

## ÖSTERREICHISCHES INSTITUT FÜR WIRTSCHAFTSFORSCHUNG



### **ICPIA – Coping with Complexity in the Evolving International Climate Policy Institutional Architecture**

### **Climate Policy Integration – Evidence on Coherence in EU Policies**

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## Abstract

In order to successfully tackle the challenge of limiting climate change it has to be recognised that climate policy is a cross-sectoral issue and needs to be firmly integrated in general and sector-specific policy areas that frame economic activity and societal development. Experience however shows that there is a divide between the need of addressing climate policy as cross-sectoral issue and short-term policy decisions that imply a low hierarchical rank for climate policy versus other policy areas. Still a big step is necessary to depart from climate policy as add-on policy area towards comprehensive integration. This paper addresses the topic of climate policy integration. We focus on horizontal policy integration at the EU level with respect to general strategic policy papers, energy policy and the EU's Multi-annual Financial Framework. Our qualitative appraisal confirms that while there is a high general commitment to climate change action on EU level, evidence on climate policy integration into specific policies analysed in this paper is not clear cut: While recent energy policy documents generally refer to climate change as a central motivation, the EU budget does not mention climate change as a budgetary priority. On the strategic level, the relationship of energy policy and climate policy is partly synergetic (e.g., the objective of a sustainable energy system) and partly conflicting (e.g., the emphasis on fossil fuels in order to ensure energy security). Specific energy policy documents generally reinforce climate policy targets. Climate policy integration is not reflected in the EU budget: no explicit resources are dedicated to climate change issues in the Multi-annual Financial Framework; in cohesion funding – to which a significant part of the EU budget accrues – climate-friendliness of the proposed projects is also no funding criterion. Quite the contrary, a large portion of cohesion funding is allocated to investment in road transport entailing adverse effects for climate policy.

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# Climate policy integration – Evidence on coherence in EU policies

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This paper addresses the topic of climate policy integration. We focus on horizontal policy integration at the EU level with respect to general strategic policy papers, energy policy and the EU's Multi-annual Financial Framework.

Our qualitative appraisal confirms that while there is a high general commitment to climate change action on EU level, evidence on climate policy integration into specific policies analysed in this paper is not clear cut: While recent energy policy documents generally refer to climate change as a central motivation, the EU budget does not mention climate change as a budgetary priority. On the strategic level, the relationship of energy policy and climate policy is partly synergetic (e.g. the objective of a sustainable energy system) and partly conflicting (e.g. the emphasis on fossil fuels in order to ensure energy security). Specific energy policy documents generally reinforce climate policy targets. Climate policy integration is not reflected in the EU budget: No explicit resources are dedicated to climate change issues in the Multi-annual financial framework; in cohesion funding – to which a significant part of the EU budget accrues – climate-friendliness of the proposed projects is also no funding criterion. Quite the contrary, a large portion of cohesion funding is allocated to investment in road transport entailing adverse effects for climate policy.



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## 1 Motivation

Climate change represents the most exigent environmental problem our societies face. It does not only pose a threat to the environment (e.g. through biodiversity loss), but also affects the living conditions for present and future generations. Impacts affecting society and economy comprise restrictions to water and food supply or reductions for certain economic activities (e.g. tourism) through changing climatic conditions and precipitation patterns, negative health effects through higher temperatures as well as economic losses through increased frequency and magnitude of extreme weather events. Just as much as a wide array of activities is or will be affected by climate change, the current production and consumption patterns tend to drive the emission of greenhouse gases. Many climate relevant decisions are taken in policy areas other than environmental policy with only little regard to climate change impacts. In order to successfully tackle the challenge of limiting climate change it has to be recognised that climate policy is a cross-sectoral issue and needs to be firmly integrated in general and sector-specific policy areas that frame economic activity and societal development (Kok – de Coninck, 2007, Ahmad, 2009, Mickwitz et al., 2009). Experience however shows that there is a divide between the need of addressing climate policy as cross sectional issue and short term policy decisions that imply a low hierarchical rank for climate policy versus other policy areas. Still a big step is necessary to depart from climate policy as add-on policy area towards comprehensive integration.

Climate policy integration or mainstreaming is not only required for sectoral policies with direct physical inter-linkages like energy or transport, but also for other policy areas. This includes for instance budgetary policy<sup>1</sup>, R&D policy or regional policy and spatial planning, thereby increasing the coherence between climate policy objectives and these policies. Complementing climate-specific policies like the EU ETS with sectoral policies that integrate and support climate policy objectives ensures that producers and consumers are confronted with coherent signals for investment decision and behavioural changes (Mickwitz et al., 2009). Climate policy integration has experienced increased interest in recent years, which is also reflected in the incorporation of climate policy aspects in various policy documents on EU level (e.g. the Europe 2020 strategy<sup>2</sup>). This development builds on the one hand on the experience with environmental policy integration, which represented the policy response to the emergence of sustainable development as a new paradigm, demanding the connection of economic prosperity, social development and environmental protection (Jordan – Lenschow, 2010). On the other hand climate policy integration stems from the recognition of

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<sup>1</sup> Budgetary policy includes on the one hand climate relevant expenditures like funding for infrastructure (e.g. transport), subsidies (for climate friendly as well as counterproductive activities) and the generation of revenues (e.g. by increasing the role of environmental taxes) on the other hand.

<sup>2</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF> On climate policy mainstreaming see also: [http://ec.europa.eu/clima/policies/brief/mainstreaming/index\\_en.htm](http://ec.europa.eu/clima/policies/brief/mainstreaming/index_en.htm)



the urgency of the problem of climate change that requires action to be taken in almost every sector of society and economy. While progress in climate policy on the international level within the framework of the UNFCCC has been limited for several years<sup>3</sup>, the European Union strives for a leading role in international negotiations, underpinning this ambition with domestic action like the introduction of the EU Emission Trading Scheme in 2005 and the adoption of the Climate and Energy Package in 2009. The 20-20 targets for energy and climate underline the political commitment on the general EU level and the increased consideration of climate change issues in energy policy. In the Roadmap 2050 the long term reduction path is laid out for the EU confirming the objective of limiting global warming at a temperature increase of 2°C.

However, the existence of a wide range of different institutions and departments in the EU as well as of different levels of governance (EU, member state, regional, local) with influence on climate change issues represents a major obstacle for policy integration and the development of a coherent climate policy framework. As a number of studies (Kok – de Coninck, 2007, Adelle et al., 2009, Dupont – Oberthür, 2011, Mickwitz et al., 2009, Medarova-Bergstrom et al., 2011) show, while general political commitment for climate policy mainstreaming exists, the actual integration in sectoral policies still has to be improved.

This paper aims at contributing to the rather new research on climate policy integration in the EU by identifying (potential) conflicts and synergies between climate policy and some other policy areas. The starting point is the assessment of climate change issues in strategic documents that constitute the general framework for sectoral policies by defining key development targets (e.g. the Europe 2020 strategy and its flagship initiatives). Then, the extent of climate policy integration in energy policy, as one area with important, direct material linkages to climate change and its role in the EU budget is discussed.

The complexity of the institutional setting in the EU limits a comprehensive analysis of all aspects of climate policy integration into other policy areas in the paper. The focus here is on horizontal policy integration at the EU level. The paper contributes to the new research field of climate policy integration concentrating on some selected policy areas.

The paper starts out with a discussion of the theoretical background and definitions of policy integration in the literature. The main focus of the paper then analyses the issue of climate policy integration in the EU with respect to general strategic policy papers, energy policy and the EU's Multi-annual Financial Framework. A qualitative appraisal and conclusions on climate policy integration complete the paper.

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<sup>3</sup> Especially the high aspirations before COP15 in Copenhagen were followed by disappointment. COP16 in Cancun in 2010 brought only little progress.



## 2 Concepts and approaches to climate policy integration

Climate policy integration can be regarded as a continuation and development of approaches for environmental policy integration (EPI) in the 1980s and 1990s that aimed at contributing to the reduction of environmental problems and guiding the transition to sustainable development (Adelle et al., 2009, Jordan – Lenschow, 2010).

On a general level EPI refers to the integration of environmental aspects and policy objectives into sector policies like energy and agriculture (Adelle et al., 2009). However, this policy-making “principle” has not been unambiguously defined, neither in its normative sense<sup>4</sup> nor in how it can be implemented in the political practice (Jordan – Lenschow, 2010). However, based on the definition for EPI by Lafferty – Hovden (2003) climate policy integration (CPI) can be defined as<sup>5</sup>:

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

According to this definition climate policy objectives are given priority in decisions in non-environmental policy areas<sup>6</sup> and the integration should be reflected in general and sector-specific policy strategies as well as applied instruments and ideally in policy outcomes, i.e. target groups' reactions to implemented policies (Mickwitz et al., 2009).

Independent of the interpretation key features of policy integration are “policy coherence” and “policy coordination”. Policy coherence refers mainly to policy output and outcome<sup>7</sup>, i.e. the promotion of synergies and mutually reinforcing policy actions (win-win-solutions) such that non-conflicting, consistent incentives are provided by different policies. Thus, the potential of other policy areas to head for climate friendly development paths is tapped (Mickwitz et al., 2009, Dupont – Oberthür, 2011, Kok – de Coninck, 2007). Policy coordination

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<sup>4</sup> The interpretations regarding how much weight or priority the environment should receive range from “weak” EPI implying the sectoral policies take environmental considerations into account to “strong” EPI according to which environmental considerations should be placed at the heart of decision making, thus giving them “principled priority” in other policy sectors and their output (Dupont – Oberthür, 2011, Jordan – Lenschow, 2010).

<sup>5</sup> This definition is also followed by Dupont – Oberthür (2011) and Mickwitz et al. (2009).

<sup>6</sup> Dupont (2010) argues that giving climate policy principled priority over other non-environmental policy areas is justified, while within environmental policy synergies and avoiding conflicts with other environmental objectives should be emphasised.

<sup>7</sup> Policy output refers to action taken by the administration in pursuance of policy decisions, i.e. the definition of regulation like standards, market-based incentives, etc. in order to influence the target group's behaviour. Policy outcomes refer to societal consequences of an implemented policy, i.e. the actual, observable change in behaviour, which, however, are less tangible and can also be influenced by other factors as well.





in turn emphasises the policy process that brings about policy coherence, i.e. the development of policies and programmes (for climate policy and other sectoral areas) that minimise redundancy, incoherence and lacunae (Peters, 1998).

Thus, policy integration or mainstreaming aims at increasing coherence, minimising duplications or contradictory policies and identifying trade-offs and synergies between policy areas (Kok – de Coninck, 2007). While in some cases there will be obvious synergies that can be exploited – e.g. in the case of promoting the use of renewables that is beneficial both for ensuring energy supply security as for reducing carbon emissions – in other cases the sectoral and climate policy objectives may be in conflict – e.g. increasing coherence and accessibility by developing road transport infrastructure in peripheral regions. In the latter cases political decisions have to be made regarding the importance that is assigned to climate policy aspects relative to the sectoral objectives.

The trade-off between climate and other policy areas is for instance highlighted by the implementation of recovery packages following the financial and economic crisis. This clearly shows the conflict between different priorities – i.e. the focus on a low-carbon, resource efficient economy on the one hand and the implementation of conventional strategies for employment preservation and limiting the economic downturn like road construction or subsidies for the automotive industry that are not compatible with climate policy efforts on the other hand. The sectoral policies in general tend to have a more short-term focus for implementation and achieving results while climate change issues require long term strategies coupled with the requirement to immediately implement measures despite the existence of uncertainties and the unequal distribution of costs and benefits – regionally as well as temporally.

Table 1: Long term investments in % of total economic stimulus package

	Infra- structure	R&D, Innovation	Education	"Green Technologies"	Total long term investments
	in %				
Austria	22	1	1	5	29
Australia	18	5	30	10	64
Canada	31	1	3	4	40
Finland	15	0	1	1	17
France	34	0	6	0	40
Germany	16	3	19	6	45
Norway	20	1	1	8	30
Sweden	8	9	0	2	19
Poland	7	1	–	0	9
Portugal	4	16	51	20	91
USA	13	2	10	7	32
<b>11 OECD-Countries</b>	<b>17</b>	<b>4</b>	<b>12</b>	<b>6</b>	<b>38</b>



Source: Breuss et al. (2009).

As mentioned above the assessment of climate policy integration is a rather new research area and the definitions and concepts provided contain little guidance on how to achieve it in practice. However, several authors have suggested criteria or core factors for evaluating the degree of climate policy integration derived from research related to environmental policy integration and policy evaluation studies (Dupont – Oberthür, 2011, Mickwitz et al., 2009, Kok – de Coninck, 2007). Based on these approaches we suggest a set of criteria for the assessment of climate policy integration that shall be applied to the selected policy areas in this paper.

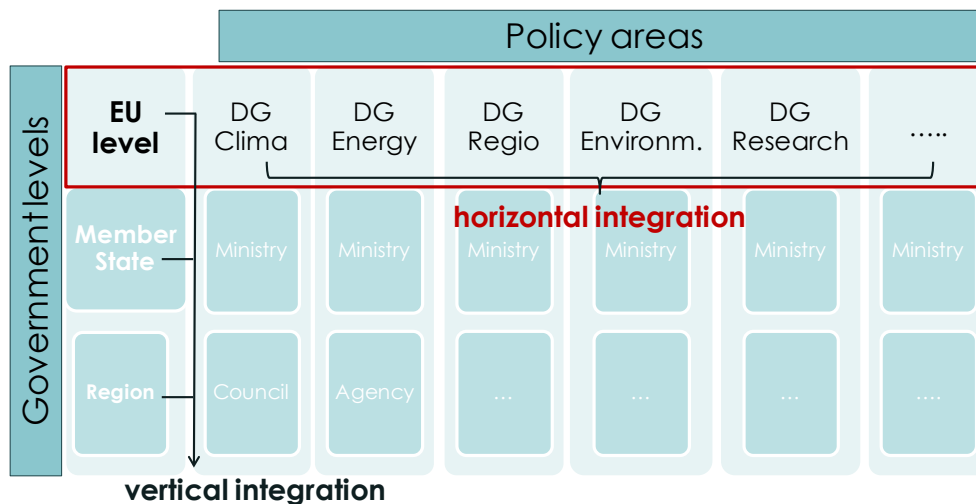
The criteria for evaluation comprise the following aspects:

- **Political commitment**  
Regarding political commitment to climate policy integration two levels can be distinguished. On the one hand the integration of climate policy concerns a general level, i.e. the integration in EU treaties and overarching strategic policy documents (e.g. the Europe 2020 strategy). On the other hand it refers to the integration and consideration of climate change issues in specific sectoral policy documents and implementation strategies (e.g. as an explicit criterion for project funding).  
Another aspect of importance in this context is consistency, i.e. the “commitment to minimise contradictions” (Lafferty – Hovden, 2003). Thus, the different policy aims and instruments should be consistent with each other in order to achieve successful climate policy integration.
- **Nature of interdependencies**  
When assessing climate policy integration into other policy areas the nature of existing interdependencies and spill-overs has to be identified. In some cases clear and direct linkages between climate change and sectoral policies will exist (e.g. for energy policies that directly influence greenhouse gas emissions). In other areas the linkages will be less clear-cut, with more indirect connections between policy aims (e.g. regional policy aims to improve accessibility involve transport infrastructure decisions that in turn affect transport related emissions).  
In addition, the relations between different policy targets can be either synergetic, i.e. mutually enforcing (e.g. reducing greenhouse gas emissions and substituting renewable energy sources for fossil fuels) or characterised by trade-offs (e.g. increasing energy security through diversifying suppliers for natural gas and reducing greenhouse gas emissions).
- **Weighting and resources**  
For sectoral policies that integrate climate policy aspects into the range of policy aims, once the nature of inter-linkages between the different objectives has been identified, one can finally assess the weighting of climate change aspects in relation to other objectives. This means, if and how a balance between different policy

targets is achieved, when decisions have to be made and whether (potential) conflicts and trade-offs are explicitly dealt with. Another aspect in this context is the assessment – were applicable – of financial resources dedicated to climate relevant measures in relation to the overall budget of a policy area.

Policy integration can be analysed from different points of view, i.e. within or across government levels (see Figure 1). Horizontal policy integration focuses on mainstreaming climate policy objectives into other sectoral policy areas on one level of government (e.g. Directorates-General on EU level, federal ministries). Vertical policy integration in contrast takes a top-down approach and focuses on mainstreaming throughout multiple levels of government and policy making (e.g. from EU directives to national implementation to local or regional implementation)<sup>8</sup>.

Figure 1: Horizontal and vertical policy integration



Source: Own illustration based on Mickwitz et al. (2009).

The analysis in this paper focuses on horizontal climate policy integration on the EU level, i.e. the assessment of the extent to which other non-environmental sectoral policies take into account climate policy targets in their strategies and policy documents, whether the climate relevance of measures represents a relevant criterion for funding or if funds are provided for specific climate related activities (e.g. for R&D or infrastructure).

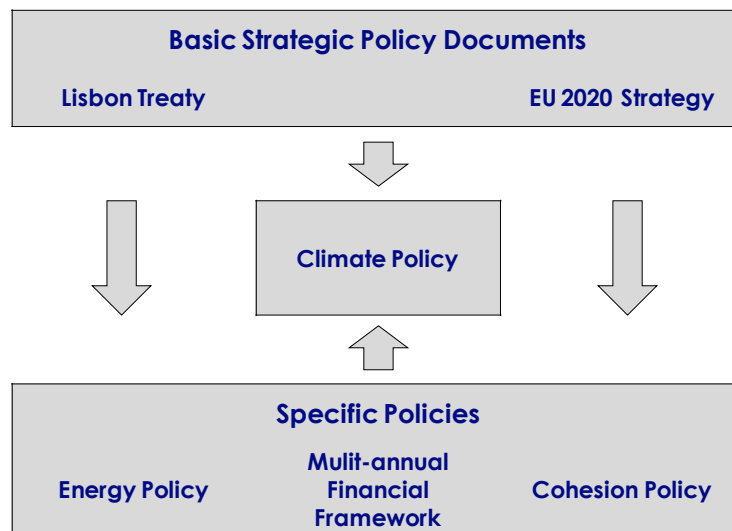
The comprehensive assessment of policies on the EU level is a very broad research agenda, which would go far beyond the scope of this paper. Therefore, the research focuses on selected policy areas. This selection is not exhaustive, but represents a first approach to analysing this topic for policy areas that are highly relevant for climate policy. In addition, we limit our research to the consideration of climate policy aspects related to mitigation.

<sup>8</sup> Vertical policy integration can also be analysed within one level of government. It refers to mainstreaming climate policy into a specific sector, e.g. a ministry and its subsidiary agencies.



For our analysis we choose a hierarchical approach starting from strategic documents like the Lisbon Treaty or the Europe 2020 strategy. We then focus on a selection of sectoral policies (energy policy focusing on strategic documents as well as specific policy topics, cohesion policy, Multi-annual Financial Framework). The approach chosen mirrors the evolution of climate policy issues over time, maturing from a secondary policy concern to an acknowledged central policy issue. The interaction of the different levels is illustrated in Figure 2.

Figure 2: Climate policy interaction in the EU



Source: own illustration.



### 3 EU climate policy integration: Basic Strategic EU documents

In the following we discuss along the lines of two basic strategic EU documents how the issue of climate change enters guiding principles of the EU. On the hand this refers to the coverage of climate policy in the EU Lisbon Treaty, demonstrating that climate change is not merely a concern for DG Environment or DG Climate, but recognised as an overarching problem. On the other hand we discuss the integration of climate change concerns in the EU 2020 Strategy. These two documents constitute the basic framework for more specific EU policy making and illustrate the policy vision for development for the coming years.

#### 3.1 Treaty on the Functioning of the European Union<sup>9</sup>

With the Treaty of Lisbon the Treaty on European Union and the Treaty establishing the European Community that “organises the functioning of the Union and determines the areas of, delimitation of, and arrangements for exercising its competences”<sup>10</sup> were amended. Regarding climate and energy issues the Lisbon Treaty implied the inclusion of a specific article on energy (Article 194) as well as the explicit reference to the commitment to sustainable development and the combat against climate change (Articles 11<sup>11</sup> and 191<sup>12</sup>). The introduction of energy into the Treaty – a policy area for which previously no EU competence was defined<sup>13</sup> – provides a legal basis for a more harmonised, common energy policy with a certain focus on increasing efficiency and promoting renewable energy sources. The aims of EU energy policy – in the context of the internal market, the regard for environmental protection and in a spirit of solidarity – are stated in the Lisbon Treaty as:

1. ensuring the functioning of the energy market;
2. ensuring security of energy supply in the Union;
3. promoting energy efficiency and energy saving and the development of new and renewable forms of energy; and
4. promoting the interconnection of energy networks.

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<sup>9</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:083:0047:0200:en:PDF>

<sup>10</sup> The Treaty on the Functioning of the European Union (Consolidated Version, 2008), Article 1.

<sup>11</sup> Article 11 comprises the objective to integrate environmental protection requirement into the definition and implementation of the Union policies and activities, in particular with a view to promoting sustainable development.

<sup>12</sup> Article 191 states the following objectives for environmental policy: preserving, protecting and improving the quality of the environment, protecting human health, prudent and rational utilisation of natural resources, promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change.

<sup>13</sup> On the evolution of EU energy policy and the inter-linkages with climate policy see de Jong et al. (2010), Adelle et al. (2009).



Energy is one of the areas of “shared competences”<sup>14</sup> between the EU and Member States as defined in Article 4. Other areas included in Article 4 are for instance environment, transport and trans-European networks. However, the EU's competence is limited by the requirement included in Article 194 (2), namely that EU measures “shall not affect a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply”. In such cases decisions have to be adopted unanimously, while in general a qualified majority and the cooperation with the EU Parliament are sufficient for energy policy decisions. This regulation reflects that energy is still widely regarded as a national policy issue although the codification of a specific energy section in the Lisbon Treaty creates better possibilities for a common policy focusing on sustainable structures that are compatible with the mitigation of climate change. It has to be taken into account, however, that the promotion of energy efficiency and renewable energy sources is just one out of four objectives of the EU's energy policy and despite the requirement to integrate environmental protection into other sectoral policies the energy policy objectives are of equal rank and a prioritisation of other aims than sustainable energy is possible.

### 3.2 Europe 2020 - A strategy for smart, sustainable and inclusive growth

With the Europe 2020 strategy<sup>15</sup> (European Commission, 2010b) a vision for a social market economy is presented emphasising three priorities for the Union's development after the economic and financial crisis and defining the kind of growth aspired:

1. Smart growth: developing an economy based on knowledge and innovation.
2. Sustainable growth: promoting a more resource efficient, greener and more competitive economy.
3. Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.

Therefore, five headline targets are defined as benchmarks for employment, social inclusion, research and development, and climate and energy for the development until 2020. The targets imply that:

- 75 % of the population aged 20-64 should be employed.
- 3% of the EU's GDP should be invested in R&D.
- The “20/20/20” climate/energy targets should be met (including an increase to 30% of emissions reduction if the conditions are right).

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<sup>14</sup> Both the EU and Member States have the right to legislate; the latter in the case that the EU stopped making initiatives or never did.

<sup>15</sup> Europe 2020 is the follow-up to the Lisbon Strategy agreed upon in 2000 with the target “to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion” until 2010.  
([http://consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/ec/00100-r1.en0.htm](http://consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/00100-r1.en0.htm))



- The share of early school leavers should be under 10% and at least 40% of the younger generation should have a tertiary degree.
- 20 million less people should be at risk of poverty.

Based on these priorities and targets seven flagship initiatives are developed that shall contribute to attaining smart, inclusive and sustainable growth and steer policy making (Bongardt – Torres, 2010, Schiellerup – Atanasiu, 2011). Of these initiatives two are aimed at promoting sustainable growth (“Resource efficient Europe”<sup>16</sup>, “An industrial policy for the globalisation era”<sup>17</sup>). The first supports the shift towards a resource-efficient, low-carbon economy by decoupling economic growth from resource use, increasing energy efficiency and the use of renewable energy sources and modernising the transport sector. The second initiative in the area of sustainable growth comprises inter alia<sup>18</sup> the intention to stimulate investment in carbon, energy and resource efficiency measures as well as developing and deploying clean and efficient technologies for mobility. In this context the importance of promoting eco-innovation is underlined. This aspect is also included in one of the initiatives for smart growth (“Innovation Union”).

The Europe 2020 strategy has incorporated the targets for greenhouse gas emission reductions, the increase in energy efficiency and the share of renewable energy set out in the EU’s Climate and Energy Package (European Commission, 2008a; see below), thus integrating them at the highest political level. The targets stand alongside the objectives for employment, R&D and social inclusion. The strategy thus references the legal obligation accepted by adopting the directives under the climate and energy package. But while synergies between resource efficiency, innovation and competitiveness are emphasised the potential trade-offs between the targets are not explicitly discussed in the strategy or the related documents. The main conflict can be identified by the need to achieve economic growth in order to ensure employment, social cohesion and fiscal stability on the one hand while the climate and energy policy targets require a paradigmatic change and a redefinition of growth in order to ensure the long-term decarbonisation<sup>19</sup> of the EU economies on the other hand.

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<sup>16</sup> [http://ec.europa.eu/resource-efficient-europe/pdf/resource\\_efficient\\_europe\\_en.pdf](http://ec.europa.eu/resource-efficient-europe/pdf/resource_efficient_europe_en.pdf)

<sup>17</sup> [http://ec.europa.eu/enterprise/policies/industrial-competitiveness/industrial-policy/files/communication\\_on\\_industrial\\_policy\\_en.pdf](http://ec.europa.eu/enterprise/policies/industrial-competitiveness/industrial-policy/files/communication_on_industrial_policy_en.pdf)

<sup>18</sup> Basically, however, the initiative is concerned with creating an improved business environment, especially for SMEs and supporting a solid, competitive industrial base that offers employment opportunities, becomes increasingly more resource efficient and face up to the challenges of globalised markets.

<sup>19</sup> The framework for a reduction of greenhouse gas emissions by 80% – 95% below 1990 levels is outlined in the Roadmap for a Low-Carbon Economy by 2050 that feeds into the sectoral roadmaps for transport and energy as well as the Roadmap for a Resource Efficient Europe.





## 4 EU Climate Policy Integration: Specific thematic documents

### 4.1 Energy policy

With the recognition of climate change as the most challenging environmental problem and energy use as the main driver for greenhouse gas emissions the interdependence of energy and climate policies has gained increased political attention. It has become acknowledged that efforts to mitigate climate change also support energy policy objectives like increasing energy supply security and vice versa (de Jong et al., 2010, Adelle et al., 2009). Both increased energy efficiency and the promotion of renewable energy sources contribute to a lower dependency on fossil fuels as well as a reduction in greenhouse gas emissions<sup>20</sup>. The strong linkages between the two policy areas have been mirrored in their integration into various policy documents at the EU level in recent years. In the following section first strategic documents are described regarding their recognition of climate and energy issues. Subsequently energy policy documents will be screened with respect to the consideration of climate policy issues and finally conclusions will be drawn on the current extent of climate policy integration in EU energy policy.

#### 4.1.1 Strategic energy policy documents

Although energy issues were one of the reasons for establishing the European Coal and Steel Community<sup>21</sup> Member States regarded this policy area as their own competence, related strongly to national security and energy sovereignty considerations, and inhibited a delegation of legislative power to EU institutions for a long time<sup>22</sup>. As mentioned before in recent years the reluctance to agree to a common energy policy has declined in light of developments like rising and volatile oil prices, increasing import dependence on fossil fuels, political instability in supplying regions or interruptions in the gas supply from Russia. Last but not least the recognition of environmental impacts, especially greenhouse gas emissions, related to fossil energy use has contributed to the shift of competences in energy policy to the European level (Dupont – Oberthür, 2011, de Jong et al., 2010, Adelle et al., 2009).

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<sup>20</sup> Although synergies between the two policy areas exist, the underlying goals are different and potentially conflicting. Climate policy targets the carbon intensity of the fuel mix, i.e. the substitution of fossil fuels, whereas energy security is concerned with resource availability, diversification of supplying countries and fuels without questioning per se the reliance on fossil fuels or considering the environmental impacts of energy consumption (Adelle et al., 2009).

<sup>21</sup> [http://europa.eu/legislation\\_summaries/institutional\\_affairs/treaties/treaties\\_ecsc\\_en.htm](http://europa.eu/legislation_summaries/institutional_affairs/treaties/treaties_ecsc_en.htm)

<sup>22</sup> Exceptions to this were particular legislative aspects related to nuclear energy (under the EURATOM Treaty, e.g. common radiation safety standards), related to the liberalisation of electricity and natural gas markets or energy security issues like the requirement to hold stocks of fossil fuels (Adelle et al., 2009, de Jong et al., 2010).





In 2006 the Green Paper "A European Strategy for Sustainable, Competitive and Secure Energy" (European Commission, 2006) was published. Just as the Communication "An energy policy for Europe" (European Commission, 2007a) it identifies the main challenges for energy policy and calls for a balance between:

- combating climate change, i.e. significantly reducing energy related greenhouse gas emissions,
- limiting external vulnerability, i.e. decreasing the reliance on imported energy sources and increasing the security of supply, and
- promoting growth and jobs (competitiveness), i.e. decreasing the vulnerability due to rising and volatile energy prices by completing the internal market and increasing investment in energy savings and renewable energy.

The Communication further outlines the need for a strategic vision, internal action and international cooperation since "[e]xisting measures on areas such as renewable electricity, biofuels, energy efficiency and the Internal Energy Market have achieved important results but lack the coherence necessary to bring sustainability, security of supply and competitiveness" (European Commission, 2007a).

The Presidency Conclusions from the European Council Meeting in March 2007<sup>23</sup> also emphasise the issues of sustainability, competitiveness and security of supply and call for the development of an integrated European climate and energy policy in order to achieve effective climate protection.

The importance of security of supply in the EU's energy policy was underlined in 2008 by the Communication "An EU Security and Solidarity Action Plan" (European Commission, 2008g) acknowledging the EU's role in protecting its energy interests beyond Member States' actions, especially in terms of external relations and important infrastructure projects. The Action Plan proposes activities in five areas:

- infrastructure needs and diversification of energy supplies;
- external energy relations;
- oil and gas stocks and crisis response mechanisms;
- energy efficiency; and
- making better use of the EU's indigenous energy resources.

In 2010, finally, two communications were published by the European Commission that define the challenges and tasks for a common European energy policy until 2020. Energy 2020, a strategy for competitive, sustainable and secure energy (European Commission, 2010c), refers to the central energy policy goals laid down in the Lisbon Treaty, i.e. "to ensure the uninterrupted physical availability of energy products and services on the market, at a price which is affordable for all consumers (private and industrial), while contributing to the EU's wider social and climate goals". The strategy specifically focuses on five priorities:

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<sup>23</sup> <http://register.consilium.europa.eu/pdf/en/07/st07/st07224-re01.en07.pdf>



#### 1. Achieving an energy efficient Europe

This priority defines four actions that shall ensure that by 2020 20% energy savings and a further decoupling of energy use from economic growth are realised and demands that energy efficiency is to be mainstreamed into all relevant policy areas. The actions focus on tapping into the biggest energy-saving potentials (buildings, transport)<sup>24</sup>, making industry more efficient, which in turn increases competitiveness, increasing efficiency in energy production and distribution (expand highly efficient cogeneration, district heating and cooling, supply of energy services and demand side management) and making the most of National Energy Efficiency Action Plans (e.g. by an annual review mechanism).

#### 2. Ensuring the free movement of energy

This priority focuses on building an integrated, interconnected energy market and removing existing barriers to open and fair competition. The EU's target to achieve a share of 20% renewables in 2020 is cited as a first step in this direction, with more efforts needed in the support of renewable energy and especially the provision of proper infrastructure across Europe. Especially the construction of new connections to neighbouring countries (e.g. the Nabucco pipeline) is regarded as essential for safeguarding the EU's security of energy supply. Specific Actions in this priority are the implementation of internal market legislation, the development of a blueprint for energy infrastructure development for 2020-2030, the streamlining of permit procedures and market rules for infrastructure developments and the establishment of the right financing framework.

#### 3. Secure, safe and affordable energy

This priority emphasises in the first place the advantages of a well functioning internal market for consumers in terms of lower (but cost-reflective) prices<sup>25</sup>, more choice and better services. This is included in the action "Making energy policy more consumer-friendly". Apart from reducing citizens' energy bills, affordable and secure energy is a precondition for securing international competitiveness of important economic sectors. Furthermore, safety aspects are covered in the second action of this priority. On the one hand this regards safety nets for times of supply crises (e.g. Gas Security Regulation, promotion of interconnections). On the other hand this encompasses the protection from risks of energy production and transport (e.g. safety and security provisions for nuclear energy, offshore oil and gas extraction, CCS).

#### 4. Making a technological shift

This priority underlines the necessity of achieving a technological shift in order to succeed in decarbonising the electricity and transport sectors until 2050 and the urgency for action

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<sup>24</sup> Specifically this includes accelerating the renovation rate by investment incentives, energy service companies and innovative financial instruments. In addition the role of public procurement is emphasised. In relation to transport reference is made to the measures included in the forthcoming White paper on future transport policy.

<sup>25</sup> However, it is recognised that consumers need to increase their efforts to reduce their demand, especially of oil products, as the market is expected to tighten significantly before 2020. Smart grids, smart meters and billing are mentioned as factors contributing to awareness raising and making consumers more pro-active.



given the lead time for the development and diffusion of low-carbon technologies. The Strategic Energy Technology (SET) plan represents the strategy for desired technological development paths in the medium term. In addition, the EU ETS is regarded as an important driver for the demand for respective technologies. The actions of this priority hence focus on the instantaneous implementation of the SET plan, the launch of four new large-scale projects by the European Commission (targeting smart grids, electricity storage, sustainable bio-fuels and "smart cities") and ensuring the EU's technological competitiveness through large-scale support for R&D in low-carbon and efficiency technologies.

#### 5. Strong international partnership

This priority recognises the strong link of energy policy with the EU's foreign and security priorities. The goals of security of supply, competitiveness and sustainability are to be part of international solutions – on the one hand in cooperation with energy producing and transit countries for a diversification of energy import sources and routes and on the other hand in development policy to ensure the access to energy for emerging and developing countries. The actions defined include the integration of energy markets and regulatory frameworks with neighbouring countries, the establishment of privileged partnerships with key partners, the promotion of the EU's global role for low-carbon energy and the promotion of global nuclear-safety, security and non-proliferation standards.

The second communication 'Energy infrastructure priorities for 2020 and beyond – A Blueprint for an integrated European energy network' (European Commission, 2010d) focuses on providing the physical basis required for reaching the energy policy as well as economic goals set out in Europe 2020. The efforts for fundamentally restructuring the energy systems, i.e. to make them compatible with the long-term policy objectives, have to be lifted from Member State to the European level, requiring a common infrastructure strategy and funding. The main challenges that have to be tackled urgently comprise electricity and natural gas grids and storage, oil transport and refining infrastructure, district heating and cooling networks, CO<sub>2</sub> capture, transport and storage, removing regulatory obstacles and financing gaps. Important infrastructural needs (priority corridors) are defined, that are regarded as prerequisites for meeting the following challenges:

- Growing electricity demand requires upgrading and modernising the European grids to allow market integration and especially the transport and balance of power generated by intermittent (renewable) energy sources.
- Natural gas is expected to keep playing an important role in the EU's energy supply in the coming decades, especially as back-up fuel for electricity generation. As the EU's own resources might already be depleted in the medium term, additional imports will have to be secured from diversified sources.
- Oil is expected to have a share of 30% of primary energy in the EU in 2030 if climate, transport and efficiency policies are not adapted. Security of supply in this area



requires not only sufficient crude oil supplies (from diversified sources) but also the respective refining capacities within the EU.

According to the communication the priorities should lead to concrete projects from 2012 on and the development of a rolling programme. Projects should be ranked using a set of criteria in order to ensure their consistency across priorities and regions. A further issue to be solved relates to the significant investment requirements that are estimated to amount to about 1 trillion € until 2020<sup>26</sup>. 200 bn. € will be needed for energy transmission networks alone, with 50% provided by the market – which shall remain the main financing source. The Commission proposes to close the financing gap by promoting faster and more transparent approval procedures in order to speed up implementation of infrastructure projects and minimise delays, by mobilising private sources of funding (the regulated energy supplying sectors) through improved cost allocation (use appropriate tariff incentives for consumers and interconnection investments) as well as by mitigating investment risks<sup>27</sup>.

Summarising it can be concluded that although for a long time energy security issues and the creation of an efficient internal market for energy were the main objectives of EU energy policy, an increasing consideration of climate policy concerns can be observed in recent years, at least on the level of strategic documents. The recent strategic energy policy documents (especially Energy 2020) indicate the integration of climate policy and the emphasis given to synergies, especially between the objectives of sustainability and security of supply. However, pursuing the different energy policy goals can also bring trade-offs and conflicts as the underlying problems are divergent and are only to a small extent mutually taken into account. Especially with regard to infrastructure development the continuously important role of fossil fuels in the coming decades is underlined.

With the agreement on the Climate and Energy Package the inter-linkages between the two policy areas seem to have been recognised and are being addressed jointly.

#### 4.1.2 *Specific policy documents*

##### **4.1.2.1 The EU's Energy and Climate Package**

In 2007 the European Commission published the communication “Limiting Global Climate Change to 2 degrees Celsius. The way ahead for 2020 and beyond” (European Commission, 2007b) and committed itself to ambitious greenhouse reduction targets. The EU defined ambitious climate and energy targets to be met by 2020 that should not only contribute to climate change mitigation but also increase European energy security and ensure a head start of the EU in the development of low carbon technologies. The Energy and Climate Package (European Commission, 2008a) defines two key objectives for 2020:

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<sup>26</sup> Based on calculations with the PRIMES model.

<sup>27</sup> Existing (e.g. grants, interest rate subsidies) and innovative, market-based financial mechanisms shall be applied, that are tailored towards the specific financial risks faced by energy projects.



- a reduction in EU greenhouse gas emissions of at least 20% below 1990 levels (30% in case of significant climate action of other industrialised countries); and
- a 20% share of renewable energy sources in EU energy consumption.

In January 2008 the European Commission proposed binding legislation to implement the 20-20 targets (European Commission, 2008f; European Commission, 2008b; European Commission, 2008c; European Commission, 2008d). This 'climate and energy package' was agreed by the European Parliament and Council in December 2008 and became law in spring 2009.

The key elements of the climate and energy package are regulated in the following documents:

1. *A new regulatory framework for the EU ETS (Directive 2009/29/EC)*

While in the first two trading phases of the EU ETS national caps were set by the Member States (European Commission, 2003a), from 2013 on a single EU-wide cap will apply to the ETS sectors according to Directive 2009/29/EC (European Commission, 2009f). The cap will be reduced by a factor of 1.74% each year. The overall emission reduction target for the ETS sectors amounts to 21% in 2020 compared to 2005 emissions in the emissions trading sector. For different sectors different allocation mechanisms will apply:

- For the power sector allowances will be auctioned starting in 2013 (with exceptions for highly efficient CHPs, district heating and some New Member States)
- Sectors exposed to carbon leakage (defined in Commission Decision of 24 December 2009 (European Commission, 2009b)) will receive up to 100% free allocation based on sector-specific benchmarks (defined in the Commission Decision of 27 April 2011 (European Commission, 2011c)).
- Other sectors – non-exposed to carbon leakage – will receive 80% free allocation in 2013; the remaining allowances will be auctioned. Free allocation for these sectors will be reduced to 30% until 2020.

The auctioning revenues should be used by the Member States to stimulate R&D in renewables and other technologies that reduce emissions and increase energy efficiency, forestry sequestration, measures to avoid deforestation, Carbon Capture and Storage and public transport.

2. *Effort sharing between Member States for the Non-ETS sectors (Decision 406/2009/EC)*

Emissions from Non-ETS sectors should be reduced by 10% until 2020 compared to 2005. In the effort sharing decision (European Commission, 2009a), this target is shared among Member States based on economic welfare, i.e. Member States with a lower per capita income face lower reductions targets and might even increase their Non-ETS emissions compared to the base year 2005. The national emission reduction targets range from -20% for Luxembourg and Denmark to +20% for Bulgaria.



3. *National targets for the share of renewables in final energy consumption (Directive 2009/28/EC)*

In Directive 2009/28/EC (European Commission, 2009e) the overall target of achieving a share of renewable energy sources in gross final energy consumption of 20% by 2020 is distributed in this directive among the Member States. The national targets range from a share of 10% for Malta to 49% for Sweden. For all countries the target of a 10% share of renewable energies in the transport sector applies. This does not only include biofuels like biodiesel and bioethanol, but also electricity from renewable energy sources used in the transport sector.

4. *Carbon Capture and Storage (Directive 2009/31/EC)*

Directive 2009/31/EC (European Commission, 2009h) provides the legal framework to minimize 'any risk to the environment and human health' related to carbon capture and storage (Article 1). The provisions cover the selection of sites, permitting, CO<sub>2</sub> stream acceptance criteria, monitoring, reporting, inspections, closure and post-closure obligations as well as financial issues.

These four central documents are complemented by regulations for transport. Regulation 443/2009 (European Commission, 2009c) defines emission limits for new passenger cars in the EU that should contribute up to 30% to the emission reductions requirements of the Non-ETS sectors: Until 2015 average emissions of new passenger cars have meet an emission reduction limit of 120 mg CO<sub>2</sub>/km. Until 2020 the limit is reduced to 95 mg CO<sub>2</sub>/km. In Directive 2009/30/EC (European Commission, 2009g) standards for petrol, diesel and gas-oil are defined. Until 2020 suppliers of these fuels have to reduce the lifecycle emissions of the fuels by 6% compared to average EU emissions in 2010 (e.g. through the adoption of sustainability criteria for biofuels or admixture of bioethanol).

Energy efficiency is not directly addressed in the legal framework of the energy and climate package. The EU aims, however, at increasing the efficiency of primary energy use by 20% compared to projected levels by 2020. To this end, the EU's energy efficiency action plan (European Commission, 2011a) has been published and a new energy efficiency directive (European Commission, 2011d) has been proposed by the Commission (see below).

#### **4.1.2.2 The European Strategic Energy Technology Plan (SET Plan)**

The EU 2020 Strategy underlines the necessity of achieving a technological shift in order to succeed in decarbonising the electricity and transport sectors until 2050 and the urgency for action given the lead time for the development and diffusion of low-carbon technologies. The Strategic Energy Technology (SET) plan represents one instrument for the desired technological development paths in the medium term.

The EU therefore conceived its SET Plan as "the technology pillar of the EU's energy and climate policy" (European Commission, 2009d). It aims at supporting the transformation of the EU into a low carbon economy, thereby not only combating climate change but also ensuring green growth via technology leadership in low carbon technologies and energy





security (European Commission, 2009i). Furthermore, because of the global nature of climate change, international cooperation in the field of low carbon technologies is aimed for (European Commission, 2009d).

Six industrial initiatives have been launched within the SET Plan framework in order to significantly increase the competitiveness of technologies crucial for the achievement of the EU's energy and climate policy objectives:

- The European wind initiative
- The solar Europe initiative
- The European electricity grid initiative
- The sustainable bio-energy Europe initiative
- The European CO<sub>2</sub> capture, transport and storage initiative
- The sustainable nuclear fission initiative

Furthermore, the Joint Technology Initiative (JTI) on fuel cells and hydrogen that was set up for the period 2008 - 2013 was prolonged and integrated in the SET Plan.

These initiatives aim at implementing research and demonstration projects in order to exploit cost reduction potentials of the different renewable and low carbon technologies. Thereby, the share of 'new renewables' in electricity generation shall be increased significantly until 2020 enhancing the goal to achieve a share of renewable of 20% as put forward in the renewable directive. Furthermore the transformation of the grid towards 'smart' structures should be supported (see also Table 2). The first implementation plans (covering the period 2010-2012) have already been published by the industrial initiatives (TPWind Secretariat, 2010; ESTELA, 2010; EPIA - PhotoVoltaic Technology Platform, 2010; entsoe – edso, 2010; SNETP, 2010; Zero Emissions Platform, 2010; EU Biofuels Technology Platform, 2010).

In addition to the industrial initiatives the 'Energy Efficiency – Smart Cities Initiative' and the 'European Energy Research Alliance (EERA)' were launched. The Smart Cities Initiative aims at providing an adequate framework for technologies that increase energy efficiency in urban areas focusing on the sectors transport, buildings and industry. Up to 30 smart cities should be established that deploy new, highly efficient grid technologies, new building technologies and alternative transport systems. EERA aims at developing and implementing joint research activities for key issues of the SET Plan (European Commission, 2009i, and European Commission, 2009d).

Furthermore, complementing activities to the nine SET Plan initiatives will be incurred or maintained. These include investments in fusion energy and breakthrough science (i.e. scientific research on the performance and interaction of materials that is a prerequisite for the development of new energy technologies) as well as fostering of cooperation for technology development both on the EU and international level.



Table 2. SET Plan targets and estimated investment requirements until 2020

Initiative	Target for 2020	Required investment and co-benefits
<b>Wind</b>	Up to 20% of EU electricity from wind power	Investment: € 6 bn. until 2020; up to 250,000 skilled jobs
<b>Solar</b>	Up to 15% of EU electricity from solar energy	€ 16 bn. until 2020; more than 200,000 skilled jobs
<b>Grid</b>	Seamless integration of RES and 'smart' operation of 50% of grids	€ 2 bn. until 2020
<b>Bioenergy</b>	At least 14% of EU energy mix from sustainable bioenergy	€ 9 bn. until 2020; more than 200,000 local jobs
<b>CCS</b>	Cost reduction of CCS to € 30 - € 50 per t CO <sub>2</sub>	€ 13 bn. until 2020
<b>Nuclear</b>	First Generation IV prototypes in operation	€ 7 bn. until 2020
<b>Fuel cells / hydrogen</b>	Demonstration and large scale deployment activities	€ 5 bn. additional to JTI (€ 470 m.)
<b>Smart cities</b>	25 – 30 European 'smart' European cities	€ 11 bn.
<b>EERA</b>	Implementation of Joint Programmes	€ 5 bn.

Source: European Commission (2009d); own illustration.<sup>28</sup>

In addition to identifying technology-specific actions (such as specific R&D activities) in order to pave Europe's way towards a low carbon society the SET Plan also identifies the investment requirements in the different technology fields until 2020. It is estimated that for achieving the SET Plan's ambitious objectives until 2020 more than € 70 bn. need to be invested in low carbon technologies (see Table 2). Investments in the EU therefore have to be increased significantly from currently € 3 bn. to € 8 bn. per year (European Commission, 2009d). Markets alone will not be able to trigger these investments for several reasons (Liljelund et al., 2011; European Commission, 2009d):

- market, financial and technology risks are too high for private investors;
- cost advantages of traditional, mature energy technologies;
- locked-in investments; and
- investments in R&D can only partly be appropriated by the investors.

For this reason public funding will be necessary to deliver the investments required for reaching the SET Plan targets. A leading role of the EU in financing the SET Plan initiatives will be essential as investment efforts should be coordinated and some technology projects are too big for single Member States.

So far, the financial resources for the SET Plan activities are only vaguely defined: Revenues from auctions of emission certificates in Phase 3 of the EU ETS (2013 - 2020) and the new entrants reserve as well as current EU funding schemes shall be used to finance projects related to the SET Plan. Furthermore, current EU funding schemes such as the Research Framework Programme and the Intelligent Energy Europe Programme will be used to finance

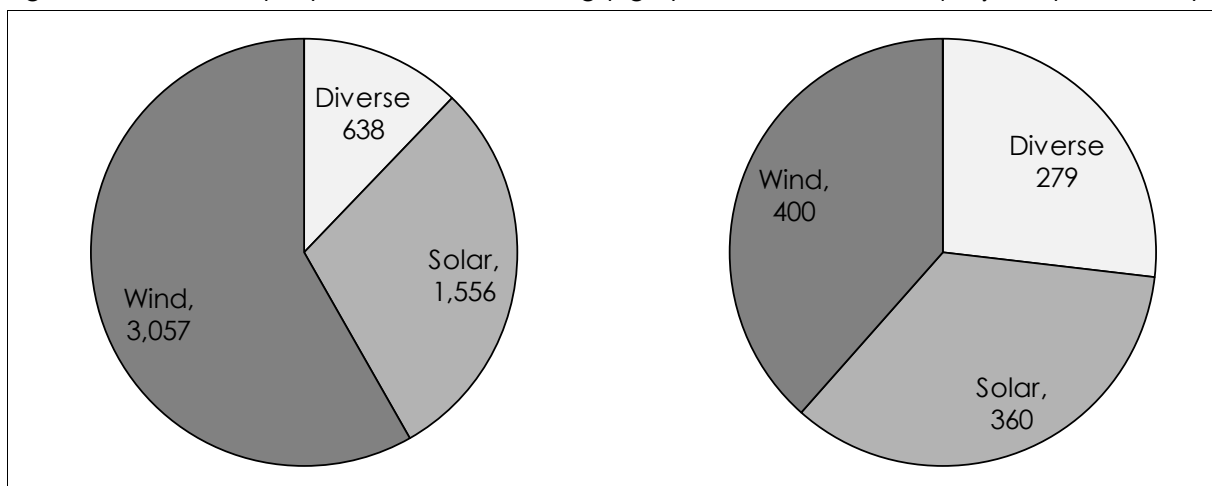
<sup>28</sup> The SET Plan Technology Roadmap (SEC 2009 (1295)) estimates the investment requirement for CCS in the range of € 10.5 – 16.5 bn. The investment required for the nuclear and smart cities initiatives is estimated € 5 -10 bn. and € 10 – 12 bn. respectively.



relevant research activities. The establishment of specific SET plan funds so far is not intended. The effectiveness of the SET Plan will hence depend on whether the broad implementation of energy technology projects aimed for is achieved.

The European Investment Bank (EIB) is supposed to play a key role in financing projects related to the SET Plan objectives. In this respect one important role accrues to the Risk Sharing Finance Facility (RSFF) at EIB. By September 2011, eleven projects related to the SET Plan priorities have been financed by the EIB (Heinz, 2011). Out of these eleven projects, five refer to solar thermal electricity generation, three refer to wind power and the remaining three refer to diverse portfolios of renewable energy generation. The total project volume is 5.25 bn. €; 58% of this amount accrue to wind power projects, 30% to solar thermal projects and 12% to the other respectively (see also Figure 3, left). The EIB financing ratio is highest for the diverse renewable projects (44% of total costs), followed by the solar thermal (23%) and wind power projects (13%) (see also Figure 3, right).

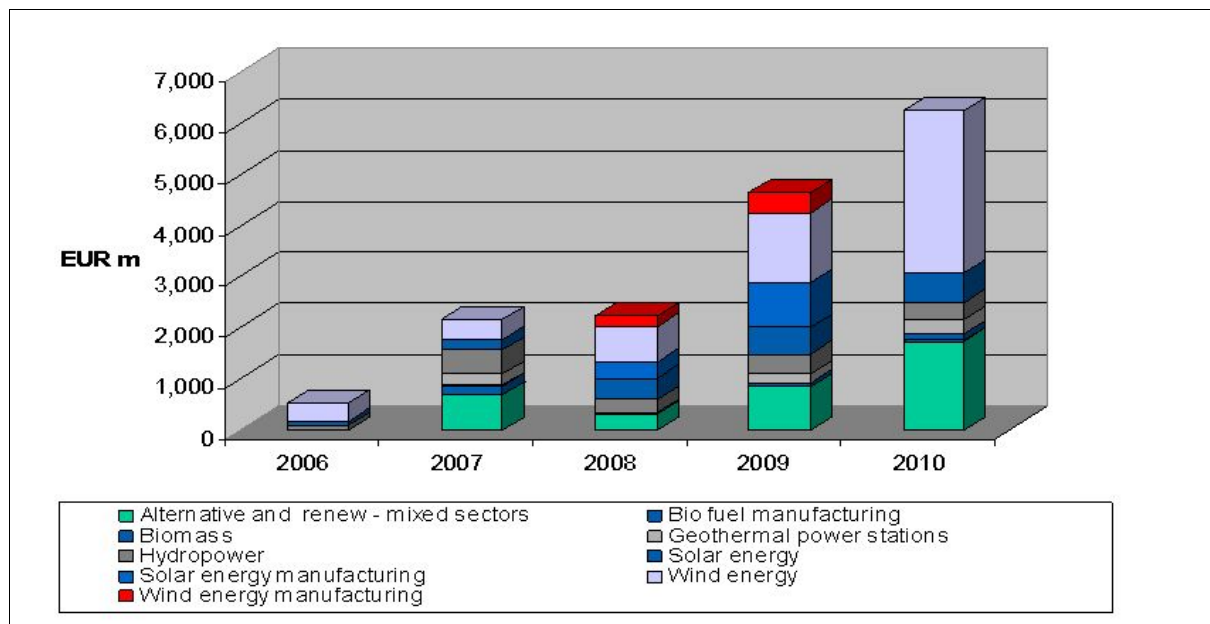
Figure 3: Total costs (left) and EIB RSFF Funding (right) for SET Plan related projects (in million €)



Source: Heinz (2011), own calculations.

In addition to projects financed by the RSFF, the EIB also finances a wide range of other renewable energy projects. The project volume of these projects has been continuously increasing since 2006, as indicated in Figure 4. The highest share in EIB financing accrues to wind power projects.

Figure 4: EIB financing for renewable energy projects (in million €)



Source: Heinz (2011).

Many projects related to the SET Plan priorities have applied for EIB financing before the SET Plan was launched in 2009. But there is no direct link between EIB financing and the SET Plan. Additionally as indicated above, the effectiveness of the SET Plan in stimulating renewable energy technologies will crucially depend on the provision of additional funding for the priority technologies. The extent to which this will be accomplished is not yet foreseeable.

#### 4.1.2.3 Proposal for a New Energy Efficiency Directive

“Energy efficiency is the most cost-effective and fastest way to increase security of supply, and is an effective way to reduce the greenhouse gases emissions responsible for climate change” (European Commission, 2011d). The EU has therefore set itself the objective of reducing primary energy savings by 20% in 2020 compared to a reference path (European Commission, 2008e) and has included this objective in the headline targets of the Europe 2020 Strategy for smart, sustainable and inclusive growth (European Commission, 2010b) In order to ensure that this target stays in reach, the European Commission was demanded by the Parliament to adopt a new ambitious energy efficiency strategy. In June 2011 the European Commission hence proposed a new Energy Efficiency Directive (European Commission, 2011d) The directive proposal entails the promotion of energy saving measures in the Member States at all stages of the energy chain – from the transformation of energy to final energy consumption.

The proposed directive contains the following key points concerning the efficiency of final energy demand:



- Member States are required to adopt national energy efficiency targets for 2020 that are in line with the EU's 20% target. The proposed national targets will be assessed by the European Commission (Article 3).
- A refurbishment rate of 3% p.a. for buildings with a floor area above 250m<sup>2</sup> that do not comply with minimum energy efficiency standards as defined by the Member States shall be achieved for buildings owned by public bodies (Article 4). Public bodies should furthermore adopt energy efficiency plans and purchase only highly energy efficient products, services and buildings.
- Member States are required to set up energy efficiency obligation schemes. These schemes shall oblige energy supply companies – either energy distributors or energy retailers – to annually reduce their energy sales by 1.5% compared to the previous year (excluding energy used in the transport sector). Short-term energy efficiency measures – i.e. the use of energy efficient light bulbs or energy efficient shower heads, information campaigns and energy audits – shall account for only 10% of the energy savings (Article 6).
- Energy audits for all final costumers should be promoted by the Member States. Furthermore, the implementation energy management systems in small and medium-sized companies should be encouraged (Article 7).
- Consumers of final energy should be provided with adequate, individual metering equipment; billing should be based on actual consumption (Article 8).

These demand side measures are complemented by energy efficiency measures targeted on energy supply and distribution:

- Each Member State should develop a national heating and cooling plan in order to ensure that potentials for high-efficiency cogeneration and efficient district heating and cooling are realised (Article 10).
- All new thermal electricity generation installations with a total thermal input exceeding 20 MW should be conceived as highly efficient cogeneration units and should be located close to final heat demand<sup>29</sup>. This energy efficiency provisions should generally also apply to industrial plants (Article 10).
- The transmission and distribution of electricity from high-efficiency cogeneration should be guaranteed or prioritised (Article 12).

The sectoral measures are complemented by horizontal provisions to increase energy efficiency. These include the implementation of certification schemes for “energy services, energy audits and energy efficiency improvement measures” (Article 13) as well as the promotion of a market for energy services (Article 14).

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<sup>29</sup> In case of substantial plant refurbishments also highly efficient CHP technologies should be adopted if the location of the plant is appropriate for heat distribution.



#### 4.1.2.4 Proposal for an amendment of the Energy Taxation Directive

In April 2011 the European Commission presented a proposal (European Commission, 2011f) for an amendment of the current energy tax directive 2003/96 (European Commission, 2003b). The proposal aims at restructuring energy taxation so that on the one hand the same taxation concept (energy content) is used for all energy sources, although tax rates differ between heating and motor fuels and on the other hand the tax base distinguishes between a CO<sub>2</sub> component and an energy component. The latter component refers to the energy content of the fuels. This new energy taxation directive should foster both energy efficiency and the use of more environmental friendly – i.e. less CO<sub>2</sub>-intensive - energy sources (see European Commission, 2011g).

The proposal of the European Commission for an amendment of the energy taxation directive entails some fundamental changes to the current regulation. Whereas the new tax rates as proposed in COM (2011)169 (European Commission, 2011f) again follow the concept of minimum tax rates other proposed changes have a more fundamental character: One important point concerns the split of the tax into an energy component and a CO<sub>2</sub> component. The energy component is based on the energy content of the fuels and differentiates between motor fuels and heating fuels and electricity: For motor fuels a minimum tax rate of 9.6 €/GJ applies; for heating fuels and electricity minimum rates are 0.15 €/GJ. The introduction of a CO<sub>2</sub> component is conceived to complement the EU ETS and therefore affects only non-ETS sectors. The tax rate for the CO<sub>2</sub> component should be in line with the CO<sub>2</sub> price in the EU ETS; COM (2011)169 proposes a CO<sub>2</sub> tax rate of 20 €/t CO<sub>2</sub>. Table 3 summarises to new minimum energy tax rates as proposed in COM (2011)169.

Table 3: Minimum tax rates proposed in COM (2011)169

Energy sources	Unit	Energy tax rate EU proposal <sup>1)</sup> €/unit	CO <sub>2</sub> tax rate <sup>2)</sup> €/unit	Total EU tax rate
Electricity	kWh	0.001		0.001
Natural gas (heating fuel)	m <sup>3</sup>	0.006	0.040	0.046
Coal	kg	0.004	0.053	0.057
Gasoil (heating fuel)	kg	0.006	0.056	0.062
Petroleum	l	0.310	0.050	0.360
Diesel	l	0.342	0.056	0.398
Biodiesel	l	0.293	0.000	0.293
Heavy fuel oil	kg	0.006	0.062	0.068

Source: COM (2011)169, <sup>1)</sup> motor fuels 9.6 €/GJ, heating fuels 0.15 €/GJ, <sup>2)</sup> 20 €/t CO<sub>2</sub>

While the energy component applies to all sectors and should exert an incentive for energy efficiency, the aim of the introduction of the CO<sub>2</sub> component is to generate a price signal for emission reduction measures similar to that of the EU ETS. Just as for the EU ETS, the proposal for an amendment of the energy taxation directive also includes exemptions for those sectors



that are (potentially) exposed to carbon leakage. Furthermore, Member States may grant derogations for social reasons.

According to the plans of the EU Commission, the directive should come into effect in 2013. For the implementation of the new directive, however, long transition periods until 2018 and 2023 respectively are provided.

The amendment of the energy taxation directive represents a structural change in the requirements for minimum tax rates in the EU; nevertheless the provisions are not to be considered to fundamentally increase energy tax rates.

#### 4.1.3 *Identification of synergies and conflicts*

As discussed above energy and climate policies are highly interrelated with strong spill-overs between the two areas, which are increasingly recognised and included in policy documents. On the EU level energy policy focuses mainly on setting goals (e.g. the renewable, energy efficiency targets for 2020) and formulating medium to long-term development paths (e.g. by defining infrastructure priorities). The choice and implementation of policy instruments, like feed-in tariffs or quotas for renewables, remains in the competence of Member States. With respect to energy taxation minimum tax rates are set on the EU level.

In recent years climate policy aspects have been increasingly integrated into strategic energy policy on the EU level as reflected in the main objectives of EU energy policy: security of supply, competitiveness and sustainability (including climate change).

Security of supply is mainly focussed on diversifying sources and transit routes (including the provision of new infrastructure and interconnections) for imports of fossil fuels (mostly natural gas) into the EU in order to avoid supply disruptions. The increase in the use of renewable energy sources is another aspect in striving for higher energy security by internal measures. The latter is already put into force in the renewables directive based on the EU energy and climate package (see below).

Competitiveness in the first place aims at the completion of the internal market for energy, thus securing affordable prices and supply choices for consumers. However, no consideration is given to the role of prices or price instruments as incentives for energy savings or efficiency investments. From a climate policy perspective the focus on "cheap" energy comprises even a counterproductive element as prices are seen as important signal for emission abatement in consumption and production processes. The discussion on climate policy instruments thus almost always regards carbon pricing as a core policy instrument. A second aspect in this regard deals with the necessity of up-scaling research and development for low carbon technologies, not least to ensure a leading position as technology supplier on international markets. Whereas the aspect of a price signal for energy and GHG emissions is not directly dealt with in the energy policy documents referred to here, price signals for energy and emissions are specifically addressed in the EU ETS directive as well as the energy taxation directive.



Sustainability highlights the importance of increasing energy efficiency and the use of renewable energy sources for the compliance with the EU's medium and long-term climate policy objectives.

In general, interactions and potential synergies between the individual objectives are recognised and accentuated. Especially the sustainability objective is regarded as having positive impacts for the energy security objective as well as climate policy. However, the policies are not all mutually reinforcing. While this holds true for sustainability and climate policy, pursuing the energy security objective does not necessarily contribute to reducing greenhouse gas emissions or energy demand. The focus on diversifying the supply countries and routes for fossil fuel imports – as especially natural gas is considered as remaining of high importance for the EU's energy mix in the coming decades – as well as considering carbon capture and storage as viable method for maintaining fossil fuel based electricity generation do not contribute to efforts for increasing energy efficiency and decarbonising the economy<sup>30</sup>. The focus on energy supply is also mirrored in the SET Plan which is focused on electricity generation paying only little regard to energy saving technologies on the demand side (activities related to final energy demand roughly account for only 20% in the total SET Plan investment requirement). For climate policy, it is however essential to also exploit energy efficiency and emission reduction potentials on the demand side. The focus on energy supply – especially in technological areas that represent „bridge technologies“ and support the integration of intermittent energy sources – reduces the incentives for scaling up efforts related to energy efficiency and energy saving. While these technologies can play an important role in the short to medium term, the long term goal of decarbonisation should be the prime focus of technology initiatives. In combination with the infrastructure priorities defined in the EU's energy policy the strong support for CCS (and nuclear) could (partially) counteract the climate policy ambitions.

A look at policy documents implementing or proposing concrete policies shows diverse evidence with respect to policy integration. From the start on the EU energy and climate package aimed at setting up a comprehensive regulatory framework recognising the interdependencies of energy and climate policy. Also the amendment of the energy taxation directive as proposed by DG Taxation jointly addresses climate change and energy aspects.

A broader discussion evolved in the context of the new energy efficiency directive. On the one hand an evaluation of the interactions with existing regulation as the renewables directive and the EU ETS directive was called for on the other hand there is agreement that energy efficiency has an outstanding role to achieve substantial emission reductions.

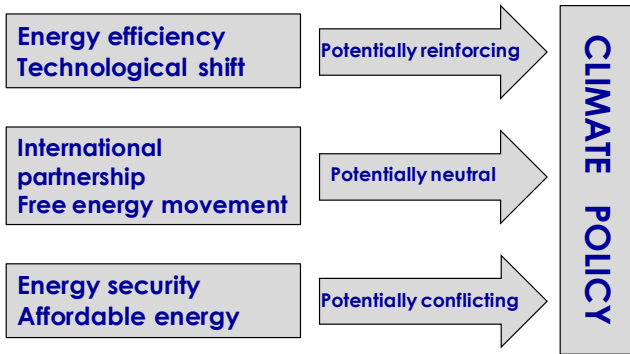
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<sup>30</sup> On the contrary, large scale investment in CCS (with € 13 bn. the second largest issue in financial terms in the SET Plan) contributes to further lock-in in carbon intensive electricity generation, which is critical given the long-term nature of such investments and infrastructure.

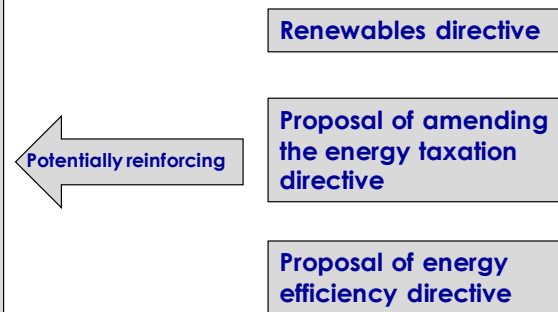


Figure 5: Synergies and conflicts between Energy 2020 and climate policy

### Strategic documents



### Specific policies



Source: Own illustration.





## 4.2 EU Climate Policy Integration: The Multi-annual Financial Framework

In addition to integrating climate policy in overarching economic strategies and other policy areas with direct linkages like energy, the consideration also in terms of defining priorities for expenditure and objectives in the EU's Multi-annual Financial Framework is called for<sup>31</sup> (Medarova-Bergstrom, 2011). In this context not only specific funding for mitigation and adaption measures is of relevance, but also spending in other areas that might have counterproductive effects for climate policy. The need for mainstreaming climate change policies in other areas like cohesion, agriculture and research of the EU budget is also emphasised in the 2010 EU Budget Review Communication (European Commission, 2010a). A thorough analysis of climate policy integration in the EU budget is complex and beyond the scope of this paper. We therefore focus on the main results of the 2010 Budget Review as well as the cornerstones of the proposal for the next Multi-annual Financial Framework (European Commission, 2011b,e). In order to illustrate the importance of EU spending for climate policy issues Regional Policy is chosen as an example. This is motivated by two reasons: first, the funds for Cohesion Policy are important in quantitative terms, representing about one third of the current budget (2007 – 2013). Second, in qualitative terms this policy area is relevant as it affects long-term development decisions e.g. for transport or energy infrastructure in the beneficiary regions, thus potentially contributing either to low carbon development paths or carbon lock-ins.

### 4.2.1 The EU's Multi-annual Financial Framework

Since 1988 the EU's financial planning is set out in multi-annual plans, the so-called Multi-Annual Financial Frameworks (MFF). The current 4<sup>th</sup> MFF covers the period 2007 – 2013. The MFF defines the overall budgetary ceiling, such that the EU's expenditures remain within its own resources. In addition, it designates the categories of expenditure (budgetary headings), which must correspond to the EU's main areas of activity.

The current MFF contains four budgetary headings (European Commission, 2004):

- Sustainable growth;
- Preservation and management of natural resources;
- Citizenship, freedom, security and justice;
- EU as a global player.

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<sup>31</sup> The integration of climate change across all budget areas, resulting in spending that is both carbon saving and climate resilient, is called climate proofing the budget (Medarova-Bergstrom, 2011).





Table 4: Multi-annual Financial Framework 2007 – 2013

	Total Commitment	
	in m. €	in % of EU budget
<b>Sustainable growth</b>	<b>437,778</b>	<b>44.9</b>
Competitiveness for growth and employment	89,363	9.2
Cohesion for growth and employment	348415	35.7
<b>Preservation and management of natural resources <sup>1)</sup></b>	<b>413,061</b>	<b>42.3</b>
<b>Citizenship, freedom, security and justice</b>	<b>12,216</b>	<b>1.3</b>
Freedom, security and justice	7549	0.8
Citizenship	4,667	0.5
<b>The EU as global player</b>	<b>55,935</b>	<b>5.7</b>
Administration	55,925	5.7
Compensation for Bulgaria and Romania	862	0.1
<b>Total</b>	<b>975,777</b>	<b>100.0</b>

1) This budgetary heading consists mainly of expenditure related to the Common Agricultural Policy and Rural Development. Environmental spending (Life+) amounts to only 0.2% of the budget.

Source: ec.europa.eu/budget/figures/fin\_fw0713/fw0713\_en.cfm; own calculation.

In quantitative terms the EU budget is relatively small, amounting to 1.12% of the EU's Gross National Income (2.5% of total public expenditure in the EU). But it generates multiplier effects as a source of co-financing for programmes implemented in Member States, for leveraging private investment and it attaches a financial weight to the individual areas of activity (delivering high EU added value). Currently, the major part (around three quarters) of the budget is dedicated to the Structural Funds (Cohesion for growth and employment) and the Common Agricultural Policy (Preservation and management of natural resources) (see Table 4). In the underlying budget communication little reference is made to environmental issues – under the first heading it is noted that “environmental objectives complement and reinforce the growth agenda”. In addition, it is recommended that funding for environmental activities should be increased in the next funding period “where necessary”. Climate change as budgetary priority is not explicitly mentioned.

This shortcoming was also identified in the EU Budget Review (European Commission, 2010a). The review was decided in 2006 by the European institutions, recognising the need to adapt the financial planning in order to be able to tackle new challenges. In the process climate change and energy were identified as priorities to be explicitly addressed. After several delays the Budget review was published in 2010. It concluded that while the MFF was successful in ensuring strict budgetary discipline and medium-term predictability of expenditure, it also resulted in limited flexibility for reacting to changing circumstances and hindered re-prioritisation of spending (e.g. following the economic crisis). Furthermore, inconsistencies between programmes, process related complexities, the administrative burden and the difficult decision making process limited the budget's effectiveness. For the future Financial Frameworks it was recommended, that they must contribute to delivering the



EU's key policy priorities, by reflecting them in the weight of spending and especially by incorporating the pressing societal/political problems highlighted in the Europe 2020 strategy (e.g. energy and climate change objectives). Under the headline "Sustainable growth" the mainstreaming of energy and climate policies is explicitly discussed. In order to cope with the challenges at hand the EU could either reshape the budget, creating large-scale funds that are specifically dedicated to supporting investment in greener technologies and services. Or the respective priorities could be mainstreamed into different other policies, thus re-prioritising areas like research, cohesion, agriculture, etc. and focusing on the synergies for delivering different policy objectives at once.

The communication "A Budget for Europe 2020" (European Commission, 2011b) proposes the headings and future financial commitments for the Multi-annual Financial Framework 2014-2020, which is designed to support the principle of smart, sustainable and inclusive growth and takes into account the recommendations derived from the 2010 budget review (see also European Commission, 2011e). This implies a stronger emphasis on results and performance related to the Europe 2020 goals, a stronger conditionality in cohesion policy (defining clear objectives and indicators and a limited number of priorities including energy efficiency and renewables) as well as a greening of direct payments to farmers. Furthermore, mainstreaming of priorities like climate action into other policy areas and their instruments and thus promoting consistency and synergies is mentioned as a precondition for building a low-carbon, resource efficient, competitive economy. The mainstreaming approach shall be combined with scaling-up of the existing LIFE+ instrument, giving it a stronger focus on EU priorities including climate change. Table 5 illustrates the budget headings and commitment appropriations for the coming MFF 2014-2020. The extent to which climate policy integration is mirrored in the EU's spending will depend not only on the amount of specific funds available but most crucially on the integration in other important sectoral policies, e.g. through the definition of conditionality criteria in cohesion policy and the efforts regarding the greening of the Common Agricultural Policy.

Table 5: Multi-annual Financial Framework 2014 – 2020

	Total Commitment	
	in m. €	in % of EU budget
<b>Smart and inclusive growth</b>	<b>490,908</b>	<b>47.9</b>
of which: Economic, social, territorial cohesion	376,020	36.7
<b>Sustainable growth: Natural resources</b>	<b>382,927</b>	<b>37.4</b>
of which: Market related expenditure and direct payments	281,825	27.5
<b>Security and citizenship</b>	<b>18,535</b>	<b>1.8</b>
<b>Global Europe</b>	<b>70,000</b>	<b>6.8</b>
Administration	62,629	6.1
<b>Total</b>	<b>1,025,000</b>	<b>100.0</b>

Source: European Commission (2011b); own calculations.



#### 4.2.2 EU Cohesion Funding

Cohesion funding accounts for a high share in the EU's budget. Regional policy and cohesion funding are important to trigger structural change. In this sense cohesion funding is of high relevance with respect to integrating climate policy aspects.

The main goal of the EU's regional policy is to improve the economic welfare of regions and reducing regional disparities (European Union, 2007). This policy area has a share of one third of the EU's total budget (about 347 bn. € for the current period 2007 – 2013) at its disposition.

In terms of governance the responsibilities are split between the EU and the Member States. The overarching priorities for regional policy are defined at the EU level. The Community Strategic Guidelines (CSG)<sup>32</sup> represent the framework for all actions that can be supported by the Funds. Given these guidelines the Member States develop National Strategic Reference Frameworks (NSRF), which in turn describe the economic strengths and weaknesses and define the respective priorities for regional development considering the existing national policies. Finally, Operational Programmes (OP) are developed, that take into account the requirements of the individual regions. Operational Programmes and NSRF have to be approved by the European Commission before implementation. Thus, the Member States manage the programmes and implement the Operational Programmes by selecting projects and evaluating them. The European Commission is responsible for the overall programme monitoring, the payment of approved expenditure, the verification of national control systems, and the evaluation of implementation.

The Cohesion policy budget is divided into three sources (depending on what kind of measure in which region is funded):

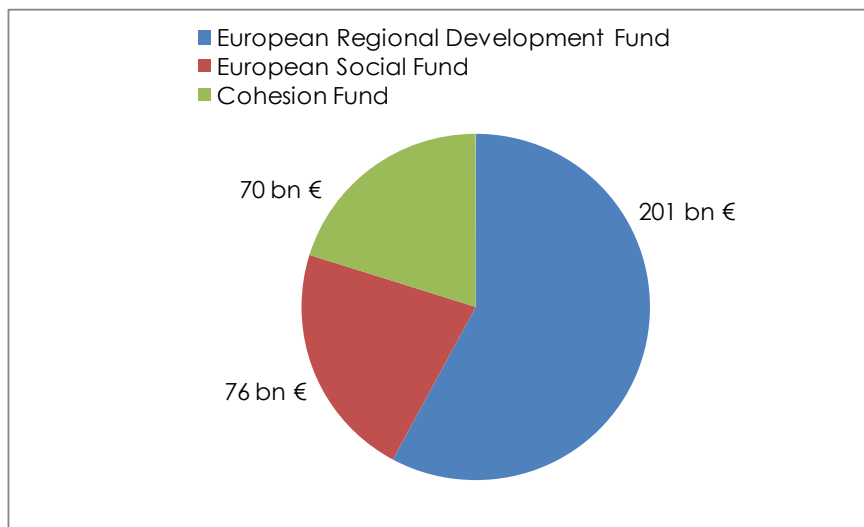
- The European Regional Development Fund (ERDF) – finances general infrastructure, innovation, and investments.
- The European Social Fund (ESF) – supports vocational training projects, other kinds of employment assistance, and job-creation programmes.
- The Cohesion Fund<sup>33</sup> – focuses on environmental and transport infrastructure projects (including the Trans-European Transport Networks, TEN-T) and the development of renewable energy.

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<sup>32</sup> For the current period three priorities have been defined: Improving the attractiveness of member states, regions and cities by improving accessibility, ensuring adequate quality and level of services, and preserving their environmental potential; Encouraging innovation, entrepreneurship and the growth of the knowledge economy by supporting research and innovation capacities, including new information and communication technologies; Creating more and better jobs by attracting more people into employment entrepreneurial activity, improving adaptability of workers and enterprises and increasing investment in human capital.

<sup>33</sup> Available for the 15 countries whose living standards are less than 90% of the EU average (12 new EU members plus Portugal, Greece and Spain).

Figure 6: Budget of Regional Funds



Source: DG Regio, (2011), own illustration.

The total budget is divided as follows: 201 bn. € are allocated to the European Regional Development Fund, 76 bn. € to the European Social Fund, and 70 bn. € to the Cohesion Fund. The Funds' contribution to project financing is up to 85% of the costs, the rest has to be provided by Member State co-financing. The spending of the Funds is to be aligned with the Europe 2020 goals<sup>34</sup>.

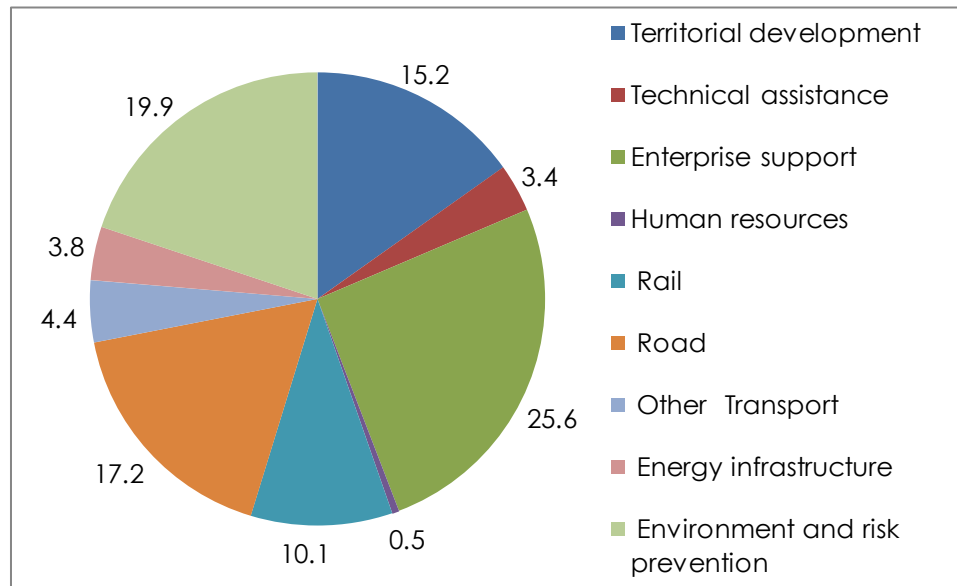
Specifically, in the current period three objectives are pursued:

- Convergence,
- Regional competitiveness and employment, and
- European territorial cooperation.

About 75% of the ERDF and 95% of the Cohesion Fund are dedicated to the Convergence objective (72% of the total Structural Funds). Another 11% are allocated to the Competitiveness and Employment objective and the remainder to Territorial Cooperation and "Multi-Objective" programmes (Ward et al., 2010).

<sup>34</sup> A substantial share of expenditures in the current period is earmarked for a concrete set of measures identified as contributing to supporting the EU's strategic (Lisbon) objectives (60% in Convergence regions and 75% in Competitiveness regions) (Nordregio, 2009).

Figure 7: Allocation of ERDF and Cohesion Fund under Convergence Objectives – end 2009, percentage shares



Source: Own illustration based on Ward et al. (2010).

While in the first place targeting economic growth, competitiveness and the creation of employment in the supported regions, the policy areas can also contribute to solving long-term challenges like climate change and (sustainable) energy supply. This was highlighted in the reflection process on the future Cohesion policy (European Commission, 2008h), Informal Meeting of Ministers for Regional Policy, 2009) and an external report (Barca, 2009) outlining an “agenda for a reformed Cohesion policy” recommending climate change as one of its key priorities.

So far, however, the extent of climate policy integration in regional policy seems to be limited, although on the strategic, overall level it has been emphasised. Under Cohesion Policy for the period 2007-2013 about 9 bn. € have been allocated to energy efficiency and renewable energy (3% of the total budget) according to the European Commission. Further climate related funding concerns clean public transport, intelligent transport systems and cycling tracks (7.8 bn. €) as well as rail infrastructure (24 bn. €). In contrast, 41 bn. € have been allocated to road construction and rehabilitation, an area which supports the main policy targets by improving accessibility of (peripheral) regions but that can also be expected to increase the emissions of greenhouse gases and furthermore contributes to locking regions into carbon-intensive structures.

An evaluation of the performance of Cohesion policy including a comparison of these plans for budget allocation – decided at the beginning of the period – with the actual expenditures until the end of 2009 (the latest data available so far) has been carried out by Ward et al. (2010). This assessment is based on the national reports on programme implementation that were submitted by the Member States in 2010. The report delivers various



results on policy implementation in the first three years of the period: the payments to Member States for programme implementation approved by the European Commission until the end of 2009 were notably lower than the resources available. Based on preliminary data up to October 2010 this has not changed fundamentally in the following year<sup>35</sup>. However, the Funds played an important role as additional funding for projects aiming at mitigating the economic downturn by expansionary fiscal measures. One reason for the delays in implementation and payments related to the current period can be found in the relaxation of the regulation requiring that the funding available in one period has to be spent two years after the end of the period. This was extended to three years because of the economic crisis, implying that funding from the 2000 - 2006 programme period was still paid out in 2009 and 2010, reducing the claims on funds from the current period. In addition, capital-intensive infrastructure projects, that are in general characterised by long lead times for planning, permitting etc., seem to have been postponed. Instead, other projects especially for business support that could be implemented faster and were targeted at employment creation or preservation were favoured. However, investment in infrastructure (including transport, energy, environment and social infrastructure) on average still represents about two thirds of total budget allocations in the Member States<sup>36</sup>. The national reports emphasise, though, that so far few conclusions can and should be drawn regarding the implementation and effectiveness of programmes, especially for those categories with long lead times.

#### 4.2.3 Identification of synergies and conflicts

Regarding an assessment of climate policy concerns being integrated in regional policy and in project funding in particular, the focus has to be put on the ERDF and the Cohesion Fund, as these funds include the programme categories that potentially affect greenhouse gas emissions<sup>37</sup>. This is especially the case for energy infrastructure, focusing on renewables, which can be expected to contribute to the climate policy objectives. In contrast, the quantitatively important category transport can result in either positive (in the case of rail infrastructure or intelligent transport systems) or negative (road infrastructure, airports) impacts. It has to be mentioned however, that while some reference is made to integrating climate policy concerns in the context of energy projects, the potential trade-offs in transport are not discussed and the main objectives of regional policy are generally put forward. Neither are climate change aspects included as eligibility criteria for programme funding. This may also be due to the fact that the guidelines for the current period were established

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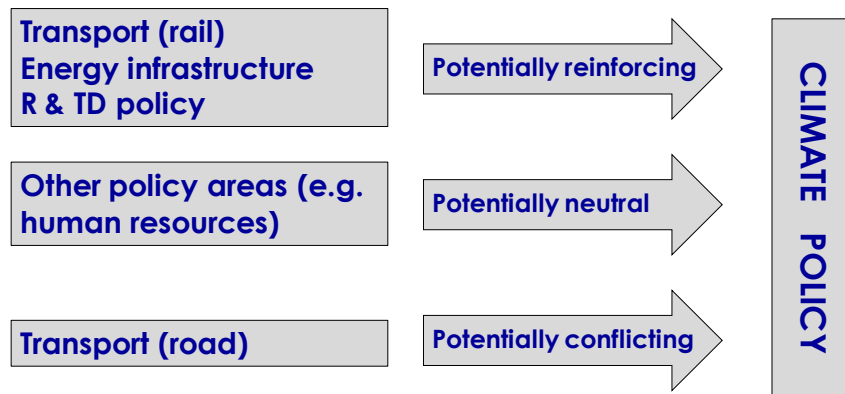
<sup>35</sup> By the end of 2009 only 12% of total funding available for the programme period had been paid from the ERDF; for 2010 the payment rate is estimated to amount to 21%.

<sup>36</sup> In regions supported under the Competitiveness and Employment objective the main part of projects related to enterprise support and especially innovation.

<sup>37</sup> Enterprise support, human resources, social infrastructure as well as environment (i.e. water supply, wastewater treatment, flood protection etc.) are omitted here, as their impact on climate change mitigation is assumed to be neutral.

before the intention to integrate climate policy was declared in relation to regional policy as well as other strategic documents. The role climate change will be given in the period 2014-2020 depends on the decisions taken regarding the future Multi-annual Financial Framework as well as the definition of the Strategic Guidelines for Cohesion policy. In addition to scaling up funding for programmes with direct benefits for climate policy, the identification and reduction/elimination of harmful spending should be a priority (Medarova-Bergstrom, 2011). The Fifth Cohesion Report (Breska, 2010) suggests the definition of a menu of obligatory priorities for future financing, which could include climate change. In addition, the report discusses the option to phase out funding for road construction at least in developed regions after 2013.

Figure 8: Synergies and conflicts between CP and cohesion policy



Source: Own illustration.

Regarding programme funding in the current period (see Ward et al., 2010) up to the end of 2009 under the Convergence objective it can be concluded that around one third was allocated to transport networks, with the major share going to road infrastructure (21% of total funding in the New Member States, 11% in the EU 15 countries). Rail infrastructure in contrast plays a lesser role (10% of total funding on average)<sup>38</sup>. Thus, about 60% of funding for transport is dedicated to road construction. While this is regarded as contributing to the accessibility of peripheral regions and being a prerequisite for economic development, it is also a long-term decision for carbon intensive infrastructure with negative impacts for the climate (Medarova-Bergstrom, 2011).

In comparison, the funding for energy infrastructure only has a share of 4% of total funding with little difference between the EU 12 and EU 15 countries. A continuous monitoring of the use of Structural and Cohesion funds in the energy and transport sectors by Friends of the Earth Europe and CEE Bankwatch Network<sup>39</sup> comes to the conclusion that the efforts to

<sup>38</sup> Under the Competitiveness objective, more than half of the funding is on average dedicated to enterprise support. Transport only has a share of 7% and energy infrastructure of 5%.

<sup>39</sup> [http://www.inforse.dk/europe/EU\\_SF\\_RE\\_07\\_13.htm](http://www.inforse.dk/europe/EU_SF_RE_07_13.htm).





promote energy efficiency, renewable energy, and environment-friendly public transport are far from sufficient and the vast potential in the New Member States is not tapped.

## 5 Summary of climate policy integration and conclusions

In this paper we address the topic of climate policy integration into other policy areas. We focus on horizontal policy integration at the EU level with respect to basic strategic policy papers, energy policy and the EU's Multi-annual Financial Framework. In Table 6 we assess the topic along four criteria. Our qualitative appraisal confirms that while there is a high general commitment to climate change action on EU level, evidence on climate policy integration into specific policies analysed in this paper is not clear cut: While recent energy policy documents generally refer to climate change as a central guideline within energy policy, the EU budget does not mention climate change as a budgetary priority. The importance of a stronger consideration of environmental and climate issues in the EU budget was however stressed in the EU budget review. The integration of climate change concerns in the EU budget would imply a positive impact as the EU budget entails multiplier effects in the member states. Evidence on expenditure in one important budget area, the cohesion funding, shows that e.g. the allocation of funds for transport with a potential climate relevant impact has a bias towards road transport.

It is evident that there is a close link between energy policy and climate policy as fossil energy use determines to a large extent the amount of GHG emissions. Within energy policy documents the consistency and synergetic character of climate policy integration shows some ambiguity. In the specific policy documents climate policy objectives are largely supported, whereas in the basic strategic documents some inconsistencies or conflicts prevail.

The scoping of some EU documents with respect to climate change integration indicates that in the recent past climate change issues are recognised in a number of strategic EU documents and is even addressed in the Lisbon Treaty. From the examples chosen in this paper one cannot conclude that climate policy is widely acknowledged as a cross cutting issue along all horizontal policy areas within the EU. However this paper only addresses a snapshot of the wide range of EU policies. The research on climate policy integration in the EU thus needs to put further emphasis on a comprehensive analysis of policy integration on the horizontal as well as vertical level.



Table 6: Climate policy integration in EU policies

	Basic Energy Policy	Specific Energy Policy	Multi-annual Financial Framework (MFF) and cohesion funding
<b>Political Commitment</b>			
General	High – sustainability and climate change are included as core targets in various strategic energy policy documents.	High – the specific documents considered in this paper (renewables directive, SET Plan, proposal for energy efficiency directive, proposal for the amendment of the energy tax directive) explicitly address climate change as central motivation.	Low - The current EU budget does not explicitly address climate change. Overall little reference is made to environmental issues. Recommendations for the next MFF include a stronger focus on the targets of the EU 2020 Strategy which also recognises the challenge of climate change. In cohesion funding monetary resources for environmental investment are provided for.
Consistency	Medium – the targets of energy security and provision of affordable energy at least partly contradict emission reduction targets.	Medium to high – all specific policy areas aim at lower or less carbon intensive energy use. Interactions between specific policies however are not addressed. The SET Plan shows a strong focus on energy supply.	Given the recognition of the challenge of climate change in basic EU documents consistency with budget policy is currently missing. With respect to cohesion funding, only a small portion of the overall budget is currently allocated to areas promoting climate change (i.e. energy efficiency and RES); in contrast a high share of funding accrues to investment in road transport.
<b>Nature of interdependencies</b>			
Direct/indirect	High – clear direct linkage as fossil energy use accounts for large part of GHG emissions; Infrastructure investment shape energy structures for several decades and thus may lead to lock-in in carbon intensive technologies.	High direct interdependencies	Medium – Indirect linkages as the EU budget generates multiplier effects as a source of co-financing for programmes implemented in member states, but little reference is made to environmental issues or climate change.
Synergetic / conflictual	Synergetic objectives of technological shift and improvement in energy efficiency support climate policy. A conflictual potential could arise from the objectives affordable energy and energy security	Synergetic interdependencies dominate, but stronger focus on consistency of multiple targets would be desirable.	On the general level potentially conflicting as climate change issues are no requirement for budgetary funding. For cohesion funding synergies can be found with respect to funding for RES, energy efficiency and rail infrastructure; funding of road transport may entail conflicts with emission reduction targets
<b>Weighting and resources</b>			
Balance of targets	The strategic policy documents do not suggest a weighting of targets. Decision making in conflictual situations cannot be assessed from the documents	Each policy document has own target without referring to other policy targets. Mitigation can be seen as superordinate objective	Not applicable
Provision of resources	No reference to resources	Provision of resources to a large extent on member state level (vertical policy integration). Funding of the SET Plan not clearly specified	No explicit resources for climate change issues in MFF; In cohesion funding in the current MFF period only 9 bn. € have been allocated to energy efficiency and 32 bn. € to climate friendly transport; in contrast 41 bn. € were allocated to road transport. Cohesion funding is co-financed by member states.



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