

Unpacking the EU Climate and Energy Package

Causes, Content and Consequences

Jon Birger Skjærseth



Unpacking the EU Climate and Energy Package

Causes, Content and Consequences

Jon Birger Skjærseth

jbs@fni.no

April 2013



FRIDTJOF NANSENS INSTITUTT
FRIDTJOF NANSEN INSTITUTE

Copyright © Fridtjof Nansen Institute 2013

Title

Unpacking the EU Climate and Energy Package:
Causes, Content and Consequences

Publication Type and Number

FNI Report 2/2013

Pages

49

Author

Jon Birger Skjærseth

ISBN

978-82-7613-667-8

ISSN

1893-5486

Abstract

This report examines the EU's innovative climate and energy package: how this package of binding policies has been initiated, decided and implemented. From the early 1990s, EU climate and energy policies developed separately, despite efforts at coordination. Policies in these areas were based on different organization, timing, policy instruments and objectives. In 2008, the EU adopted a package of climate and energy policies, harmonizing legislation to ambition levels unmatched by any other major actor in international climate policy. The present report argues that the linking of EU climate and energy policies can explain how differently-valued issues were combined, side-payments crafted to overcome distributional obstacles and synergies created to achieve a successfully negotiated outcome. Changes in circumstances can explain why synergies between climate and energy policies have been replaced by conflict and why this package may be a one-off event. Whereas issue-linkages can promote agreement, package deals may act to impede revision if circumstances change, as amending one component may have repercussions for the package as a whole. Stagnation or even disintegration of the EU climate and energy package may weaken the EU's realization of a low-carbon economy and its 'leadership by example' in international climate policy.

Key Words

EU, climate policy, energy policy, EU climate and energy package, issue linkages, policymaking, implementation

Orders to:

Fridtjof Nansen Institute
Postboks 326
N-1326 Lysaker, Norway.
Tel: (47) 6711 1900
Fax: (47) 6711 1910
Email: post@fni.no
Internet: www.fni.no

Contents

Introduction	1
Analytical point of departure	2
Background	6
Initiating the package	10
Preparations	10
Initiation	16
Deciding on the package	24
The package proposal	25
The negotiations	29
Implementing and developing the package	32
Concluding remarks	38
Interviews	41
Bibliography	43

Tables

Table 1: Supply–demand balance 2008–2011	33
------------------------------------------	----

Introduction¹

In 1991, the EU attempted to adopt a package of climate and energy policies based on carbon/energy pricing, renewables and energy efficiency. Shortly before the 1992 Rio Conference, the environmental ministers failed to give broad backing to the proposal of the European Commission (henceforth: Commission), whereupon Environmental Commissioner Ripa de Meana resigned in protest. Efforts to adopt a climate and energy package of policies eventually succeeded in 2008, with the adoption of an innovative, radical package of binding policies, harmonizing climate and energy legislation to ambition levels unmatched by any major EU partner or competitor. With the climate and energy package, the EU's realization of a low-carbon economy by 2050 gained traction.² The package also strengthened EU leadership by example credibility in the international climate negotiations (Oberthür and Kelly, 2008; Van Schaik and Schunz, 2012).

In December 2008, the climate and energy package was unanimously adopted by the 27 EU member states in the European Council and endorsed by the European Parliament (henceforth: Parliament). The package had been designed jointly by the Commission's Directorates General (DGs) for energy and transport and the environment.³ Most energy-intensive industries exposed to international competition accepted the package, albeit reluctantly, and were granted special arrangements to level the playing field. Even the most impatient green groups applauded. However, by 2012, this member-state unanimity had vanished, the Commission had become more divided, and energy-intensive industries were seriously challenging the package. This eroding support has obstructed further development of the package, putting the EU's long-term low-carbon ambitions at risk.

This apparent paradox of high support and subsequent resistance gives rise to at least two key questions. How did the EU climate and energy package come about in the first place? And why have its development and implementation partly been obstructed, despite the massive initial support?

The core package negotiated throughout 2008 included a revision of the EU Emissions Trading System (EU ETS) covering large industrial emitters; a decision on effort-sharing among member states (ESD) for sectors not covered by the EU ETS, like transport and agriculture; promotion of renewable energy sources (RES) and the world's first legal framework for safe carbon capture and storage (CCS).⁴ Policies for

¹ The author would like to thank Steinar Andresen, Per Ove Eikeland, Lars H. Gulbrandsen and Torbjørg Jevnaker for constructive comments.

² The EU aims at 80–95% reduction of emissions by 2050 so as to contribute to limit the rise in global temperature to 2°C.

³ From February 2010 renamed DG Energy and DG Climate Action.

⁴ The 'core package' refers to EU policies proposed, negotiated and adopted simultaneously in 2008.

reducing CO₂ emissions from new cars and for fuel quality, from ‘well to wheel’, were negotiated independently of the core package (Christensen and Gulbrandsen, 2012). Further policies on energy efficiency were adopted independently and according to a different time schedule.

Well-established theories of EU policymaking and integration, complemented with theories of issue-linkages, can explain the making of the core package. How these policies were linked and de-linked to create synergies, to combine differently valued issues and to offer side-payments to overcome distributional obstacles explains how the package came about. Drawing on existing literature on single components of the package and approaches to EU policymaking and integration, this report provides a broad analysis of the major components and phases.⁵ Such an approach enables a better understanding of the nuts and bolts linking the initiation, decisionmaking and implementation of the 2008 EU climate and energy package.⁶ This report is organized in terms of these three policymaking phases, including the further development of the package, after an introduction to the analytical framework and a brief history of EU climate and energy policy. The results of the analysis and their implications for EU climate and energy policy are discussed in a brief conclusion.

Analytical point of departure

The EU faced three key challenges in making the package: initiation and policy design by the compartmentalized Commission, adoption by the energy-economic diversified member states and the Parliament, and subsequent implementation and further development. The policy initiation phase concluded when the Commission formally proposed the package in January 2008. The decision-making phase ran from the Commission proposal until December 2008, when the package was adopted. From 2009, the package has been implemented through comitology procedure on a number of remaining issues and by national follow-up plans. This phase has also included efforts at further developing the package towards longer-term EU targets.

How could the linking or combination of different policies and issues facilitate widespread support and ambitious EU outcomes that differed so significantly from the status quo? Essentially, issue-linkage involves joint negotiation of two or more issues, and generally occurs because at least one actor believes that linkages will improve the chances of a favourable

⁵ The package has been analysed from various angles, including its relationship with international processes and law (e.g. Kulovesi et al., 2011); effects on European energy system (e.g. Blesl and Kober et al., 2010); interactions and synergies between the different instruments (e.g. Lecuyer and Bibas 2012); relationship to EU environmental leadership ambition (e.g. Uusi-Rauva, 2010; Van Schaik and Schunz, 2012) and early assessments of the content of the package (e.g. Oberthür and Pallemmaerts eds, 2010).

⁶ This article draws on two rounds of interviews in 2011 and 2012 with policy-makers and stakeholders in Brussels – see below.

agreement (Sebenius, 1983; Hovi and Skodvin, 2008). Combining different issues for joint settlement (like climate mitigation and energy security) can raise EU-level ambitiousness without sacrificing consent among policymakers (agenda-setters and veto-players) whose agreement is necessary to initiate and adopt change in policy (Tsebelis, 2002).⁷ Since it is the Commission that has the sole formal right to initiate new policies, the content of what the Commission links together in its drafting of legislative proposals may have significant impacts on outcomes (McKibben, 2010:701).

There are at least three issue-linkage mechanisms that can promote EU-level unanimity in cases that diverge from the status quo. First, issues that are differently valued by policymakers can be combined, creating possibilities for mutually beneficial exchange of concessions (Sebenius, 1983; McKibben, 2010) – as with different concerns for energy security and climate change. Second, distributional obstacles can be overcome by adding issues as side-payments, a mechanism by which ‘winners’ can compensate ‘losers’ so that all benefit. Direct side-payments may be institutionally difficult to arrange or insufficient for fully compensating ‘losers’, but issues that function as side-payments may prove effective (Tollison and Willett, 1979; Sebenius, 1983). For example, revenues from auctioning of emissions trading allowances can be used to compensate lower-income member states’ investments in low-carbon technologies. Finally, issues can be added to exploit their interdependencies. With positive relationships among different issues, synergies may be exploited to the advantage of all the parties (Sebenius, 1983). Thus, policies for combatting climate change can reduce air pollution, thereby raising decisionmakers’ willingness to agree on climate policies.

Two countervailing propositions tied to the consequences of issue-linkages are considered here. The first holds that adding issues can yield joint gains that create or enhance the probabilities of a successful outcome by combining values, crafting side-payments and enabling synergies – as with the making of package deals. These mechanisms can help to explain how the EU managed to combine widespread support and acceptance with a new and ambitious package of policies.

In contrast, adding issues may also reduce the chances for successfully negotiated outcomes (Sebenius, 1983). Adding issues can introduce pivotal new decisionmakers and render policymaking more complex and cumbersome. Issue-linkage fails when individual issues have little commonality or when the basis for a new agreement could destroy the common ground. These mechanisms can explain why other, related,

⁷ If unanimity is required, the adopted policy could be expected to reflect the least ambitious actor, and the ‘Law of the Least Ambitious Program’ (LLAP) would apply (Underdal, 1980). This situation could have led to high acceptance based on consent between sovereign states, but low ambitiousness in relation to the targets. The LLAP, however, applies only in the absence of issue-linkages. When different issues are linked, the level of ambition can be increased without sacrificing consent among relevant actors when unanimity is required.

policies were negotiated independently of the EU's core climate and energy package.

Once adopted, policies must be implemented consistently over time. A first hurdle is the time inconsistency problem (Hovi, Sprinz and Underdal, 2009). Optimal choices made at one point in time may prove to be at odds with optimal future choices. A commitment to develop a low-carbon economy is likely to face a credibility problem: the investments will not necessarily be profitable in the short term, and new challenges may arise. Governments could be tempted to renege on earlier promises, particularly if circumstances change. With complex package-deal compromises, subsequent opposition to individual elements may have repercussions for the package as a whole. There are several ways of coping with the challenge of time inconsistency (Hovi, Sprinz and Underdal, 2009). Alternative options can be eliminated by developing new low-carbon technologies that may become irreversible when commercially viable. Another option is 'tying hands' by adopting pre-commitment strategies, like binding climate and energy targets.

The second hurdle is disruptive institutional interaction. Institutional interaction occurs when one source institution or policy instrument affects the effectiveness of another target institution (Oberthür and Gehring, 2006). Interaction relates to vertical influence between international regimes and EU legal instruments or between EU legal instruments. This is a core matter for the Commission, which has focused on enhancing coherence between different policy instruments in governance. Such interaction can create synergy or conflict when one instrument affects the decisionmaking process or the performance of another instrument.

How issue-linkages are formed, by whom, and with what consequences for implementation and further policy development has implications for the validity of well-established explanatory approaches to EU policymaking. Liberal intergovernmentalism sees EU policy-making and integration mainly as a result of interstate bargaining, making the interests, preferences and negotiation behaviour of the EU member states the key to understanding the package.⁸ The essential claim of the liberal intergovernmentalist approach is that EU policymaking is determined primarily by governments that are constrained by political interests within the nation (Moravcsik, 1998; 1999). The development of the climate and energy package is compatible with a liberal intergovernmentalist

⁸ A broad understanding of issue-linkages can also be related to the enduring grand theory of neofunctionalism for explaining European integration – depicting the package as a result of 'spillover' from goals related to one issue (e.g. climate) to another (e.g. energy). It could be argued that a given action on climate change creates a situation in which the original goal can be achieved only by taking further action on energy, which creates a need for action on innovation, industrial policy, and so forth. Here we should note that the deterministic nature of neofunctionalist explanations of European integration failed to explain the slowdown of European integration in the 1960s and paved the way for the emergence of the theory of intergovernmentalism.

approach to the extent that the EU member states requested and decided on the package.

The Commission has the formal and exclusive right to initiate and draft new EU legislation. In the policy initiation phase, however, member states can exert significant influence on Commission proposals through advisory committees, hearings and informal consultations with the Commission (Grant et al. 2000). The state holding the EU presidency can also take new initiatives. Moreover, the Commission may anticipate the constellation of interests among member states when drafting its proposals (McKibben, 2010). In the decisionmaking phase, the European Council or the Council of Ministers, composed of representatives of national governments, is the main decisionmaking body. The member-state occupying the presidency is responsible for chairing the meetings, and can play an important role as a mediator. The likelihood of the Commission getting the necessary backing for a proposal also depends on the decision rule applied. Unanimity gives each member-state more control, but increases the probability of deadlock. The co-decision procedure requires a qualified majority in the Council of Ministers and gives each state less control, but increases the probabilities for adoption of legislative proposals. With the climate and energy package, it seems likely that the package reflected the constellation of interests and preferences among member-states, given the decision rule applied.

Multi-level governance (MLG) has been presented as an alternative to state-centred intergovernmentalist approaches of EU policymaking (Marks, Hooghe and Blank, 1996; Fairbrass and Jordan, 2004). There are many variants of multi-level governance approaches, but all share the assumption that governments are not in full control and that European integration has weakened the state. Moreover, MLG places more emphasis on the institutional aspects of policymaking, including norms and rules for collective action. Central aspects of the multi-level governance approach are governance by supranational institutions, such as the Commission and the Parliament, and influence by non-state actors at the EU level. The institutional aspects encompass supranational institutions as both actors and arenas in policymaking. The development of the climate/energy package is compatible with multi-level governance to the extent that it was initiated and shaped particularly by supranational EU institutions such as the Commission and the Parliament, and by non-state actors.

In the phase of policy initiation, we would expect a prominent role for the Commission. The Commission's ability to initiate the package would first depend on the degree of internal cohesion in the Commission itself, a body that has been characterized as segmented (Sbragia, 2000). Second, the actual content of what the Commission links together in its proposals may have important impact on the bargaining interaction and outcomes (McKibben, 2010). In the decisionmaking phase, the Commission has often continued to play an important role although it is no formal legislator. Under the co-decision procedure, it is difficult for the Council or the Parliament to amend a Commission proposal without the Commission's agreement. The Parliament has become increasingly important as a co-legislator together with the Council of Ministers. The co-decision

procedure gives the Parliament the right to propose amendments or veto the proposal if it feels that its amendments have not been taken sufficiently into account. Non-state actors have also generally played an important role in the making of EU climate and energy legislation, even though industry or green groups have no formal right to initiate or veto EU legislative proposals.

Common to the liberal intergovernmentalist and multi-level governance approaches is the emphasis on EU-internal factors and processes. However, factors external to the EU, such as international regimes, can also affect EU policies (Weale et al., 2000).⁹ The development of the climate/energy package is more in line with an international regime approach to the extent that it was developed in response to (changes in) the international climate regime, represented by the Kyoto Protocol and the United Nations Framework Convention on Climate Change (UNFCCC). Vertical interaction between the climate regime and EU policy-making may have affected the making and implementation of the package. The international climate regime may also increase the probabilities for an ambitious EU climate policy by providing a level playing field for European industries exposed to international competition.

In this report, these approaches to EU policymaking and integration are used mainly as heuristic tools for understanding why and how issues were linked and de-linked to initiate, decide and implement the EU climate and energy package.

Background

In 1985, the Commission first addressed the issue of climate change (at the time, identified as the greenhouse gas problem) in its research policy.¹⁰ One year later, climate change was discussed by the Parliament. In 1988, the first Communication from the Commission to the Council was presented (Commission, 1988). Comprehensive programmes for studying scientific aspects of climate change were proposed. After the establishment of the Intergovernmental Panel on Climate Change (IPCC) in 1988, the Commission followed up by stressing the urgent need for a clear commitment by industrial countries to stabilize CO₂ emissions by the year 2000. The Commission was at the helm in the early years, from problem ‘diagnoses to policy recommendations. In 1990, the EU member-states (12 until 1995) entered the scene with a target for stabilizing CO₂ emissions by 2000 at their 1990 levels, adopted by a joint Council of energy and environment ministers in October. This shows that, from the beginning, action on climate change was viewed in the context of energy. Though the unanimous stabilization target was not

⁹ Regimes are social institutions composed of *agreed-upon* principles, norms, rules and decisionmaking procedures that govern the interaction of actors in specific issue-areas. These are the rules of the game that determine the character of recognized social practices. (Young 1998)

¹⁰ This section is based mainly on Skjærseth, 1993; 1994.

legally binding for the member states, it carried significant political weight and spurred the development of policy instruments for achieving the stabilization goal.

The Commission immediately started to hammer out a package of policy instruments. As in the Council, the driving force within the Commission were the DGs for environment and energy. This alliance was based on common interests in EU climate policy, but their motivations varied. DG Environment sought to cope with climate change, while DG Energy's major concern was to promote energy efficiency which in turn could promote energy security. In late 1990 and 1991, various communications prepared jointly by DG Environment and Energy leaked out. These draft communications revealed that the EU aimed to take a leading role in the global negotiations leading up to the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in June 1992. The central element involved 'EU leadership by example', by adopting a package consisting of a carbon/energy tax, strengthening the energy efficiency programme (SAVE) and establishing a programme on renewables (ALTERNER). The need for action in the transport sector was also noted. Although concerted international action was underlined, it was held that the EU could go it alone because the strategy could have positive benefits for the Community (Commission, 1991).

DG Taxation found the tax proposal provocative, and the Commissioner for Taxation opposed the introduction of any new Community-wide taxes, including eco taxes. The proposal also provoked the business lobby, sparking off the most intense lobby campaign seen in Brussels to that date (Newell and Paterson, 1998). The Council itself was split on the package even though it agreed on the target: The environment ministers agreed unanimously on a unilateral carbon/energy tax, whereas the energy ministers were sceptical to a tax as long as similar measures were not implemented by Japan and the USA. Commission President Jacques Delors shared this view, but was tempted by the idea of using tax revenues to strengthen the Commission. The Parliament's Environment Committees and the Committee on Energy Research and Technology were also sceptical. Among the most enthusiastic member states were the Netherlands, Germany and Denmark. The UK was concerned about the lack of impact assessment and disagreed with the plans for collecting revenues at EU level to finance energy and environmental programmes. Such revenues, it was felt, could serve to strengthen the Commission and the supranational power of the EU. Spain, Portugal and Greece were concerned about loss of competitiveness in the absence of more financial assistance from the Community, whereas France, with its reliance on nuclear energy, preferred a tax based solely on carbon content. The evolving package proposal also included a burden-sharing element, whereby countries with greater developmental needs were to be allowed greater flexibility (Ringius, 1999).

Despite diverging interests among different types of actors, the Commission developed a formal package proposal intended for adoption prior to the Rio Conference in June 1992. Faced with significant opposition and scepticism, DG Environment accepted a compromise based on a principle of tax conditionality on other OECD countries: the tax would be

implemented only if other OECD countries followed suit. Further, large energy-users would be exempted from a portion of the tax depending on energy costs for the final product, and certain member states could be temporarily exempted from application of the tax.¹¹ Also the SAVE proposal got watered down. A regulation aimed at increasing the use of renewables in total energy (ALTENER) demand from 4% in 1991 to 8% in 2005 was proposed, including energy saving in buildings and transportation. Finally, the fourth and last proposal was for a Council Decision on a monitoring mechanism of greenhouse gas emissions (GHGs), to ensure that the stabilization target would be achieved.

Shortly before the Rio Conference, the environmental ministers failed to give broad backing to the Commission's proposal. This led Environmental Commissioner Ripa de Meana to resign in protest, blaming the member states for the failure. The leaders, including Denmark, Germany and the Netherlands, accused the Commission of not going far enough, particularly due to the principle of tax conditionality to other countries. Others, such as the UK, claimed that the proposal was going too far too soon. While the principle of tax conditionality paved the way for a compromise within the Commission and between the Commission and industry, it failed to satisfy leaders and laggards in the Council (Skjærseth, 1994). At UNCED in Rio, the United Nations Framework Convention on Climate Change (UNFCCC) was adopted, containing a vague commitment for industrial countries to return to earlier levels of GHG emissions by the year 2000.

After UNCED the Commission made new effort at getting the package adopted. The only success in terms of new and binding measures was the monitoring mechanism, adopted in 1993. The proposal for a combined CO₂/energy tax continued to fail, due to the requirement of unanimity and the fact that there were few signs that main OECD competitors would establish similar taxes. The tax proposal was downplayed towards the end of 1994 and abandoned in 1997 (Skjærseth and Wettestad, 2008a). Failure also met the Commission's efforts at further developing an internal burden-sharing agreement, because of opposition from the major emitters. The programmes for energy efficiency (SAVE) and renewable energies (ALTERNER) were dramatically weakened (Oberthür and Kelly, 2008). The budgets for these programmes were significantly reduced, and watered-down versions of the programmes were adopted in 1993. SAVE and ALTERNER did not gain sufficient support to become EU legislation. Reductions in EU GHG emissions in the early 1990s came about mainly through factors unrelated to climate policies – particularly the rush from coal to gas in the UK, and German reunification.

In the preparatory process to the first UNFCCC Conference of the Parties (CoP) to be held in Berlin in 1995, the EU agreed on new negotiations to strengthen the UNFCCC despite weak internal climate policies. The Ad

¹¹ In addition to massive opposition from industry, Gulf countries had expressed concern: the tax could threaten the volumes of their oil export to the Community by discouraging fossil energy use.

Hoc Group on the Berlin Mandate (AGBM) was established as a forum for negotiations towards a new protocol, to be concluded by 1997. Reaching agreement within the EU on a common position based on an internal burden-sharing agreement proved difficult – the Commission made several unsuccessful efforts concerning burden sharing in order to underpin a common EU target and take a leadership role internationally. The breakthrough came under the Dutch presidency, in March 1997, with the ‘tritych approach’ that differentiated member states in terms of three sectors: electricity production, the light domestic sector and energy-intensive industries (Ringius, 1999). Different targets could then be imposed on the two former sectors, and identical targets could be imposed on energy-intensive industries to ensure a level playing field within the EU to counter carbon leakage. The burden-sharing agreement was adopted by the Environment Council in March 1997 as a basis for the EU’s conditional 15% reduction target prior to the Kyoto negotiations.

In Kyoto in December 1997, the EU argued in favour of domestic action and opposed flexibility, such as international emissions trading between states. The USA was unwilling to accept a binding numerical emissions target without flexibility, and the EU could not accept a protocol without a binding numerical target (Grubb et al., 1999). The compromise was that international emissions trading would be optional and could not start until appropriate rules and guidelines were established. Whereas the EU had some influence as regards ‘environmental integrity’, the flexible design of the ensuing protocol was largely a result of US influence. Three flexibility mechanisms became central: international emissions trading (ET), Joint Implementation (JI) and a Clean Development Mechanism (CDM). The Kyoto Protocol endorsed the burden-sharing agreement, but reduced the EU ambition to 8% reduction in GHGs by 2008–2012 from 1990 levels – still the highest reduction target among industrialized countries.

The story of the first EU climate and energy package and the various efforts prior to the Kyoto Protocol shows that we need different explanatory perspectives to understand the largely unsuccessful efforts at getting EU climate policies adopted. First, the member states clearly determined the outcome, given the decision rule that was applied. The proposals in the package required unanimity according to Article 130s of the Single European Act and restricted the role of the Parliament to non-binding consultation. The Maastricht Treaty, which was adopted in 1992 and entered into force in 1993, extended the area where majority voting applied for environmental proposals and provided the Parliament with greater powers. Still, unanimity would continue to apply to provisions of a fiscal nature, such as the carbon/energy tax. Opposition from one member state would be sufficient to kill the tax proposal. Second, opposition from industry and segmentation within the Commission contributed to water down the package proposal in a way that that also served to erode the fragile consensus between the member states before the package was proposed. Third, the international climate regime negotiations in 1992 and 1997 served as important targets for the EU’s leadership ambitions, putting considerable time pressure on the Commission and the Council alike. The Kyoto Protocol negotiations were instrumental in the development of the burden-sharing agreement.

Finally, neither the Commission nor the member-states were able to exploit issue-linkages in a way that could overcome distributional challenges. From 1991, studies conducted by the Commission showed that there would be costs involved: these costs would be unevenly distributed among the member-states, and most sectors of industry would be negatively affected (Skjærseth, 1994).

Initiating the package

EU climate and energy policies gained momentum after the 1997 Kyoto Protocol. But these policies developed separately, based on different organization, timing, policy instruments and objectives.

Preparations

The EU Kyoto target deviated from the EU assumptions as regards targets, number of gases and the time perspective underlying the 1997 burden-sharing agreement. The agreement was revised in June 1998, based on the 8% EU Kyoto commitment divided among the EU's 15 member states. Individual commitment levels ranged from +28.0% for Portugal to -28.0 for Luxemburg. As for Germany, it was to reduce emissions by 21.0% from 1990 to 2008–2012. The burden-sharing agreement became legally binding in 2002 – three years before the Kyoto Protocol entered into force.

The burden-sharing agreement guides domestic climate policy initiatives among the individual member states. But implementation of domestic climate policies has varied significantly, entailing the need for new harmonized policy instruments to meet the Kyoto commitments. Emissions increased somewhat from 1994, and were projected to increase further by 2010 unless new measures were taken (Oberthür and Kelly, 2008). Voluntary agreements with European, Korean and Japanese car manufacturers were adopted in 1998 and 1999, but these agreements failed to deliver agreed emission cuts due to reluctance from the car industry and its opposition to binding measures (Christensen and Gulbrandsen, 2012). Other directives stimulating GHG reduction, such as the Landfill Directive, were motivated mainly by considerations other than climate change.

DG Environment had responsibility for developing new climate-policy instruments. The most important EU climate-policy instrument to emerge in the wake of the Kyoto Protocol was the EU Emissions Trading System (EU ETS). A shift in the position on emissions trading was hinted at by the Commission in a 1998 Communication on how to follow up on the EU's Kyoto commitments. It stated: 'the Community could set up its own internal trading regime by 2005' (Commission, 1998:21). The next May 1999 Communication on the implementation of the Kyoto Protocol took the trading idea somewhat further by indicating participation by industry and by proposing a Green Paper (Commission, 1999). The March 2000 Green Paper outlined specific design issues for a mandatory cap-and-trade system and the degree of harmonization between the Community

and the member states (Commission, 2000a). The Commission argued for a harmonized system preferably based on harmonized EU-level cap-setting and allocation of allowances for payment (auctioning). The system would apply to electric power producers and energy-intensive industry.

In March 2000, the Commission launched another innovation – the European Climate Change Programme (ECCP), intended to enable stakeholders to participate in preparatory work on new climate policies. Stakeholders included various Commission DGs, member-state experts, industry and other non-governmental organizations. It examined an extensive range of sector and instruments within 11 working groups coordinated by a Steering Committee. The first working groups set up covered transport, industry, energy supply, energy use and flexibility mechanisms, emissions trading in particular. In addition to several informal and ad hoc consultation meetings, ten stakeholder meetings were held between 2000 and 2001 to shape a platform based on a common understanding of the need for emissions trading in the EU (Skjærseth and Wettestad, 2008a). Initially, only the UK, Denmark and the Netherlands supported an EU ETS. The remaining EU member states either opposed it or were indifferent. Most industry sectors, the green movement and the Parliament were either sceptical or opposed. The most important industrial proponent was the power industry, led by the industry association Eurelectric and the oil majors BP and Shell.

In March 2001, President George Bush Jr. withdrew the USA from the Kyoto Protocol. This move advanced the Commission's ETS plans and opened a window for the EU to exert global climate leadership by becoming a pivotal actor for achieving ratification of the Protocol.¹² The EU ETS served as an important expression of this leadership by strengthening the credibility of EU climate policy. In essence, the plans for an EU ETS evolved, from an instrument for implementing the protocol commitments to an instrument for saving the Protocol. This contributed to increase the internal support for an EU-based emissions trading system. In October 2001, the Commission delivered its proposal for the EU ETS (Commission, 2001). The Emissions Trading (ET) Directive was formally adopted by the Parliament and the Council in 2003. The ET Directive referred to the promotion of GHG reduction in a cost-effective and economically efficient manner (Art.1). A qualified majority was required, but the Directive was adopted unanimously by the then 15 member states, with only four votes cast against the Directive at the final reading in Parliament (Vis, 2006). As the first-ever international cap-and-trade system, the ETS represented an innovative market-based policy instrument that rapidly became the new star of Brussels.

The proposal and the final ET Directive revealed two important changes from the 2000 Green Paper: first, a decentralized system was adopted that gave the member states significant discretion in tailoring their own

¹² The US withdrawal made the entry into force of the Protocol uncertain, as that required ratification by 55 parties accounting for at least 55% of 1990 CO₂ emissions from that group.

trading systems, including the total allocation of allowances, in the form of National Allocation Plans (NAPs). Secondly, allowances were to be allocated to industry mainly for free. In July 2003, the Commission also proposed a directive linking the ETS to the flexible mechanisms under the Kyoto Protocol, thereby creating a direct link between internal climate policy and the international climate regime. The Council and the Parliament formally adopted this Linking Directive on 27 October 2004. In the final text, the Commission proposal was changed to allow more use of CDM/JI credits by relaxing the cap. Greater use of international credits would reduce the costs of compliance with the Kyoto commitments and decrease the incentives for industry to invest in low-carbon solutions within the EU.

Implementation of the ET Directive for the first pilot phase (2005–2007) started in 2003. Implementation involved a range of issues, including the preparation of NAPs. The NAP preparation process in member states entailed significant challenges, as could be expected when implementing a new decentralized system. The ambitiousness was low in terms of CO₂ reduction (the cap) for the pilot phase, and there were significant delays in applying the allocation criteria specified in the Directive and by the Commission (Skjærseth and Wettestad, 2008b). Nevertheless, the ETS was successfully launched on 1 January 2005.

DG Energy had responsibility for renewable energy and energy efficiency. In 1997, the EU started to work on doubling the contribution from renewables by adopting a target of 12% share of renewable energy in gross inland consumption by 2010. This target would not be met for a various reasons, including high costs, administrative problems, lack of information and grid access. Of particular importance was the uneven national progress related to weak EU policies and varying national circumstances (Commission, 2007b). In several Council Resolutions, promotion of renewable energy sources became closely linked to climate change, in addition to security of supply. In December 1996, the Council stated that energy policy on the European level would need to make an active contribution to mitigating climate change (Official Journal, 1997:1). After the adoption of the Kyoto Protocol, promotion of renewables was seen by the Council as an important element in implementing the EU's commitments under the Protocol (Official Journal, 1998:1). In 2001, the EU adopted a directive for the electricity sector aimed at increasing overall electricity consumption to 21% by 2010 (2001/77/EC). This directive linked renewables directly to the 1998 burden-sharing agreement under the Kyoto Protocol: '...national indicative targets should be consistent with any national commitment made as part of climate change commitments accepted by the Community under the Kyoto Protocol' (Official Journal, 2001:33). However, the target under the 2001 Directive was optional, and national progress was uneven (Commission, 2007b).

Concerning biofuels, the main substitute for petrol and diesel in transport, the EU adopted a directive in 2003 (2003/30/EC). Like the 2001 electricity directive, it was based on the 1998 Council resolution, and combined the aim of compliance with the Kyoto Protocol with the aim of reducing dependence on imported energy and influencing the fuel market for

transport, thereby enhancing security of energy supply. The indicative targets set for the member states in 2005 and 2010 were not met by a large margin, due to inappropriate support systems, fuel-supplier reluctance to use bioethanol and an underdeveloped EU regulatory framework. Germany actually accounted for two-thirds of total EU consumption (Commission, 2007b:7).

The heating and cooling sector, accounting for about half of overall EU final energy consumption, had not been directly targeted by EU legislation, and there was a considerable potential for increasing the use of renewables in the sector. The 2004 Cogeneration Directive and the 2002 Energy Performance of Buildings Directive¹³ promote efficient heating – but not renewable energy in heating, like biomass, solar and geothermal energy. The Commission concluded in its Renewable Energy Roadmap that greatest progress had been made in the electricity sector, some in transport biofuels – but none for heating and cooling (Commission, 2007c). Progress had been made due to the efforts of a relatively small number of member states.

Developing a common EU policy on renewables and energy efficiency was proving difficult in practice. Targets were mainly non-binding; moreover, the considerable potential for stepping up renewables in the heating and cooling sector remained unexploited. Slow policy development at the EU level reflected the common view that member states should have sovereignty in choosing primary energy sources and the energy mix. The UK was the chief bottleneck to a more harmonized EU-level energy policy (Eikeland, 2012).

A clash between DG Energy and DG Environment surfaced in the wake of the adoption of the EU ETS and EU ratification of the Kyoto Protocol in 2002. Energy Commissioner De Palacio challenged Environment Commissioner Wallström over the economic costs of the latter's climate leadership-by-example strategy. De Palacio questioned the rationale and costs behind adopting measures to implement the EU's Kyoto commitment if the Protocol failed to enter into force. Commission President Romano Prodi publicly criticized De Palacio and stressed the importance of keeping the Commission unified in support of the EU's leadership role in international climate policies (Barnes, 2011; EurActive, July 2005). The concern for costs was shared by the 'competitiveness-first' DGs responsible for the internal market and industry/enterprise. Those critical to the costs of environmental policies and the impact on competitiveness of European industry included Enterprise Commissioner Verheugen and Internal Market Commissioner McCreevy (EurActive, July and December 2005).

¹³ Respectively, Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the Promotion of Cogeneration Based on a Useful Heat Demand in the International Energy Market and Amending Directive 92/42/EEC; and Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the Promotion of Cogeneration Based on a Useful Heat Demand in the International Energy Market and Amending Directive 92/42/EEC.

This incident between De Palacio and Wallström shows that GHG mitigation had significantly lower priority in DG Energy than in DG Environment, despite references to the Kyoto Protocol in energy legislation. It is quite illustrative that the European Wind Energy Association barely mentioned climate policy arguments when lobbying DG Energy to integrate wind power into European electricity infrastructures (EWEA, 2005).¹⁴ Energy security was the key concern for DG Energy, as the EU imported about 50% of its energy needs and this share was expected to increase significantly. In addition came the doubling costs of crude oil from 2003 to 2005, with a peak in August 2005 tripling the costs. Energy ministers were concerned about the EU ETS and possible ‘market disturbances’ in the energy sectors (Energy Council, 2005:5). In 2005, 230 million tonnes were traded in the growing carbon market, representing 3 to 4 billion euros, with the market price for allowances reaching a top level of around 30 euro per tonne CO₂ in late April 2006 (Skjærseth and Wettestad, 2008a). With carbon prices rising towards 30 euro, the ETS had the potential to become the prime policy-driver of energy efficiency and renewable energy in industry. As a market-based instrument, the ETS was also compatible with a competitive internal energy market. Essentially, DG Environment’s ETS was poised to govern DG Energy’s domain by affecting the costs of fossil fuels, nuclear and renewables differently. DG Energy had responsibility for legislation on the internal market of electricity and natural gas, security of supply, renewable energies, energy efficiency and nuclear power.

Concerns for climate policy costs reached the top EU level. In March 2004, the European Council requested the Commission to undertake a cost-benefit analysis and consider new climate targets (European Council, 2004:9). In 2005, the Commission responded with the communication *Winning the Battle against Global Climate Change* (Commission, 2005). Internal disagreement prevented the Commission from proposing a new climate target: instead, it launched a second phase of the European Climate Change Programme (ECCP), instigating a review of progress in climate policies and exploring new actions with all major implementing agents and other stakeholders. ECCP II was launched in October 2005 by a stakeholder conference attended by over 450 delegates representing all major stakeholders, including the Commission, national experts, industry and the NGO community. The Commissioner for the Environment, Stavros Dimas, opened the conference by stating: ‘Let me assure you that the programme will continue to respect the ECCP principles of stakeholder consultation, transparency.... This is why all working groups comprise a wide range of different stakeholders, stemming from many different interests’ (Dimas, 2005:5). ECCP II established new working groups on aviation, CO₂ and cars, CCS, adaptation and vessels.

The Commission also established a High-Level Group, with industry participation, on energy, environment and competitiveness, to discuss the relationship between policies in these areas. In addition, the Commission

¹⁴ A 2005 report released by EWEA and published on the DG Energy home site lists fourteen arguments as the rationale for renewables in general and wind power in particular. Climate change is not mentioned among them.

proposed to raise public awareness on climate change through a strategic programme to sensitize the general public through the launch of an EU-wide awareness campaign.¹⁵ Finally, the Commission emphasized the need for low-carbon innovation. Demand-and-supply policies pulling and pushing technological change, such as carbon pricing and R&D funding, would encourage technological development and use. In the field of energy efficiency, for example, technological advances would create a more competitive industry that consumed less energy, and with new jobs. The EU could also gain a first-mover advantage by focusing on technologies that other countries would need to adopt.¹⁶

The analysis underlying the 2005 Communication showed that benefits could be increased by fully exploiting *synergies* with energy security and air pollution. Costs could be cut by bringing the major world emitters into a global effort. The Communication was based on the entry into force of the Kyoto Protocol, the need for a long-term EU climate strategy and IPCC climate-change science, like the 1996 EU Council of Ministers statement that global average temperatures should be limited to 2°C above pre-industrial levels. The Communication reassured that the EU would continue to play a leadership role in the multilateral negotiations on climate change. In December 2005, the parties to the Kyoto Protocol met in Montreal, where they agreed to set up a group to start discussions on further emission cuts after 2012. The parties to the UNFCCC, including developing countries and the USA, agreed in parallel to hold a discussion on long-term actions for dealing with climate change. Gradually, an international climate regime post-2012 became a target for the EU.

Mixed signals emerged individually and jointly from the member states. In March, EU environment ministers agreed to aim for a 15–30% reduction of GHGs by 2020 and 60–80% by 2050 compared to 1990 levels (ENDS, March 2005). EU leaders backed the first of these goals in the European Council, but dropped the long-term 2050 vision. However, the backing from the European Council was vaguely formulated and was seen in the context of the newly ratified Kyoto Protocol: ‘...the EU looks forward to exploring with other parties strategies for achieving...reduction pathways for the group of developed countries in the order of 15–30% by 2020...in the spirit of the conclusions of the Environment Council, should be considered’ (European Council, 2005:16). Still, the goal formulated by member-state representatives went further than the Commission’s 2005 communication, which did not

¹⁵ The campaign, launched by the Commission in May 2006, involved PR outreach, website, schools campaigns and advertising. Eurobarometer surveys presented in 2005 showed that respondents wanted strong environmental and climate policy: nine out of ten said that decisionmakers should pay as much attention to environmental considerations as to economic and social factors when taking decisions. Climate change was among the top public concerns, with 63% of those surveyed replying that protecting the environment should take priority over economic competitiveness (against 24% who disagreed) (EurActive, May 2005).

¹⁶ According to the Commission, countries that had taken a lead in wind energy now had 95% of the growing wind turbine industry (Commission, 2005:7)

include any specific targets. The Parliament's environment committee strongly supported the short- and long-term targets (ENDS, October 2005)

No specific plans were launched for linking climate and energy legislation at EU level in the Commission's work programme for 2006, presented in the end of 2005, but 2006 was seen as a critical year for climate policy (ENDS, November 2005). The programme stressed that the EU needed to maintain momentum by reviewing existing climate and energy policies and adopting new ones.¹⁷ And one major hurdle was about to disappear: the UK shifted from resisting to supporting EU-level energy policies during its autumn 2005 presidency (Eikeland, 2012). New signals indicated that the UK was changing position. At their meetings at Hampton Court, EU heads of state and government discussed a plan to create a common EU energy policy presented by British Prime Minister Tony Blair (EurActive, October 2005). The essence of the plan was to improve coordination between climate-change policies and policies to improve security of supply at EU level. The plan included better interconnection of power grids and the need for maintaining the EU lead in climate policies, including the EU ETS and renewables policy. With this change in the UK's position, agreement emerged among member states on a common response to climate change and energy security challenges (European Council 2005; Commission, 2006).

Summing up, we see that EU actors and institutions started to initiate new climate and energy policies partly in response to the commitments of the international climate regime and partly as an effort to drive the further development of the regime post-2012. Change in the positions of member states was important in two ways: collectively by adopting new targets, and individually – especially by the UK's U-turn on common energy policies. New targets were also strongly supported by the Parliament. The Commission, however, was split between climate-change concerns and competitiveness concerns on the one hand, and between climate-change concerns and energy interests on the other. This contributes to explain why the Commission did not forcefully drive new targets and policies, although it did take some important initiatives, such as the ECCP II. Finally, and related to this, there had been few signs of a climate and energy package of legislation before 2006. Still, it was clear that climate and energy policies would be important themes for 2006.

Initiation

By 2006, oil prices were rising, climate 'hype' was sweeping Europe, and public opinion supported EU-level action on energy and climate-change challenges (Eurobarometer, 2006). Political and public attention to climate change was also raised by Al Gore's award-winning document-

¹⁷ This included bringing aviation into the EU ETS, an action plan on energy efficiency, a communication on biofuels, taking stock of voluntary agreement on car emissions, and a Green Paper on secure, competitive and sustainable EU energy policy. The Commission also intended to propose legislation to establish a European institute of technology, which would focus on eco-innovation.

ary, ‘An Inconvenient Truth’, released in May that year; and in October by warnings in the *Stern Review* that failure to act on global warming would impose major costs on the global economy. Energy security climbed the political agenda also because of the Ukraine–Russia energy dispute that threatened European gas supplies and highlighted the EU’s dependency on foreign imports for its energy needs.¹⁸ Internationally, a series of talks took place among the parties to the UNFCCC and its Kyoto Protocol. The EU put forward a proposal that the developed countries should cut emissions by 15–30% by 2020, with further cuts by 2050. Widespread agreement emerged that new international reduction targets should be decided by 2009 at the latest. The EU also intended to expand the EU ETS globally, and used this ambition to get its member states to submit their National Allocation Plans in time for the second trading period, from 2008 to 2012 (ENDS, March 2006c; May 2006).

In March 2006, the Commission issued a Green Paper, prepared by DG Energy, on a European strategy for sustainable, competitive and secure energy (Commission, 2006). It painted a dark picture of energy challenges and stressed the need for a new energy policy as an *integrated* part of EU climate policy, referring to the 2005 Hampton Court Heads of State and Government Summits to bring plans for a common EU energy policy forward. The Green Paper mentioned various challenges in the energy field, including climate change and rising oil and gas prices. Energy Commissioner Piebalgs presented a Eurobarometer poll showing support for a new energy policy for Europe: the majority of those surveyed would prefer European-level decisions on the new energy challenges, including energy supply security, growing energy consumption and climate change (Europa, Press Release, 2006).

The 2006 Green Paper indicated that energy and climate were now being seen in a more coherent way. Policies on energy efficiency, renewable energy and CCS were placed under the heading ‘An integrated approach to tackle climate change’. The EU ETS was referred to as system which creates ... ‘a flexible and cost-efficient framework for more climate friendly energy production’ (Commission, 2006:10). An Action Plan on energy efficiency would be proposed in 2006 to achieve the 20% potential indicated in the 2005 Green Paper on energy efficiency. The new element was that this target was now linked to a 2020 deadline: 20% by 2020. Concerning renewable energy sources, a Renewable Energy Roadmap was proposed, as the 2001 RES (renewable energy sources) Directive and the 2003 Biofuels directives were not expected to deliver according to indicative targets. The 2006 Green Paper further envisaged a Strategic European Energy Technology plan to stimulate development and deployment of new low-carbon energy technologies. As to CCS, the Green Paper stated that this technology would need a stimulus to create the necessary economic incentives, legal certainty for the private sector

¹⁸ The dispute led Russia to cut off (on 1 January 2006) all gas supplies passing through Ukrainian territory. Russia is by far the EU’s largest oil and gas supplier, and Russian gas piped through Ukraine and other regions feeds not only the Central and East European countries (CEECs), but also Western Europe, including France, Germany, and Italy.

and large scale demonstration projects. CCS was also linked to emissions trading which could: ‘...make this a profitable option for the longer term’ (Commission, 2006:13).

In the summer of 2006, the legal requirements were followed up when the Commission announced that it would propose a legislative framework for CCS in the course of 2007 (ENDS, June 2006).¹⁹ While the 2006 Green Paper framed climate and energy policies as complementary and synergistic, the specific follow-up actions indicated were still considered largely in isolation. This also became evident in the first report from the High-Level Group (HLG) in June 2006, which called for a comprehensive approach to energy security, sustainability and competitiveness. Its recommendations were linked to single policy instruments and issue-areas (HLG, 2006).

The Green Paper was criticized by the green movement for the lack of binding targets and deadlines and by the German environment minister for giving too much focus on energy security issues at the expense of renewables and climate policy. The Confederation of European Industries (later Business Europe) welcomed stronger coordination on energy policy (ENDS, March 2006a, 2006b). The Parliament adopted a non-binding resolution stating that the Commission should aim higher than its proposed target of 20% energy savings by 2020 (ENDS, June 2006). In 2004, the Parliament had called for a target of a 20% share of renewables in 2020 (Commission, 2007d:7).

The European Council supported the idea of a new energy policy, while underscoring that member-state sovereignty over the choice of primary energy sources and the energy mix should be respected (European Council, 2006). At its March 2006 meeting the Council painted a gloomy picture of energy challenges:

...the ongoing difficult situation on the oil and gas markets, the increasing import dependency and limited diversification..., high and volatile energy prices, growing global energy demand..., the growing threats of climate change, slow progress in energy efficiency and the use of renewables, the need for...further integration and interconnection of national energy markets with energy market liberalization...,the limited coordination between energy players while large investments are required in energy infrastructure (European Council, March 2006:13)

In response to these challenges, the European Council called for a new energy policy in line with the Green Paper. The Council did not adopt specific targets, but referred to the ‘20% by 2020’ energy efficiency saving potential and considered new target on renewables (15% share of renewable energies and 8% biofuels by 2015). The Commission was

¹⁹ In late 2005, a stakeholder group — the Zero Emissions Technology Platform — was set up by the Commission Research Directorate to accelerate research and market development. The group immediately pointed to public acceptance as crucial for this technology. In addition, DG Environment dealt with the legal issues and prepared for legislative proposals under the European Climate Change Programme.

invited to prepare a set of actions with clear timetables that could be adopted at the 2007 spring session. Coherence, consistency and coordination were emphasized in general terms, but not linked any specific package of measures.

In autumn 2006, the Commission rapidly initiated the climate and energy package. Favourable external and internal conditions for linking climate and energy policies had placed the issue firmly on the Commission's agenda, but these conditions did not by themselves drive the initiation of the package. At least three factors were decisive. First, the initiative for the package came from DG Environment, which needed DG Energy to strengthen the case for more ambitious climate-policy targets and instruments within the Commission. Particularly DG Enterprise had, as noted, been sceptical to unilateral climate policy, seeking to protect the interests of Europe's energy-intensive industries. DG Energy needed DG Environment to develop a common EU energy policy. A package of instruments that would stimulate the internal energy market, renewables, energy efficiency and a continuing role for fossil fuels by applying CCS could also satisfy various interests within the patchy DG Energy.²⁰ Second, with the new Barroso Commission came new commissioners: Stavros Dimas as Commissioner for the Environment and Andris Piebalgs as Commissioner for Energy. Piebalgs immediately prioritized co-ordination of energy, environmental and research policies (European Parliament, 2004). Various senior officials within the Commission were also important.²¹ Jos Delbeke, the 'founding father' of the EU ETS, requested his staff in DG Environment to develop early sketches of a possible package based on RES, CCS and revision of the ETS. For a long time he had worked closely with Peter Vis, lead author of the 2000 Green Paper on the ETS. Vis was offered the position as Deputy Head of Cabinet to Andris Piebalgs with responsibility for the relationship between climate and energy policies.

Catherine Day, who had served as Director-General for DG Environment, was appointed Secretary-General for Barroso with particular responsibility for coordinating policies within the Commission (EurActive, September 2006). Day was encouraged by Delbeke to propose a package of policies and she had the ear of the Commission President, José Manuel Barroso.²² Targets ranging from 15% to 30% reduction were suggested – the former by EU enterprise commissioner Günter Verheugen, who warned in a letter to Barroso that the EU was moving too fast (ENDS,

²⁰ A strengthening of the ETS would be compatible with the internal energy market directorate; a more active policy on CCS would extend the future for fossil fuels and correspond with the interests of the energy directorate; policies on renewables and energy efficiency corresponded to the directorate responsible for these policies.

²¹ Not an exhaustive list of those involved.

²² Some disagreement prevailed between DG Energy and DG Environment. DG Environment tried, for example, to persuade DG Energy to hold back its announced energy efficiency plan. In October, the plan to reduce energy consumption by 20% before 2020 was presented to the Energy Council by Piebalgs, who was under pressure from the Finnish presidency to deliver.

November 2006). On renewables, a target of around 20% by 2020 was expected, but sector-specific targets were uncertain (ENDS, December 2006). The three biggest EU member states were on board as well. Germany, with support of France, announced that climate and energy policy would be key priorities during the German presidency in the first half of 2007 (ENDS, September 2006). Germany and France could rely on support from the UK, which had presented an ambitious response to the Commission's 2006 Green Paper, including plans to strengthen policies on energy efficiency, renewables and the ETS (EurActive, July 2006).

With 2007 came a turning point for EU climate and energy policy. In January, the Commission issued two key communications on energy and climate policy strategies for 2020 and beyond (Commission, 2007a; 2007b). These communications proposed the 20+20+20 targets: to cut GHG emissions, increase the share of renewables and energy efficiency by 20% by 2020 compared to 1990 levels. The proposal of reducing GHGs by at least 20% would be stepped up to 30% if an adequate international climate treaty could be agreed. The twin targets represented an effort to demonstrate international leadership on a post-2012 climate treaty (Commission, 2007a). They also represented a compromise between DG Enterprise, which argued for less than 20% cuts, and DG Environment, arguing for more than 20%.

The long-term goal was to stabilize global warming at an average of 2°C. That would entail 60–80% reductions by most developed countries by 2050. The communications underlying these commitments were prepared by DG Energy and DG Environment respectively, and were published on the same day by the Commission, illustrating the close collaboration between the respective Commissioners. *Synergies* between climate and energy were underscored: an ambitious climate policy would contribute to the realization of energy goals; an ambitious energy policy would contribute to the realization of climate policy goals.

Action on climate change was placed at the centre of a new EU energy policy by stressing the importance of making energy use more efficient, lessening the need for imported hydrocarbons and reducing vulnerability to fluctuations in oil and gas prices. Action on energy policy would contribute to climate-change mitigation and more effective application of the ETS, while also creating new 'green' jobs. This was to be achieved by strengthening policies on renewables, energy efficiency, liberalization of the European energy market and technological innovation. A European energy technology plan was proposed, to lower the cost of clean energy and put the EU at the forefront of the low-carbon technology sector. Largely swept under the carpet were potential conflicts like downward pressures in carbon prices caused by renewables and energy-efficiency measures in the ETS sectors.

The communication from DG Environment, *Limiting Global Climate Change to 2 degrees Celsius: The way ahead for 2020 and beyond*, set a radical tone: 'Strong scientific evidence shows that urgent action to tackle climate change is imperative' (Commission, 2007a:3). To deliver on the GHG reduction targets, the communication proposed strengthening the

EU ETS, limiting transport emissions (by including aviation in the ETS, and reducing CO₂ emissions from cars and transport fuels), reducing emissions from other sectors (buildings) and strengthening research and technological development. On transport fuels, DG Environment and the Commission followed up by proposing a fuel quality directive that would require cutting life-cycle carbon emissions from fuels by 10% by 2020. The Commission also proposed the adoption of CCS policies, including the construction of up to twelve large-scale demonstration plants in Europe by 2015.

The communication prepared by DG Energy, *An Energy Policy for Europe*, set an equally radical tone, aimed at transforming Europe, catalysing a new industrial revolution by speeding up the change to low-carbon growth: ‘The EU would have set the pace for a new global industrial revolution’ (Commission, 2007b:5, 21). The communication took a threefold point of departure: combating climate change, limiting the EU’s external vulnerability to imported hydrocarbons, and promoting growth and jobs (ibid.:5). Climate change mitigation was placed at the centre of a new European Energy Policy for three reasons: reducing emissions would mean using less and cleaner energy, it would limit the EU’s exposure to increased volatility in oil and gas prices, and would bring about more competitive energy markets, stimulating innovation and jobs. Moreover, realization of the Internal Energy Market was seen as contributing to climate and energy goals: a real energy market would stimulate energy efficiency and investment, allow effective application of the EU ETS, stimulate transmission system operators to promote connection by renewables, combined heat and power (CHP), micro-generation and promote security of supply.

The Commission signalled new legislation on renewables to achieve the 20% target, including a binding minimum target for renewable transport fuels of 10% of vehicle fuel by 2020. The overall 20% target shifts the focus away from sector targets on electricity and transport/biofuels. Given oil prices of \$78/barrel and a carbon price of more than £20, achieving of the 20% share of renewables would not cost more than ‘traditional’ energy sources (Commission, 2007b:15). The 20% renewable target was based on a separate but integrated communication on renewable energy, accompanied by an impact assessment (Commission, 2007c; 2007d).

The impact assessment analysed the impact of climate policies on renewables – not the other way around, like the impact of the renewable targets on carbon prices. According to this impact assessment, the renewable target was largely political, as existing policies would nearly double the share of renewable energy by 2020; it referred to ‘...a convergence of views between the Parliament, Commission and Council on defining a policy option to embody this more ambitious approach’ (Commission, 2007d:7). The EU ETS was regarded insufficient to achieve the 20% renewable target by itself, but further progress could be achieved by strengthening the system. Still, a single CO₂-based target achieved through the ETS alone could be an appropriate approach, if the renewable energy sector were a mature and well-functioning market (Commission, 2007d:28).

Further, the communication prepared by DG Energy proposed a European energy technology plan, to lower the cost of clean energy and to put the EU at the forefront of the low-carbon technology sector. This plan is based on step-wise visions by 2020, 2030 and 2050. Specific measures were proposed for CCS, including a regulatory framework, incorporation in the EU ETS and a mechanism to stimulate up to 12 demonstrations of sustainable fossil-fuel technologies in commercial power generation. The Commission also emphasized the need to strengthen international energy policy. The communication ended with a call on the European Council and Parliament to endorse and confirm the ambitious plan.

The two communications were thus framed in a synergistic way: From an energy perspective, an ambitious climate policy would contribute to realize key energy goals. From a climate perspective, an ambitious energy policy would contribute to climate policy goals. Largely swept under the carpet were potential conflicts – energy-intensive industries moving abroad; competition between land use for food production, energy and biodiversity; more energy-intensive production of materials to improve insulation, to mention a few.

The proposals also rested on the linking of *differently-valued issues* between DG Energy and DG Environment and among member states. DG Environment favoured a more stringent climate policy; DG Energy was more concerned with energy security. The ten Central and Eastern European countries (CEECs) that joined the EU between 2004 and 2007 were economically poorer and less energy-efficient than the EU-15, increasing the EU's interregional disparity in carbon intensity and varying in GDP per capita by a factor of 10 (Wheeler, 2010). These new CEECs were more concerned about energy security, whereas most of the EU-15 favoured a more stringent climate policy, as expressed by the adoption of the ET directive.

The Parliament responded swiftly, in February 2007 issuing a resolution on climate change that argued for targets even more stringent than those proposed by the Commission (European Parliament, 2007). The EU should base all its internal policies on a 30% reduction target; the share of renewable energy should be increased to 25%, and biofuels to 12.5%. The Parliament established a specific climate committee to coordinate the assembly's position on a post-2012 climate policy framework. Green groups argued that the 20% GHG target was insufficient and demanded a 30% unilateral reduction goal. Energy-intensive industry expressed concerns about competitiveness, should the EU commit ahead of other major emitting countries (ENDS, January 2007). The renewables industry, represented by the European Renewable Energy Council (EREC), opposed the replacement of sector targets with an overall renewable target. In a position paper, EREC argued that sector targets would provide greater certainty for goal attainment and investors by promoting development in all sectors (EREC, 2007).

In March 2007, the European Council adopted the key elements of the new integrated climate and energy policy, pointing to the central role of the EU ETS in the EU's long-term strategy for reducing GHG emissions

(European Council, 2007:12). The European Council emphasized: ‘the EU is committed to transforming Europe into a highly energy-efficient and low greenhouse-gas emitting economy and decides that, until a global and comprehensive post-2012 agreement is concluded (...) the EU makes a firm independent commitment to achieve at least a 20% reduction of greenhouse gas emissions by 2020 compared to 1990’ (European Council, 2007:12). Referring to the ETS as the main measure for realizing this target, the Council formally invited the Commission to ‘review the EU Emissions Trading Scheme in good time with a view to increase transparency and strengthening and broadening the scope of the scheme...’ (ibid.).

The European Council also adopted the new energy plan in the form of a European Council Action Plan (2007–2009): Energy Policy for Europe (EPE). In addition to new measures for improving the internal market and security of supply, the Council adopted new targets on energy efficiency, renewable energies and energy technologies. It stressed the need to increase energy efficiency by 20% compared to projections for 2020, and adopted a binding target of a 20% share of renewable energies by 2020, including a 10% binding minimum target of biofuels in overall EU transport petrol and diesel consumption by 2020. With regard to technology, the Council welcomed the construction and operation by 2015 of up to 12 demonstration plants for Carbon Capture and Storage (CCS). In essence, the Commission had gained backing from the highest political level and the two main veto players or decision-making bodies in the EU.

The renewables target was controversial for the leaders. Member states were divided over whether the renewable target should be binding or indicative (ENDS, March 2007; EurActive March 2007). Germany’s Chancellor Angela Merkel, with the support of the UK, pushed for a binding target, whereas France, Finland and several of the new member states were opposed. Based on generous subsidies, Germany was increasing its use of renewable energies faster than any other European country. It aimed at a 40% emission cut against 1990 levels by 2020, of which 25–30% would be renewable electricity production, compared to about 13% in 2007. France (and Finland) argued that low-carbon nuclear energy should be taken into account, and preferred linking the renewables target to low-carbon energies. Many of the new member states, including Poland, Hungary and the Czech Republic, have been heavily reliant on coal; they resisted targets that could force them to invest in more expensive renewable energy sources. Then, on 9 March, French President Jacques Chirac agreed to a binding objective on renewable energies (EurActive, March 2007). In addition to their differing interests, countries argued that many overlapping targets could be very complicated. Poland, Hungary and the Czech Republic also voiced concern as to how efforts to reach the climate target would be shared. Despite these warnings, the Commission had received backing from the highest political level before the package entered the decision-making phase.

With the release of its first full assessment of climate science since 2001, in 2007 the Intergovernmental Panel on Climate Change confirmed the need for an ambitious EU climate and energy policy: ‘warming of the climate system is unequivocal’ and ‘most of the observed increase in

global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic GHG concentrations' (IPCC, 2007). The international negotiation process was directed at the UN climate conference in Bali. In December, the Bali road-map was adopted in which world governments decided to aim for a global climate agreement by 2009.

Thus we see that the Commission initiated a package of climate and energy policies based on two issue-linkage mechanisms. First, differing values among individual and collective decisionmakers as regards energy security and climate mitigation were exchanged to benefit most policy-makers. The proposals rested particularly on linking differently-valued issues between DG Energy and DG Environment and among the member states. Second, there was a strong emphasis on complementarities and synergies between climate and energy policies and between these policies and other policies. Synergies were to be created by mutually reinforcing climate and energy goals, so as to reduce air pollution, create green jobs and stimulate technological innovation. Potential conflicts were largely ignored. The challenge of implementing policies consistently over time was taken into account by the 20+20+20 pre-commitment targets, the long-term 2050 low-carbon economy goal and by the promotion of coherent, mutually reinforcing policies. For the longer term, elimination of fossil-fuel options was to be stimulated by energy technology innovation.

Two factors in particular, from the multilevel governance and the liberal intergovernmentalist approaches, pull in the same direction in helping to explain the initiation of the package. First, the EU member states collectively and individually changed the Commission's room for manoeuvre to initiate a climate and energy package. They also put pressure on the Commission, which was unable to act forcefully due to internal rivalry. Secondly, it was DG Environment that took the initiative to the package in 2006 and allied with DG Energy for political reasons to strengthen climate policy. After an earlier history of conflicts between these two DGs, changes in external conditions and in key personnel made joint effort on the package possible. Gradually, the package developed more towards an effort to affect international negotiations on a new post-Kyoto treaty, than as a response to existing international climate commitments.

Deciding on the package

In January 2008, the Commission formally proposed the climate and energy package to achieve the 20+20+20 targets by 2020 as a first step towards a low-carbon economy by 2050. The main structure involved two cross-sector instruments prepared by DG Environment. The first was a revised EU ETS aimed at reducing emissions in the ETS sectors by 21% below 2005 emission levels. The second instrument was an effort-sharing decision (ESD) based on different national targets, to amount to a 10% reduction for sectors not covered by the ETS. In addition, two technology-specific directives were included in the core package: one on the promotion of renewable energy sources (RES) based on different

national targets, and one proposal on a legal framework for safe storage of carbon (CCS).

Commission President Barroso was reported to have travelled far on climate policy since 2005, and now presented the plans with passion in various speeches (ENDS, February 2008). Environment Commissioner Stavros Dimas and Energy Commissioner Andris Piebalgs proved in practice that they were able to put together an ambitious climate and energy package. By contrast, Günter Verheugen, the commissioner with the responsibility for the industry sector that would be most affected by the package, kept a low profile when the package was presented. The package also included new rules on state aid, allowing governments to grant bigger subsidies for green investments.²³

The package proposal

The revision of the EU ETS was based on Article 30 of the 2003 ETS Directive, which stated that, on the basis of experiences and progress achieved, the Commission was to draw up a review report by 30 June 2006, accompanied by proposals as appropriate. The Commission started working on the review in the autumn of 2005. Strong impetus for ETS reform had come with the Commission's November 2006 Communication on 'Building a global carbon market'. And, as noted, a special working group under ECCP II was to prepare recommendations for a revised ETS in close collaboration with stakeholders.²⁴

One major lesson learned was the 'race to the bottom' caused by a decentralized system based on National Allocation Plans (NAPs). Assessments of the NAPs produced in the course of 2004 indicated that member states had allocated overly-generous amounts of allowances to protect their own industries (Skjærseth and Wettestad, 2010). After allowance prices peaked at around €30 in July 2005, verified ETS 2005 emissions in the spring of 2006 showed that 4% more allowances had been handed out than were really needed. The suspicion of lack of scarcity in allowances in the ETS pilot phase was confirmed and the allowance price immediately halved – and continued to drop to close to zero in 2007. In addition to lack of scarcity of allowances, the price collapse was caused by the impossibility of transferring, or banking, allowances to the second phase. The Commission intervened in the second round of allocation of allowances in 2006 and forced member states to adopt less generous NAPs for the second phase (Skjærseth and Wettestad, 2008b).

After intense lobbying in late 2007 and early 2008, not least from energy-intensive industries, the Commission put forward its ETS reform proposal on 23 January 2008. Significant changes were evident. First, the Commis-

²³ These rules were under the competence of the Competition Minister, Neelie Kroes.

²⁴ The ECCP II Working Group on the review of the EU ETS met four times in the spring of 2007. Ensuing protests by industry resulted in two *ad hoc* consultation meetings in 2008 with stakeholders within the ECCP II.

sion proposed to introduce a single, EU-wide cap, and allocate allowances on the basis of fully harmonized rules for the period 2013–2020. That meant that NAPs would simply no longer be needed. The level of the EU-wide ETS cap would be calculated on the basis of the target of 20% by 2020 at 1990 levels, equivalent to a 14% reduction compared to 2005. The linear reduction consistent with this target amounts to 1.74% per year, bringing a reduction of ETS emissions of 21% below 2005 emissions in 2020. Second, auctioning was now proposed as the main principle for all allocation. With regard to the power industry, full auctioning was the proposed rule from 2013 onwards, taking into account power producers' ability to pass on the increased costs of CO₂ emissions to consumers. For the energy-intensive industry and other sectors covered by the ETS, a transitional period was foreseen, where the amount of free allocations based on benchmarks would be gradually reduced from 80% in 2013 to zero by 2020. No new CDM or JI credits were to enter the system (only those banked from the 2008–2012 phase) unless agreement could be reached on a 'satisfactory' new global climate agreement and a move to the more ambitious 30% EU goal took place. In that case, additional CDM and JI credits would be allowed into the ETS, covering up to half of the additional reduction effort needed.

The Effort Sharing Decision (ESD) proposal should be understood in the context of the ETS and earlier burden-sharing arrangements. Interestingly, the change in wording from 'burden' to 'effort' sharing signals a more positive and opportunity-based approach. The 20% reduction target by 1990 translates, as noted, to 14% reduction compared to 2005 levels. The EU ETS sectors are to achieve 21% reduction and the non-ETS sectors 10% reduction compared to 2005. This division was based on a cost–efficiency scenario developed by the Commission: more reduction is required in the ETS sectors because abatement costs are lower there (particularly in the electricity sector) than in most other sectors. The ESD applies only to sectors not covered by the ETS, which can be seen as consequences of the proposed EU-wide ETS cap. These sectors include small emitters: transport (cars, trucks), buildings (heating), services, small industrial installations, agriculture and waste.

The European Council meeting in March 2007 did not introduce a clear distinction between the ETS and the non-ETS sectors or mention a specific ESD instrument, but stated that:

...a differentiated approach to the contributions of the Member States is needed reflecting fairness and transparency as well as taking into account national circumstances...It recognizes that implementation of these targets will be based on Community policies and on an agreed internal burden-sharing and invites the Commission, in close cooperation with the Member States, immediately to start a technical analysis of criteria, including socio-economic parameters and other relevant and comparable parameters, to form the basis for further in-depth discussion (European Council, 2007).

The Commission faced a difficult situation. The EU now had twelve new member states with economies that varied significantly in GDP per capita. But there was also a moderating factor: the electric power

producing and energy-intensive industries were now sectors covered by the ETS, so they did not have to be taken into account in the ESD. This made the ESD politically easier than previous burden-sharing arrangements. Strong national and corporate interests linked to the ETS sectors were not directly affected by the upcoming Effort Sharing Decision.

The sharing of the –10% target for these sectors was based on one criterion: GDP per capita. Member states below the EU GDP/capita average would have less ambitious targets, with a maximum limit of emissions 20% above 2005 levels. Member states above the EU GDP/capita average would have to make greater efforts, up to a maximum of 20% below 2005 levels. The individual targets could be achieved by a combination of unilateral policies and EU-wide measures, such as the regulation on CO₂ emissions from new cars.

The ESD proposal not only shares the effort among the member states: it also contains several mechanisms for promoting the 10% reduction target. First, a linear reduction path is foreseen, as in the ETS, based on reporting each year for each member state. Second, there is flexibility in meeting the target: member states may borrow 2% of their allowed emissions from the following year, or bank emission reduction in excess of their targets for the following year. In addition, CDM credits can be used up to a level corresponding to almost one third of the 10% reduction (3% of 2005 emissions). This amount can be increased and national targets adjusted, if the EU increases its ambition to 30% due to an adequate international climate agreement. Third, the Community can launch infringement procedures against non-complying member states. This may allow the Commission, in extreme cases, to ask the Court of Justice to impose a financial penalty. This EU infringement procedure comes in addition to a possible compliance regime under a new climate agreement for the post-2012 period.

There were, as noted, both political and substantial reasons for proposing a new directive on renewables. Moreover, price volatility in the first phase of the ETS had reduced the system's capacity to stimulate renewable energy. The RES proposal contained mandatory, but differentiated national targets for 2020, national action plans, cooperation mechanisms, administrative and regulatory reforms and biofuels sustainability criteria. The final and newest part of the package was the world's first legal framework for Carbon Capture and Storage. The proposal was based on the need to develop CCS in order to achieve the long-term (2050) EU climate target, as fossil fuels would continue to play an important role in the energy mix. CCS had for a long time been included in EU technology research and Commission technology initiatives, such as the Technology Platform for Zero Emission Fossil Fuel Power Plants (ZEP). Through these initiatives, it had become clear that the EU needed a legal framework and mechanisms to provide incentives for CCS. The Commission based its proposal on a Communication on sustainable power generation from fossil fuels and an impact assessment of the best way to regulate capture, transport and storage. The proposal contains a regulatory framework on risk management, licencing and liability.

Together, the RES, ESD and ETS aim to be balanced and proportionate, and based on the particular circumstances of member states and industries, so as to promote fairness and solidarity (Commission, 2008a). As explained by the Commission, the translation of overall EU-wide goals into specific targets for each member state has been governed by the need for political consensus to drive change and carry public opinion. The efforts required must be fair, as some member states are more able than others to finance the necessary investments.

The main criterion for calculating differentiated national targets in ESD and RES was GDP per capita. Overall costs to EU economies were estimated at just under 0.5% of GDP by 2020. In principle, no member state was expected to undertake investments that diverged too sharply from this average. The EU climate and energy package was based on thorough assessment of how the ETS, ESD and RES proposals would work together to level the costs (Commission, 2008b). Significant differences in costs by 2020 between member states were levelled out to provide *side-payments* to compensate poorer member states, in three ways, in order to make the package politically acceptable:

- by setting different national targets in the non-ETS sectors (ESD) based on GDP/capita
- by setting different national targets for the share of EU energy consumption to be achieved by renewable energy (RES) based on a combination of GDP and flat-rate increase in the share of renewable energy
- by using auctioning revenues (ETS) to compensate lower-income member states.

The combination of these three policies covering different issues aimed to ensure fairness in effort-sharing. Analyses of energy-intensive industries exposed to significant international competition and at risk of carbon leakage had showed that access to CDM credits and free allowances through benchmarking would be effective strategies for limiting potentially negative effects on competitiveness of the revised ETS.

Other policies simultaneously developed by the Commission were de-linked from the impact assessment and the core package because they might increase the burdens for certain member states or make negotiations more complex. For instance, a regulation covering emissions from new cars applied only to member states with car manufacturers, and was not included in the package. Similarly, a directive on fuel quality, including a required reduction of the carbon footprint of road fuels from well-to-wheel, applied primarily to oil companies and was not made part of the core package (Christensen and Gulbrandsen, 2012). These policies could have been linked, as they were part of DG Environment's portfolio. Finally, the Commission proposed no new binding measures for achieving the 20% energy-efficiency target. Development of energy-efficiency policies followed a different time-schedule and could have burdened the CEECs, which had the greatest energy-efficiency challenges – or, put differently, the highest energy-efficiency potential. Negotiations would have been even more complex if energy efficiency had been added to the climate and renewable energy targets.

The negotiations

The package proposed by the Commission in January 2008 was well received by the Parliament and the Council of Ministers. This can largely be understood in light of the integrative nature of the package, promoting cost-effectiveness, fairness in burden-sharing and mutually reinforcing climate and energy goals. In addition, the 20+20+20 targets supported by the Parliament and adopted by the European Council in 2007 demanded an ambitious package of measures if words were to be translated into action. On the other hand, nothing can guarantee that the Commission's legislative proposals will survive negotiations.²⁵

Still, the package's main structure remained intact throughout the 2008 negotiations. Member states unanimously adopted the package and the Parliament endorsed it – also the reduction targets for ETS and non-ETS sectors and different national targets in the ESD and RES Directives. The four legislative proposals were complex and the schedule for their development was tight. The EU needed an ambitious package to show its 'leadership by example' before the international climate negotiations in Copenhagen and the June 2009 Parliament elections could result in a less supportive Parliament. Deliberations commenced with informal negotiations among high-level representatives from the Commission, the Parliament and the Council.

The major climate-policy element was the proposal for revising EU ETS. There were two main areas of disagreement in negotiations on reforming the ETS: the new CEECs, led by Poland, demanded more economic 'solidarity' than originally included in the Commission's proposal; and energy-intensive industries demanded more free allowances, to reduce the risk of their moving out of Europe (Skjærseth and Wettestad, 2010). These demands were voiced with increasing intensity in autumn 2008, fuelled by the unfolding global economic crisis and rising concerns about the costs of the package. The crisis made EU governments more concerned about the costs of the package. In October, Italian Prime Minister Silvio Berlusconi called for a 'pause for reflection' (ENDS, October 2008). The challenge was that these demands were conflicting: the more allowances distributed for free, the fewer revenues would be available for a solidarity fund for the CEECs. And more import of credits from CDM would reduce the costs of the package, but also reduce its incentive effect within the EU. The issue of allocation was also linked to the international climate negotiations and the prospects of an ambitious international agreement at the December 2009 Copenhagen summit. If the negotiations did not succeed, the EU would have to protect its energy-intensive industries by free allowances or a border tax to level the playing field.

In autumn 2008, France assumed the EU presidency from Slovenia. French leadership proved extremely important in forging compromise by the end of that year. One institutional tool the French used was the introduction of a more demanding decisionmaking procedure, replacing

²⁵ An example is the failed EU carbon/energy tax.

qualified majority voting in the Council of Ministers with unanimity in the European Council (Skjærseth and Wettestad, 2010). Because the elements of the package were mutually reinforcing, decisionmakers were pressured to negotiate and adopt all legislative proposals simultaneously: in practice, each member state plus the Parliament would have a veto position.

Germany defended the energy-intensive industries and demanded more free allowances, but the Parliament opposed this. However, Germany got its way, in exchange for accepting more stringent car emissions rules than it had originally proposed, so the EU ETS became linked to legislation on car emissions. For accepting more free allowances, the Parliament got 300 million allowances from the ETS New Entrants' Reserve to co-finance up to 12 CCS demonstration projects and other renewable technologies, linking the new CCS legislation to the ETS. Energy-intensive industries also got more access to external credits than originally proposed by the Commission. Companies will have roughly similar access to CDM/JI credits in the third trading period as in the second trading period (Skjærseth and Wettestad, 2010).

With regard to the ESD proposal, the final outcome followed the main lines of the proposal. Most importantly, the individual targets for each member state based on 2005 emission levels remained intact. Nevertheless, the group of Central and Eastern European member states demanded changes in the baseline and structure of the proposal that were not compatible with the overall design of the package. These demands eventually led to increased revenues from auctioning to the solidarity fund and greater concessions to the CEECs regarding some free allowances for the power sector, linking the effort-sharing decision proposal to the ETS. Even though the national targets remained intact, the final decision introduced significantly greater flexibility in how to achieve the individual targets. For example, the use of credits from Community-wide projects under the revised ETS Directive is now allowed. Member states can apply for inclusion of installations/emission sources into the ESD on a project basis (Lacasta, et al., 2010). This provision creates a direct link between the revised ETS and flexibility in the ESD. The enforcement procedure was also made more stringent.

The negotiations on the CCS proposal introduced significant changes in how to incentivize CCS. The only incentive provided in the Commission proposal had been the expected ETS carbon price, as operators would not have to purchase stored emissions. The Parliament rapporteur for the CCS dossier – Chris Davies – managed to shift the focus towards financing and how to make CCS commercially viable (Chiavari, 2010). Davies cooperated closely with Avril Doyle – rapporteur for the proposal to revise the ETS. Doyle presented an amendment to set aside 500 million carbon allowances from the New Entrants' Reserve – emission rights for new entrants under the ETS – to co-finance CCS demonstration plants. Davies proposed CO₂ emission limits on power stations to force the use of CCS on coal power (Chiavari, 2010). Several member states opposed the Parliament proposal, particularly coal-dependent new CEECs expecting high CCS costs. After long and complex negotiations, the compromise outcome was that 300 million allowances from the ETS New

Entrants' Reserve would be set aside to co-finance up to 12 commercial CCS demonstration projects and new renewable energy technologies. Negotiations on the CCS proposal thus focused on issues that were not part of the proposal itself and solutions that were part of another proposal: the ETS revision negotiations.

In the negotiations on the RES proposal, both the national targets and the 10% minimum target for renewable energy in the transport sector were upheld throughout the negotiations. However, several details as to how these targets were calculated were changed (Howes, 2010). For example, only biofuels that met sustainability criteria would count towards the target. The main relationship between the RES proposal and the rest of the package was the link to the fuel quality directive (common sustainability criteria) and the design of the Directive. In addition to previous renewable regulation, RES Directive targets are calculated roughly as the ESD proposal. Like the ETS and ESD proposals, the RES Directive also contains flexibility mechanisms on how to achieve the targets. Further, it is based on a gradual trajectory towards the target, as in the revised ETS Directive.

The climate and energy package proposed and adopted in 2008 also aimed at strengthening the credibility of EU climate policy leadership internationally. According to Barroso: 'If we want a global agreement it's absolutely indispensable that Europe leads the way' (ENDS, January 2008). The prospects of an ambitious international agreement were directly related to the EU's climate target (20% cut in emissions, upped to 30% if other developed countries follow suit) and revision of the EU ETS with regard to allocation methods. If a new agreement was concluded, the EU would adjust its targets to ensure an overall 30% reduction in ETS and non-ETS sectors. In the absence of international progress, energy-intensive industries would be protected from carbon leakage by free allowances based on benchmarks. The EU also launched a public consultation on what position the EU should take in negotiations on a post-2012 global climate agreement. In December, negotiations in Poznan on a new global climate agreement failed to make progress on new emission cuts.

Climate change remained at the top of the EU political agenda in 2009. The focus changed from internal policies to the upcoming negotiations in December in Copenhagen. The EU pushed for a binding and ambitious international agreement that could trigger the 30% reduction target. The EU ETS underpinned the EU's position. First, the EU aimed at an OECD-wide carbon market by 2015 based on the EU ETS. Second, the EU planned to use carbon markets to fund climate-change mitigation in developing countries. Developed countries could either sell allowances at the carbon market or buy their allowances at a fixed price. Finally, the use of the Kyoto Protocol's flexible mechanisms (CDM/JI) for compliance purposes under the ETS would also affect the post-2012 vision of these mechanisms. In the end, however, the EU was sidelined in Copenhagen and the negotiations made scant progress.

We have seen how issue-linkages through side-payments were introduced as a third mechanism (in addition to combining differently valued issues

and exploiting synergy) in the decisionmaking phase to promote effort-sharing. This led to an integrated package proposal that made negotiations cooperative in nature. The comprehensive package designed by the Commission provided further room for side-payments through issue-linkages during the 2008 negotiations. Side-payments linked to one part of the package compensated actors for their concessions to other parts of the package, thus reducing resistance and enhancing support for the overall package. The result was unanimous adoption of the EU climate and energy package in December 2008.

The rapid adoption of the complex package of new policies when the financial crisis unfolded was largely a result of how it was designed by the Commission. In addition to forging synergies and combining values, the Commission designed a package of instruments that provided side-payments to lower-income member states and to energy-intensive industries exposed to significant international competition. Aided by strong French leadership, the negotiations among member states did not affect the main structure of the proposed package, but the Commission's emphasis on effort-sharing clearly anticipated the constellation of interests among the member states and energy-intensive industries. The international climate regime continued to serve mainly as a target regime, with the upcoming climate negotiations in Copenhagen at the centre. Access to CDM credits under the Kyoto Protocol lowered the costs for European industries, providing a direct vertical link to side-payments offered by the international climate regime.

Implementing and developing of the package

The package was politically agreed in December 2008, formally adopted in 2009 and implemented through further deliberations on various remaining issues through comitology procedure and by national follow-up plans. The RES Directive requires member states to submit National Renewable Action Plans. All 27 plans have been submitted; forecasts show that the total production of renewable energy will exceed the 20% target and reach 20.3% by 2020 (Commission, 2012a). In October 2012, the Climate Change Committee approved the national limits in the non-ETS sectors. The draft decision sets Annual Emission Allocations (in tonnes) for each member state and year from 2013 to 2020. For the EU ETS, the new allocation rules have been negotiated with industry. A list of sectors and sub-sectors exposed to international competition and deemed to be exposed to significant risk of carbon leakage has been adopted, based on product-based benchmarks. Benchmarks compensate the most energy-efficient installations with 100% free allowances, thereby providing them with a competitive advantage. An auctioning regulation has been adopted for sectors not exposed to carbon leakage, mainly the electric power industry. This enables the Commission to supervise auctioning of allowances on behalf of the member states. Finally, the NER300 funding mechanism has been implemented by a Decision that specifies criteria and measures for financing commercial demonstration projects.

Despite apparently successful formal implementation, changes in circumstances have brought serious impediments, particularly for the revised EU ETS and NER300. First, the climate and energy package was intended to strengthen EU leadership towards a new, ambitious and binding climate treaty that would include all major emitters. This ambition has failed, as nations like the USA, China and India have refused to go along. The international conditions set by the EU for upping to a 30% GHG reduction target were not met in Copenhagen. The ‘Copenhagen Accord’ did not set global reduction targets; it did not add up to what scientific advice holds is necessary to remain within the 2C^o objective, and it was not legally binding. The Accord fell short of the EU’s expectations, but provided a basis on which to work further. The December 2010 climate negotiations in Cancún did not resolve the EU’s concerns, but they made some progress on restoring confidence since Copenhagen and deciding on, *inter alia*, a fund to finance climate mitigation and adaptation efforts in developing countries. The 2011 Durban Platform for Enhanced Action aims at finalizing a new 2020 climate agreement with legal force by 2015. However, even with the Doha 2012 outcome of including a new commitment period under the Kyoto Protocol, it is highly uncertain whether a new climate agreement can prove sufficient to align EU actors in support of a more stringent climate target and a more stringent EU ETS.

Second, the financial crisis brought a drop in emissions from the ETS sectors. As shown in Table 1, from 2008 the number of allowances has been increasing every year alongside supply and use of international credits, most notably in 2011 (Commission 2012b; 2012c).²⁶

Table 1: Supply–demand balance 2008–2011 (in Mt)

	2008	2009	2010	2011	Total
Supply: Issued allowances and used international credits	2076	2105	2204	2336	8720
Demand: Reported emissions	2100	1860	1919	1886	7765

Source: Commission, 2012b.

By early 2012, a surplus of 955 million allowances had accumulated. Of these, 549 million were from the use of international credits.

The increasing supply of allowances combined with low demand is, according to the Commission, partially reflected in the evolution of the carbon price since 2008. The carbon price has dropped from nearly €30 in spring 2008 to just above €5 in spring 2012, with a significant reduction in the second half of 2011 coinciding with an accelerated build-up of allowances and international credits. The surplus is expected to build up in 2012 and 2013, and may reach a structural surplus of 2 billion allowances in phase 3, due to various elements related to the transition to

²⁶ The use of international credits for compliance increases the surplus of allowances, as each international credit frees up one allowance that does not need to be used.

phase 3.²⁷ The amount of surplus by 2020 will depend on the pace of economic recovery and various energy factors, such as the development of renewable energy, and energy efficiency. Greater diffusion of renewable energy and energy efficiency in the EU ETS sectors will reduce the demand for allowances, further spurring increases in the imbalance between supply and demand.

The combination of the financial crisis and slow progress on an international climate treaty has ignited conflicts within the EU that threaten the future of the climate and energy package and the EU's international leadership. The Commission has sought to deal with this challenge in various ways. In 2010, it presented an analysis of options for unilaterally moving beyond the 20% GHG reduction target (Commission, 2010). This would require a strengthening of the climate and energy package or new additional policies. The Communication concludes that a 30% target is technically feasible and economically affordable, and it discusses the means and consequences of moving to this target in light of the new circumstances. Two options are particularly relevant with regard to the package: 1) to tighten the ETS cap to 34% rather than the current 21% below 2005 emissions; 2) to tighten the ESD cap from 10% to 16% and introduce a CO₂ tax in sectors not covered by the ETS.

The 30% unilateral target was discussed internally throughout 2010. It was pushed by climate Commissioner Connie Hedegaard and DG Climate Action and supported by the UK, Ireland and Denmark. France and Germany were split, with their ministers for the environment supporting a more ambitious carbon target while ministers of the economy were more sceptical. Particularly Poland and Italy had been long-standing opponents of tougher emission cuts. Vigorous opposition came also from the European Alliance of Energy Intensive Industries, which argued that a unilateral 30% target would be detrimental to the competitiveness of energy-intensive industries. In a resolution adopted prior to the international climate negotiations in Cancún, the Parliament adopted a resolution calling on the EU to adopt a unilateral 30% target '...in the interest of the future economic growth of the European Union' (European Parliament, 2010). This was a controversial point, as some would prefer to link the target to specific conditions. The resolution was narrowly adopted (292 in favour, 274 against, with 38 abstentions).

Poland, with varying support from other CEECs, has blocked any further development of the package. In March 2011, the Commission published a roadmap prepared by DG Climate Action for moving towards a competitive low-carbon economy by 2050 (Commission, 2011b). The analysis showed that GHG emissions would have to be reduced by 25% in 2020, 40% in 2030 and 60% in 2040 below 1990 levels to reach 80% by 2050. The roadmap also encouraged decisionmakers to strengthen the EU ETS by revising the 1.74% linear reduction factor. In the short term, allowances for 2013–2020 should be set aside to provide scarcity in the

²⁷ These include forward-selling to generate funds for the NER300 program, early auctioning to meet power-sector hedging demand, and the sales of left-over allowances in phase 2 New Entrants' Reserves.

market and raise carbon prices. In June 2011, 26 of the 27 member states agreed with the presidency conclusions, which indirectly referred to the target of 25% reduction by 2020:

...TAKES NOTE of the Commission's finding that the 25% domestic reduction by 2020 would be in line with the pathway, consistent with the long-term climate objective...if EU delivers on its energy-efficiency objectives, this would enable the EU to outperform the current 20% emission reduction target and achieve a 25% reduction by 2020... (Council, 2011:3).

In March 2012, 26 member states again supported a watered-down presidency conclusion on the roadmap. The blocking state on both occasions was Poland, supported by energy-intensive industries across the EU (ENDS, March 2011).

Responses to the low-carbon roadmap were divided within the Parliament. The EP's Environment Committee voted in favour of adopting a 30% CO₂ reduction goal for 2020 (44 in favour, 14 against, 1 abstention). The Committee argued, *inter alia*: '...under the current 20% target, the ETS will have a very limited role in driving emissions reductions and deployment of low-emission technologies...' (European Parliament, 2011:4). At the full session of the Parliament in June, however, centre-right MEPs called for a 25% cut; this was opposed by Green MEPs, arguing the 2010 resolution to Cancún was better – and the resolution failed. Since then, the Parliament has voted in favour of the roadmap and the strengthening of the EU ETS (European Parliament, 2012).

In December 2011, the Commission published an Energy Roadmap 2050 prepared by DG Energy (Commission, 2011b). Here the key message is that greater energy efficiency and more use of renewables to achieve 80–95% reduction by 2050 will cost about the same as would continued heavy reliance on nuclear power and fossil fuels. This roadmap suggests increasing the share of renewables to around 30% by 2030. Unsurprisingly, the ETS is given a less prominent role in driving decarbonization, compared to the low-carbon roadmap (i.e. Commission, 2011b). Still, the EU ETS should play an increased role and can coexist with instruments promoting energy efficiency and renewables: '...as the central pillar of European climate policy...designed to be technology neutral, cost effective and fully compatible with the internal energy market' (Commission, 2011b). The Energy Roadmap stresses that decarbonization of Europe should not develop in isolation, but take into account international developments to minimize carbon leakage and adverse effects on competitiveness.

In June 2012, Poland vetoed a compromise proposal on the Energy Roadmap as well, arguing that EU efforts should be matched internationally and that references to 'decarbonization' should be deleted (Council, 2012). Poland is the largest coal producer in the EU, and Poland's import dependency is among the lowest in the EU. Poland also exports a significant share of its coal production. Solid fuels account for a share of 58% in its total primary energy supply; domestic production of solid fuels accounts for 88%. Electricity production is based almost exclusively on domestic coal (Commission, 2007e). A Polish impact assessment study of

the Energy Roadmap concludes that the benefits are few and the costs high, particularly related to increasing energy prices (Polish Chamber of Commerce, 2012). Poland does not see any market opportunities in renewables. Several delegations also wished to delete a reference in the Roadmap to a greater share of the energy mix for renewable energy, of around 30% in gross final energy consumption in 2030, whereas Germany, Belgium, Ireland and Sweden wanted to keep this reference (Council, 2012; ENDS, June 2012a).

Failure to agree on a more ambitious 2020 climate target or stepwise targets toward 2050 has pitted EU climate and energy policy instruments against each other and raised tensions between DG Climate Action and DG Energy. Growing shares of renewables and more energy efficiency further reduce demands for EU ETS allowances (Commission, 2012c). This potential conflict has been reinforced by the adoption of a new Energy Efficiency Directive (EED) in October 2012, which explicitly mentions the need to strengthen the EU ETS to make it more effective. Technically, the ETS could be fixed by a permanent set-aside of allowances and revision of the linear 1.74% reduction factor to achieve a more ambitious climate target. Since a more ambitious climate target has proven politically unfeasible, energy policies on renewables and energy efficiency have been strengthened, at the expense of climate policy and the EU ETS.

DG Climate Action has proposed measures for dealing with the situation in the short term. The Commission has proposed a regulation to postpone or backload auctioning of 900 million allowances from the beginning to the end of the 2013–2020 period (Commission, 2012d). Backloading is expected to stabilize the carbon price, but will not solve the surplus problem since it does not take the allowances permanently out of the system. Most energy-intensive industries have resisted any measures to fix the ETS – despite the Commission’s December 2011 effort to sweeten the pill for these industries by proposing a list of sector that can be given state aid to assist with the indirect costs of the ETS.

In June 2012, a legal opinion prepared for the Alliance of Energy Intensive Industries in the EU by the German law firm Luther argued that ET Directive does not permit the Commission to intervene if the carbon price is too low (Luther, 2012; BusinessEurope, 2012) – an interpretation supported by BusinessEurope (BusinessEurope, 2012). In a letter to Commission President Barroso, BusinessEurope held: ‘...short-term measures such as changes to the ETS auctioning regulation to withhold allowances must be avoided as these would interfere with a more constructive discussion on how to achieve a systemic solution’ (BusinessEurope, 2012). BusinessEurope underlined its support for the central role of EU ETS in EU climate policy, argued for a discussion of long-term targets by 2030 and called for a stakeholder dialogue on any proposed measure. DG Enterprise allied with industry, and held that the legal basis for using comitology rules to adopt changes to the auctioning profile was weak (ENDS, June 2012b). The Commission has replied by proposing a decision to clarify its own legal competence to backload (Commission, 2012b).

The upshot? There are several design options available for dealing with the problem in the short and long term. Whether these options will be realized hinges largely on political feasibility. The eroding support and acceptance underlying the EU climate and energy package may jeopardize the EU's long-term low-carbon ambitions. If not fixed, the EU ETS may lose relevance and consequently output legitimacy. Funding of CCS and renewable projects through NER300 and national revenues from auctioning suffer when the allowance price is low. The EU's 2050 ambitions can hardly be met without CCS or equivalent measures, as fossil fuels are forecast to continue to play an important role in the low-carbon and energy roadmaps. Moreover, increasing internal divisions dampened the EU's ambitions of leading by example in the 2011 Durban and 2012 Doha climate negotiations.

Challenges of time inconsistency and institutional interaction have impeded the implementation and further development of the package to achieve long-term targets. Poland has questioned the low-carbon economy ambitions by blocking more stringent climate targets. Non-state actors in the form of energy-intensive industries have challenged the legal foundations of the proposal to strengthen the EU ETS. If successful, these industries could act as a veto-player, even without any formal decisionmaking role in the EU. Opposition will not necessarily obstruct realization of the 2020 targets, but in the long term it will affect the options for coping with time inconsistency. These options include pre-commitment strategies towards 2050 and commercialization of low-carbon strategies, like CCS.

Interaction has caused conflict between the various components of the package and between the package and the international climate regime. Synergies between climate and energy policies have been replaced by conflict. Policies on renewables and energy efficiency clash with ETS performance, again raising tensions between different Commission DGs – and a divided Commission is less able to push for agreement among member states. Opposition to fixing the ETS has had repercussions for the issue-linkage logic underlying the compromise package. A low carbon price means less revenue to compensate lower-income member states. Actors valuing climate policy and investments in low-carbon technologies other than renewables will not get what they anticipated.

The package approach has made solutions difficult. The ETS cannot be revised to achieve a more stringent 2020 climate target unless the ESD is revised as well, because the contributions of these cross-sector instruments have been shared and calculated according to the 2020 emission reduction target. The ETS sectors are to contribute with 21% reduction and the non-ETS sector with 10% reduction, in order to achieve the target of 20% reduction by 2020 from 1990 levels. Issue-linkages and package deals can promote agreement by combining differently-valued issues, overcoming distributional obstacles and promoting synergies. However, seen here, such packages may act to impede revision if circumstances change, as amending one component may have repercussions for the package as a whole.

How will EU climate and energy policies will develop in the future? The Commission has issued a Green Paper on a framework for climate and energy policies towards 2030 (Commission, 2013a). This Green Paper launches the idea of a public consultation on the content of the 2030 framework, including new targets, coherence between policy instruments, contributions to competitiveness and how differing member-state capacities can be taken into account. The Commission has also published a Consultative Communication on the future of CCS in Europe in response to its slow deployment (Commission, 2013b). One of the key barriers identified is the lack of a long-term business case and the cost of CCS technology. At the current low carbon price, CCS investment does not make sense for operators. This situation is unlikely to change in the short term. In April 2013, the European Parliament rejected the short-term fix to the EU ETS by voting against backloading of 900 million tonnes in allowances from the EU ETS.

Concluding remarks

This report has argued that issue-linkages can contribute to explain how the EU climate and energy package came about in the first place – but also why it may prove to be a one-off event despite recent efforts to develop the package towards 2030. Linking climate with energy policy instruments gave something to most stakeholders. Three mechanisms yielded joint gains. First, climate mitigation and energy security were differently valued by policymakers but were combined in the package, ensuring support from key DGs within the Commission and the Parliament and among member states. Second, side-payments were crafted by combining policies to compensate poorer member states and industries exposed to international competition. Finally, synergies were created by mutually reinforcing objectives in different issue-areas. Policies that could increase the burdens for certain member states or make negotiations too complex were de-linked from the core package and developed independently. This analysis of the EU climate and energy package has shown that the issue-linkage approach is fruitful for understanding the making of EU policy packages.

Issue-linkages were used differently in the various policymaking phases. In the policy initiation phase, the combination of differently-valued issues to create mutual exchange of concessions between policymakers was necessary for aligning the compartmentalized Commission. Once internal agreement had been reached within the Commission, the package was ‘sold’ politically by emphasizing the synergies while downplaying potential negative interactions. In the decisionmaking phase, the asymmetrical costs of implementation became evident. Issues were accordingly linked in the Commission proposal as side-payments to compensate poor member states and energy-intensive industries.

We have seen that the making of the package cannot be fully understood without reference to non-state actors, member states, EU institutions and the international climate regime. Insights from various approaches to EU policymaking and integration – multilevel governance, liberal inter-governmentalism and internal regimes – are all needed to explain how

linkages have been formed, by whom and with what consequences for implementation. Still, a key observation is that the content of what the Commission actually linked together in its drafting of the package had significant impacts on the outcomes.

The package has proven difficult to change when circumstances shifted. One reason lies in the time inconsistency between adoption and implementation. The financial crisis has caused serious problems, particularly for the EU ETS. Poland has vetoed, and energy-intensive industries have opposed, higher climate ambition levels that could address the ETS problem. The resultant low price of carbon undermines other parts of the package, like funding for CCS. Opposition to individual components of the package brings repercussions for the package as a whole. The ETS cannot be strengthened to meet a more ambitious 2020 climate target unless also the ESD is revised.

A related reason can be found in disruptive institutional interaction. Internally, climate and energy policy instruments intended to be mutually reinforcing have developed into a relationship characterized by conflict, expressed by the unhappy marriage between the EU ETS and policies to promote renewables and energy efficiency. This also makes longer-term targets for renewables more difficult to adopt, as greater use of renewables would further reduce the carbon price. With the benefit of hindsight, we have seen that potential conflicts between various components of the package were swept under the carpet by the Commission to enhance political feasibility. Externally, slow progress on a new international climate treaty served to spur opposition to the climate and energy package by actors concerned about losing competitiveness. The package and the targets rested on the expectation that other key states would follow the example set by the EU.

What will be at stake if the EU proves unable to fix the EU ETS? First, the output *legitimacy* of the system may be at risk if it does not deliver results. The mandatory 'cap' part of the system will ensure reduction of emissions in the ETS sectors according to the EU 2020 target, but the low carbon price will not provide industry with incentives for investing in abatement and innovation. If this situation continues, the system may lose support also from those who have favoured emissions trading for dealing with the problem of climate change. Second, the system has a key role in securing long-term low-carbon efforts when circumstances change and decisionmakers could be tempted to renege on earlier commitments. Increasing the shares of renewables and more energy-effective production will not guarantee a reduction in emissions if energy consumption grows. This means there is a need for gradually decreasing the cap in the ETS sectors beyond 2020, as well as for sectors not covered by the ETS. Imports to the EU of cheap coal from the USA illustrate this point.

Finally, the system cannot function as a good model for other countries unless its deficiencies are remedied. On the other hand, the importance of this point should not be exaggerated: after all, of the emerging trading systems in North America (regional), Australia, New Zealand, Japan (regional), South Korea and China (regional), there are very few that have actively sought to directly incorporate lessons for the EU ETS in

designing their own systems, and the diversity of these systems may hamper any market convergence (Tuerk et al., 2013). Today, the dynamic is located outside Europe – and the performance of these systems may prove more important for other countries than what unfolds in Europe.

The challenge now confronting EU policymakers is how re-pack the climate and energy package to promote a low-carbon economy by 2050 and strengthen credibility for EU international leadership. The combination of issues that created sufficient flexibility and support to get the package adopted has apparently also locked decisionmakers in relationships that are hard to change. This is a research challenge as well: we need a better understanding of how issue-linkages and EU policy packages can be re-shaped when circumstances change.

Interviews

September 2011

Chris Beddoes, Europa, Vice-Secretary General, 15 September 2011

Arno Behrens, Centre for European Policy Studies (CEPS), Head of Energy & Research Fellow, 24 April 2011

Christian Egenhofer, Centre for European Policy Studies (CEPS), Senior Fellow, Head of the Energy and Climate programme, 13 September 2011 and 24 April 2012

Paal Frisvold, Bellona Brussels, Board chairperson, 11 September 2011

Paul Hodson, DG TREN, Head of Unit Energy Efficiency, 13 September 2011

Tor Eigil Hodne, Statnett Brussels, Director EU Office, 14 September 2011

Bjørn Staale Haavik, Energy Advisor, Norway's Representation to the European Union, 14 September 2011

Jürgen Salay, DG CLIMA, Policy Officer, co-ordinator of the implementation of the Effort Sharing Decision, Unit Low Carbon Technologies, 13 September 2011

Yvon Slingenberg, DG CLIMA, Head of Unit Implementation of ETS, 12 September 2011

Matti Supponen, DG ENER, Policy Co-ordinator, policy and project officer of Unit Internal Market II: Wholesale markets; electricity & gas, 13 September 2011

Jonas Teusch, Researcher, Centre for European Policy Studies (CEPS), 24 April 2011

Tom van Ierland, DG CLIMA, Policy Officer, Economic assessment of climate policies in Unit Strategy and Economic Assessment, 14 September 2011

Stefaan Vergote, DG CLIMA, Head of Unit Strategy and Economic Assessment, 14 September 2011

Peter Vis, DG CLIMA, Head of Cabinet, 15 September 2011

Thomas Wyns, CAN Europe, Policy Officer, 15 September 2011

April 2012

Christian Egenhofer, Centre for European Policy Studies (CEPS), Senior Fellow, Head of the Energy and Climate programme, 24 April 2012

Martina Dopplehammer, Unit Low Carbon Technologies, DG CLIMA, 25 April 2012

Susanne Nies, Eurelectric, Head of Unit Energy Policy & Generation, 23 April 2012

Jürgen Müller, DG CLIMA, Member of Cabinet, 24 April, 2012

Raphael Sauter, Unit Low Carbon Technologies, DG CLIMA, 25 April 2012

Yvon Slingenberg, DG CLIMA, Head of Unit Implementation of ETS, 26 April 2012

Hans van Steen, DG ENER, Head of Unit Renewables and CCS Policy, 25 April 2012

Ignacio Vazquez Larruscain, DG CLIMA, 26 April 2012

Torsten Wöllert, Unit Low Carbon Technologies, DG CLIMA, 25 April 2012

Terhi Lehtonen, Policy advisor, the Greens in the European Parliament, 24 April, 2012.

Bibliography

- Barnes, P.M. (2011) 'The Role of the Commission of the European Union: Creating External Coherence from Internal Diversity', in R.K.W.Wurzel and J. Connelly (eds) *The European Union as a Leader in International Climate Change Politics*. London: Routledge, pp.41–58.
- Blesl, M., T. Kober, D. Bruchof and R. Kuder (2010) Effects of Climate and Energy Policy Related Measures and Targets for the Future Structure of the European Energy System in 2020 and Beyond, *Energy Policy* 8 (10): 6278–6292.
- BusinessEurope (2012) Letter to Mr José Manuel Barroso on the EU ETS. Brussels: BusinessEurope, 27 June 2012.
- Chiavari, J. (2010) The Legal Framework for Carbon Capture and Storage in the EU, in S. Oberthür and M. Pallerwarts (eds) *The New Climate Policies of the European Union*. Brussels: VUB Press.
- Christensen, A.R. and L.H. Gulbrandsen (2012) *EU Policies on Car Emissions and Fuel Quality: Reducing the Climate Impact from Road Transport*, FNI Report 14/2012. Lysaker: Fridtjof Nansen Institute.
- Commission of the European Communities (1988) The Greenhouse Effect and the Community: Commission Work Programme Concerning the Evaluation of Policy Options to Deal with the 'Greenhouse Effect'. COM (88) 656 final, 16 November.
- Commission of the European Communities (1991) A Community Strategy to Limit Carbon Dioxide Emissions and to Improve Energy Efficiency. SEC (91) 1744 final, 14 October.
- Commission of the European Communities (1998) Towards an EU Post-Kyoto Strategy. COM (98) 353, June.
- Commission of the European Communities (1999) Preparing for Implementation of the Kyoto Protocol. COM (99) 230, May.
- Commission of the European Communities (2000a) Green Paper on Greenhouse Gas Emissions Trading within the European Union. COM (2000) 87, final, March.
- Commission of the European Communities (2000b) Towards a European Strategy for the Security of Energy Supply. COM (2000) 769 final, 29 November.
- Commission of the European Communities (2001) Proposal for a Directive Establishing a Framework for Greenhouse Gas Emissions Trading within the European Community. COM (2001) 581, 23 October.
- Commission of the European Communities (2005) Winning the Battle Against Global Climate Change. SEC (2005) 180, 9 February.
- Commission of the European Communities (2006) Green Paper on a European Strategy for Sustainable, Competitive and Secure Energy. COM (2006) 105 final, 8 March.

- Commission (2007a) Limiting Global Climate Change to 2 degrees Celsius: The Way Ahead for 2020 and Beyond. COM (2007) 2 final, 10 January.
- Commission of the European Communities (2007b) An Energy Policy for Europe. COM (2007) 1 final, 10 January.
- Commission of the European Communities (2007c) Renewable Energy Roadmap. Renewable energies in the 21st century: building a more sustainable future. COM(2006) 848 final, 10 January.
- Commission of the European Communities (2007d) Impact Assessment Accompanying Renewable Energy Roadmap. SEC (2006) 1719, 10 January.
- Commission of the European Communities (2007e) Poland: Energy Mix Fact Sheet. Available at:
http://ec.europa.eu/energy/energy_policy/doc/factsheets/mix/mix_pl_en.pdf
- Commission of the European Communities (2008a) Europe's Climate Change Opportunity. COM (2008) 30 final, 23 January.
- Commission of the European Communities (2008b) Impact Assessment. Document accompanying the package of implementation measures for the EU's objectives on climate change and renewable energy for 2020. SEC (2008) 85/3, 23 January.
- Commission of the European Communities (2010) Analysis of options to move beyond 20% greenhouse gas emission reductions and assessing the risk of carbon leakage. COM (2010) 265 final, 26 May.
- Commission of the European Communities (2011a) A Roadmap for Moving to a Competitive Low Carbon Economy in 2050. COM(2011) 112 final, 8 March.
- Commission of the European Communities (2011b) Energy Roadmap 2050. COM (2011) 885 final, 15 December.
- Commission of the European Communities (2012a) Renewable Energy: Action Plans and Forecasts. Available at
http://ec.europa.eu/energy/renewables/action_plan_en.htm.
- Commission of the European Communities (2012b) The State of the European Carbon Market in 2012. COM (2012) 652 (undated.)
- Commission of the European Communities (2012c) Commission Staff Working Document: Proportionate Impact Assessment, draft, 2012 (undated).
- Commission of the European Communities (2012d) Commission Submits Draft Amendment to Back-load 900 Million Allowances to the Years 2019–2020. Available at
http://ec.europa.eu/clima/news/articles/news_2012111203_en.htm.
- Commission of the European Communities (2013a) Green Paper: A 2030 Framework for climate and energy policies. COM(2013)169 final, 27 March..

- Commission of the European Communities (2013b) On the Future of Carbon Capture and Storage in Europe. Brussels, COM(2013) 180 final, 27 March.
- Council (2011) Presidency Conclusions. Brussels: General Secretariat, 22 June.
- Council (2012) Draft Council Conclusions. Brussels: Permanent Representatives Committee, 8 June.
- Dimas S. 2005. *Developing the European Climate Change Programme*. Stakeholder meeting 24 October. Brussels.
- Eikeland, P.O. (2012) *EU Energy Policy Integration – Stakeholders, Institutions and Issue-linking*, FNI Report 13/2012. Lysaker: Fridtjof Nansen Institute.
- ENDS (March 2005) EU leaders back 2020 greenhouse gas target. 23 March.
- ENDS (October 2005) MEPs urge stronger EU climate policies. 12 October.
- ENDS (November 2005) Commission to push EU climate change policies. 14 November.
- ENDS (March 2006a) EU energy paper draws praise and criticism. 8 March.
- ENDS (March 2006b) Germany's Gabriel slams EU energy paper. 16 March.
- ENDS (March 2006c) EU pushes for deep cuts in world climate gases. 27 March.
- ENDS (May 2006) Ministers restate EU ETS commitment. 22 May.
- ENDS (June 2006) Climate top of next year's agenda, says Dimas. 21 June.
- ENDS (September 2006) Franco-German ministers set EU green agenda. 27 September.
- ENDS (November 2006) EU 'must get real on energy-climate policies'. 24 November.
- ENDS (December 2006) EU set to shift its sights on clean energy. 11 December.
- ENDS (January 2007) Energy/climate plan draws mixed reactions. 10 January.
- ENDS (February 2007) States back unilateral EU climate gas curbs. 20 February.
- ENDS (March 2007) EU leaders set for renewables stand-off. 2 March.
- ENDS (January 2008) Businesses' contrasting reactions to climate plans. 24 January.
- ENDS (February 2008) Green reputations at stake. 1 February.
- ENDS (October 2008) Climate legislation 'not a luxury EU can forgo'. 15 October.

- ENDS (March 2011) Too much or too little? Reactions to EU carbon and energy plans. 9 March.
- ENDS (June 2012a) Poland vetoes energy roadmap to 2050. 15 June.
- ENDS (June 2012b) Pressure builds up against ETS auctioning proposal', 26 June.
- Energy Council (2005) Council Conclusions on Climate Change and Energy Efficiency. Brussels: 2695th Transport, Telecommunications and Energy Council Meeting, 1 December.
- EREC (2007) EREC Position on the need for sectorial targets. Brussels: EREC
- EurActive (May 2005) Eurobarometer: citizens want strong environment policy. 2 May.
- EurActive (July 2005) 'High noon' for EU's environment policies. 20 July.
- EurActive (October 2005) Blair calls for stronger EU energy policy cooperation. 31 October.
- EurActive (December 2005) Crunch time for EU environmental policies. 21 December.
- EurActive (September 2006) Interview with Commission Secretary-General Catherine Day. 26 September.
- EurActive (July 2006) UK energy review answers some EU Green paper questions. 12 July.
- EurActive (March 2007) EU makes bold climate and renewables commitment. 9 March.
- Eurobarometer (2006) Europa, Press Release, 2006. European citizens in favour of a European Energy policy, says Eurobarometer survey. IP/06/66. Brussels, 24 January.
- Europa, Press Release (November 2006) Energy Council: 22–23 November. MEMO/06/442. Brussels, 22 November.
- European Council (2004) Presidency Conclusions from European Council 25 and 26 March 2004. Brussels, 19 May.
- European Council (2005) Presidency Conclusions from European Council 22 and 23 March 2005. Brussels, 23 March.
- European Council (2006) Presidency Conclusions from European Council 23 and 24 March 2006. Brussels, 18 May.
- European Council (2007) Presidency Conclusions from European Council 8 and 9 March 2007. Brussels, 2 May.
- European Parliament (2004) Committee on Industry, Research and Energy hearing with Mr Andris Piebalgs. ITRE/2004/D/49530. Brussels, 15 November.
- European Parliament (2007) European Parliament Resolution on Climate Change. P6_TA (2007) 0038. Brussels, 14 February.

- European Parliament (2010) Climate: EU Should Move to 30% Emissions Reduction Target, say MEPs. Brussels: Press release.
- European Parliament (2011) On the Analysis of Options to Move beyond 20% Greenhouse Gas Emission Reductions and Assessing the Risk of Carbon Leakage. PR\858607EN.doc. Brussels: Parliament.
- European Parliament (2012) Parliament Calls for Low-carbon Economy by 2050. Brussels: Parliament, PR\40876.
- EWEA (2005) Large Scale Integration of Wind Energy in the European Power Supply: Analysis, issues and recommendations. Brussels: European Wind Energy Association, December.
- Fairbrass, J. and A. Jordan (2004) 'Multi-level Governance and Environmental Policy, in I. Bache and M. Flinders (eds), *Multi-level Governance*. Oxford: Oxford University Press, pp.147–164.
- Grant, W., D. Matthews and P. Newell (2000) *The Effectiveness of European Union Environmental Policy*. London: Macmillan.
- Grubb, M., C. Vrolijk and D. Brack, (1999) *The Kyoto Protocol: A Guide and Assessment*. London: Royal Institute of International Affairs and Earthscan.
- HLG (High Level Group on Competitiveness, Energy and the Environment) (2006) *Contributing to an Integrated Approach on Competitiveness, Energy and Environmental Policies*. Brussels: HLG, 2 June.
- Hovi, J. and T. Skodvin (2008) Which Way to U.S. Climate Cooperation? Issue Linkage versus a U.S.-Based Agreement, *Review of Policy Research* 25 (2): 129–148.
- Hovi, J., D.F. Sprinz and A. Underdal (2009) Implementing Long-term Climate Policy: Time Inconsistency, Domestic Politics, International Anarchy, *Global Environmental Politics* 9 (3) 20–39.
- Howes, T. (2010) The EU's Renewable Energy Directive, in S. Oberthür and M. Pallermarks (eds) *The New Climate Policies of the European Union*. Brussels: VUB Press.
- IPCC (2007) Summary for policy makers. IPCC Fourth Assessment Report. Geneva: Intergovernmental Panel on Climate Change.
- Kulovesi, K., E. Morgerata and M. Muñoz (2011) Environmental Integration and Multi-faceted International Dimensions of EU Law: Unpacking the EU's 2009 Climate and Energy Package, *Common Market Law Review* 48: 829–891.
- Lacasta, N., S. Oberthür, E. Santos and P. Barata (2010) From Sharing the Burden to Sharing the Effort, in S. Oberthür and M. Pallermarks (eds) *The New Climate Policies of the European Union*. Brussels: VUB Press.
- Lecuyer, O. and R. Bibas (2012) Combining Climate Energy Policies: Synergies or Antagonism? Modelling Interactions with Energy Efficiency Instruments. CIRED (International Research Centre on Environment & Development) (FEEM Working Paper No. 98, 2011). 26 January 2012.

- Luther (2012) Luthers legal opinion: Brussels' plans for CO₂ set-aside violate EU law. Cologne: Press Release, 21 June.
- Marks, G., L. Hooghe and K. Blank (1996) European Integration from the 1980s: State Centric vs. Multi-level Governance, *Journal of Common Market Studies* 34 (3): 341–378.
- McKibben, H. (2010) Issue Characteristics, Issue Linkage and States' Choice of Bargaining Strategies in the European Union, *Journal of European Public Policy* 17 (5): 694–707.
- Moravcsik, A. (1998) *The Choice for Europe: Social Purpose and State Power from Messina to Maastricht*. London: Routledge.
- Moravcsik, A. (1999) A New Statecraft? Supranational Entrepreneurs and International Cooperation, *International Organization* 53 (2): 267–396.
- Newell, P. and M. Paterson (1998) A Climate for Business: Global Warming, the State and Capital, *Review of International Political Economy* 5 (4): 679–703.
- Oberthür, S. and T. Gehring (eds) (2006) *Institutional Interaction in Global Environmental Governance: Synergy and Conflict among International and EU Policies*. Cambridge, MA: MIT Press.
- Oberthür, S. and C. R. Kelly (2008) EU Leadership in International Climate Policy: Achievements and Challenges, *International Spectator* 43 (3): 35–50.
- Oberthür, S. and M. Pallermarks (eds) (2010) *The New Climate Policies of the European Union*. Brussels: VUB Press.
- Official Journal of the European Communities (1997) Council Resolution of 27 June 1997 on Renewable Sources of Energy (OJ 97/C 210/01).
- Official Journal of the European Communities (1998) Council Resolution of 8 June 1998 on Renewable Sources of Energy (OJ 98/C 198/01).
- Official Journal of the European Communities (2001) Directive 2001/77/EC on the Promotion of Electricity Produced from Renewable Energy Sources in the Internal Electricity Market (OJ 2001/L 283/33).
- Official Journal of the European Communities (2003) Parliament (25 October 2003), Directive 2003/87/EC of the Parliament and of the Council of 13 October 2003 Establishing a Scheme for Greenhouse Gas Emission Allowance Trading within the Community and Amending Council Directive 96/61/EC (OJ 2003/ L 275, 32–46).
- Polish Chamber of Commerce (2012) *Assessment of the Impact of the Emission Reduction Goals Set in the EC Document 'Roadmap 2050' on the Energy System, Economic Growth, Industry and Households in Poland*. (Warsaw: EnergSys), 15 February.
- Ringius, L. (1999) Differentiation, Leaders and Fairness: Negotiating Climate Commitments in the European Community, *International Negotiation* 4: 133–166.

- Sbragia, A.M. (2000) Environmental Policy – Economic Constraints and External Pressures, in H. Wallace and W. Wallace (eds), *Policy-Making in the European Union*. Oxford: Oxford University Press, pp. 293–316.
- Sebenius, J.K. (1983) Negotiation Arithmetic: Adding and Subtracting Issues and Parties, *International Organization* 37 (2): 281–317.
- Skjærseth, J.B. (1993) *The Climate Policy of the EC: A Study of Interests and Preferences versus EC Problem-solving Capacity*. FNI Report 2/1993. Lysaker: Fridtjof Nansen Institute.
- Skjærseth, J.B. (1994) The Climate Policy of the EC: Too Hot to Handle, *Journal of Common Market Studies* 32 (1): 25–45.
- Skjærseth, J.B and J. Wettestad (2008a) *EU Emissions Trading: Initiation, Decision-making and Implementation*. Aldershot: Ashgate.
- Skjærseth, J.B and J. Wettestad (2008b) Implementing EU Emissions Trading: Success or Failure? *International Environmental Agreements* 8: 275–290.
- Skjærseth, J.B. and J. Wettestad (2010) Fixing the EU Emissions Trading System? Understanding the Post-2012 Changes, *Global Environmental Politics* 10 (4): 101–123.
- Skjærseth, J.B., G. Bang and M. Schreuers (2013) Explaining Growing Climate Policy Differences in the European Union and the United States. Forthcoming in *Global Environmental Politics*.
- Tollison, R.D. and T.D. Willet (1979) An Economic Theory of Mutually Advantageous Issue Linkages in International Negotiations, *International Organization* 33(4): 425–449.
- Tsebelis, G. (2002) *Veto Players: How Political Institutions Work*. Princeton, NJ: Princeton University Press.
- Tuerk, A., M. Mehling, S. Klinsky and X. Wang (2013) *Emerging Carbon Markets: Experiences, Trends and Challenges*, London: Climate Strategies, Working Paper January 2013.
- Underdal, A. (1980) *The Politics of International Fisheries Management: The Case of the Northeast Atlantic*. Oslo: Universitetsforlaget.
- Uusi-Rauva, C. (2010) The EU Energy and Climate Package: a Showcase for European Environmental Leadership, *Environmental Policy and Governance* 20: 73–88.
- Van Schaik, L. and S. Schunz (2012) Explaining EU Activism and Impact in Global Climate Politics: Is the Union a Norm- or Interest-Driven Actor? *Journal of Common Market Studies* 50 (1): 169–186.
- Vis, P. (2006). Basic Design Options for Emissions Trading, in J. Delbeke et al. (eds), *EU Energy Law, Volume IV EU Environmental Law, The EU Greenhouse Gas Emissions Trading Scheme*. Leuven: Claeys & Casteels.

- Weale, A., G. Pridham, M. Cini, D. Konstadakopulos, M. Porter and B. Flynn (2000) *Environmental Governance in Europe: An Ever Closer Ecological Union?* Oxford: Oxford University Press.
- Wheeler, D. (2010) *Confronting the American Divide on Carbon Emissions Regulation*, Working Paper 232. Washington DC: Center for Global Development.
- Wurzel, Rüdinger K.W. and J. Connelly (eds) (2011) *The European Union as a Leader in International Climate Change Politics*. London: Routledge.
- Young, O. R. (1998) *Creating Regimes: Arctic Accords and International Governance*. Ithaca, NY: Cornell University Press.

The Fridtjof Nansen Institute is a non-profit, independent research institute focusing on international environmental, energy, and resource management. The institute has a multi-disciplinary approach, with main emphasis on political science, economics, and international law. It collaborates extensively with other research institutions in Norway and abroad.



**FRIDTJOF NANSENS INSTITUTT
FRIDTJOF NANSEN INSTITUTE**

**Fridtjof Nansens vei 17, P.O. Box 326, NO-1326 Lysaker, Norway
Phone: (47) 67 11 19 00 – Fax: (47) 67 11 19 10 – E-mail: post@fni.no
Website: www.fni.no**