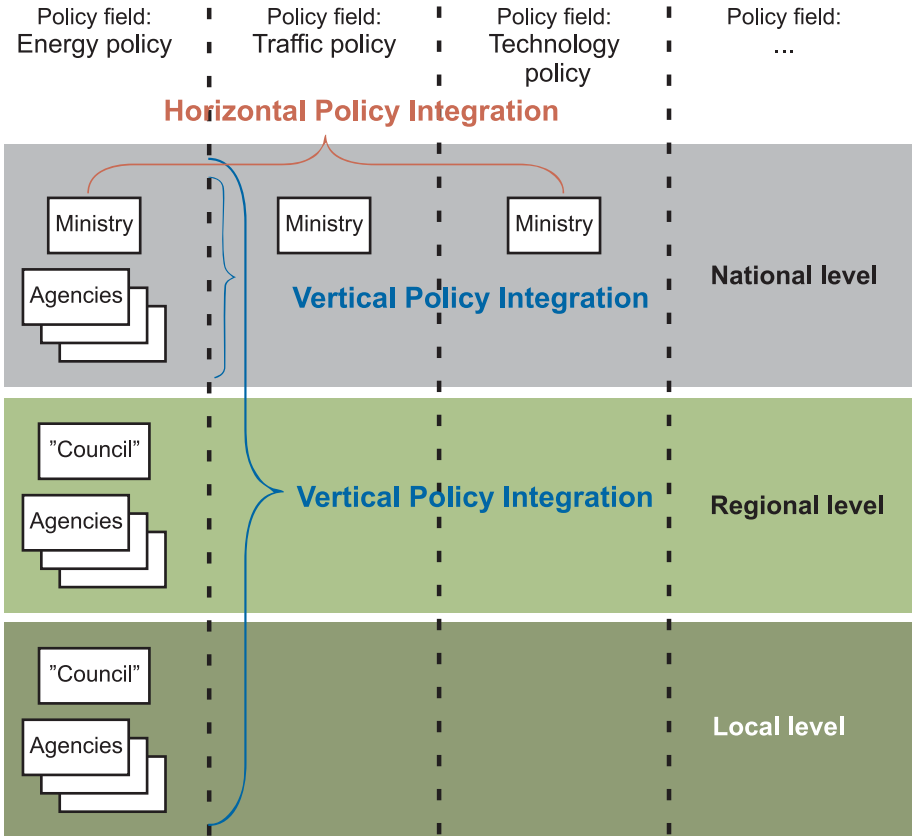

Figure 2. Horizontal and vertical climate policy integration
(Mickwitz et al. 2008a) Vertical policy integration may occur within, as well as between, levels (i.e. national state, state, region, local).

in order to mainstream or bring about a comprehensive integration of climate change mitigation and adaptation aims into public policies. Typical means include broad climate change strategies and the integration of climate policies into the preparation and adoption of new regulations and the annual state budget. Vertical policy integration within governmental levels refers to the integration of climate policies into a specific sector. It includes sector-specific strategies and decisions made at ministerial level, as well as the integration of climate policy

[4] *In this report, the term "level" is used in two different ways: governmental levels according to multi-level governance (local, regional, state, national state, supranational and global) and policy levels as in Figure 1, i.e. policy strategies, policy instruments and policy outcomes. In most cases the context makes it clear as to which type of level is being referenced; in cases where this is not obvious, governmental level is used when "level" refers to multi-level governance levels and policy level when "level" refers to the levels in Figure 1.*

into the strategies, measures and actions taken by different agencies under the supervision of a ministry. Vertical policy integration can be assessed at just one level, but it also refers to integration throughout many levels (i.e. national state, state, region, local). Thus, vertical policy integration across levels refers to the integration of climate policies over different levels of policy making according to multi-level governance approaches (Bache and Flinders 2004).

Some criteria are required in order to be able to assess the degree of policy integration (Table 1). Numerous researchers (e.g. Lenschow 2002, Jordan and Lenschow 2008) have studied environmental policy integration and developed methods to assess its extent. Organisations such as the OECD (2002) and the European Environmental Agency (2005a,b) have also developed criteria and checklists for assessing environmental policy integration. The criteria used in this study are developed on the basis of the definition provided above (more details are available in Kivimaa and Mickwitz 2006 & Mickwitz and Kivimaa 2007). The first criterion is "the inclusion of climate change aims". Some degree of "inclusion" is a prerequisite for the other criteria utilised. In order to recognise fully why climate policy integration cannot exist without any inclusion, the difference between policy integration and a policy with positive unintended side-effects from a climate point of view has to be taken into account. If a land use policy is reformed because of extreme weather, or an energy policy is renewed so as to decrease dependency on imported fossil fuel, but the first does not consider adaptation to climate change and the second does not address mitigation, this does not represent policy integration; rather, it signifies policies with synergies for climate policy aims. While inclusion in policy is necessary, it does not mean that inclusion in documents and statements is necessary. But documents and statements are written to reflect what is considered important and can thus be used as sources when examining inclusion or other criteria.

When integrating a policy, it is essential that different policy aims and instruments are consistent with each other; or, as expressed by Lafferty and Hovden (2003), there should be "a commitment to minimise contradictions". A common means of achieving compromises is simply to include many different aims in one policy. If this is done without any attempt to create a consistent whole, one cannot truly talk about policy integration. The second evaluation criterion is thus, "the consistency of the integrated climate change aspect in relation to other aspects".

Some have argued that, when there are conflicts between different policy aims, environmental issues should be prioritised (the second part of the Lafferty and Hovden definition). This argument is based on the view that environmental concerns cannot be balanced with other objectives because they relate to

preserving the carrying capacity of nature, i.e. the basis for any survival (Lafferty and Hovden 2003, 10). Climate change has been assessed as a serious threat to society. At the same time, it is clear that there will always be some emissions of greenhouse gases. There are many other pressing societal aims as well, however; and some of these are in conflict with the aims of mitigating and adapting to climate change. Some conflicts can be resolved by creating win-win options, while in other cases political choices have to be made. In these cases, the weight given to climate aims is essential for the ability of climate policy integration to promote mitigation and adaptation. The third criterion will thus be ”weighting of the integrated climate change aspect with respect to other aspects”.

The fourth criterion, ”reporting”, is based on the recognised importance of feedback for policy implementation. Reporting addresses the degree to which strategies include specifications ex ante about how climate change aims are to be followed up and reported. The reporting also takes into account the information on climate change mitigation and adaptation actually included in ex post evaluations of the policy instruments by which they were implemented.

Finally, policy integration is not just about intentions; it also requires knowledge and resources – in the form of personnel, money or time. Recognizing strategy links or the impacts of an instrument on climate change mitigation and adaptation is not an easy task. Policy integration at all levels is thus dependent on the know-how of the people involved, the time they are able to spend on these questions and the resources that they have at their disposal. The fifth criterion is thus, ”the resources for integrating climate change aspects”.

Table 1. *Summary of the criteria that will be used to assess policy integration (Based on Kivimaa and Mickwitz 2006).*

Criterion	***Key question***
Inclusion	*To what extent are direct as well as indirect climate change mitigation and adaptation impacts covered?*
Consistency	*Have the contradictions between the aims related to climate change mitigation and adaptation and other policy goals been assessed and have there been efforts to minimise revealed contradictions?*
Weighting	*Have the relative priorities of climate change mitigation and adaptation impacts compared to other policy aims been decided and are there procedures for determining the relative priorities?*
Reporting	*Are there clearly stated evaluation and reporting requirements for climate change mitigation and adaptation impacts (including deadlines) ex ante and have such evaluations and reporting happened ex post? Have indicators been defined, followed up and used?*
Resources	*Is internal as well as external know-how about climate change mitigation and adaptation impacts available and used and are resources provided?*

2.1.2. Policy coherence

Policy coherence is often taken to imply that various policies ”go together” because they share a set of ideas or aims. As pointed out by May et al. (2006) policy coherence is a relative term, and it cannot be measured directly. Policy coherence can be studied in respect of a policy sector (e.g. energy, transport, etc.), a target group (industries, energy producers, etc.) or a geographic area. Whereas some view policy co-ordination, consistency and coherence as synonyms, Jones (2002) argues that coherence goes further than the two other concepts in ”systematic promotion of mutually reinforcing policy actions across government departments and agencies creating synergies toward achieving the defined objective.” Whinship (2006) has stressed that policy coherence is not primarily about choosing between conflicting aims, but rather about enabling a process by which both aims and means can be redefined so that new win-win situations can be determined.

In this study, we shall refer mainly to the term ”policy coherence”. Policy coherence is used to imply that the incentives and signals of different policies – climate and others – provide target groups with non-conflicting signals. Policy co-ordination is one of the means of achieving coherence. An aim of policy integration is also to achieve coherence, i.e. to introduce processes and means that reduce coherence problems between sectoral and climate policies. One would thus expect there to be fewer coherence problems in cases of extensive climate policy integration, especially based on the consistency criterion. However, even though climate aims have been widely included and consistency addressed, there may be fundamental conflicts between climate aims and other policy goals – and thus coherence problems may remain unless climate aims are given overriding priority.

2.1.3. Multi-level governance

For the purpose of policy integration, the perspective of multi-level governance is especially important. Bache and Flinders (2004) state: "The multi-level governance concept thus contained both vertical and horizontal dimensions. 'Multi-level' referred to the increasing interdependence of governments operating at different levels, while 'governance' signalled the growing interdependence between governments and non-governmental actors at various territorial levels."

Policy interdependency as such is nothing new but well recognized from federal systems in various countries. It presents additional challenges for policy integration, because interdependencies frequently lead to unclear competencies or responsibilities for government agencies at different levels, often in respect of the problem of budgeting. Reforming such policy interdependency and improving policy integration is by no means a trivial matter. At the same time, multi-level governance offers the opportunity to mandate policy response to the most appropriate level, as expressed by the subsidiarity principle. The subsidiarity principle states on the one hand that the EU should act where the objectives to be pursued can be better attained at the Community level, but stipulates on the other hand that it should not act if objectives can be satisfactorily attained by the Member States acting on their own (Newman 2001). The principle is frequently extended to the regional and local levels as well, in support of the argument that action should be taken as close to the citizens as possible.

For climate policies to be effective, both aspects are of key importance. If one follows the principle of subsidiarity, action should be taken at the lowest appropriate level, which includes the local or regional level. One the other hand, given the issue at stake, action should also be taken at the national or European level. This allows concrete action on climate change adaptation at the regional level, for national legislation on greenhouse gas reduction, as well as for European leadership on binding reduction targets and funding. On the other hand, the European multi-level system needs additional policy integration because of the existence of complex decision-making structures and specific failures of governance (e.g. unclear or overlapping responsibilities), as addressed under the concept of meta-governance (Jessop 2004). Moreover, horizontal and vertical aspects of policy integration are strongly interconnected and multi-player processes are entangled with multi-level problems in complex, multi-level games, representing new forms of the internationalisation of the state (Brand et al. 2008).

2.2. A multi-case study approach based on a variety of materials

The research tasks of this study (Section 1) required two types of approach: a comparative approach and more detailed case-specific approach. The comparative approach is based on assessing different cases in terms of policy integration and coherence by using reasonably similar methods, concepts and data so as to allow for a comparison of the results. This has been done at different levels (country-region-local) and focused on one or two sectors in particular. The main materials were documents, interviews and in some cases focus group discussions (as elaborated upon in the country studies). A key principle of the study was triangulation; that is, the combination of several perspectives to gain an increased understanding. Four types of triangulation can be identified: multiple methods, multiple data sources within one method, multiple analysts, and multiple theories (e.g. Scriven 1991, 364). All four types of triangulation were used in this study. In addition to this main, comparative approach, specific approaches were used in some of the case studies. These are described in detail in the country studies; but, for example, the Spanish study used an actor-based assessment combined with a policy experiment, developed through participatory workshops.

This study is based on a case study approach. Case studies are typically studies of a case of something, i.e., they are not studies of a unique object. At the same time, generalisations cannot be made statistically from cases to any group of similar objects. This is because the cases are not selected on the basis of statistical sampling from a well-defined population of possible cases. Often, this is because the issues studied are not sufficiently well understood to determine the population, or the nature of the issues is such that it is not possible to determine the population precisely. For example, it is not possible to determine once and for all into which policy sectors it would be appropriate to integrate climate policy aims, or even how to divide public policy into sectors or levels; it depends on time and context. While statistical generalisations are not possible in case studies, they aim at ”analytical generalisation”, based on theory, previous knowledge and comparison of several cases. (Yin 1994)

This study is a multi-case study because it is based on several cases at several levels. It is based on studies of several countries, and in each country of many policies, but mostly centred on one or two, and on some regions and municipalities. The results can be compared and combined to give a deeper understanding, but it would not be useful to do this statistically.

In case study research, a critical issue is what the chosen case is a case of. As stated by Bent Flyvbjerg (2006: 238): ”The goal is not to make the case

study be all things to all people. The goal is to allow the study to be different things to different people." For those interested primarily in national climate policy integration, the relevant cases are the countries involved in the study, while for those interested in mechanisms (e.g. budgeting) or in a specific policy (e.g. flood management), there are cases at all levels of governance. Even though only some countries, regions and municipalities and a few sectors have been studied, generalisation can be made. These generalisations must be cautious, however, and take into account possible biases, e.g. this study's focus on North-Western European countries.

This report is largely based on the following country studies:

- The Danish country study: **Anne Jensen and Anders Branth Pedersen 2009**. Climate Policy Integration and Coherence in Danish Public Governance and in the Transport Policy Sector. Roskilde: National Environmental Research Institute.
- The Dutch country study: **Séverine van Bommel and Wiebren Kuindersma 2008**. Policy integration, coherence and governance in Dutch climate policy. A multi-level analysis of mitigation and adaptation policy. Alterra-rapport 1799. Wageningen: Alterra.
- The Finnish country study: **Paula Kivimaa and Per Mickwitz 2009**. Making the Climate Count – Climate Policy Integration and Coherence in Finland. Finnish Environment N:o 3/2009, Helsinki: Finnish Environment Institute.
- The German country study: **Silke Beck, Christian Kuhlicke and Christoph Görg 2009**. Climate Policy Integration, Coherence, and Governance Germany. UFZ-Bericht 1/2009 Leipzig: Helmholtz Centre for Environmental Research – UFZ.
- The Spanish country study: **María Máñez, Francisco Aix and Nils Ferrand 2009**. Spanish Country Report and Actors' based Assessment. Montpellier: Cemagref.
- The UK country study: **Hugo Reinert and David Carss 2009**. PEER 2: Policy Integration, Coherence and Governance – The UK Country Study. Edinburgh: The Centre for Ecology & Hydrology.

Unless otherwise stated, the empirical examples, evidence and conclusions come from and are based on the above-mentioned country studies. In addition to the above- mentioned country studies, research has also been undertaken in Bulgaria, France and Portugal. These studies have also informed the understanding of the issues in this report, but since it is unclear when and how they will be published no direct references to these experiences are made in this report.

The countries studied are both diverse and similar. From a global viewpoint, they have common characteristics: they are all Western European democracies; they are all members of the European Union; and they are among the richest in the world, with relatively well-developed climate policies. However, they are also quite diverse: they differ in their natural conditions, resources and assets; they are differently affected by impacts of climate change; they have different economic and socio-cultural structure; and they have their own histories, which are reflected in the current political and administrative cultures. For example, administrative structures vary significantly. The larger countries tend to have more administrative tiers, which complicates efforts to achieve climate policy integration at all levels. In all countries, however, processes or structures are required to improve co-ordination between levels. Despite the country-specific differences, commonalities can be found, and it is possible to learn from the experiences of other countries, although differences should be kept in mind.

Box 1. Two examples of the specific characteristics of national policy culture and administrative systems

Consultation, consensus and compromise are key words in the decision-making culture of the Netherlands. In policy-making, the national government not only consults decentralised governments, but interest groups are also incorporated informally into the policy-making process. From the viewpoint of the formal institutional structure, it is not surprising that there is a lot of informal cooperation between organisations. Responsibilities and power are spread over many organisations, overlapping and cutting across each other. This consensus-centred democracy, combined with decentralization, typically reinforces policy integration at the regional and local level. At the higher levels of organization, governments avoid making clear-cut "yes" or "no" decisions. These decisions are left to the regional and local level.

Spain in particular has a highly decentralised administrative system. The 17 Autonomous Communities (AACC) and, to a lesser extent, the local entities have a large degree of authority in important matters like education or health as well as in questions relevant to climate change such as transport or industry. The variety of issues on which political responsibility is shared is so vast that a new administrative body was created: the Environmental Sectoral Conference, which embodies the cooperation between central government and the AACC.

Before proceeding to an assessment of climate policy integration, it is worth noting that many developments have taken place since the Second World War

which have increased co-ordination problems in the public sector. Peters (1998) has stressed that the role of government has expanded, new agencies have been formed, decisions have been transferred from the ministries to the lower levels, the participation of clients as well as employers has increased, and many policy issues have become broader and more complex. The general co-ordination challenges and the attempts to address them are essential aspects of the context of climate policy integration. Enhancing climate policy integration and coherence may also be informed by and have synergies with policy efforts to address the general co-ordination challenges.


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3. Policy integration taking place and coherence problems observed

This Section assesses the degree of horizontal and vertical policy integration in the countries studied by using the criteria developed in Chapter 2.

3.1. Inclusion as the starting point for policy integration

The first criterion of policy integration is the inclusion of climate policy aims into general policies as well as sectoral policies. These aims refer to climate change mitigation as well as climate change adaptation.

3.1.1. Inclusion of mitigation

In most of the countries studied, climate change mitigation policy already has a history of about 20 to 25 years. Initially, mitigation was largely seen as a sectoral issue that was included in national environmental policy and/or energy policy. Policy integration in other policy sectors received less attention at that stage.

Although political attention to climate change mitigation has varied over the years because of economic conditions, political circumstances and external events, in recent years a significant rise in the political emphasis of mitigation has become evident. The increased importance of climate change is also reflected in the interest that the media gives to the subject. This increase in attention is exemplified by the statistics on climate change from six Dutch newspapers between 1990 and 2006 – rising from fewer than 50 articles in 1990 to almost 600 in 2006, with a threefold increase after 2003 (Hajer 2007). Climate change is increasingly given priority and it is placed high on many political agendas.

Regardless of their political background, governments and prime ministers have clearly declared their intention to deal with climate change. The current societal and political attention paid to climate change has boosted the inclusion of climate change in governmental programmes and strategies. In Denmark, for

example, the 2005 governmental programme mentioned climate change only six times, whereas the same coalition mentioned climate change 79 times in its 2007 programme. In the Netherlands, the coalition government led by Jan Peter Balkenende mentioned climate change only once in its first programme, whilst the current Balkenende IV government programme includes 30 references to climate change. At the same time, objectives for greenhouse gas reductions were not mentioned in the Balkenende I programme, the objective was simply to achieve Kyoto and EU obligations in the Balkenende II programme; whereas the target was raised in the Balkenende IV programme to a 30 per cent reduction in 2020 compared to 1990. Similarly, the emphasis on climate change in the programme of Matti Vanhanen's second government is greater than in any previous Finnish governmental programme. This increased political attention has led to the issuing of new and more ambitious national mitigation strategies in all of the countries included in the study.

These high-level commitments strengthen the political mandate given to ministries and agencies to address climate change and integrate it into the policies and practices for which they have responsibility. It is not just through high-level decisions and declarations, however, that leading politicians can provide signals and mandates for action. By specific action and clear statements on particular issues, it is possible to influence discussion and action at various levels by the public as well as by private bodies. For example, a letter by Finnish Prime Minister Matti Vanhanen to the editor of the largest Finnish newspaper, Helsingin Sanomat (January 9, 2008), about the future of Helsinki's energy has been cited, by civil servants at the national as well as local level in Finland, as a significant signal of the importance attached to the need for to start tackling climate change.

A general trend emerging from all of the studies is the broadening of policy integration in terms of sectors, actors, levels and scales. Climate change goals are included into a wide variety of sectors (ranging from energy, transport and infrastructure to innovation and technology policies and education). For example, whilst energy remains the focus of the 2008 Finnish national climate strategy, other policies are examined including: research, technology and innovation, education, consultation and communication, buildings and building, traffic, spatial planning and community structure, waste, and agriculture and forestry. The 2005 and 2001 Finnish strategies, by contrast, were focused just on energy policy. National governments are arguing more frequently that the enormous challenges of CO_2 emission reduction, storage and capture and the promotion of sustainable energy cannot be met by environmental or energy policies alone.

Box 2. Vertical policy integration from the EU to the city level

In a study by Monni and Raes (2008) an ex post approach was used to follow the implementation of the EU climate directives at national and municipal levels and to identify the relevant voluntary action taken in the latter. The city of Helsinki was used as an example, and the study covered the directives on:

- *the energy performance of buildings (2002/91/EC);*
- *the promotion of cogeneration based on a useful heat demand in the internal energy market (2004/8/EC);*
- *the promotion of electricity produced from renewable energy sources (2001/77/EC);*
- *the promotion of the use of biofuels or other renewable fuels for transport (2003/30/EC) and*
- *the landfill of waste (1999/31/EC).*

The study concluded that coherence between national and municipal policies was greatest in regulated areas, such as waste management and building regulation. Voluntary action was taken at the municipal level in areas where co-benefits were expected: e.g. energy conservation with economical benefits and biofuels for transportation with air-quality benefits. On the other hand, a clear conflict was identified between the EU and national renewable electricity targets and non-action at the city level. In that case, local conditions and private interest were obstacles to the implementation of a climate policy.

The increased emphasis on climate change is also reflected in new policy instruments or changes of existing policy instruments. Climate policy integration has taken place within all types of policy instrument – regulations, economic instruments and information. Policy measures to promote policy integration will be discussed in more detail in Section 4. Generally, however, the specific measures are not of a magnitude that would be likely to bring about the declared policy aims. This could be due to timing, to symbolic politics or to the difficulties becoming apparent when planning the specific instruments. Since the increased emphasis on climate change mitigation is recent – the most ambitious goals have been made in 2007 or 2008 – there has not been enough time yet to formulate and implement specific measures. The increase in attention and significance could also be a demonstration of symbolic politics, whereby commitments are made in order to indicate a willingness to take the public's concerns seriously, but without any real intention of implementing specific measures that would have concrete impacts on target sectors. Finally, it could well be that the saying, "The

devil is in the detail," is true; that is, trade-offs between different policy goals and problems of coherence become apparent only when specific instruments are negotiated.

Besides climate policy integration by national governments, there are several examples of regional and local governments that have included climate mitigation in their programmes and strategies. In many countries, e.g. Denmark, Finland, Germany and the United Kingdom, several municipalities have started to develop their own strategies for becoming "carbon-neutral" or "low-carbon cities". In some cases, this has been the direct consequence of national incentives; in others, it has been mainly at their own initiative. Some large cities, e.g. Copenhagen, London and Rotterdam, have also formulated their own mitigation strategies and policies. In some cases, these policies have even preceded (in time) and exceeded (in ambition) national mitigation strategies. In Denmark, for example, climate policy has at least partly "taken over" the role previously played by sustainability policies as the symbol of green policy orientation at the regional and municipal levels.

Box 3. Climate cities matter

Copenhagen and Rotterdam are good examples of cities which have included ambitious mitigation targets in their programmes and strategies. These targets have become an important feature of each city's branding and international public relations.

Copenhagen is due to host the 15th conference of the parties to the Framework Convention on Climate Change (COP-15) in 2009. This event is stimulating the city to increase its efforts on climate change mitigation. The Eco-Metropolis vision focuses on a 20 per cent reduction in CO_2 emissions in 2015 compared to 2005. Examples of concrete climate change mitigation measures include an expansion of the urban rail system, the city biking policy, a congestion charging system, the incorporation of public transport into the design of new neighbourhoods and the regeneration of existing buildings.

Rotterdam has initiated the Rotterdam Climate Initiative. This multi-participant initiative is a collaboration between the municipality of Rotterdam, other governments, different sectors of society and members of the business community. The ambition is to reduce CO_2 emissions by 50 per cent in 2030. The initiative focuses on CO_2 capture and storage.

Conclusions from the country-based studies include the following:

- Climate change mitigation has become a key political issue.
- Climate change is widely integrated into governmental programmes.
- Wider recognition in the countries studied of the need for climate policy integration if the more ambitious climate change mitigation commitments are to be achieved.
- Cities and municipalities have also integrated climate aims in their strategies and in specific measures. Their goals are sometimes more ambitious than those of their respective countries.

3.1.2. Inclusion of adaptation

During early policy discussions on climate change the focus was almost solely on mitigation, while adaptation to climate change was perceived as a non- or marginal issue. This can be explained by the reluctance of the politicians and other members of society who were advocating emissions reductions to accept climate change as an "inevitable" fact, which could be interpreted as implying that there would be no need to act in terms of mitigation. Advocates in some countries thus feared that climate change adaptation would lead policy-makers to the relinquishing or lowering of mitigation targets. The mere idea of adapting to climate change was problematic for those advocating emissions reductions, and was treated "with the same distaste that the religious right reserves for sex education in schools" (from Pielke et al. 2007). The attitude is exemplified by former US Vice-President Al Gore's statement: "Believing that we can adapt to just about anything is ultimately a kind of laziness, an arrogant faith in our ability to react in time to save our skin." (Gore 2000, 240) Recently, however, perceptions of the role of adaptation and policies designed to enhance it have changed – as demonstrated by both the Stern Review (2006) and the Intergovernmental Panel on Climate Change (2007). As a result, national adaptation plans and strategies have either been created or are under preparation in most EU countries in 2005–2008 (for an overview see Swart et al. 2009).

The inclusion, and ultimately the integration, of climate change adaptation in other policy sectors is a major issue in national adaptation strategies. Unlike

the case with mitigation, these national strategies do not attempt to establish an adaptation policy sector. There is a growing awareness that successful adaptation to climate change will depend on policy integration in other sectoral policies such as the policies for water, waste management, energy supply, spatial planning, transport and infrastructure. Not surprisingly, most countries focus mostly on integrating adaptation policy into policy sectors that have already been affected by extreme weather events. The risk here is that climate change adaptation focuses only on the visible issues – water and drought – and other adaptation issues related to agriculture, forestry, impacts on ecosystems, and natural habitats, for example, are neglected.

The fact that most adaptation strategies have been issued very recently could lead to the conclusion that most countries have not been adapting to climate change until now. The case studies demonstrate that this is not necessarily the case. Recently, many countries have experienced extreme weather conditions, viz: an increase in the volume and intensity of rainfall and river flooding (Germany, the United Kingdom, the Netherlands, Denmark); water shortages and drought (Spain and the south of France); heatwaves (France and Germany); and an extremely mild winter (Finland). Storms, extreme rainfall and droughts have always occurred, but climate change is expected to increase the frequency and intensity of extreme weather conditions, and recent events have already been interpreted as impacts of climate change. This has led to adaptation measures "avant la lettre" or adaptation strategies without using this term. In different countries extreme events have been used to make a compelling case that climate change is already taking place and will have catastrophic impacts. Examples are the flooding of the rivers Rhine and Meuse in the Netherlands (1993 and 1995) and the Elbe and the Mulde (2002) in Germany.

Box 4. Policy reactions to extreme flooding in the Netherlands and Germany

The extreme flooding of rivers in the Netherlands (1993 and 1995) and in Eastern Germany (2002) caused a lot of damage and attracted a lot of political and public attention. The government's policy responses in both countries show a remarkable resemblance. In both countries, the national or regional government responded quickly after the events by taking technical measures. These measures consisted mostly of technical and visible projects: such as the construction of new dams or higher dykes – which could be relied upon to gain substantial public support, shortly after the disastrous events.

Adaptation strategies require co-ordination at both the horizontal and vertical level. Climate change can have very different consequences for different regions. Many responses to adaptation issues require tailor-made solutions at the regional or local level instead of standardised national solutions. This does not mean, however, that the national government is not involved in these regional and local solutions; but it does indicate the need for co-ordination and integration into an overall policy framework. One reason for national involvement is the fact that many adaptation issues are cross-sectoral, multi-level problems that require not only horizontal and vertical policy integration but also new forms of multi-level governance.

Conclusions from the country-based studies include the following:

- Adaptation has only recently become a legitimate and important policy issue and national adaptation strategies have recently been issued in the studied countries.
- Policy integration is at the heart of adaptation strategies. National governments intend to implement adaptation policies mainly through other policies.
- Extreme weather events in some countries have already triggered the integration of adaptation into strategies for specific policy sectors and the implementation of visible measures in particular.

3.2. Consistency between policies promoting climate objectives and advancing other aims

The question of consistency between climate objectives and other policy goals is rarely discussed in the general strategies of the countries included in the study. There is even a tendency to conceal inconsistencies between climate change issues and other issues, while potential synergies are highlighted.

During the 1990s, concerns about the declining competitiveness of European industry in relation to that of North American and Asian competitors increased. Under the umbrella of sustainable development, ecological, economic and social issues were reframed to become complementary rather than contradictory objectives. Against this background, it has come to light recently that properly designed environmental standards do not restrain economic growth but can trigger innovation and even stimulate the national economy. Environmental regulation can induce innovation by making industries aware of and willing to exploit opportunities which would otherwise be missed. According to this view, win-win opportunities can benefit industry and the environment alike and result in environmental benefits and increased competitiveness. This framework was

instrumental in reframing climate change from a threatening global risk to an economic opportunity (Section 5.3).

In recent years, governments committed to integrating climate change into sectoral policies have developed a novel approach to policy "co-ordination." In Germany, for example, top-down and restrictive state interventions in production, consumption or transport structures have been increasingly contested and challenged by strong opposition from powerful target groups. As a result, climate policy integration has not taken place on issues where stakes were high and vital interests strongly affected. The rationale of the new approach is to decouple climate policies from the negative image created by restrictive policies, including prohibitions and bans. The underlying philosophy is that climate policy can succeed only when those in positions of responsibility in research, trade and industry, the political sector, government and civil society mobilize all available resources and pull in the same direction. As the German Integrated Energy and Climate Programme demonstrates, sectoral, bottom-up, decentralized approaches to policy integration may help to enhance policy coherence if they lead target groups to reduce their opposition and motivate them to cooperate and to assume responsibility for implementation targets.

Box 5. Seeking innovations and competitive advantage through climate policies

In Germany the 2005 coalition agreement viewed climate change as "a driving force for: developing and marketing future-oriented technologies worldwide, enhancing energy and resource productivity and thus boosting the competitiveness of the German economy, creating new and secure jobs for well-qualified workers". The German approach can be characterised by its strong focus on the potential of technological innovations to solve environmental problems (Jänicke and Jacob 2006). It is based on the dual strategy of increasing efficiency and expanding the use of renewable energies and regenerative raw materials and thus broadening the energy mix. The implementation of this approach in practice has changed from a broad focus on sustainable development to a narrower focus on climate policy integration. An innovation-oriented climate policy also includes a pro-active government, demanding targets and a mix of instruments which influence the entire innovation cycle from initial research to achieving success on global markets. It combines economic policy instruments to indicate general directions, e.g. through emissions trading, and regulations. By becoming a forerunner, Germany aims to gain competitive advantages over other countries.

In the Netherlands, industrial sectors take part in the sustainability agreement signed with the government in 2007. Sector-specific "strategic roadmaps" or innovation agendas will be used to analyse how a target of 50 per cent energy savings in the production chain can be achieved by 2030. One idea in the Dutch 2007 "Clean and Efficient" mitigation programme is that standards that become stricter in the course of time stimulate innovations. Global and European standards would be preferable from a competitiveness point of view, but domestic standards can also be used in certain sectors – for new buildings, for example.

In the new (2008) Finnish Climate and Energy Strategy, research into and development of technologies and innovations is the first sector dealt with in the section on policy instruments and measures. The starting points are the export potential of and existing R&D traditions in energy production. The recent, more general perspective which stresses customer- and demand-based innovation policy is also reflected, however. The establishment of Strategic Centres for Science, Technology and Innovation (SHOKs), especially in respect of energy and environment, is stressed. The strategy is very general, however, in specifying the nature of the innovation policy measures that will be taken. The challenge of achieving the stated aims will be huge, given the lack of climate policy integration in the 2008 National Innovation Strategy and the complete absence of climate change in the 2009 budget proposal for innovation policy, including the budget for the Finnish Funding Agency of Technology and Innovation (Tekes). Irrespective of the lack of climate policy integration in the National Innovation Strategy and in the state budget, Tekes includes climate change in its 2008 strategic definitions.

Despite the fact that the country studies focus on very different policy sectors (forestry, water management and transport), land use related questions appear to be a common source of conflict. This arises because land use in support of climate change mitigation or adaptation often competes with land use for other purposes. The lack of consistency can be explained in part by attempts to take into account and reconcile contrary political aims – such as economic development and nature conservation. The conflict between the goal of using biofuels to mitigate climate change and the goals of biodiversity as well as food production are common in several countries. Inconsistencies are also related to land use conflicts where adaptation would require areas to be used for water retention and other uses such as urban development or where industry would like to use the same space.

Box 6. Trade-offs and conflicts between climate policy and land use aims

In the Netherlands, many trade-offs and conflicts between climate policy and other policies are concerned with land use and spatial planning. Adaptation measures, in particular, claim more space for water and dykes. In general, these claims compete with the space needed for agriculture, nature conservation, housing and other purposes. However, in some cases, these claims can be combined. An example is water storage in nature conservation areas. In some areas this is clearly possible, while in other areas it would be disastrous for the specific nature reserve. The Zuidplaspolder case of the Dutch country study even shows that water storage, housing and nature conservation could go hand-in-hand in the deepest polder in the Netherlands. Some national politicians wanted to prevent this apparent inconsistency with national climate change adaptation policy. However, specific research in this case showed that these combinations were possible and even had advantages for climate change adaptation as compared to the previous agricultural land use.

Consistency is also relevant when it comes to the relationship between mitigation and adaptation. Whilst in some countries, the two were initially perceived as being contradictory and exclusionary options, adaptation to impacts of climate change that are no longer avoidable today is seen as a second, complementary pillar of contemporary climate policy which supports the reduction of greenhouse gas emissions. There is now widespread recognition that combating climate change requires a combination of mitigation and adaptation measures – although they may compete for the same resources and political attention and some adaptation measures may make mitigation harder and vice versa.

Conclusions from the country-based studies include the following:

- There are many inconsistencies between climate policy aims and other policy aims in the countries included in the study.
- In most countries and sectors the trade-offs between the aims of climate policy and other aims are rarely openly assessed or are not fully known (this applies to adaptation in particular).
- Strategies designed to deal with inconsistencies involve describing them as innovations or synergies or displacing them to other (usually lower) levels of decision making.

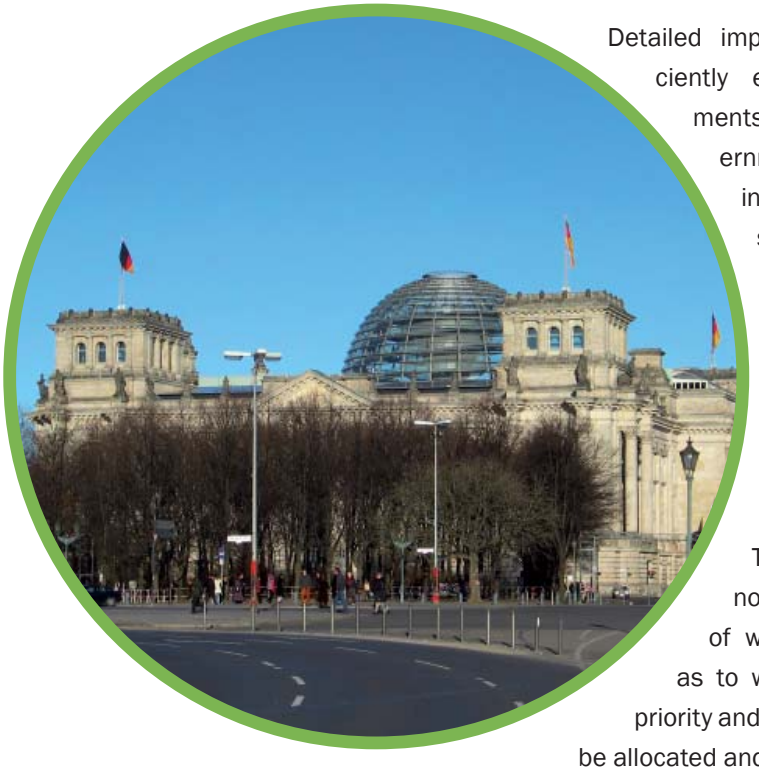
3.3. Weighting of climate aims

In cases where trade-offs persist and choices have to be made, the weight given to climate aims becomes crucial. Weighting is therefore an important criterion for assessing the degree of policy integration. It indicates the real strength of the willingness to implement declared commitments. Since 2007 in particular, in the countries included in study, climate has become one of the key issues of governmental policies, along with employment, competitiveness and regional development, but these issues are usually not explicitly prioritised against each other.

Box 7. Implicit and explicit weighting of climate aims

In Finland, the analysis of key government strategies shows that the inclusion of climate aims into those strategies is extensive. Recognition of the need for action has not yet resulted in specific measures that would be comparable in stringency to the magnitude of the climate change challenge or the commitments made. It may partly be an issue of timing: after the new Climate and Energy Strategy (2008), specific and sufficient measures may follow. Yet it may also be a signal that the political weighting of climate policy might still not be sufficient when climate policy aims are in conflict with other political aims.

In the Netherlands, attaching a greater weight to climate policy over other policy issues is not a well developed feature of national policy. In many cases, the national government leaves a lot of space for other governments (adaptation) or target groups (mitigation) to prioritize climate issues over other policy aims. Critics suggest that the ambitious climate policy aims are merely symbolic, devoid of any real support as regards enforcement or implementation. Others believe that other governments and target groups will attach a greater weight to climate policy over other interests on a voluntary basis. The recent advice of the Delta Commission (2008) on water safety suggests that, in the near future, water-related climate change adaptation seems to be outweighing (almost) all other policy aims such as housing and agriculture. The reason for this is mainly the fear of a future rise in the sea-level and severe flooding in the low-lying delta of the Netherlands. However, this advice has not yet been translated into real policy strategies and is still the subject of political discussion.



Detailed implementation plans or sufficiently extensive financial commitments to climate change by governments are frequently absent in the countries included in the study – which can be seen as an implicit indication that climate change is a rather weak priority. Weighting is an important factor, especially when decisions on specific measures are taken and resources are allocated. The current fiscal and economic crisis will increase the role of weighting since controversies as to which issue should be given priority and how scarce resources should be allocated and distributed will intensify.

The degree of policy integration is also dependent on the position and the relative weight and power of ministries or persons in charge. Environment ministries often lack the standing and weight of more influential departments – such as ministries of economic affairs – within government and thus in any inter-departmental negotiations. When climate change became a prominent issue in Germany in 2007, Chancellor Angela Merkel and Environment Minister Sigmar Gabriel used the "window of opportunity", made climate change "a matter for the boss" and demonstrated a willingness to take political leadership and to push climate policies. This increased the support shown by the entire government, and many ministries markedly increased their efforts to implement targets in their respective sectors. It has also become evident that the way in which authority and responsibility for the formulation of targets and implementation are defined and distributed does matter.

Summarising the findings of the country studies:

- Climate policy aims and other policy aims are usually not explicitly prioritised against each other in governmental programmes and strategies.
- When climate change becomes a "matter for the boss", climate policy gains more political weight.

- The frequent lack of implementation plans, specific and stringent instruments and financial resources for climate aims indicates that, in practice, such aims are often still outweighed by other policy aims.

3.4. Reporting for accountability and policy development

Reporting is important for climate policy integration because it can improve accountability and learning. Public policies frequently result in unintended side-effects, and their intended impacts may be absent or far smaller than expected. This can be due to wrong assumptions as a basis for the policies; implementation, i.e. what was delivered was not what was planned; or changing contexts, which imply that policy outputs interact with factors other than those foreseen. In order to learn about lacking intended effects as well as side-effects policy integration requires feedback, i.e. reporting becomes an important criterion. It is particularly important in the case of climate change because of the uncertainties and complexity of the systems involved. The "reporting" criterion addresses the degree to which mitigation and adaptation strategies and policy instruments specify ex ante how their impact on climate change aims are to be followed up and reported. Reporting also refers to the information on climate change mitigation and adoption actually included in ex post evaluations of strategies and policy instruments.

All European countries have well-established monitoring of e.g. emissions, temperatures and rising sea levels. We now need to link this into assessments of policy options before decisions are made and retrospective evaluations of the policies implemented. For example, monitoring CO_2 emissions from traffic and the numbers of cars is not enough to be able to evaluate whether integrating climate aims into instruments such as car taxation or spatial planning is working as planned. In addition to data, assessment and evaluation requires an understanding of the essential socio-economic and environmental processes behind climate change mitigation and adaptation.

In general, the country studies reveal that evaluations are performed, but that there is much room for improvement regarding both ex ante assessments and ex post evaluations of climate change mitigation and adaptation measures. Furthermore, lack of relevant data will always constitute a problem. Sometimes, there might be national data available, while regional or local data are absent – as, for example, in the case study of the Mulde flood management in Germany and in Valencia in the Spanish country study.

Box 8. Reporting in Dutch climate policy

The Netherlands has a long-standing and strong tradition in policy evaluation (ex post and ex ante). Examples of ex ante evaluations that have been intensively used in numerous policy strategies are the climate scenarios of the Dutch Meteorology Institute (KNMI) and the National Environmental Assessment Agency (MNP). More specific ex ante evaluations are the EIA-reports on strategic government plans and specific projects. Ex post evaluations of policy strategies/ policy measures have been increasingly included in policy documents. In some cases these evaluations are performed while the policy implementation is still in progress. These evaluations tend to focus more on policy learning than on accountability.

Specific to adaptation is the uncertainty of the impacts of climate change. The Delta Commission (2008), which advised on adaptation in the water sector, has also acknowledged the uncertainty of climate change and its effects on the sea level. Remarkably, the committee based their advice on the most extreme climate scenarios. Their assumption is that adaptation (on water issues) could then be spread over 100 years (and more). Meanwhile, new climate scenarios and information on the consequences of climate change should be used to fine tune and adjust the initial policy aims and measures. Their message is that if we start to adapt now based on the most extreme scenarios, there is enough time to adjust the adaptation strategy in line with new scientific insights.

The German country study further demonstrates that institutional constraints can block effective evaluations. A systematic assessment of political actions is lacking in Germany since it is not embedded into the national policy style. Frequently, evaluations are conducted by the same ministries, or departments in charge of implementation without much insight or independence. Needless to say, if the evaluation procedure is performed behind closed doors, and, in particular, if the target group for the regulation is involved in the evaluation process, there is a risk of a biased evaluation. A related problem is that the ministries which represent the interests of groups targeted in respect of emissions of greenhouse gases might be reluctant to make objective and open evaluations of the effects of their respective sectoral policies on climate change mitigation or adaptation. One solution might be to create new units such as the Danish Climate Co-ordination Forum, which is allocated evaluation tasks.

Reporting is an important aspect of policy integration and may reveal whether declared integration is mainly symbolic or really intended to be effective. At the same time, reporting should not be used as a criterion for policy integration

without taking the national evaluation context into account. Whilst some European countries (e.g. the Netherlands, Sweden and the United Kingdom) introduced policy evaluation widely in the 1960s, it was only a decade or so ago that policy evaluation emerged in other countries (e.g. Finland and Spain). This is still reflected in the general inclusion of evaluation in policy, in the resources for undertaking evaluations and in the processes for using them. (Furubo and Sandahl 2002)

Summarising the findings of the country-based studies:

- Most countries still struggle with the issue of how to combine monitoring, policy evaluation and policy learning.
- Meanwhile, developments in respect of climate policy are often dominated by uncertainties about the extent of the problem, its consequences and the impact of policy measures. This calls for policy development and policy implementation to be informed by experience.

3.5. Resources to take climate change into account

Efficient climate policy integration requires resources. The know-how available and the financial resources allocated for this task are thus a sign of its significance. In the country studies we assessed the form of inclusion, as well as the promotion and generation of knowledge and know-how involved in climate policies. An additional factor was the financial resource allocated for climate policies. The third theme concerned the number of civil servants and climate experts who work with climate-related policies at national, regional and local levels of governance.

The country studies reveal diverse approaches and strengths in knowledge building. In two countries, the recognition of a greater need for climate change research implies that a climate research co-ordination unit has been set up, as shown in the Danish and the German country studies. The UK and Germany have long-standing experience in climate modelling, as does the Netherlands in impacts research.

Concerning adaptation, it is noteworthy that governments usually follow the pathways set by areas that have experienced extreme events which can be ascribed to climate change. Backed by its particular geographical features, the Netherlands, for example, has a strong research focus on issues related to water, such as flooding etc; it also recognizes the importance of tacit local knowledge and traditional practices and culture.

The focus on knowledge production and applying it to policies is linked to the way in which climate change issues are represented as climate change problems that require political responses. Most of the research targets natural science-based knowledge on current and future changes in specific geographical areas and within particular policy sectors (e.g. agriculture or water supply) or the estimates of forecast costs and benefits of particular climate changes. Little attention is generally paid to migration issues, regional security policies in regions with potential water shortages or cultural and everyday life adaptation issues, for example, with the exception of the Netherlands.

Finally, concerning financial resources, in all of the countries included in the study, climate policy issues over the past few years have been allocated resources in both national and local budgets. In Spain, the majority of the resources are allocated to mitigation measures. In Denmark, the establishment of a climate ministry for climate policies in itself represents substantial resources. All of this, however, does not prevent many cases – in the Netherlands, for example – in which there seems to be a substantial gap between the resources budgeted for and those actually required in order for measures to be implemented.

Conclusions from the country-based studies include the following:

- In the countries studied, climate policy issues in recent years have been allocated resources in both national and local budgets. It remains to be seen how permanent those resources will be, however.
- Hitherto, most research has been natural science-based and centred on increasing knowledge about e.g. current and futures changes in specific geographical areas and within particular policy sectors.

4. Measures and means to enhance climate policy integration and improve policy coherence

Based on the previous section, it is obvious that additional means – such as institutions, procedures or measures – will be required in order enhance climate policy integration and improve policy coherence. These means will need to be formed within the context of multi-level governance. This section will start with a brief overview of the types of means available followed by subsections on some of the most interesting options – that is, impact assessments, the annual budget, spatial planning and cross-compliance.

4.1. Many means exist to enhance climate policy integration and improve coherence

Based on their broad studies of environmental policy integration in 30 OECD countries, Klaus Jacob, Axel Volkery and Andrea Lenschow (2008) have classified the variety of instruments used into three categories:

- communicative instruments, such as inclusion in the constitution, environmental and sustainable development strategies, requirements for sectoral strategies, obligations to report performance and external and independent reviews of performance;
- organisational instruments, such as combinations of departments, green cabinets, environmental units within sectoral departments and independent working groups; and
- procedural instruments, such as veto or obligatory consultation rights for environmental departments, green budgeting and impact assessment.

The countries studied have already introduced instruments of all three types. Climate issues are widely included in governmental programmes, in environmental

and sustainable development strategies and in climate strategies for mitigation as well as adaptation (Section 3.1). Communicative instruments have thus largely been introduced. Most countries have created new organisations to deal with climate change in general or to enhance policy integration in particular. Denmark has established a new ministry, Spain and the United Kingdom new ministerial departments. In Finland ministerial task forces on climate and energy policy have been appointed. Many countries have established new research institutes and appointed climate specialists or councils. There are thus a huge variety of organisational instruments. In addition, some procedural instruments have been used for the purposes of climate policy integration, but so far most countries have not introduced new climate specific procedural instruments; rather, they have tried to integrate climate into existing procedures. The procedural instruments – impact assessments, the annual budget, spatial planning and cross-compliance – will be discussed in more detail in the following sub-sections.

Climate policy integration may be promoted either by the creation of new institutions and instruments or by the reframing of existing ones. Most countries have created organisations for climate research or brokers between research and decision-makers. For example, Germany has established several institutions, including the German Advisory Council on Global Change (WBGU), the Potsdam Institute for Climate Impact Research (PIK), the Expertise Centre for climate change effects and adaptation (KomPass) and the German Climate Research Center (DKRZ). Finland has chosen a different approach and, instead of establishing new institutions, has broadened the mandates of established research institutes. Thus there now exist climate groups, projects or programmes at, for example, the VTT Technical Research Centre of Finland, the Finnish Meteorological Institute, the Finnish Forest Research Institute and the Finnish Environment Institute. Some new instruments – for example, the Climate Change Act adopted by the United Kingdom in November 2008 – have also been widely discussed as an example by other countries. There are also many proposed options that have not been deeply scrutinised. For example, the proposal for a climate ombudsman presented in Finland or the proposal to link the bonuses or the general wages of civil servants to their own organisations' CO_2 emissions or to their impacts on the national emissions (Mickwitz et al. 2008a).

Box 9. The United Kingdom Climate Change Act

The Climate Change Bill was announced in the Queen's Speech in November 2006, following an early day motion passed immediately after the 2005 election

and signed by 412 of the 646 Members of Parliament (MPs). Only three other such motions have ever been signed by more than 400 MPs. The Bill was published in draft form in March 2007, introduced in Parliament in November 2007 and then completed the various stages of its passage through Parliament in November 2008. It was approved and received Royal Assent – the final formality, turning it from a Bill into an Act – on November 26, 2008.

The overall aims of the Act are to move the UK towards a low-carbon economy and demonstrate UK leadership internationally. The Act lays out a framework for the first aim by setting a statutory target of 80 per cent emission reductions by 2050 against a 1990 baseline, across all six Kyoto greenhouse gases, and granting the Government powers to introduce the measures required to meet these targets – e.g. new trading schemes and financial incentive programmes – through secondary legislation. An interim target of a 26 per cent reduction in CO_2 emissions by 2020 is being reviewed in the light of the government move – at a late stage in the passage of the Bill – to include all greenhouse gases and raise the 2050 target from 60 to 80 per cent. Emissions will be regulated through five-year carbon budgets that set binding limits on emissions, backed up by annual accountability and independent scrutiny. Three of these budgets will be in place at any time, giving a 15-year planning time-frame. The first three budgets, to be set by June 2009, cover the periods from 2008–2013, 2013–2017 and 2017–2022. International aviation and shipping emissions are to be included in the Act by December 31, 2012, or the government must account for the exclusion to Parliament. Projected emissions from the two sectors must be taken into account in the calculation of carbon budgets.

The Act also establishes the Committee on Climate Change (CCC) as an independent body to monitor and provide advice on progress towards targets set out in the Act. In particular, the Committee will advise the government on the inclusion of emissions from international aviation and shipping, and on the appropriate balance between action at domestic, European and international levels for each budget period. In its final stages, the Bill was amended to require a limit on the purchase of credits for each budgetary period, to be established through secondary legislation requiring debate in both Houses of Parliament. Other measures covered in the Act relate to biofuels, the introduction of financial incentive schemes for household waste and powers to require a minimum charge for single-use carrier bags. On adaptation, the Act requires the government to report every five years on risks arising from climate change, and introduces powers for government to require public bodies and statutory undertakers to carry out risk assessments and develop appropriate risk-management plans.

In addition but related to the question of whether to reform existing institutions and instruments or to establish new ones is the question of the degree to which climate policy integration should be based on specific institutions and how much it may rely on either institutions for environmental policy integration or on institutions to provide general coherence of public policies. If extended emphasis were to be put on external and independent review of climate performance, would that require a new institution or could it be undertaken by an institution that carries out general environmental auditing or by the general auditors? These questions will be further discussed later on (Section 5.5) but they are an essential aspect of the specific measures discussed in the sub-sections below.

4.2. Making impact assessments climate inclusive

Different types of impact assessment can potentially be important instruments for climate policy integration. All European countries use ex ante impact assessments of policy proposals, strategies and plans. Environmental Impact Assessment (EIA) of projects is the oldest and most institutionalised procedure. The EU adopted the Environmental Impact Assessment Directive in 1985. Although plans were to some degree included in the EIA Directive, the scope was widened when the Directive on the assessment of the effects of certain plans and programmes on the environment (the SEA Directive 2001/42/EC) entered into force in July 2004. The history of Regulatory Impact Assessment (RIA) is largely related to policies to promote competitiveness and deregulation – as in the Netherlands, for example, where it started from the formulation of the "Competitiveness, deregulation, and legislative quality" programme. The EU has promoted RIA as part of its strategy to improve regulation (COM 2005 97). For new EU regulations the Commission adopted new guidelines for impact assessment in 2005 (SEC 2005 791). The impact assessments of the proposed EU regulations are to be based on an integrated careful analysis of potential economic, social and environmental impacts. The focus of the guidelines is, however, largely on economic analysis, especially with regard to potential effects on competitiveness. Analyses of the practice of the new system has argued that it could marginalise the environment, but there are also signs of increased transparency and possibilities for learning (Hertin et al. 2008).

Making impact assessment important for climate policy integration requires first that the links, direct and indirect, between a project, strategy or regulation and climate change be recognised. The ability to recognise these links depends on the understanding of the processes in place. If potential climate impacts can be foreseen, their more specific assessment depends on the availability of

comprehensive and reliable data as well as the development of assessment and performance tools. The tools may be advanced, such as models; formal, such as cost-benefit analyses or risk assessments; or simple, such as check lists (e.g. Nilsson et al. 2008). Finally, the role of impact assessments depends largely on whether they are conducted in such a way that they actually become used. Practical experiences establish that successful policy integration is not only a question of reinventing new frameworks and tools but also of enhancing existing capacities and putting them into practice effectively. At the same time there is a growing awareness that policies do not necessarily require more accurate and specific predictions from climate models, for example, as modellers tend to suggest. For example, in the case of flood management, increased accuracy and more precise predictions are not really necessary in order for decisions to be made. There is a need to examine the kind of knowledge and information required and relevant from the point of view of decision-makers at different levels, and take this into account when planning impact assessments.

Until recently, climate change has not in general played a major role in environmental impact assessments (EIAs) of projects. Climate change mitigation has been an important issue in the EIAs mainly of large energy-demanding projects, power plants or traffic infrastructure. In many cases, the results of the impact assessments depend on how they are focused. Examples from Denmark and Finland show studies that have argued that new infrastructure, e.g. a road or a bridge, would reduce CO_2 emissions because traffic would become smoother, but have not considered possible increases in traffic volumes due to the smoother traffic. In the Netherlands a working group has been working on making the EIA (both for projects and plans) climate proof. It gave recommendations concerning climate change mitigation as well as adaptation.

In Finland, the emphasis on impact assessments of national programmes increased after 1999, when the Chancellor of Justice required a more thorough environmental assessment of the national forest programme. In practice, there has been a large variation in the choice of assessment approach, as well as in the

role of climate change in the assessments carried out. For example, the strategic environmental assessment of the national forest programme in 1999 did not directly evaluate climate impacts, whilst in the assessment of the new national forest programme in 2007, climate change was extensively acknowledged (Mickwitz et al. 2008a). Similar variations have been observed in Denmark as well. In Finland the most thorough assessments utilising advanced tools, such as macroeconomic and energy system models, have been carried out as assessments of the three national climate and energy programmes (2001, 2005 and 2008). There remain, however, a number of programmes and plans of which climate impacts are either not assessed at all or only incompletely assessed at the planning stage.

Virtually every European country has set up legislation, procedures, guidelines and sometimes institutions for Regulatory Impact Assessment (RIA). Even if a discourse about regulatory impact assessment in the context of "better regulation" has emerged across Europe, the content and use of the RIA concept varies significantly in different countries and have not yet converged (Radaelli 2005). For example, even if the duty to assess possible impacts of a bill exists in Germany it is not seriously implemented and effectively integrated into regulatory structures at different levels of decision making. As part of the Dutch RIA there is an environmental test (E-test), the aim of which is to identify the potential impacts on the environment. Its impacts on decision making in practice have been considered limited. In most countries each ministry's RIAs are carried on by departmental officials, sometimes with the support of external consultants. The resources provided by research institutes or consultants vary – between countries, departments and cases. Whilst the Netherlands has two units responsible for quality control of RIAs, no such system exists yet in Finland, for example. The challenges for the RIAs are thus to include climate aspects in the RIA (even if there is an E-test this does not always mean that all climate change aspects are taken into account) and to make sure that this inclusion is not merely symbolic but actually influences decision making.

In addition to the impact assessment procedures established in all of the countries included in the study, the Netherlands has the Water test, which could become important especially for adaptation to climate change. The aims of the Water test are to guarantee that water interests are taken into account in spatial and land use planning, so that negative effects on the water system are prevented or compensated for elsewhere. This integration of water in spatial planning works in two ways: a plan is assessed on its implications for the water system and the constraints that the water system puts on land use are made explicit. Currently the Water test does not include climate change objectives; nor does it include

the means by which to weigh climate change objectives against other policy objectives. New legislation with regard to the Dutch Water test, incorporating climate change, is expected.

4.3. Utilising the annual budget as a climate policy instrument

The annual budget – of the EU, states and municipalities – influences climate change mitigation and adaptation in many ways. First, it provides the resources for the public institutions that provide information for, plan or implement climate policies and integrate climate-related aims into sectoral policies. Second, on the income side of the budget, some taxes and charges are designed to enhance mitigation. Third, on the expenses side, some subsidies are designed to promote mitigation, e.g. subsidies for renewable energy. In addition to the intended climate impacts, the budget also has unintended climate impacts, as a result of behavioural change induced by taxes and public expenditure, so-called unintended consequences of planned action. These unintended climate impacts may be beneficial or harmful from the point of view of climate change mitigation and adaptation. For example, publicly financed traffic infrastructure may contribute to increased or decreased CO_2 emissions depending on the type of infrastructure (highway vs. railway) and the context. Not only are the stipulations directly included in the budget important, but also the detailed rules set out in e.g. tax laws or the instructions guiding their implementation. Obvious examples are energy tax exemptions for some sectors that all countries have.

There are five ways in which climate could be better integrated in the budget proposals:

- climate-based taxes and charges could be increased and new taxes introduced;
- climate-based subsidies and budget allocations could be increased or new ones introduced;
- subsidies and taxes with harmful climate impacts could be removed or redesigned;
- budget allocations and taxes with favourable side effects from a climate point of view could be increased; and
- rules and texts stipulating the way in which present budget allocations may be used could be more climate-based by stipulating climate-based limits or goals for the administrative bodies that govern these means.

In the countries included in the study, the history of utilising taxation to promote climate change mitigation is a lengthy one. Even in the early 1990s, individual climate-based taxes were introduced, such as the Finnish and Danish CO_2-based fuel taxes in 1990 and 1992. Some, more comprehensive ecological tax reforms, with climate as a central aspect, have also been undertaken, such as the German ecological tax reform by the Red-Green government under Schroeder in 1999 and 2000.

Although a few new climate-based taxes have been introduced in recent years, there is in many countries a reluctance to utilise taxation as a policy instrument in general as well as for climate policy purposes. For example, the "no-new-taxes" policy of the present Danish government has blocked initiatives for a congestion charging scheme. In Germany, the present government has declared that it "will not raise the eco-tax further" and that "the current eco-tax relief regulations for the industry will be retained". Contrary to the current Danish and German reluctance, the Dutch government has recently introduced several new taxes, such as a tax on air tickets and a higher tax on electricity (first taxation) and diesel. The Dutch aim is, however, to redirect the revenue from these additional measures as much as possible to result in a shift rather than in an increase in the burden of taxation.

Box 10. Using taxation to reduce CO_2 emissions from traffic

The Dutch government has introduced several new taxes related to traffic, such as a higher tax on the acquisition of new cars with high CO_2 emissions and a lower tax on cars with low emissions and a bonus for fuel-efficient company cars.

In Finland a new CO_2-based vehicle taxation was adopted in 2007 and entered into force from the beginning of 2008. The Finnish Government's report on long-term transport policy to the Parliament (2008) also identifies taxation as one of the measures through which the use of environmentally friendly vehicle- and fuel technology could be promoted. Measures that have been discussed and studied, but not yet adopted are, for example, a climate-based reform of the rules for deduction of the travel expenses for the trips between home and work from taxable income and a climate-based reform of the taxation of company cars.

In Germany a significant tax reduction for fuel-efficient cars was introduced in 1997. A reform of vehicle tax on the basis of CO_2 is included in the German Integrated Energy and Climate Programme of 2007. This measure has not yet been implemented, however. Another planned measure, that of coupling automobile registration costs with the amount of CO_2 vehicles emit, has

been tabled indefinitely. The German government tends to justify the delay in implementing key elements in terms of open, yet-to-be determined negotiations at different levels of decision making such as the EU. It argues that it is waiting until the framework and directives/guidelines are adopted at the European level and appropriate binding CO_2 values are introduced, which must be anchored legally at the EU level. At the same time, the delay also mirrors resistance by affected industries and stakeholders or conflicts between governmental departments.

To date, climate-based taxes have been decided nationally. There remain many links to the other governance levels. In Finland, for example, changes in the rules for income tax deductions in respect of travel to work would also affect the municipalities. Different municipalities would be affected very differently because of different commuting distances, the availability of public transport and the share of the workforce working in other municipalities. On account of the economic relationships between countries, taxation in one country has implication across borders. The creation of a Nordic market for electricity thus motivated Finland in 1997 to move from the taxation of electricity production to consumption and to abolish the CO_2 component of the electricity tax, while retaining it for heat. The Dutch flying tax did not reduce flying as much as expected, but shifted Dutch passengers to German and Belgium airports. Many have thus argued for taxes decided or at least co-ordinated at the EU level. There is, however, severe opposition in many countries to transferring resources and the power to decide on their use to the EU. Assigning new resources to the EU budget requires unanimity in the Council and ratification by all member states. For example, many previous EU CO_2 tax proposals have failed and been withdrawn. (Wilkinson et al. 2008)

All governments in the countries studied have increased their budget allocations to climate-related activities. The increases have generally been related to either the creation of new institutions or to subsidies, mainly for renewable energies or energy efficiency. For example, the Danish government's budget for 2008 includes funding for the new Ministry of Climate and Energy, some € 240 million (DKK 1.8 billion) in total in 2008. In addition, in 2008, about € 16 million (DKK 116 million) were spent on preparing the 2009 COP-15 meeting. In Germany a total of about € 3.3 billion (including up to € 400 million from the auctioning of emissions allowances and around € 700 million from bilateral and multilateral development cooperation) are earmarked for climate policy for the 2008 financial year. This is an addition of € 1.8 billion compared to the federal budget for 2005.

So far, no systematic and institutionalised approach, such as Green Budgeting or Sustainability Impact Assessment of public spending, has been applied to state budgeting in any of the countries included in the study. In addition, the external monitoring – from a climate perspective – of the budgeting process or the use of financial resources by external organisations, such as auditing offices, has been limited or non-existent.

The state budget – and the same is true for other governmental levels as well (EU, regional, municipal) – could be used to provide much bigger incentives for climate change mitigation and adaptation. However, this would require new types of knowledge to be integrated into the budget preparation process – especially knowledge on the direct as well as indirect mitigation impacts and the effects on adaptive capacity of budget allocations and taxes. Climate change has not traditionally been a key expertise of finance ministries, nor of most of those involved in budget preparation in other ministries or agencies. It would also require an increased knowledge of the parliaments to deal with this aspect of budgeting. The biggest challenge is to recognise the indirect climate impacts of budget allocations, which depend on complex interactions between many actors that are likely to be context-specific. Finally, utilising the budget as a climate policy instrument also requires climate aspects to be taken into account in the follow up and control of public spending by state controller offices and audit offices.

4.4. Spatial planning as an increasingly important instrument for climate change mitigation and adaptation

Spatial planning is to a greater extent becoming an important instrument for implementing and integrating many climate policy aims. This is because many adaptation as well as mitigation measures have important spatial implications and often are in conflict with other goals for land use. At the same time, there is a growing need to co-ordinate sectoral policies at different levels of decision-making more effectively. Spatial planning is a promising instrument for addressing these challenges and to provide integrated responses at the local level. Particular land use practices such as (de)forestation contribute to global warming, while the impacts of climate change will significantly alter land use practices, whose regulation is a major concern of spatial planning.

The consequences of climate change will be experienced on a local level and will differ markedly from region to region. While coastal areas, for instance, will be prone to rising sea levels and possibly to more intense and severe storm floods, continental areas may be prone to more intense and enduring droughts leading to water shortage and crop failures. Hence, adaptation strategies need

to be suited to the respective regional or local conditions. At the same time, the potential for implementing mitigation measures is also highly diverse across regions: rural areas might be particularly suitable for setting up wind-parks or solar fields, while urban areas might possibly need more green corridors or space for water storage. At this level, conflicts between different land use options, for example biofuel production versus restoring ecosystems or food production, need to be addressed since actors might be immediately affected by proposed measures, such as resettlements as a result of flood management. To respond to such conflicts strategies should be built upon integrative approaches, including different sectors, scales and levels, involving a wide range of instruments (including regulatory plans, fiscal incentives or sanctions, voluntary and soft measures) and considering future development.

Across Europe, a variety of different frameworks and strategies are used for climate change adaptation. In the Netherlands, for instance, the challenge of adapting to the consequences of climate change has been implemented in the national water management strategy – the heightening of dykes, giving room to rivers – and plays a decisive role in that country. In Germany, on the other hand, adaptation to climate change has not been a major issue in flood management until now because its linkage to climate change is still being contested. At the same time, impacts of climate change are increasingly recognized as a pre-existing problem that has to be integrated into research and planning strategies. In all countries, the process is on the level of policy formulation and not yet on the level of the formulation of concrete instruments and measures.

There is also potential for integrating mitigation in spatial planning, especially when it comes to infrastructure and water and energy provision and the modernization of public buildings, but also in terms of land use cover and multi-functionality in agriculture. However, for various reasons, implementation is rather difficult. Experiences from Finland show that despite the fact that the government and municipalities had acknowledged the need to link transport and

land use planning for the purposes of climate change mitigation as long ago as the 1990s, the community structure has continued to disperse. In Spain, where there have been similar experiences, policy-makers see the development of the urban sector and construction during the last 10 years as a key driver for climatic changes in the area. This has been corroborated by scientific results on the diminution of local evaporation due to land use changes from agricultural use to urban use (Millan 2007). Still, this development is justified by Spanish politicians on the basis of regional economic growth.

Spatial planning actually faces a particular dilemma: while the need for co-ordination and integration across sectors, scales and levels is growing, the capacities to respond are frequently shrinking because of the rigidity of administrative and political borders, the stability of departmentalism and the strength of sectoral interests and preferences for small-scale solutions. While it is generally recognised that the role of spatial planning for climate mitigation and adaptation should be strengthened, the practice is not very well developed as yet.

4.5. Cross-compliance as a climate policy instrument

Cross-compliance has been introduced in the context of the EU's common agricultural policy (CAP) as a mechanism to promote coherence (e.g. Varela-Ortega and Calatrava 2004). Cross-compliance implies that target groups receiving support are obliged to respect, e.g. environmental regulations. In other words, one policy, i.e. CAP, is used to ensure compliance with another policy, i.e. environmental policy. Conceptually, cross-compliance could be taken to mean ensuring compliance of one policy through another policy. Cross-compliance could thus be used for ensuring compliance of climate change mitigation or adaptation through any other policy. It may, for example, be as important in the case of EU's structural policies as for the CAP. In practice, it has in the studied countries so far mainly been discussed for agriculture.

Cross-compliance is a relatively new policy that was only recently introduced on a compulsory basis (as from the 1st of January 2005). The empirical base for understanding cross-compliance is therefore quite limited at present. In most countries the purposes for cross-compliance have been identified but these do not always include a focus on climate change adaptation or mitigation. In 2007, Denmark had 113 cross-compliance requirements. None of the Danish requirements has an explicit focus on climate change mitigation or adaptation. In the Netherlands and Germany, no use of cross-compliance for climate policy aims was found. The new (2008) Climate and Energy Strategy of Finland takes

a stand on cross-compliance by declaring that "the reduction of greenhouse gases and the targets of energy conservation will be taken into account in all planning of the subsidy policy of agriculture" and that "Finland will strive to influence the EU for changing the guidelines of state subsidies so that the use of national measures to limit the greenhouse gases will be possible." In Spain, cross-compliance requirements are most closely related to climate change aims as these include requirements linked to irrigation and water extraction. In the United Kingdom, cross-compliance requirements are also integrated into grant and subsidy schemes – e.g. the Environmental Stewardship (ES) scheme under the Rural Development Programme England (RDPE) – that do address climate change concerns.

In addition to the direct use of cross-compliance for climate policy integration, existing cross-compliance requirements also have a range of ancillary climate-change implications. These include, for example, improved soil structure and reduced soil carbon loss, and transformations in the agricultural sector such as a shift towards lower-input agriculture reducing nitrous oxide emissions, and reductions in livestock numbers limiting methane emissions. The 2006 UK Climate Change Programme document, for instance, estimates that cross-compliance will effect 0.68 MtC emission savings through reductions of livestock methane in 2010.

Technically, cross-compliance could improve climate policy integration by ensuring compliance with climate goals. However, cross-compliance is a rather top-down way of controlling human behaviour. There is a clear risk that such a centralized and hierarchal style of regulation may result in antagonistic responses and reduced legitimacy.

5. The present and potential role of climate policy integration and improved coherence

5.1. Recognising the window of opportunity for climate policies

Climate change is currently one of the most important political issues in Europe. It is repeatedly one of the top priority issues when heads of state meet in the European Council. It has a more prominent role in the governmental programmes than ever before. And many cities, such as Copenhagen, Rotterdam and Helsinki, have made climate commitments (Section 3.1). A pessimist would still say that this is nothing new. Climate change was already one of the top issues of international politics during the preparation for the United Nations' Conference on Environment and Development held in Rio de Janeiro in 1992, where the UN Framework Convention on Climate Change was also signed. Many European countries, e.g. the Netherlands and Germany, prepared their first climate strategies already in the early 1990s. Also new – and at that time even radical – specific policy instruments were introduced, such as the first CO_2 tax by Finland already in 1990. Despite all the efforts during the last two decades, the climate problem has not been resolved, and we are even further away from a low-carbon society. An optimist can clearly see differences in current climate politics, however, which may make it possible to move from merely talking and planning to acting, i.e. mitigating climate change and adopting to the changing climate.

Some of the triggers that put climate change at the top of the political agenda are common across Europe. These include the publishing of the Stern Review on the Economics of Climate Change in 2006 and the fourth assessment report by the Intergovernmental Panel on Climate Change (IPCC) in 2007. The

Nobel Peace Prize for 2007 awarded to the IPCC and Al Gore was an important milestone as well. Other reasons are related to extreme whether conditions experienced in recent years and their environmental impacts. These experiences have been local, but have often worked as important triggers for national climate policies. The 2002 flooding of the rivers Elbe and Mulde in Germany, the 2003 heatwave in France, Germany and Spain, the 2005 storm in Denmark, the 2007 floods in the United Kingdom and the exceptionally mild winter in Finland in 2008 have all put the spotlight on climate change nationally. In addition, the aim of the German chancellor Angela Merkel to make ”ambitious climate protection goals” one of the two forward-looking decisions during the German Presidency of the European Union in 2007 have also affected the position of climate change in the domestic political arena. Similarly, the Danish focus on climate change problems has been increased by the fact that Copenhagen is hosting the 15th Conference of Parties to the United Nations' Climate Change Framework Convention (COP–15) at the end of 2009.

While all of the countries studied now have more ambitious climate goals than earlier, there are differences. Some countries design their policies and strategies largely in order to fulfil their national obligations according to the Kyoto Protocol or requirements agreed upon within the European Union. Finland and Spain, for example, belong to this group. Other countries set more ambitious national goals than those adopted by the EU and proactively aim to reach stronger international and EU agreements. These countries also aim to become international forerunners and thus to gain first-mover advantages. Germany, the Netherlands and the United Kingdom belong to this group. While the difference between the groups is apparent, its meaning should not be oversimplified. First, the Kyoto or EU requirements are harder for some countries to reach than for others, depending on, for example, the structure of the economies and energy production and changes in these due to external factors. Second, the difference may also be related to different national policy styles of both target setting and international negotiations in general and not just in climate policies.

Recognising that the present climate policy declarations are not unique, why then is the situation now different? What are the factors that frame the ”window of opportunity” that actually may make real solutions possible this time? First, the political support is broader than before. Climate change is no longer delegated to just one minister, one ministry or a few institutions. It is a matter for prime ministers, whole cabinets and the entire administrations. Second, the recent climate strategies recognise the need for – and are built on – climate policy integration to a much greater extent than was previously the case. (Section 3.1). The scope for action is thus much broader. Third, climate change is not viewed as

purely a problem with costs and lost jobs attached to it. More frequently climate change is reframed as an opportunity for innovations, for new enterprises and for profits. Fourth, the local experiences of extreme weather conditions combined with concrete local mitigation efforts have made the multi-level governance nature of any sustainable solutions obvious. While these factors determine an opportunity, it will be absolutely crucial how climate concerns can be coupled with other concerns, such as increased energy security and with the responses to the economic recession that started from the financial crises in the autumn of 2008.

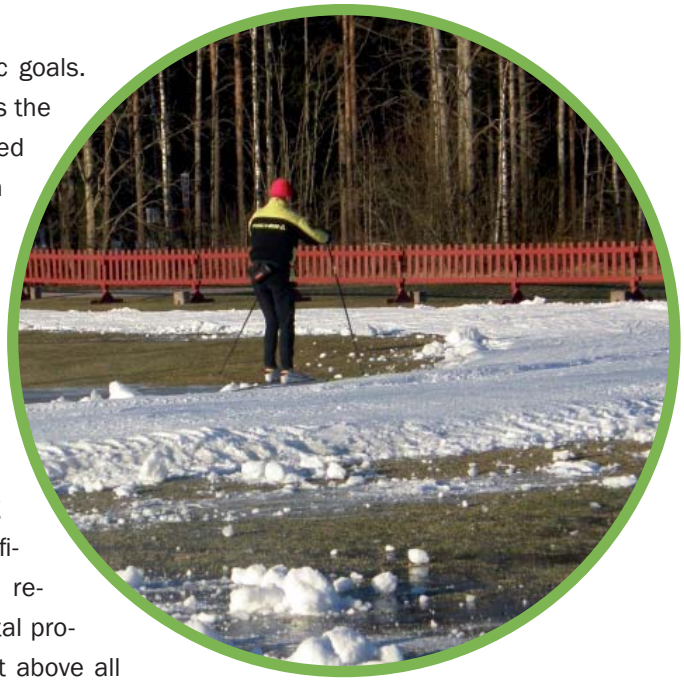
The time for actually starting to deal with the climate change problem may be here. It will not be easy, however, and the attempts may fail. Climate policy integration can have a crucial role if Europe truly wishes to mitigate climate change and to adapt to its impacts. This will, however, require:

- that climate policy integration is efficient at multiple levels (discussed in Section 5.2);
- that the opportunities, but also the limitations, of the innovation possibilities are fully identified and utilised (discussed in Section 5.3);
- that the old discussions and conflicts that climate policy integration reopens can be handled (discussed in Section 5.4);
- that proper institutions and sufficient resources are assigned (discussed in Section 5.5); and
- that climate policy integration becomes reflexive and that the monitoring, assessment and retrospective evaluations that such a learning process requires are undertaken (discussed in Section 5.6).

These requirements for making climate policy integration an efficient part of the solution to the climate challenge are the themes of the sub-sections that follow. After these sections the limitations for climate policy integration will briefly be discussed in Section 5.7.

5.2. Efficient policy integration requires action at many levels

As has been seen, climate policy is nowadays very widely included in governmental programmes and country strategies. But still the greenhouse gas emissions of many sectors and countries are increasing. In the cases where European countries have managed to reduce their emissions it has either been due to general factors not caused by climate policy or it has been because they have not only issued general strategies but also implemented specific measures



that have supported their strategic goals. General structural changes, such as the move from coal to gas in the United Kingdom and deindustrialization of Eastern Germany following the unification process, have helped some countries to reduce their emissions. There are, however, a range of measures that establish that emissions can be reduced if specific and well implemented action is taken (Section 3.1). Making climate policy integration more efficient does not therefore primarily require more inclusion in governmental programmes and climate strategies. It above all requires that consistency is more directly and openly addressed, that climate change is given enough political weight, that reporting is undertaken and that resources for integration – both in the form of know-how and money – are available. In other words, climate policy integration at the level of strategies would need to become deeper based on the other criteria for policy integration than inclusion (Sections 3.2 to 3.5).

Yet, even more important than incorporating climate policy integration more deeply into policy strategies is extending it more fully to specific policy instruments (Figure 1). This means new policy instruments as well as changing the way in which the present instruments are shaped and implemented. As discussed in Sections 4.3 and 4.4 the need to deepen climate policy integration into spatial planning and governmental budgeting is common across the countries. It is important, however, that it does not just become a question of changing planning and budgeting processes – these processes are just means – but that the climate aspect really changes actual land use plans and the funds allocated. Furthermore, these changes need to be such that mitigation and adaptation, by companies and individuals, are actually enhanced.

There is considerable potential to make budgeting a climate policy instrument. As already stated by Wildavsky (1986), budgeting reflects power and through budgeting consensus may be generated, but conflicts are also made. Our assessment of the current state of climate policy integration in annual budgeting is largely in line with more general assessments of green budgeting (e.g. Wilkinson et al. 2008); significant opportunities exist since integration is not generally taking

place in practice currently. If budgeting is going to integrate climate change aims, it has to be integrated not just into the preparation of the budget, but into all stages of the "budgeting life cycle", i.e. planning expenditure priorities; formal adoption of the budget; implementation of the budget; monitoring, evaluation and reporting; and revenue raising (Wilkinson et al. 2008). The general mechanisms for all stages are in place, and in some cases have even been made stronger recently. What is lacking is sufficient climate-specific knowledge as well as the political will to integrate climate aims in budgeting life cycle.

In addition to extending climate policy integration from the level of strategies to those of instruments, implementation and practice, it also needs to be more fully incorporated into a multi-level governance framework. Too frequently, both mitigation and adaptation are seen as concerning just one policy level or, if several levels are concerned, they are viewed as simply a top-down control problem. The following statement by Tol (2005, 573) is quite typical for the single level perspective: *"Mitigation is primarily a matter of national governments in the context of international negotiations. Adaptation is primarily a matter of local managers of natural resources, and individual households and companies, in the context of a regional economy and society."* This study has clearly shown that both mitigation and adaptation concerns all levels from the local to the global and that the interactions between levels are complex and multidirectional.

Firstly, the carbon neutrality aim declared by municipalities such as Skive, Frederikshavn and Samsø in Denmark and Kuhmoinen, Mynämäki, Padasjoki, Parikkala and Uusikaupunki in Finland[5] is far in advance of national ambitions. More importantly than just examining intentions, it is clear that in many mitigation-related decisions the conditions are generally set locally or the decisions are even made by municipalities. Local authorities usually develop land use plans that greatly influence the need for mobility and possible modes of mobility, including the extent and form of public transport. Municipalities also greatly influence the possibilities of different forms of energy production and, through procurement, energy use. The list could be made much longer. It is beyond doubt that mitigation is also an issue for local politicians and administrations, as well as for those making decisions at the national, EU or UN level.

Although specific adaptation measures are applied locally, this does not mean that other levels are irrelevant. The incentives for adaptation measures are largely affected by resources and regulations, e.g. insurance laws and rules, decided at the national or EU level. If adaptation to climate change is to

[5] *Website (the five Finnish municipalities): www.environment.fi/canemu*

be integrated into policies that affect agriculture or water, the EU level has to be included because the Common Agricultural Policy and the Water Framework Directive set vital frameworks in these fields. Like mitigation, adaptation is also a multi-level issue, and efficient policy integration of both aspects requires that this be recognised.

The need to recognise the multi-level perspective more fully is further emphasised by two of the trends that make contemporary climate policy different from earlier policies: the integration of climate policy is aimed at more sectors; and there is an increased reliance on innovation opportunities. Firstly, when climate policy is integrated into several policy sectors, the responsibilities of different levels varies between sectors. In agricultural policy, the role of the EU is strong, whereas the role of local authorities is often very strong in land use planning and the national level dominates educational and research policies in most countries. In all these cases all other levels matter, but their roles and the type of interaction between the levels are sector-specific. When climate change is seen as an innovation opportunity, the interactions between national research and development, local business incentives, EU product policies and the innovation incentives provided by different types of regulations become central. In other words, all levels are important, but not in a top-down implementation way, and the importance of interactions with private actors at all levels are obvious.

Understanding climate change as a complex problem also requires a better understanding of governance that fully accounts for the variety of institutions at various levels. New governance mechanisms that would fulfil these challenges have not yet crystallised into simple language, or a consistent discourse, and still entail a surplus of terms such as social learning, networks, multi-stakeholder processes and reflexive governance. It is important to realise that these multi-player and multi-level governance processes always also contain elements of hierarchy and markets, which have to be taken into account when assessing the effectiveness of such mechanisms. Furthermore, multi-player and multi-level governance does not imply that everything is open for constant renegotiation and that nothing can be fixed. In the case of climate change, it has clearly been shown that citizens and business companies will not make adequate decisions without consistent and firm signals, incentives and regulations.

5.3. Climate change is becoming viewed as an innovation and business opportunity

It is well known that the way in which an issue is framed affects the solutions proposed. It is therefore important to recognise that climate change has recently

been reframed in many countries. Whereas climate change used to be seen as a "limited" environmental or energy issue, it is now more frequently being viewed largely as an encompassing issue which provides opportunities for innovations, new businesses and profits.

During the 1990s, the way in which climate change was discussed and institutionalised differed from country to country. In most European countries, the political debates on climate change started in the late 1980s or early 1990s. During that time, climate change was discussed as one aspect of sustainable development, a concept that had been pushed to the fore following the publication of the "Brundtland report" in 1987. For example, the Dutch National Environmental Policy Plan (NEPP1) entitled, "To Choose or To Lose" (Kiezen of Verliezen), presented in 1989, explicitly considers climate change, but it is mainly presented as an emission problem. At the 1990 Finnish National Environmental Meeting, "The Time has Come" (Aika on kypsä), the climate problem was clearly recognised by the prime minister; at the same time, the national difficulties related to reducing CO_2 emissions were also stated (Holkeri 1990). In Germany, climate change was originally perceived negatively and framed as a "catastrophe" requiring immediate action. In terms of both energy and the environment, climate change was perceived as a threat to the national competitiveness and a "job killer".

In countries in which climate change was framed simply as an additional environmental issue it has been argued, although not established indisputably, that climate issues have been partly marginalised and have suffered from the often relatively weak position of environmental ministries. In cases in which climate policy has been seen as primarily a part of sustainable development policies the same has been observed and, in addition, it has been affected by the recent decrease in the emphasis on sustainable development. In Finland, where it was framed as an energy issue, the debate largely focused on different forms of energy production, such as nuclear power versus natural gas, and many other aspects, such as energy use, were not as central.

Recently climate change has been reframed as a "business chance" and an "innovation opportunity". The idea being promoted is that so-called win-

win opportunities may benefit industry and the climate alike and result in both mitigation of (or adaptation to) climate change and increased competitiveness. Innovation opportunities are being highlighted in several countries, including Denmark, Finland, Germany, the Netherlands and the United Kingdom (Section 3.2).

A parallel – and in some ways even more radical – reframing of the climate change issue that has taken place in Europe can be seen in the Obama and Biden (2008) energy plan presented during the U.S. presidential campaign, as well as in Obama's earlier writings (2006) and recent speeches (New York Times, November 19, 2008). One goal of the Obama and Biden (2008) plan is to *"help create five million new jobs by strategically investing $ 150 billion over the next 10 years to catalyze private efforts to build a clean energy future"*. Another one is to *"convert our [America's] manufacturing centers into clean technology leaders"*. The Obama and Biden plan includes a variety of additional instruments, such as emissions trading and energy efficiency standards, as well as technological support. If such a new U.S. plan is actually implemented, it is likely to have significant implications for other societies (including the EU countries studied in this report) as a result of the globalisation of economies and in particular technology and information.

The complete integration of climate aims into technology and innovation policies may be challenging, as demonstrated by earlier research into environmental policy integration into technology policy in Finland (Kivimaa and Mickwitz 2006). Even when environmental aims were largely included in policy strategies and mainstreaming was declared, it was not fully achieved in specific decisions. Instead, environmental aims were largely separated into specific research and development programmes and largely ignored in other programmes or funding decisions. The innovation turn of climate policy requires that climate policy integration be fully extended from general strategies to specific policy instruments (as discussed more generally in Section 5.2).

The innovation-oriented climate policy would also need to recognise fully the development of general innovation policy and theory from a "linear innovation model" focused merely on R&D support to a systemic approach. The systemic approach stresses markets and commercialisation (Kivimaa 2008) as well as the need for a horizontal innovation policy which is embedded in a wider socio-economic context (Lundvall et al. 2002, Smits and Kuhlmann 2004). Climate policy integrated into such an innovation policy framework would include a proactive government, demanding targets and a mix of instruments which influence the entire innovation cycle from initial research to achieving success in global markets.

A key insight from innovation research is that innovations take time. In order for climate policy signals to be able to induce innovation, the signals provided by politicians in general and specific policy measures in particular have to be foreseeable, consistent and credible (e.g. Kivimaa 2008). For example, the policy signal that the International Maritime Organization (IMO) would introduce binding regulations on NOx emissions was credible enough to cause companies to invest in R&D for achieving this goal many years before the regulation was formally adopted (Mickwitz et al. 2008b).

In order to provide incentives for private firms to invest in research and development on climate-related objectives, there must be trust that a market for these products, processes or technologies will exist in the future. If the economic recession that started in the autumn 2008 causes governments to back off from declared climate policy aims and measures, this will undermine the credibility of such a message.

The current emphasis on win-win solutions and innovations provides new opportunities, but it may also conceal some trade-offs and cause some new conflicts. This is because, even if conflicts and contradictions frequently give rise to innovations, not all conflicts can be resolved by technologies or innovations, and innovation processes may sometimes be very slow. It is frequently the case that the innovation-based climate policy approach is focused solely on technological innovations, largely ignoring process and social innovation. The technological focus and the overly narrow concept of innovation a priori excludes many alternatives linked to structural and behavioural changes, which could be more efficient. The focus on marketable technological solutions marginalizes or even excludes the environmental impacts of climate change, such as the loss of species, where technical fixes are not available from the adaptation debate. Although the current emphasis on economic opportunities contains some limitations and risks, the failure to explore these possibilities would be even more risky. When energy or emissions become more expensive, as a result of climate policies, countries and

firms that have not developed more energy efficient products and processes and cleaner energy production technologies will not be competitive. Not all countries, regions or firms can, however, win in a competition of relative advantages. It is already evident that the firms and sectors most closely locked into technologies that require a lot of energy and produce CO_2-intensive products, or which have not invested in this type of R&D, often oppose innovation-based climate policy.

Economies in transition, such as the new EU member states, have a great opportunity to couple economic restructuring and climate aims. At the same time, there is an obvious risk that economic development will be seen as much more urgent, and that climate issues will simply be bypassed. Integrating climate change into EU structural funds is thus essential for the diffusion of innovations and the restructuring of these economies. The recent economic crisis will also reveal, for new as well as old EU member states, the real strength of the win-win argument for innovation-oriented climate policies. Will the EU and national governments really expect climate policies to stimulate national economies or will they cut climate policy expenses?

5.4. Climate policy integration reopens and reframes old discourses and conflicts

In December 2002 the Supreme Administrative Court of Finland rejected the application by Kemijoki Ltd to construct the "Vuotos" reservoir and a dam in the upper course of the Kemijoki river. The decision was based on the Finnish Water Act, but also involved European Community law and International law (Koivurova 2004). Many thought that this was the end of one of the longest and best-known environmental struggles in Finland. Climate change and the quest to increase the use of renewable and domestic energy have, however, reopened the debate on hydropower in general and Vuotos in particular. For example, during the parliamentary debate about the new Climate and Energy Strategy in November 2008, Vuotos was mentioned several times and opinion was as divided as ever. This is an example of how climate policy integration can often reopen old conflicts, as in this case related to land use conflicts. Similar examples can be found in all of the countries studied.

Another case of climate change inclusion in a project is that of the bridge across the Fehmern Belt between Southern Denmark and Germany. According to its initiators, this project would reduce CO_2 emissions because the fixed link would reduce congestion and produce less CO_2 than the current ferries. However, the plan did not take account of the increase in traffic that usually follows the construction of new infrastructure.

In many ways the greatest conflict that has been reframed through climate arguments is the debate on the construction of new nuclear reactors. In the past, risks of radioactivity leakages from power plants or waste storage sites were the focus of the discussion. Recently, the argument that nuclear energy is a possible solution to the problem of reducing CO_2 emissions has become prominent in many European countries. This has been the case in Finland, Germany and the Netherlands. Nuclear power is still highly controversial, both politically and socially, and the outcomes have varied in these countries.

Box 11. Integrating climate change into the nuclear debate: different histories and different results

After the Chernobyl accident in 1986, attitudes towards nuclear power became critical and risks – related to both production and waste – became the primary issue in the nuclear debate. This resulted in a cessation of Dutch "nuclear ambitions", in the rejection of an application for a fifth nuclear power plant by the Finnish Parliament in 1993, and in the "Atomkonsens" to end the use of nuclear power in Germany. At that time, climate change was not a major issue in the nuclear debate in any of these countries. During the last decade climate has become a key argument in the nuclear debate of all three countries, however; but it has entered different discourses, which to date are producing different results.

German scientists used climate change as an argument with which to defend nuclear power, a source of energy that became very unpopular after the Chernobyl accident. Since that time climate change has been closely linked to energy policy, one of the most contested policy sectors in Germany – characterised by an irreconcilable debate about nuclear power on the one hand and the potential of renewable energy production and energy-saving on the other. The Red-Green government under Schroeder initiated the phasing-out of nuclear power in 2002. The Act in question contains a ban on the construction of new nuclear power plants and the restriction of the so-called residual operating life to 32 years following the commissioning of the plant. Recently, this "consensus" has been challenged increasingly by industry and several policy-makers, often with reference to greenhouse gas emissions targets.

In the Netherlands, the debate about nuclear power has been re-opened and the main arguments have been climate change, security of energy supply and resource independence. The Netherlands has added its name to the growing list of European countries that might build nuclear power stations to help meet their greenhouse gas targets. The fourth Balkenende government has decided to postpone a sensitive decision on whether or not to build a new nuclear power

plant until after the next elections. This has not stopped public discussion and political debate about nuclear power production in Holland, however.

The Finnish National Climate Strategy of 2001 presented only two future scenarios, wherein the principal energy sources were either natural gas or nuclear power. Teollisuuden Voima Oyj had applied in 2000 for permission to build a fifth nuclear power plant. Climate change mitigation was one of the main arguments heard in Parliament when the application was discussed, along with energy security, the competitiveness of the Finnish industry and employment. When Parliament voted on the application, approval was linked to four statements related to energy saving and renewable energy production. The application was approved although all political parties, except the Green League, were divided on the issue. Analyses of the debate in Parliament have argued that the earlier discourse focused on risk and the role of economic growth was replaced by a technology-focused and "ecological modernisation"-based discourse, where those in favour of the nuclear option stressed its efficiency in reducing CO_2 emissions and those against it argued for renewable energies also based on costs technological potential (Berg 2004). The fifth Finnish nuclear power plant is under construction and the latest climate strategy (2008) contains the possibility of additional nuclear power plants.

The discussion on climate change adaptation is also linked to existing policies and old or ongoing discussions. Often, adaptation has been seen largely as a water issue. Framing adaptation as a water-management problem is necessarily selective. By highlighting climate change adaptation as a water management issue or even as a spatial planning issue, other aspects of climate change adaptation are excluded or receive much less attention. When discussing spatial adaptations to climate change, policy-makers often prefer quick and technical solutions, such as – in the Netherlands – building higher and stronger dykes and not building in low-lying polders. These solutions are only partial, however. Building higher and stronger dykes may solve the problem of higher water levels but it does not solve the problems of other sectors such as agriculture, nature or tourism (Hajer 2007). The integration of adaptation into these other policy areas has been limited so far.

What do the presented examples reveal? Some would claim that they show that climate mitigation has been included and integrated successfully into all kinds of policy decisions. Others, however, would claim that mitigation or CO_2 reduction has been hijacked and misused by economic interest groups and other policy sectors. These examples also demonstrate that if climate change is linked to highly contested sectors such as energy and transport, reframing in terms of

climate change implies a redistribution of benefits and costs as well as power. The expectations of this redistribution is one source of opposition – but many of the old discussions reopened by climate change involve significant value-based or ideological conflicts. For example, the value of nature, e.g. the Vuotos mires in Finland, versus economic interests, e.g. hydropower production. Nevertheless, by integrating climate change considerations, these discourses may change. Climate change considerations may also alter the importance given to different positions or reframe even more thoroughly the whole discussion, as in the case of the Finnish nuclear power debate.

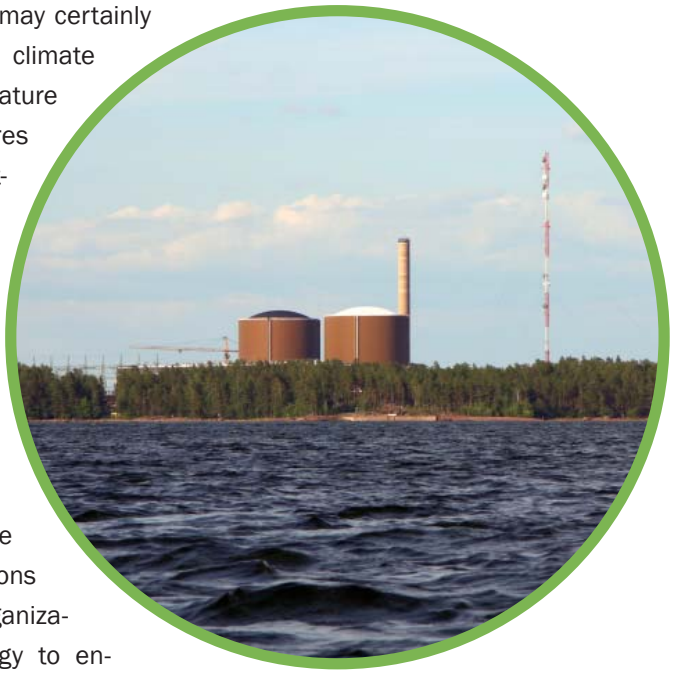
5.5. Institutions, measures and resources for climate policy integration and coherence

Many approaches to policy integration use the establishment of new institutions or the formal institutionalisation of refocused institutional agreements as one of their main criteria for policy integration (e.g. OECD 2002, EEA 2005a,b). In this study institutionalisation was not used as a specific criterion for policy integration, but it was considered within the context of the resources criterion. Furthermore, Section 4 discussed several of the key measures available for increased climate policy integration and improved coherence, such as ex ante impact assessment and ex post evaluation; the annual budget; spatial planning; and cross-compliance. The aim of this section is not to repeat the previous discussion, but to discuss the importance of there being sufficient resources and institutional arrangements that function according to their specific context. At the same time, challenges related to the formation of institutions for climate policy integration and resource mobilisation will also be discussed briefly.

It is obvious that the practical challenges are so extensive that without a clear assignment of resources policy integration cannot be achieved. Recognising coherence problems and identifying which policies have significant climate side-effects requires time and knowledge. Developing proposals for strategies and specific measures that integrate climate change also demands even more time and skills. So does the practical implementation and monitoring of the measures and evaluating their impact. Resources in the form of money, i.e. time and knowledge, are thus necessary for climate policy integration, and these resources could be provided either through existing or new institutions.

As has been discussed, many countries have established new institutions which are responsible not only for climate policy but also for enhancing climate policy integration. For example, Denmark has established a new ministry and Spain a new ministerial department. Many countries have also established new research

institutes and appointed temporary climate specialists or councils. While these new institutions may certainly have an essential role in enhancing climate policy integration and coherence, the nature of integration is such that it also requires resources and knowledge within existing organisations. On the other hand, in countries or cities with fewer new climate-specific institutions, the need for climate knowledge, earmarked resources and leadership in existing organisations is even greater.



Based on practical experience and theoretical studies from other contexts, it is not possible to determine whether new climate-specific institutions or the expanded mandates of old organizations provide a more efficient strategy to enhance policy integration. Many studies have established strong path dependence (Pierson 2000) and political inertia (Rose & Karran 1987). In other words, it is not easy to change the resource distribution and focus of established institutions. This would be an argument for at least relying partly on new institutions. On the other hand, there is a risk that new specialized institutions are seen as remote or even antagonistic in relation to established governmental structures. The critique of an ”additive” environmental administration (Hertin and Berkhout 2003), especially in relation to providing incentives for eco-innovations, could well be valid for ”additive” climate institutions as well. The critique is based on the view that segregated responsibilities maintain administrative misfits and antagonistic relationships focused on zero-sum solutions, instead of producing the shared responsibility and co-operative relationships required for creating win-win solutions. This has resulted in particular in a lack of incentives for innovation, a bias against integrated technological responses and an unstable innovation context. More generally, it has also been concluded that ”governmental organizations appear more receptive to information produced internally than that which comes from external sources” (Rist 2000, 200). In summary, extensive and efficient climate policy integration is likely to benefit from both specific institutions and being included in the mandate of more general established organisations.

5.6. Policy integration based on learning — the need for assessment, evaluation and monitoring

The social and economic processes that affect greenhouse gas emissions or vulnerability to climate change are very complex. Although increased research may reduce some risks, climate policy will always have to be formulated in a context predominated by uncertainty and ignorance. Climate policy integration – at all levels, from the EU to the local – should therefore be reflexive and able to learn from past experiences. In other words, the processes through which climate concerns are integrated into sectoral policies should be based on careful pre-assessment but, in order to develop the policies adopted and implemented, policies should also be retrospectively evaluated from a climate perspective much more than hitherto.

All European countries use ex ante impact assessments of projects – Environmental Impact Assessment (EIA) – strategies and plans (SEA) and, more recently, regulations (RIA). These impact assessments are all general environmental assessment processes. Their climate policy implications depend on the ability to recognise direct and indirect climate impacts in these processes, on the capacity to assess these climate impacts for various options and on the way in which the impact assessments are used (Section 4.3). Until recently, climate change has not played a major role in EIAs, SEAs or RIAs. However, some work has been undertaken recently in order to make EIA (both for projects and plans) climate-proof, with regard to climate change adaptation as well as climate change mitigation. In practice, there are huge differences in the quality of the SEAs and RIAs undertaken. Time pressure and the availability of background information are sometimes obstacles for performing good SEAs and RIAs and there are large variations in how well climate change impacts are integrated into individual assessments. The use of SEAs and RIAs will, in addition to the context specific political situation, depend on the institutional capabilities of ministries, agencies and parliaments to take advantage of these assessments and in particular the aspects of them related to climate change.

Since pre-assessment is about providing information for decision making in very complex contexts, the focus cannot be on relying solely on scientific knowledge. Instead, scientific findings must be translated and reconsidered in order to meet the needs of decision makers. In general, complex problem solving requires the recognition of mutual dependence between the actors involved. In such situations, negotiating both problem definitions and solutions is required, and EIA, SEA and RIA may be as much about providing a process that provides space for multiple perspectives as about generating just ”facts” or paper products.

With the exception of a few countries, retrospective policy and programme evaluation is a somewhat recent phenomenon in Europe (Furubo et al. 2002). In addition, evaluation has come later to the environmental field than to many other policy areas (Mickwitz 2003). It is therefore no surprise that most climate strategies and policy instruments lack specifications as to how they will be monitored and evaluated. Several programmes, plans, policies etc. are not very explicit as to how the mechanisms for climate change aims are supposed to work. In addition, goals are often very general, like national reduction targets. If the goal is not subdivided into more specific goals – e.g. for different sectors – it becomes more difficult to plan a reporting procedure, and later, ex post, to assess successes and failures. It is essential, however, not to evaluate goal achievement per se, but to evaluate the means – strategies, instruments, changed practices etc. – by which to reach them.

The evaluation of the climate aspects of policies is not an easy task, since actors are affected simultaneously by multiple policy interventions. In addition, when one actor's actions are determined through complex interactions with several others, and because the time span between decisions and effects may be very lengthy, evaluation becomes even more challenging. Hardly ever is it possible to attribute change – or a quantitative part of it – unambiguously to a specific policy intervention. At the same time, there is no alternative; only through a versatile debate on "what works" based on counter-factual thinking can climate policy integration be improved on the basis of experience. In an international context, it is essential that countries can learn from each others' experiences of policy integration as well.

Effective climate policy integration will need to be reflexive, adjusting to new circumstances and actively seeking new information about what is working and what is not. Such a reflexive policy, which contributes to policy learning over time, is only possible if the evaluation community becomes stronger. This requires improved interaction between social and natural scientists; it also requires an increased engagement by those undertaking assessment, evaluation and monitoring, those whose efforts are being evaluated and those using the knowledge produced. This community would need to discuss not only the findings of the assessments, evaluations and monitoring undertaken, but also their different views on knowledge, knowledge production and use.

5.7. Climate policy integration is no panacea

This study has focused on climate policy integration and coherence, rather than on climate policy as a whole. While integrating climate policy aims into other

policies is essential for effective climate policies, it is far from all that is required. The mitigation policy debate, especially at the international level, has largely been about issues such as setting overall emission reduction targets and time schedules, dividing these between countries and establishing emission trading systems and other market-based instruments. All these issues are and will likely remain important aspects of climate policy, and they demonstrate that climate policy neither can nor should be just about climate policy integration and increased coherence. At the same time, the limited, or even absent, achievements of climate mitigation policies so far speak in favour of complementing the traditional approaches with one whereby climate aims are taken into account in sectoral policies in order to address the forces that have continued to increase greenhouse gas emissions – from traffic, for example.

If the first caveat is that climate policy integration alone may not fix the whole climate change problem, the second is that it might not work at all. There used to be high hopes of environmental policy integration (EPI) as the way of actually achieving sustainable development (e.g. Lafferty and Hovden 2003). The more recent assessments of environmental policy integration, however, are generally quite pessimistic. Jordan and Schout (2006, 259) conclude that it is no surprise that the EU has problems with EPI: *"In effect, it [the EU] has set itself a political target, then failed to put in place sufficient implementing (or, to be more precise, coordinating) mechanisms to deliver it."* While Jacobs, Volkery and Lenschow (2008, 26) state: *"The implementation of the EU's strategy for sustainable development subsequently lost momentum, a development which was mirrored across many other EU Member States."* This study verifies this development in many countries, such as Finland and Germany, and also in many municipalities. The experiences with EPI raise two questions for climate policy integration. First, what can be learned from the disappointing experiences of EPI that could be taken into account when enhancing climate policy integration? Second, what is

the relationship between EPI and climate policy integration? Could an increased focus on climate policy integration assist in building a new momentum for EPI or will it be its final death blow?

The declining focus on EPI in the EU as well as in many individual countries has been linked to the a lack of political support (Jordan and Lenschow 2008). The shortage of political support has been related both to the focus shifting to other issues, e.g. from the political commitment to the Cardiff process to the Lisbon process and to the change in the party composition of governments. Jordan and Lenshow (2008, 329) also state that EPI and sustainable development *"has not attracted much sustained public attention and support"*. The contrast with climate change is obvious. The nature of both the concept of sustainable development and EPI are that they are abstract and quite vague, making it hard for politicians, interest groups or the media to build appealing stories around them. In addition to a lack of political support, EPI has also suffered from a lack of resources; a lack of efficient institutions and specific means; and a lack of evaluation and feedback mechanisms. In other words, all the aspects that we have argued as being crucial for efficient climate policy integration have been missing.

The attention to climate change, by politicians, the media as well as the general public, has provided possibilities for climate policy integration; but it has also shifted the focus away from sustainable development and EPI. If climate policy integration becomes successful, both administratively through institutionalisation, and in society through observable outcomes, i.e. mitigated emissions and enhanced adaptive capacity to climate change, this could have positive impacts for sustainable development and EPI more generally. First, action taken to decouple greenhouse gas emissions from production may be beneficial also for other environmental aspects, e.g. through reduced use of natural resources. Second, and more importantly, if organisations and means emerge that can efficiently integrate climate change and, in addition, if climate policy becomes reflexive, there would be a basis on which to expand so as to encompass sustainable development as a whole. However, there is also a risk that integration based on a single specific environmental problem would shift the attention even further away from moral and comprehensive issues like sustainable development.

6. Conclusions

It is becoming evident to politicians as well as the general public that if high-consumption societies are going to tackle climate change, significant changes in production as well as consumption processes will be required. These changes will concern fundamental features of life, such as food, energy, mobility and land use. The relevance of climate policy integration is thus straightforward; the necessary change cannot be achieved unless climate change is taken into account in the general and sector-specific policies essential for economic activities and general social organisation. Whilst the need for climate policy integration is easy to recognize, attaining it in practice is challenging. In addition, promoting policy integration instead of issue specific policies is also an old way resisting change, by diffusing attention and by making the means and resources for policy implementation weak, while declaring support for change through proclaimed integration. There is a huge need to evaluate stated climate policy integration claims and to extend such evaluation from general strategies to specific actions.

Climate change is one of the most important issues in contemporary politics. Different states have made international commitments to handling global warming since Rio in 1992. What is different now is that the inclusion of climate change mitigation and adaptation in general governmental programmes and strategies has substantially increased. In addition, both mitigation and adaptation increasingly focus on inclusion and integration in sectoral policies. In order to make climate policy integration matter, it is necessary for consistency between climate and other aims to be more directly and openly addressed. Managing consistency may reveal new win-win possibilities; in other case, however, trade-offs will remain and choices will have to be made. In these cases it is essential that climate change be given enough political weight.

While climate change is now widely recognised in programmes and strategies, much more will be needed in the form of specific measures. This may require the creation of new mechanisms, such as the 2008 Climate Change Act in the United Kingdom. It also means, however, that existing measures and institutions are to be used as climate policy instruments to a greater extent than hitherto. The annual budgets, impact assessments and spatial planning are three

examples of existing measures with significant potential to be climate policy instruments.

Contrary to what is frequently claimed, climate change mitigation is not an issue solely for international and national policies. Regional and local decision-makers make a huge number of decisions that directly or indirectly affect traffic, energy production or energy use more generally. These and other decisions on land use change – deforestation, peat land cultivation etc. – are crucial as regards greenhouse gas emissions. On the other hand, it is also clear that adaptation to climate change is not just a local issue. Water management and agriculture are just two examples of policy fields, essential for adaptation, in which the general policy framework is largely decided by the European Union. In order to be efficient, the integration of both mitigation and adaptation aims would need to recognize the interconnections between multiple levels, from the local to the international.

For a long time, climate change has largely been perceived just in terms of restrictions and limitations on economic activity, resulting in expense, bankruptcies and job losses. Recently, many European countries – as well as Barack Obama – have started to redefine climate change in terms of innovation possibilities, business opportunities and potential profits. This new innovation-based climate policy has great potential. It is clear that the required changes will call for new technologies, new processes and new social organisations. Those who can provide these will surely benefit. Enhancing innovations through policies requires policy signals to be clear and credible over the long term. The strong innovation focus of climate policy has, however, tended to focus almost only on technological innovations – and mainly on separate ”climate” technologies rather than on the climate aspects of ordinary technologies. The potential process and social innovations may then be unrecognised. Furthermore, while tensions and conflicts often result in innovation, not all conflicts between climate policy aims and other policy goals can be solved by innovation, at least not in the short run.

When climate policy is integrated into more and more policy sectors, many old discourses and conflicts are reopened and reframed. The extended use of hydropower, new bridges, new roads and new waterways have all been promoted by arguments related to climate change. One of the largest conflicts that has been reframed through climate change is that concerning nuclear power. Several countries have started to consider new nuclear power plants as an option for producing electricity without greenhouse gas emissions. When the Finnish parliament approved the application of a fifth nuclear power plant in 2001 the impacts on CO_2 emissions had become a more important issue than the issues related to the risks that had dominated the previous debate. Many of the old disputes reopened by climate change involve large value-based or ideological conflicts, in which climate change is just an additional feature. In such cases, the possibility of successfully integrating climate change will depend on the ability to handle the general ideological and value conflicts.

Effective climate policy integration will require sufficient resources in the form of knowledge and money. Without these resources, there will be no realistic possibility of truly recognising the links between general or sectoral policies and climate change or of finding alternatives and implement them. Given the great complexity of the socio-economic processes that result in greenhouse gas emissions, as well as those of adapting to a changing climate, policies need to be based on learning. In order to provide the basis for such a reflexive climate policy integration, interventions should be monitored, proposed interventions should be assessed and retrospective evaluations of decisions made and implemented should be conducted. In view of the meagre culture of environmental policy and programme evaluation in Europe, providing the input for such a learning process is a huge challenge.

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This report is largely a synthesis of the following country studies:

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It is becoming evident that if societies are going to tackle climate change, significant changes in production processes as well as consumption patterns will be required. These changes cannot be achieved unless climate change is taken into account in the general and sector-specific policies essential for economic activities and general social development. In this report the degree of climate policy integration in different European countries, policy sectors and, in some cases, regions and municipalities is assessed. In addition, measures and means to enhance climate policy integration and improve policy coherence are analysed.

This report shows that the inclusion of climate change mitigation and adaptation in general governmental programmes and strategies has substantially increased in recent years. Much more will be needed than hitherto, however, in terms of integrating climate into specific measures. Annual budgets, impact assessments and spatial planning are three examples of existing measures with significant potential to be climate policy instruments. In order to be efficient, the integration of both mitigation and adaptation aims would in the future need to recognize the interconnections between multiple governance levels, from the local to the international.

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