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Katharina Rietig

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Climate Policy Integration Beyond Principled Priority: A Framework For Analysis

Katharina Rietig

Grantham Research Institute on Climate Change and the Environment
London School of Economics and Political Science
Houghton Street, WC2A 2AE London; k.m.rietig@lse.ac.uk

Countries aiming to achieve ambitious international and national climate objectives need to integrate climate considerations into all sectoral policies. This contribution argues that since climate change is a diffuse and complex challenge, Climate Policy Integration cannot simply be modeled after the well-established principled priority of Environmental Policy Integration but requires a separate analytical framework. It distinguishes four levels of Climate Policy Integration: the EU strategic level, the EU policy-design level, the national strategy-setting and the national implementation level. Options available on the EU policy-design level are traditional single-purpose climate policies and Climate Policy Integration. Type-1 Climate Policy Integration refers to policy areas with inherent co-benefits for climate action such as renewable energy policy, while the mainstreaming approach (type-2) requires incentives or conditionalities such as regulatory support as policies have no inherent co-benefits. A case study on the German climate strategy illustrates Climate Policy Integration on the national strategy-setting level.

Keywords: Climate Policy; Climate Policy Integration; Environmental Policy Integration; European Union; Climate Strategy; Germany; Principled Priority.

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Introduction

Climate Change is not simply one more environmental challenge the earth system is facing in the 21st century; it is a fundamentally cross-cutting issue with consequences for economic development, social cohesion and the human environment (IPCC, 2007; Stern, 2006). While the public frequently holds the view that global summits and legally binding international treaties are a precondition for moving towards global solutions, they are overlooking that the current international governance architecture is only capable of making incremental steps due to its consensus decision-making structure based on national sovereignty and the fear of countries to disadvantage their economic development. The 1992 Rio Earth Summit on Sustainable Development that created the three conventions on climate change, biological diversity and desertification as well as the 2012 Rio+20 UN Conference on Sustainable Development concluded with one central call for implementation. Their global commitments and related treaties to limit the negative consequences of climate change demonstrate that the global community recognizes the problem and is willing to act. However, global governance with its current institutional architecture based on state sovereignty is not capable of and not designed for delivering and implementing policy solutions to the problems. At best, it can provide visions and roadmaps. Then, it is up to the states, regions, cities, business and civil society to walk the path of implementation with respect to their local legal, economic and social frameworks.

Countries have made advances over the past 15 years in developing strategies to combat climate change. Some countries have implemented appropriate legislation to achieve these goals and others are in the process of bringing legal frameworks underway that are based on national climate strategies. Starting with the

implementation of the Kyoto Protocol (UNFCCC, 1998) and the retreat of the United States from its leadership role in the early 2000s, the European Union has taken on an international leading position as laboratory for developing progressive climate policies (Schreuers and Tiberghien, 2007). The field of climate policy has achieved a similarly high regard like the environment. EU member states made the integration of environmental aspects into other sectoral policies a principled priority in the 1997 Treaty of Amsterdam (Collier, 1997). The EU designed a number of specific climate policies such as the European Emission Trading Scheme (EU ETS; EU, 2003) to implement its Kyoto commitments (Wettestad, 2003). Similar to other parties of the climate change convention, there remains a huge gap between the required actions to limit climate change (IPCC, 2007) and the level of ambition in countries' commitments of the Cancun Agreements (UNFCCC, 2011) and another equally huge gap between the existing targets such as the EU's 2050 Roadmap that aims at reducing the emissions by 80-90 percent in 2050 compared to 1990 levels (EC, 2011a) and the capabilities of current emission reduction policies targeted at energy production, consumption and industry. A large number of sectors remain relatively unaffected from specific climate policies such as agriculture, infrastructure, internal regional development (cohesion policy), external development assistance, trade and major parts of the transport sector.

If climate change is to be addressed effectively, the increased integration of climate policies into other sectoral policies across multiple levels of governance is required. This is a crucial supplement to traditional single purpose climate policies such as command and control regulation targeted at the reduction of greenhouse gas (GHG) emissions, market-based instruments such as the European Emission Trading Scheme or the Kyoto Protocol's Clean Development Mechanism as well as

environmental management and voluntary agreements that include different private and public stakeholders.

The academic literature has made great advances in understanding and discussing the concept of 'Environmental Policy Integration' and is moving towards providing analyses and policy implications for the integration of climate policies, i.e. 'Climate Policy Integration' (Jordan and Lenschow, 2010). However, it remains unclear what exactly 'Climate Policy Integration' means in relation to the much older concept and principled priority of 'Environmental Policy Integration'. What distinguishes Climate Policy Integration from Environmental Policy Integration? Is there one uniform type of Climate Policy Integration from a public policy point of view or do different types already exist with distinct requirements for successful implementation? How does Climate Policy Integration relate to similar concepts such as 'mainstreaming', 'green growth' and 'low carbon economic development'? If the political statements and limited commitments of international climate agreements are to be implemented on the national level, Climate Policy Integration can be an important contribution if made operational across different levels of policy-making and implementation.

There are two dimensions to Climate Policy Integration. First, the strategic decision-making level that provides political commitments to integrate climate change policies as a means of implementing international and national climate targets. The second dimension is the design of policies that do integrate climate considerations into other sectoral areas. This article makes two distinct contributions to the environmental governance and policy literature. First, it provides a conceptualization of Climate Policy Integration taking into account its development based on the Environmental Policy Integration principle on which earlier contributions to the

conceptualisation of Climate Policy Integration are based (Ahmad, 2009; Dupont, 2011; Jordan and Lenschow, 2010; Mickwitz et al., 2009a; 2009b). It finds that these do not sufficiently take the particular nature of climate change into account (Jordan et al., 2010) and remain on an abstract conceptual level. They leave a gap towards making Climate Policy Integration operational as contribution to achieving the climate targets required (IPCC, 2007; UNFCCC, 2011). To make the integration of climate policies into other sectoral policies operational in the policy-making context, the concept of Climate Policy Integration requires a differentiation among different sub-types and their distinct requirements.

The second contribution is an empirical case study of how climate policy is being integrated into national strategic decision-making. Germany serves as an appropriate example of national attempts at Climate Policy Integration as one of the countries with the highest commitments to reduce GHG emissions at 40 percent by 2020 from 1990 levels (BMU, 2012). Consequently, the pressure to implement climate policy is particularly high in Germany. The case study analyses how climate policy is being integrated on the national strategic level and examines the key actors behind the strategy. This allows identifying relevant conditions for successful Climate Policy Integration on a strategic level. It is important to note that the terminology of Environmental and Climate Policy Integration is rarely used among policy makers and in legislation, but rather described as ‘mainstreaming’ (EC, 2011b), ‘green growth’, ‘low carbon economic development’ (UNFCCC, 2011) or ‘integrated climate strategy’ (Meseberg-Programm; BMU, 2012).

Following a review of existing Environmental Policy Integration and Climate Policy Integration conceptualizations in the academic literature, the theoretical part of this contribution turns to a discussion of their appropriateness given the cross-sectoral

character of climate change and implications for strategic policy-making on the national level. It identifies Climate Policy Integration as a parallel stream of policy design besides single-purpose climate policies with a further typology of policies with automatic and non-automatic co-benefits for climate mitigation, i.e. ‘mainstreaming’. The empirical analysis assesses the strategic level of climate policy integration at the example of Germany and identifies the central role of societal and political actors as the main drivers for Germany’s progressive integration of climate considerations on the strategic level. The contribution leaves implications for further research regarding the operationalisation of Climate Policy Integration on the implementation level, i.e. what aspects would need to be fulfilled for a policy to be referred to as contributing to Climate Policy Integration.

What is Climate Policy Integration?

Climate Policy Integration is being conceptualised in the literature in two ways: either by replacing the word "environmental" with "climate" in the definitions and conceptualisations of Environmental Policy Integration (Ahmad, 2009; Dupont, 2011), or by adapting the existing definitions from Environmental Policy Integration, which is based on Underdals (1980) conceptualisation of Policy Integration, to Climate Policy Integration; thereby taking account of the underlying differences between climate change and the environment.

Climate Policy Integration has developed out of the Environmental Policy Integration research field. To date, there are a limited number of government-encouraged reports (Abbott and Dempsey, 2008; Beck et al., 2009; Mickwitz et al., 2009a; 2009b; Van Bommel and Kuindersma, 2008) and literature that frames Climate Policy Integration as mainstreaming climate policy in different policy areas and levels of governance (Dowlatabadi, 2007; Kok and de Coninck, 2007; Kok et al., 2008; Yamin, 2005) or the integration of other policy areas into climate change mitigation or adaptation (Howden et al., 2007; Patel et al., 2002; Patel et al., 2003).

The concept of Climate Policy Integration is fairly new with a limited body of emerging literature (Ahmad, 2009; Dupont, 2011; Nilsson and Nilsson, 2005). The conceptual and empirical literature discusses Climate Policy Integration on four different levels: the European Union strategy level, where the European Council sets the overall strategies with predominantly strategic declarations and roadmaps (level 1), the European Union implementation level, where the European Commission proposes specific sectoral policies to implement the overall principled objectives determined by the European Council (level 2), the member state strategic decision

making level that aims to implement the European Union policies into national legislation (level 3) and finally the member state implementation stage, where European policies that have been translated into national legislation are being implemented in the cities and regions (level 4). Figure 1 visualises the four analytical levels of Climate Policy Integration that can be differentiated:

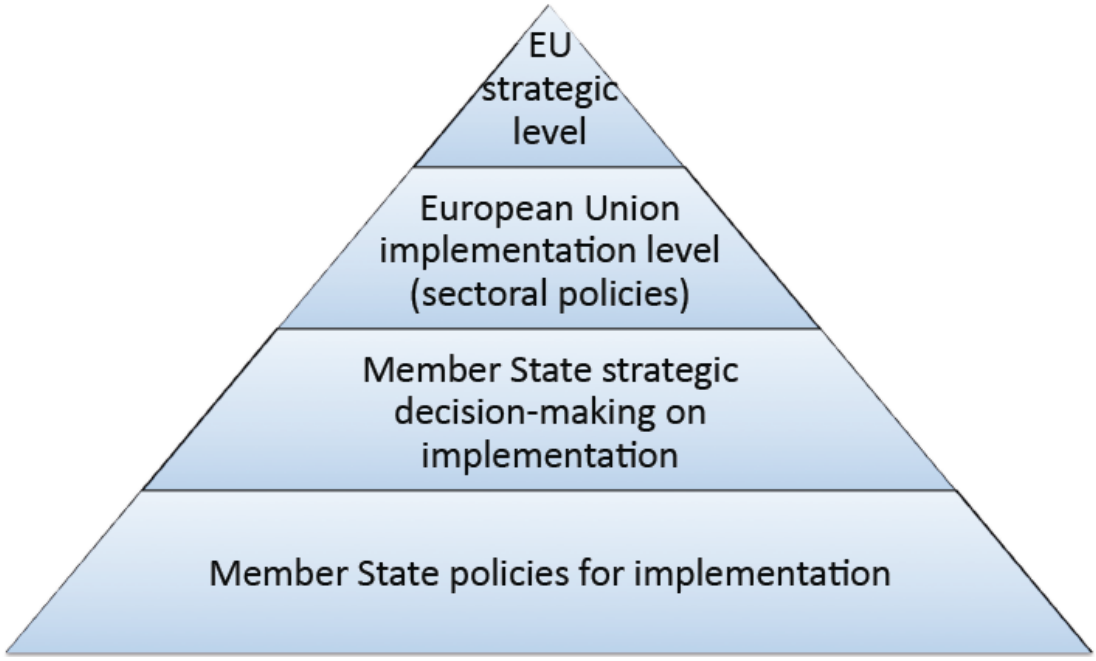

Figure 1. Levels of Climate Policy Integration in the European Union. Compiled by author.

The earliest academic contribution explicitly dealing with 'Climate Policy Integration' (Nilsson and Nilsson, 2005) proposes the integration of climate policy into the energy, transport and agricultural sectors as a response to the need for a European climate strategy implementing international commitments and the Lisbon strategy. It thereby deals with Climate Policy Integration on the EU strategic level from a normative point of view, pre-dating the European climate strategy of 2007.

The argument for mainstreaming climate mitigation and adaptation into other sectoral policies, especially development, was picked up by Kok and de Coninck (2007) without a specific focus on a region or multiple levels. Similar to Nilsson (Nilsson and Nilsson, 2005), Dupont (2011) focuses on a conceptualisation of Climate Policy Integration on the level of strategic, long-term decision-making in the European Union, especially the strategies and agenda-setting of the European Council (level 1). Dupont's (2011) key contribution is a conceptual framework for analysing Climate Policy Integration on the European strategic level, framed as principled priority and based on the criteria of political commitment, inclusion, consistency, weighting, reporting and resources (Dupont, 2011: 394); concluding with a call for case studies and further research. A follow-up contribution (Dupont and Primova, 2011) is to date the only analysis of European energy policy from a Climate Policy Integration point of view (level 2). It retains a strong focus on strategic considerations (level 1) and evaluates if the realities of energy policy making hold up to Climate Policy Integration as a "principled priority" (Dupont and Primova, 2011: 3). However, inferring the principled priority of Environmental Policy Integration enshrined in the Amsterdam Treaty (Collier, 1997) to Climate Policy Integration could be regarded as premature in terms of legislation and as ignoring the particularities of climate change, which is reduced to an environmental problem with this conceptualisation. Other available studies predominantly focus on the implementation of Climate Policy Integration on the national level in specific policy areas and horizontally by providing analytical tools for designing policies (Mickwitz et al., 2009a; 2009b).

This contribution extends the concept of Climate Policy Integration to the implementation stage on the European policy-making level by providing an analytical framework for different types of Climate Policy Integration based on which sectoral

policies climate considerations are being integrated into (level two). Here, the focus is on how the European Commission implements strategies set out by the European Council on level one as discussed by Dupont (2011). It secondly analyses what Climate Policy Integration means on the member state level. Member states need to implement the European Union's decisions into national policy strategies. Here, two further levels can be differentiated: the national strategic decision-making level (level three) and the national implementation of specific policies (level four). The case study on Germany contributes to the third level of implementing European Climate Policy Integration strategies on the national strategic decision-making level. Implications for further research would be case-study analyses on the fourth level, i.e. how Climate Policy Integration is being implemented in different member states.

Theoretical-conceptual roots of Climate Policy Integration in Environmental Policy Integration

Environmental Policy Integration is usually understood as either a process of governing or a policy outcome. It is a mature concept, both in terms of policy-making – at least in the European Union – and in the academic literature (Jordan and Lenschow, 2010).[1] Based on its 'mother concept' of sustainable development (Lafferty and Hovden, 2003), Environmental Policy Integration has reached a quasi-constitutional status in the European Union when it was enshrined into the Treaty of Amsterdam 1997 and is widely regarded as principled priority on the political decision-making level (Jordan and Lenschow, 2010). Most authors that so far

[1] For landmark contributions to Environmental Policy Integration see Adger and Jordan, 2009; Feindt, 2010; Hertin and Berkhout, 2003; Jordan and Lenschow, 2008; Jordan and Lenschow, 2010; Knudsen, 2010; Lafferty and Hovden, 2003; Lenschow, 2002; Nilsson and Persson, 2003; Nilsson, 2005; Nilsson and Nilsson, 2005; Nilsson and Eckerberg, 2007; Weale 1992; Wilkinson, 2009.

contributed to conceptualising Climate Policy Integration identified Environmental Policy Integration as its 'mother concept' and adopted the notion of a 'principled priority' of the concept over other policy objectives (Ahmad, 2009; Dupont, 2011). This section discusses the merits and shortcomings of these approaches and the appropriateness of defining Climate Policy Integration as principled priority with regard to the four levels of Climate Policy Integration: the EU strategic level, the EU implementation level, the national strategic decision-making level and the national implementation with specific legislation.

Concept of 'Policy Integration' goes beyond 'Environmental Policy Integration' and can be traced back over three decades. Underdal (1980) is widely acknowledged as having provided the first academic analysis of 'policy integration' (Dupont, 2011; Jordan and Lenschow, 2000; Lafferty and Hovden, 2003). According to Underdal (1980), three criteria need to be satisfied before a policy can be considered as integrated: it must be comprehensive in terms of actors, time and space; provide an aggregate analysis from different perspectives and be consistent with other components of the integrated policy. A policy is integrated when

> "all significant consequences of policy decisions are recognised as decision premises, where policy options are evaluated on the basis of their effects on some aggregate measure of utility, and where the different policy elements are in accord with each other" (Underdal, 1980: 162).

Developing a common conceptualisation and an analytical framework for Environmental Policy Integration has proven challenging. Although Environmental Policy Integration has become a central concept to integrate sustainable development considerations into sectoral policies such as energy, transport and industry, both internationally (WCED, 1987) and especially on the European level where the Amsterdam Treaty granted Environmental Policy Integration quasi-constitutional

status, it has remained a "fuzzy" concept (Lafferty and Hovden, 2003: 5). In particular government-issued reports and analyses are not based on a common conceptualisation (Lafferty and Hovden, 2003). One reason might be found in the requirement of political consensus and a desire to not clearly define the concept similar to the relatively flexible use of "sustainable development" in policy making to avoid complications due to different party-political and ideological interpretations.

Collier (1997) identified three Environmental Policy Integration objectives that are also applicable to Climate Policy Integration due to their generic approach: first, the achievement of sustainable development and preventing damages to the environment; second, removing contradictions within and between policies; and third, the realisation of mutual benefits (Collier, 1997: 36). Based on a critique of Collier's definition, which is very broad and not tailored to *Environmental* Policy Integration, Lafferty and Hovden developed a widely recognised definition of Environmental Policy Integration that served as a more specific basis for also conceptualising Climate Policy Integration by replacing the word 'environmental' with 'climate change' (Ahmad, 2009; Dupont, 2011; Nilsson and Nilsson, 2005; Nilsson and Eckerberg, 2007):

> The incorporation of environmental [climate change] objectives into all stages of policy- making in non-environmental [non-climate change] policy sectors, with a specific recognition of this goal as a guiding principle for the planning and execution of policy; accompanied by an attempt to aggregate presumed environmental [climate change] consequences into an overall evaluation of policy, and a commitment to minimise contradictions between environmental [climate change] and sectoral policies by giving principled priority to the former over the latter. (Lafferty and Hovden, 2003: 9)

This approach carries the advantage of drawing from a well-developed conceptual literature that already includes 'policy integration' as crucial element of Climate Policy Integration. The Environmental Policy Integration literature provides a

number of frameworks for implementation and theoretical analysis. The concept of Environmental Policy Integration has been widely analysed and discussed over the last two decades from various perspectives[2] with a number of proposed frameworks for implementation and theoretical analysis. Hertin and Berkhout analyse institutional strategies (2003) by proposing agenda setting, horizontal communication, policy learning and capacity building as four specific functions of Environmental Policy Integration. Acknowledging the central role of institutions and policy networks, Nilsson and Persson (2003) place policy learning between actors at the heart of their analytical framework. They identify policy-making rules, assessment processes, problem malignancy and the international context as the factors that lead to stronger or weaker Environmental Policy Integration, with the coordination between actors and their willingness to learn as further critical determinants (Nilsson, 2005).

Both Underdal's definition of Policy Integration and Lafferty/ Hovden's definition of Environmental Policy Integration, on which recent Climate Policy Integration conceptualisations are based (Dupont, 2011; Dupont and Primova, 2011), raise a number of inconsistencies when applied to Climate Policy Integration. The Environmental Policy Integration literature has rarely addressed or included climate change into its country case studies and policy integration analyses (Ahmad, 2009).

The first inconsistency is the question if Climate Policy Integration is a principle, paradigm or a policy tool? This problem is also applicable to Environmental Policy Integration (Nilsson and Eckerberg, 2007). If Climate Policy Integration can be regarded as a principle – or even principled priority as proposed by Dupont and Primova (2011) – is debateable. The term 'principled priority' has rather abstract

[2] E.g. Adger and Jordan, 2009; Feindt, 2010; Jordan and Lenschow, 2000; Jordan and Lenschow, 2008; Jordan and Lenschow, 2010; Lenschow, 2002; Knudsen, 2010; Lafferty and Hovden, 2003; Lenschow, 2002; Nilsson and Persson, 2003; Nilsson, 2005; Nilsson and Eckerberg, 2007; Weale 1992; Wilkinson, 2009.

implications and it remains unclear how this priority of climate chance policies over sectoral policies could be applied and especially carried through in the practicalities of policy-making concerned with balancing frequently contradictory interests, political bargaining and imbalanced power structures. It is problematic to assign Climate Policy Integration the status of a 'principled priority' (Dupont and Primova, 2011). Given the lack of a legal basis and democratic legitimisation via the European Parliament or the European Council, a principled priority of Climate Policy Integration remains a mere abstract idea. Climate Policy Integration has other than Environmental Policy Integration no strong quasi-constitutional basis in international and regional treaties and therefore a far weaker standing both in international law and as a policy principle. Given the lack of a legal basis in European law, there are no provisions for implementation. It remains unclear who should oversee, evaluate and carry out the integration of climate policies, let alone have appropriate legal, policy and administrative instruments available for enforcement. As long as there is no legal basis for Climate Policy Integration similar to Environmental Policy Integration, the former concept can hardly be held against the same evaluation standards in terms of policy design. If Climate Policy Integration is to be introduced as policy evaluation concept, it needs to be linked to a legal framework that explicitly takes climate mitigation and adaptation into account as a core principle and objective, such as the European Sustainable Development Strategy (EU SDS; European Commission, 2005; European Council, 2001; 2006). The Sustainable Development Strategy highlights combating climate change as its second priority (Eurostat, 2009) and provides indicators for evaluating the progress towards achieving this objective.

Yet the core distinction between Environmental and Climate Policy Integration is that climate change is a different challenge than other environmental

problems. It can consequently not simply be conceptualised like Environmental Policy Integration but needs to be approached with more differentiated policy instruments and a different type of policy integration. Climate change itself is frequently seen as an environmental problem (Dupont, 2011). However, climate change is especially difficult to address effectively due to its particular nature (Jordan et al., 2010: 4) that withstands many conventional means of environmental regulation: There is public ambivalence over climate change action. Climate change carries uncertainty and has implications for critical natural capital as well as intergenerational justice (Neumayer, 2007). Climate change has adverse cost-structures and no clear connection between policy intervention and observable effects. There is also the lack of an 'easy fix' or technological solution. Social behavioural path dependencies hinder the smooth implementation of institutional and technological policy instruments (Jordan and Lenschow, 2010). Consequently, there are financial, technological, institutional, behavioural, governance and collective action related impediments that make addressing climate change especially challenging compared to other environmental problems that can be remedied with regulatory tools more readily. Climate change requires coordinated efforts in various policy areas and levels of governance that are linked with above impediments.

There is no consensus to conceptualise climate change as an environmental problem. On the contrary - since its drivers are social, economic and developmental patterns (Ahmad, 2009; Cohen et al., 1998; Moomaw et al., 1999) and are therefore cross-sectoral, policies that address climate change would need to be equally integrated across the different policy areas. With a view towards response approaches, Climate Policy Integration can be further divided as the integration of climate change mitigation and climate change adaptation policies into other policy sectors.

Therefore it is necessary to take the particularities of climate change into account when identifying Environmental Policy Integration as suitable basis for developing a coherent Climate Policy Integration conceptualisation. Replacing "environmental" with "climate" and assuming a "principled priority" for Climate Policy Integration because it is similar in some points to Environmental Policy Integration is not sufficient to grasp the complex interdependencies of policy areas, as they require coordination and constructive collaboration to effectively address climate change and develop an integrated climate policy.

Climate Policy Integration on the EU policy implementation level

Following the strategy setting on the level of heads of states within the European Council (level one), the level of implementing these strategies with European legislation is crucial for achieving any objectives (level two). This stage of implementing climate policy integration on the European level remains underexplored and under-conceptualised in the academic literature. To date, there are very few policy examples of Climate Policy Integration and analyses of to what extent these policies can be regarded as Climate Policy Integration (Rietig, 2012a). Any such analysis needs to start from a legal basis in European Union or international law that already provides for integrating climate change considerations such as the European Sustainable Development Strategy, which sees combating climate change as a major objective (European Commission, 2005; European Council, 2001; 2006).

This section goes beyond the theoretical construct of holding climate policy integration up to a not (yet) existing legal principled priority benchmark. It uses current and emerging European policies as a basis to conceptualise Climate Policy

Integration in the European Union on the three policy implementation levels beyond Climate Policy Integration concerning the first strategic declarations on the EU-level as provided by Dupont (2011). The following conceptualisation refers to the second level of implementing strategic declarations with policy proposals on the EU level. The European Commission with its privilege and obligation to draft proposals for policies and introduce them into the policy-making process that involves multiple levels of governance is the central actor. Further actors include the European Parliament with its representatives of political parties and voter constituencies; the European Council with ministers and the working-party level of civil servants from national government departments representing the national level as well as multiple other levels of governance via the Committee of Regions representing predominantly states or other sub-national units and the input these bodies receive from civil society and lobbying groups (Hix, 2005; Weidenfeld, 2006).

Climate Policy Integration needs to take into account multiple levels of governance, policy change and the particular policy dilemma of the costs and benefits of climate change mitigation efforts. To allow for an operationalisation, the process of policy formation, current legal bases, the particularities of climate change and the actual economic consequences for the concerned sectoral policies should be taken into account, as should the conditions under which policy makers are confronted with actual trade-offs, inter-departmental power struggles for limited resources and political bargains. Climate considerations cannot be integrated into all sectoral policies to the same extent or with the same success, given that climate policies are more or less compatible with the sectoral policies' objectives. This must be taken into account when designing policies that aim to implement the strategic EU-level

objective of combating climate change via conventional sectoral non-climate specific policies.

In consequence of above discussion, this contribution conceptualises 'Climate Policy Integration' as the integration of climate policies that are designed to combat climate change and are in line with the Sustainable Development Strategy into national and international sectoral policies with special relevance to policy fields where mutual benefits between climate policy in terms of reduced emissions and the sectoral policies' aim can be achieved, facilitated and encouraged by the use of regulatory instruments.

Climate Policy Integration is another kind of regulation as illustrated in Figure 1. Traditional climate policies are targeted at the single purpose of reducing emissions. These include command and control regulation such as emission standards, market based instruments such as emission trading schemes or carbon taxes as well as voluntary agreements and environmental management schemes by industry such as increased fuel efficiency, disclosure of carbon footprints and green investments. With regard to the introduced particularities of climate change and the policy-making process, Climate Policy Integration can be conceptualised as sectoral policies with direct climate co-benefits (type-1) and mainstreaming of climate objectives into areas that are not or only indirectly concerned with mitigation, thus creating indirect co-benefits by using financial instruments or making the allocation of funds contingent upon the fulfilment of climate criteria (type-2).

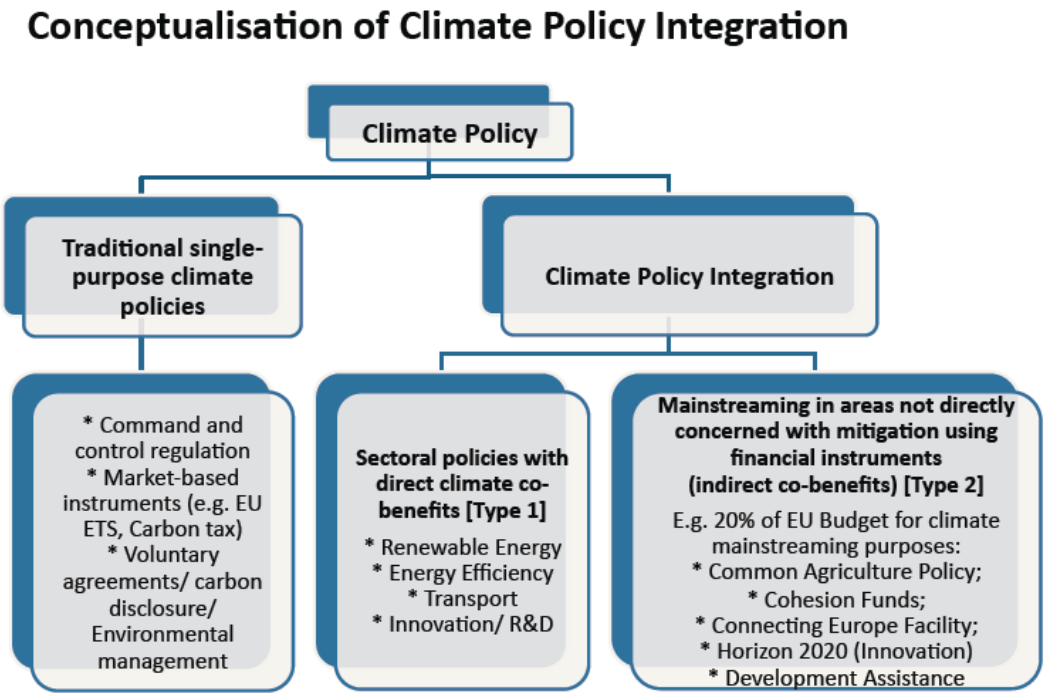

Figure 1. Conceptualisation of Climate Policy Integration. Compiled by author.

The first type is policies with co-benefits for climate mitigation and/or adaptation such as renewable energy, low-carbon transport and innovation policies targeted at low carbon technologies. These policies, also referred to as 'green economy' or 'low carbon economic development policies', aim to provide co-benefits for economic growth via investment in innovative technologies and industries that simultaneously contribute to the mitigation of climate change as their technologies are cleaner than conventional high-emission technologies.

The second type is referred to as 'mainstreaming'. The European Union is pioneering climate mainstreaming approaches that integrate climate mitigation and adaptation into policies not traditionally related to addressing climate change using financial instruments such as devoting a certain percentage of the EU budget for large funding programmes such as Horizon 2020 (innovation), the Common Agricultural

Policy and the Cohesion Funds. It proposes both incentives for overcompliance, conditionalities of EU funds and penalties for violations to require sectoral policies to take into account climate objectives with very specific measures. Examples include mainstreaming of climate mitigation and adaptation considerations in agriculture (Rietig, 2012a), cross-border transport and economic development policies, both in terms of the EU Cohesion Funds and EU-external development assistance in the form of grants and loans (Rietig, 2012b; European Commission, 2012). The integration of climate objectives into economic and energy policies is framed as 'low carbon economic development' and 'green growth' in the public debate, European and national policy proposals.

The next section analyses the case of climate policy integration in economic and energy policy on the German national strategic level of implementing EU policies into national legislation (level three) by setting out a national climate strategy. The case study is interesting given the most ambitious Kyoto-Protocol target of reducing GHG emissions by 40 percent from 1990 levels by 2020 and the image of progressive German climate policies, while maintaining its position as leading European economy (BMU, 2012).

Climate Policy Integration on the national strategic level

The European Union and with it Germany have recently undertaken significant Climate Policy Integration efforts, thereby acting as front-runner and laboratory for innovative climate policies. This section reviews these efforts in Germany, adding to previous studies (Beck et al., 2009; Mickwitz et al., 2009a; 2009b). The focus is on the actors that determine if and how climate policies are being integrated on the national level of designing policy strategies that implement European climate legislation (level three) and serve overall European and international climate objectives. The methodology used is document analysis of the 2011 media debate in Germany on green growth and on low carbon economic development that was closely linked to competitiveness concerns, the economic crisis and the nuclear accident in Fukushima/Japan in March 2011. These have been compared with legal documents as well as reports from the German government and policy research institutes.

The German integrated climate strategy

Germany presents itself as a central driver in pushing for a progressive international and European climate policy by influencing decisions on these levels (BMU, 2010b; 2010c), which require Germany to comply once the decisions have been reached. In 2007 the German government released its latest *Integrated Climate Strategy* (Integriertes Energie- und Klimaschutzprogramm IEKP) consisting of 20 legislative decisions to achieve climate targets for 2020 (BMU, 2012). The set targets are to reduce German GHG emissions by 40 percent from the 1990 baseline, increase

the share of renewable energies to at least 30 percent of the overall energy mix and 14 percent in heat generation as well as to increase the share of biofuels without endangering ecosystems or food security (BMU, 2012). Core elements of the strategy to simultaneously achieve these targets, to spur green growth, counterbalance rising prices for fossil fuels and to increase energy security are with the respective laws and directives (BMU, 2009; BMU, 2012):

- Energy efficient buildings (legal requirements for energy indicators in buildings were tightened by 30 percent in 2009);
- Investments of 1.4 billion Euro for renewing and updating the insulation of old buildings;
- Improving energy infrastructure and networks;
- Guidelines to increase energy efficiency in products and services;
- Incentives to feed-in biogas into the gas networks (10 percent by 2030);
- Increase the share of biofuels without endangering food security;
- Sustainable mobility by electric vehicles using electricity from renewables;
- Toll differentiation with discounts for low emission lorries;
- Tax differentiation taking into account CO_2 emissions of new cars.

(BMU, 2012).

Studies concluded that this program (Meseberg-Plus Programm), once implemented by the respective laws and directives, should lead to a 14.1 percent reduction of GHG by 2020 from 2008 levels and together with previous achievements to a reduction of 34.2 percent from 1990 levels (Jochem et al., 2008; UBA, 2011). The gap is projected to be closed by reduced demand for fuel and electricity due to innovation and increased efficiency, reducing emissions by further 8 percent until 2020 and 7 percent until 2030 with an overall investment of 310 billion Euro (Jochem et al., 2008).

Key challenges are to motivate and win the support of investors, business and consumers to achieve the technological and economic potential from these investments. The economic implications and motivation for this climate strategy are to harvest first-mover advantages by specializing comparatively early in clean

technologies and thereby achieving economy of scale effects and resulting international competitive advantages (Jochem et al., 2008). To achieve and maintain these competitive advantages, the conditions to establish lead markets need to be taken into account (Jochem et al., 2008; Walz, 2006). Renewable energy policies with subsidies and tax incentives as well as Carbon Capture and Storage require significant upfront investment. However, the report points out that the increased cost effectiveness, investment opportunities, technological leadership and international first mover advantages justify these measures in the medium and long term (Jochem et al., 2008). Overall, the current German climate strategy is the motor of what is considered to spur economic growth with increased net investment of over 30 billion Euro per year and long term GDP increase by 70 billion Euro annually as well as the creation of 500,000 new jobs until 2020, helping Germany to win back its economic competitiveness by increased innovation and moving towards an overall low-carbon economy (Jochem et al., 2008).

However, challenges remain and are acknowledged in the green growth debate (BDI and BDA, 2009; BMU, 2010a; BMU, 2011; Böll, 2009; 2010a; 2010b; 2011a; 2011b; European Commission, 2010). Clean technologies are usually more expensive and therefore less cost-effective than conventional carbon intensive technologies as long as market distortions based on an insufficient internalisation of environmental externalities prevail. Regulation plays a central role in the implementation of Climate Policy Integration (Foxon and Pearson, 2008) with its available innovation push-policies and technology pull-policies to facilitate the emergence of clean technologies out of their market-niche. Other challenges are achieving sustainable changes in behavioural path dependencies and to increase the competitiveness of clean technologies (Grüber and Nakicenovic, 1999).

The debate of the high economic costs is not particularly dominant due to the strong support of civil society for environmentally friendly technologies and life styles. This is demonstrated by widespread enthusiasm for recycling, organic food, solar panels and photovoltaic panels on one-family homes facilitated by the feed-in tariff, comparably low 'not-in-my-backyard' resistance to wind energy, as well as investment in building insulation including biofuels for heating and triple-glass windows becoming the standard (SZ, 2011c; 2011d). However, the enthusiasm only lasts as long as there are economic incentives and health benefits from these low carbon strategies. The feed-in tariff for renewable energies, fees for waste disposal combined with the provision of recycling facilities, frequent information in the evening television programmes about federal financial support for updating energy insulation in buildings and heating alternatives to fossil fuels paired with rising energy costs have proved to be powerful incentives for changing behavioural path dependencies and making use of available clean technologies. Furthermore, there is also a certain willingness to pay for cleaner products, however only as long as the long term benefits outweigh the short-term higher upfront investments (Media debate, 2011).

Central actors in German Climate Policy Integration on the strategic level

Central drivers for environmental policy and climate policy integration in Germany are the strong regulatory state and the wide public support for green policies. While industry is a central actor in all environmental and climate policy discussions, it has an especially important role in the debate around green growth and moving towards a low carbon economy. It maintains highly effective ties with the

liberal democrats (Freie Demokratische Partei/ Free Democratic Party, FDP) representing entrepreneurs and a predominantly young and well educated upper middle class favouring market-liberal policies as well as with the conservative parties (Christliche Demokratische Union/ Christian Democratic Union, CDU and the Bavarian Christliche Soziale Union/ Christian Social Union, CSU), who are traditional coalition partners on the state and national governmental levels (Hartmann, 2004). While industry, CDU/CSU and FDP have high regard for 'green growth' as an integral part of economic and energy policy with implications for innovation, eco-efficiency and technological leadership, the Green party and with it the Social-Democrats and unions conceptualise integrating climate policy in economic and energy policy as equivalent to promoting renewable energies and especially the exit from using nuclear energy with jobs emerging in the renewable energy industry and related services (Böll, 2009; 2010a; 2010b; 2011).

When the 'Red-Green' coalition between social democrats and greens took office in 1998 and introduced a number of stringent environmental policies against industry opposition such as the eco-tax, feed-in tariffs and subsidies for the uptake of renewable energies, the traditionally consensus-based discussion around green growth became more intense (Böll, 2009; 2010a; 2010b; 2011). Unlike the grassroot and protest strategies used in the 1980s when the Green party was closer to a highly ideological, left radical political protest movement (SZ, 2011a, 2011b, 2011d) than a party in charge of the Foreign Office and Environment Ministry, the Green party finally possessed the regulatory tools to implement and enforce its policy objectives also against industry protest (Bluehdorn, 2009). Bailey and Rupp (2004) conclude that climate policy in Germany remains both autocratic and deeply unpopular with industry as especially the tradition of self-regulation and negotiated targets was

abandoned by the 'Red-Green' coalition to satisfy party interests and meet international climate commitments. Instead of crippling economic competitiveness, the stringent regulation pursued by the 'Red-Green' coalition eventually led to industry innovation (Bluehdorn, 2009). The policies including the decision to phase out nuclear power by 2020 were maintained in the subsequent years of the 'Great Coalition' between the conservative parties and the social democrats who opposed market-liberal policies out of concerns to remain compatible with the Green party as their 'natural' and preferred coalition partner (SZ, 2011a; 2011d).

Implications for climate policy integration in Germany

The international leadership role Germany accepted especially within UNFCCC and the EU and the branding of Angela Merkel as the 'Climate-Chancellor' required both the Great Coalition Government and the conservative liberal government (CDU/CSU and FDP) elected in 2009 to maintain the overall course of moving towards regulatory requirements for integrating climate considerations in economic and energy policies. However, industry influence on climate and energy increased rapidly with the replacement of the social democrats by the liberal democrats as junior partner of the CDU/CSU government in 2009. In conclusion, two central drivers shape German Climate Policy Integration of the first type, the focus on sectoral policies with direct climate co-benefits such as a focus on renewable energies, energy efficiency, innovation and low carbon transport (Figure 1). On one side there is the Green party with civil society, growing public support, environmental NGOs, the social-democratic party as preferred coalition partner and their societal stakeholders. The other group is represented by industry, business, the conservative

parties and the liberal democrats who prefer self-regulation and voluntary actions while promoting investment in clean technologies, innovation and eco-efficiency as the tools of choice to achieve green growth with principled priority of the economy over environmental concerns (Media debate, 2011). Central determining factors are the strong public support for the environment and climate policy that gives high popularity to the Green party (Bailey and Rupp, 2004) and thereby translates civil society concerns and environmental activism into political influence that has resulted in stringent government regulation and pressures on other political parties to develop and implement progressive environmental policies over the past 15 years (Media debate, 2011; SZ, 2011b; 2011c; 2011d).

It can be concluded there is a consensus among policymakers and stakeholders that type-1 Climate Policy Integration in the form of a transition to a low carbon economy is an appropriate way forward given the challenges of increasing resource prices, peak oil, energy insecurity from political conflicts in oil and gas exporting regions and especially the threats to human health posed by nuclear power at the example of catastrophes in Chernobyl and Fukushima (Media debate, 2011). Both the conservative party with the industry as well as the green party and the social democrats have taken several steps away from their original, either market-liberal or ecological critique of capitalism positions. Both sides work constructively towards achieving economic growth with low carbon technologies and sustainable development motivated by consumer and voter demand as well as external events such as the nuclear catastrophe in Japan and increasing fuel and energy prices. The German government embraces the ‘green growth’ concept and follows up with climate policy integration efforts in the form of stringent regulation, incentives for innovation and investment in low carbon technologies (BMU, 2009; 2010a).

Conclusion

Countries aiming to achieve ambitious international and national climate objectives need to implement appropriate measures including the integration of climate considerations into all sectoral policies. This paper analysed available conceptualisations of Climate Policy Integration and the recent German climate policy integration efforts. It adds to previous studies (Beck et al., 2009; Mickwitz et al., 2009a; 2009b) with the objective of contributing a conceptualisation of Climate Policy Integration on the EU implementation level and a case study of a best-practise example of a national climate change strategy that integrates climate change considerations into other sectoral policies on a national strategic level.

The key conclusion from the discussion of available conceptualizations for Environmental Policy Integration and emerging conceptualizations of Climate Policy Integration is that since climate change is a diffuse and complex challenge (Jordan et al., 2010), Climate Policy Integration cannot simply be modeled after the well-established principled priority of Environmental Policy Integration but requires a separate analytical framework. Therefore four levels of Climate Policy Integration need to be distinguished: the EU strategic level, the EU policy-design level, the national strategy-setting and the national implementation level. Options available on the EU policy-design level are traditional single-purpose climate policies and Climate Policy Integration. Type-1 Climate Policy Integration refers to policy areas with inherent co-benefits for climate action such as renewable energy policy, while the mainstreaming approach (type-2) requires incentives or conditionalities such as regulatory support as policies have no inherent co-benefits.

The case study on the German climate strategy illustrated Climate Policy Integration on the national strategy-setting level. It contributed to level three, the implementation of the EU strategic decisions (level one, conceptualised by Dunlop, 2011; Dunlop and Primova, 2011) on the national strategic policy-making level. It sets the frame for further empirical country studies on the implementation of the climate strategies via integrating them into national sectoral policies that are either automatically beneficial for combating climate change such as renewable energy policy (CPI type-1) or that require additional regulatory support in the form of incentives, conditionalities and sanctions. This approach is referred to as 'mainstreaming' by the European Commission and integrates climate objectives into areas that are not automatically co-beneficial for the environment.

The approach of mainstreaming climate policies into all sectoral policies is important for achieving GHG mitigation targets and adapting to the unavoidable consequences of climate change. Yet it poses a methodological challenge in terms of tracking the climate actions and their respective contribution to GHG reduction in a geographical area over a certain time frame. This carries implications for further research. One aspect is how Climate Policy Integration can be identified, i.e. if legislation actually implements any assumed 'principled priority' of Climate Policy Integration using appropriate criteria such as the Sustainable Development Strategy (Rietig, 2012). Second, once Climate Policy Integration legislation has been adopted on the European and national level, the question arises how the implementation towards achieving the overall strategic climate targets can be measured, verified and monitored. Certainly, following the approach of Climate Policy Integration may be very useful in terms of achieving actual emission reductions as all sectors contribute to this overall objective as far as possible and if necessary motivated by incentives

and/or regulatory conditionalities. However, it also means that these contributions will be more difficult to quantitatively trace unless Climate Policy Integration on the level of national implementation (level four) is accompanied by a sophisticated yet simple-to-use methodology for economic evaluation. Implications for further research would be to explore to what extent Environmental Impact Assessment (Pearce et al., 2006) could serve as a methodological blueprint for future '*Climate Impact Assessments'* as climate considerations are not only relevant on the regulatory and strategic levels corresponding with Regulatory Impact Assessment and Strategic Environmental Assessment (Therivel, 2004), but especially on the local and project level where climate considerations need to be mainstreamed into all policy sectors to implement the overarching strategies and policies.

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