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Tosun, Jale, and Israel Solorio. (2011): Exploring the Energy-Environment Relationship in the EU: Perspectives and Challenges for Theorizing and Empirical Analysis, In: Tosun, Jale, and Israel Solorio (eds) Energy and Environment in Europe: Assessing a Complex Relationship, *European Integration online Papers (EIoP)*, Special Mini-Issue 1, Vol. 15, Article 7 <http://eiop.or.at/eiop/texte/2011-007a.htm>

DOI: 10.1695/2011007

Exploring the Energy-Environment Relationship in the EU: Perspectives and Challenges for Theorizing and Empirical Analysis*

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Abstract: Environmental concerns have played a key role for institutionalizing energy policy at the level of the European Union. There is thus a tendency in research literature to assume that the objectives of these cognate policy areas are compatible and mutually reinforcing. There have been only few efforts, however, to critically assess the quality of this relationship. The contributions to this mini-special issue reveal that the instruments employed in these two policy fields are markedly different. Environmental policy instruments are mostly based on the command-and-control logic whereas environment-related European energy policy is characterized by the use of ‘softer’ measures. The second main finding is that despite the centrality of climate change concerns in the rhetoric of the European Commission, an effective integration of environmental goals into energy policy is difficult to achieve.

Keywords: Competition policy; electricity; energy policy; environmental policy; European Commission; European law; Europeanization; harmonization; integration theory; Lisbon Treaty; national interest; neo-functionalism; Single Market, political science

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Introduction

Since the mid 1980s, energy policy has been acquiring an increasingly important role in the political agenda of the European Union (EU), progressively over-throwing the barriers that traditionally hindered Brussels' action in this policy area. Current EU energy policy comprises three strands: the construction of the internal energy market, energy security, and the development of a low-carbon economy to combat climate change. While the dimensions related to the internal energy market and energy security are entirely coherent with the EU's major characteristic as an economic union, the third dimension that brings together environmental and energy concerns appears rather unusual, at least at first glance. On closer examination, however, the strong linkage between European energy and environmental policies becomes fairly understandable given that before the Lisbon Treaty entered into force on 1 December 2009, the EU had no legal competence for formulating energy policy. Instead, policy making had to be based on the provisions of the internal market, competition or environmental protection (Vedder, 2010, p. 291).

Accordingly, linking energy issues to environmental concerns provided additional room for the strategic manoeuvring of those actors that sought to achieve further policy integration and harmonization. As a result, EU energy policy, as it evolved over time, is characterized by a notable 'green' dimension. Solorio (2011), for instance, finds that, out of the three strands of the EU energy policy outlined above, the majority of legislation adopted over time addresses environmental concerns. A prominent example of EU energy policy that was developed on the basis of the Community's legal competence for environmental protection is the promotion of renewable energy (Directives 2001/77/EC and 2003/30/EC, later replaced by Directive 2009/28/EC). Another major area of relevant legislative activities refers to increasing energy efficiency through labelling of domestic appliances, the setting of ecodesign requirements for energy-using products, and the definition of requirements for the energy performance of buildings. Moreover, the linkage between energy and environmental concerns becomes apparent in taxes on energy use and the emission of air pollutants (see Dobbins and Tosun, 2011).

It is important to stress that the European Commission has played a key role as an entrepreneur for establishing energy policy at the EU level in order to expand its political influence over the Member States (Jordan et al. 2003, p. 558; Braun, 2009; Buchan, 2010, p. 374). However, it should also be noted that even if environmental protection proved to be particularly useful, the European Commission has exploited all dimensions of energy policy jointly to create as many different policy frames as possible to make energy legislation viable (Pointvogl, 2009, p. 5708; Nilsson, Nilsson and Ericsson, 2009).

It could be expected that the green dimension only served as a strategic means for furthering energy policy in the absence of legal competences. Yet, the prominence of environmental issues in fact continues under the new Energy Title introduced by the Lisbon Treaty. Article 194 (1) of the Treaty on the Functioning of the EU (TFEU) posits that EU policy making shall ensure a functioning energy market, the security of energy supply, the promotion of energy efficiency and the development of renewable energy as well as the further interconnection of energy networks. Remarkably, the Energy Title allows only for an EU energy policy that corresponds to the “need to preserve and improve the environment”, which indicates that the green dimension is further corroborated.

The proximity of European energy and environmental policy is also reflected in scholarship. While initially research efforts have predominantly focused on the internal market dimension of energy policy (see, e.g. Schmidt, 1996; Eising, 2002; Pagdett, 2003), with more recent studies there is a clear trend towards addressing the green dimension (see, e.g. Buchan, 2009; Jacobsson et al., 2009; Nilsson, Nilsson and Ericsson, 2009; Morata and Solorio, 2011). In this context, European strategies for the promotion of renewable energy have attracted the most scholarly attention.

Many studies exploring the linkage between EU environmental and energy policies are based on the – often implicit – assumption that the goals in these cognate policy areas are compatible. Notably fewer studies, however, critically assess the quality of this interrelation. It is therefore the objective of this mini-special issue to systematically evaluate the supposedly mutually reinforcing relationship between EU energy and environmental policy and to illustrate alternative theoretical and empirical approaches to its study. How similar are energy and environmental policy instruments? How feasible is an effective integration of environmental and energy policy goals? To address these research questions, the two contributions approach European energy and environmental policy from varying analytical perspectives and employ different research methodologies. In this way, they enhance our understanding of the energy-environment nexus at the European level.

The remainder of this introductory paper is structured as follows. First, we illustrate the historical development of EU energy policy. Second, we present the main research perspectives and theoretical arguments employed in the state-of-the-art literature for assessing the relationship between European energy and environmental policy. Subsequently, we present the studies forming this mini-special issue. In the final section, we discuss the main findings of the papers and draw some general conclusions in order to outline promising avenues for future research.

1. The Emergence of EU Energy Policy: The Central Role of Climate Change

The first area of EU energy policy to evolve was the subcategory of energy security, which today is often regarded as the weakest strand (see Buchan 2010, p. 368). In reaction to crises related to the supply of oil from the Middle East, the EU already adopted legislation specifying the level of emergency oil stocks in the late 1960s (Tosun, 2011). Ever since, the European Commission has been eager to play a dominant role in energy security, but the Member States were reluctant to transfer their decision-making powers. Consequently, the dimension of energy security provided only limited opportunities for the European Commission to strengthen energy policy at the supranational level. Essentially, it only facilitated the adoption of action programmes on short-term targets for the rational use of energy. However, with the recent enlargement rounds and the Central and East European states' dependence on Russian energy supplies, concerns about energy security have begun to receive more attention and the Member States are becoming more and more willing to strengthen the European Commission's role (see Pointvogl 2009; Youngs, 2009).

An important stimulus for the further development of energy policy was the 1986 Single European Act (SEA) and the subsequent Single Market Programme. This opened up the second avenue along which energy policy became institutionalized at the supranational level, namely policies related to the creation of the internal market and the regulation of competition. The result was the adoption of three packages of directives beginning in 1996 that pursued the objective of liberalizing the energy market. This significant progress towards creating a common energy market was only achieved by the lifting of the deadlock in the Council of Ministers through an agreement between Germany and France to accept the principle of market opening and the need for common rules in the European market (Eberlein, 2008, p. 76).

In addition, the institutionalization of environmental policy through the SEA opened up a third avenue for promoting EU energy policy. Compared to the first two avenues, the green dimension has provided the most effective means for advancing energy policy at the level of the EU (see e.g. Buchan, 2009, 2010; Solorio, 2011). This can mainly be attributed to the principle of environmental policy integration (EPI) and the Community's ambitions to combat climate change.

EPI rests on the conviction that no effective environmental policy can be formulated unless it is coordinated with decisions in cognate policy areas. This principle was mentioned in the SEA, but its scope was notably extended in the Amsterdam Treaty and the Fifth Environmental Action Programme (1993-2001) (Knill and Liefferink 2007, p. 34; see also Lenschow, 2002a). Remarkably, it was mainly the pressure of Austria, Finland and Sweden – the 'new' member states at the time – that led to an integration clause in the Amsterdam Treaty strengthening the legal status of the principle of EPI (Adelle, Russel and Pallemmaerts, 2011, p. 22). The initiation of the so-called Cardiff Process in 1998 represented another step forward to the practical application of EPI. While EPI has the potential to affect a multitude of sectoral policies, the integration of EU environmental and energy policy represents a

particularly promising approach since energy production is a major contributor to a plethora of environmental problems (Collier, 2002, p. 175).

In parallel, the burgeoning importance attached to climate change placed more pressure on the integration process of both policies. In this regard, there is broad consensus in the research literature that the Community's concern for climate change is one of the main drivers of the formal strengthening of the EU's competence to take action in the area of energy policy (see, e.g. Damro, Hardie and MacKenzie, 2008; Buchan, 2009, 2010; Solorio, 2011). This integrative approach to energy policy can be regarded as a consequence of the EU's decision to play a leading role in pushing for the negotiation and implementation of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (see, e.g. Tiberghien and Schreurs, 2007; Oberthür and Roche Kelly, 2008). To reach the negotiated climate mitigation targets, the European Commission and the Member States increasingly realized that climate policy must become more integrated with sectoral policies (see, e.g. Lenschow 2002a; Lafferty and Hovden, 2003; Jordan and Lenschow, 2008; Biermann, Davies und van der Grijp, 2009; Jordan et al., 2010).

As a result of all these developments, in 2005, the European Commission began pushing forward the energy debate with the paramount goal of laying down the foundations of a new energy policy of global character as an indispensable step towards effectively tackling climate change. The first step was the Green Paper entitled 'A European strategy for sustainable, competitive and secure energy', in which the European Commission put forward concrete proposals for implementing a European energy policy. Subsequently, the European Commission launched a strategic review of the current energy challenges as a guide to EU energy policy, in which renewable energy, energy efficiency and greenhouse gas emissions reductions were specified as a necessary goal to limit climate change. This entailed the formulation of corresponding new legislation at the European level.

Altogether, we can conclude that the linking up of environmental protection with energy issues has contributed decisively to the institutionalization of energy policy at the European level as reflected in the inclusion of the Energy Title in the Lisbon Treaty. Most importantly, it has been the European Commission's and the Member States' desire for leadership in international efforts to combat climate change. This ambition has been translated into a determination to lead by example and thus to re-design energy policy accordingly. Furthermore, the explicit emphasis the Energy Title of the TFEU places on the environmental dimension of energy policy hints that the integration of these two policy areas is likely to increase.

2. European Energy and Environmental Policy: Analytical Perspectives and Theoretical Approaches

The relationship between EU energy and environmental policy has been predominantly addressed from two perspectives. Similar to our illustration in the previous section, the first

perspective stresses the role of climate change for energy policy change at the EU level. In this context, the most central argument is that the EU's deliberate decision to play a leading role in international climate politics turned the European Commission into a policy entrepreneur (see, e.g. Braun, 2009; Oberthür and Pallemmaerts, 2010; Adelle, Russel and Pallemmaerts, 2011; Solorio, 2011). Policy entrepreneurs are central to theories of policy change, such as the advocacy coalition framework (Sabatier and Jenkins-Smith, 1993; Sabatier and Weible, 2007) or the multiple streams approach (Kingdon, 2003), which attribute them a decisive role for bringing about new policy arrangements. The main argument in this regard is that the acknowledgement of climate change has helped to convince Member States to transfer policy-making powers to the European Commission.

More generally, the first perspective conceives of the emergence of EU energy policy as the dependent variable and environmental and climate change concerns as the independent or intervening variable. In this sense, environmental policy is primarily perceived in an instrumental way. As opposed to this approach, the second dominant research perspective centres on EPI. In this case, the degree to which 'principled priority' is given to climate policy objectives represents the dependent variable (see, e.g. Lafferty and Hovden, 2003; Lafferty and Knudsen, 2007).

The EPI perspective is principally associated with neo-functionalism, which posits that integration is a depoliticized process that starts in one policy field and creates a dynamic that eventually spills over to other policy fields (Renner, 2009). Even though this logic might be interpreted in such a way that EPI represents an automatic continuation of the integration process, Lenschow (1997, p. 116) cautions that it rather brings to the fore considerations about policy players and the impact of institutional structures. Therefore, for a compelling analysis, empirical studies based on this perspective usually scrutinize either horizontal or vertical aspects of EPI. The horizontal dimension refers to the cross-cutting support for this principle in the individual Member States. Addressing this dimension involves questions about the independence of the involved ministries and the distribution of competences for the implementation of integrated policy measures as well as the extent to which the respective administrative culture facilitates inter-ministerial cooperation. Vertical aspects, in contrast, relate to the different levels of government that are involved in the implementation process. In this regard, federal systems are broadly perceived to have greater difficulties in implementing policies based on EPI than unitary states (Jordan and Lenschow, 2008).

The implementation of integrated policy measures has attracted considerable scholarly attention thus leading to "numerous country studies of EPI 'in action'" (Jordan and Lenschow, 2010, p. 150). The theoretical toolbox of such empirical analyses corresponds to that of 'classical' Europeanization research and studies on the implementation of EU law (see, e.g. Knill and Lehmkuhl, 1999; Börzel and Risse, 2000; Mastenbroek, 2005; Falkner, Hartlapp and Treib, 2007; Treib, 2008). In this context, existing institutional arrangements and the preferences of the relevant domestic actors are usually treated as key explanatory variables (see, e.g., Jordan et al., 2003; Jacob and Volkery, 2004; Knudsen, 2011). In addition, the implementation of integrated policy measures is discussed with reference to

governance theories (Jordan and Lenschow, 2010). This literature has mostly assessed the main characteristics of the instruments for EIP and the degree to which they can be assigned to different modes of governance, such as hierarchy, competition and communication (see Knill and Lenschow, 2003).

Another line along which the EPI framework has been employed refers to the design of integrated policies. For example, Nilsson and Persson (2003) focus on policy-making rules and illuminate background factors such as problem characteristics and the international policy context to define the degree to which presumably integrated policy measures are actually integrated. Likewise, Russel and Jordan (2009) relate considerations about the multitude of actors involved in policy formulation to theoretical expectations regarding the policy instruments utilized to achieve EPI. The authors argue that the realization of EPI is mostly achieved through ‘softer’ policy mechanisms (e.g. market-based instruments, information-based instruments and voluntary agreements) rather than the adoption of ‘hard’ policy instruments such as command-and-control regulation. Another important aspect is addressed by Adelle, Russel and Pallemarts (2011), who underline how important the Member States’ preferences are for the formulation of integrated policy instruments. This is exemplified by the policy-making process related to the European Commission’s proposal for a carbon tax. The proposal failed to gain support from the Member States and forced the European Commission to work on a new proposal, which turned out to be an emission trading scheme for greenhouse gas emission allowances.

All in all, the literature on EPI is more diverse than the first strand of research on the relationship between EU energy policy and climate change concerns. Studies employing the EPI framework address many different research questions and point out numerous independent variables that potentially affect the degree of energy and environmental policy integration and influence the design of these policy instruments. The scope of this literature can certainly be seen as a consequence of the conceptual vagueness of EPI, which allows for different understandings and therefore opens up multiple avenues for research.

3. Two Research Perspectives: An Overview of the Contributions

The two articles constituting this mini-special issue approach the relationship between EU energy and environmental policy from different analytical angles and pursue different objectives with their analyses. It is for these diverse research perspectives that they provide a nuanced understanding of the subject of study.

The study by *Claire Dupont* and *Radostina Primova* contributes to the research on EPI, or more precisely, climate policy integration (CPI). The authors elaborate a theoretical framework for explaining the extent and variation of CPI in the areas of renewable energy and internal energy market policies. The explanatory framework is a synthesis of causal factors suggested by the literature. It is composed of four key explanatory factors: political commitment, functional overlap between climate and energy policy objectives, the

participation of climate policy advocates in the policy-making process as well as the characteristics of the institutional and policy context. The dependent variable of this study is measured on the basis of policy outputs and the extent to which ‘principled priority’ was given to climate policy objectives. In contrast to the majority of studies addressing EPI/CPI, the authors do not focus on national policies but on the design of EU-level policies.

On the basis of this innovative analytical framework, *Dupont* and *Primova* can illustrate that CPI is insufficient in both cases, but still more effective with regard to renewable energy policy than internal energy market policy. The better performance of renewable energy policy results from a more direct and synergistic overlap of climate change and energy policy, the Member States’ greater political commitment and the comparatively high participation level of climate policy advocates.

The contribution by *Sophie Schmitt* and *Kai Schulze* represents an alternative empirical approach to the relationship between environmental and energy policy at the EU level. The article is distinct in that it does not investigate instruments designed to integrate the two policy fields, but instead it compares the existing regulatory approaches that populate them. To this end, the authors concentrate on those policy measures that have been employed to combat air pollution and energy policy with environmental objectives. The study is hence based on two dependent variables, which clearly represents a novel analytical perspective. The main research questions addressed are: how does the Community approach environmental policy objectives as part of its energy policy? Is the environmental dimension of EU energy policy subject to a different regulatory approach than environmental policy?

The descriptive empirical analysis deserves credit for a comprehensive overview of the development of EU environmental and energy policy making from the 1970s until today. The findings of this analysis show that, despite similar underlying policy goals, the respective instrument choices vary systematically over the two policy fields. Most importantly, environmental policy heavily relies on command-and-control instruments whereas environment-related EU energy policy is characterized by the use of ‘softer’, cooperative measures. In this way, the study supports previous findings based on a notably smaller empirical basis by Knill and Lenschow (2003) and Russel and Jordan (2009). The cooperative energy policy instruments include action plans, financial supports, information exchange and reporting as well as research and development activities.

The conceptualization of the dependent variables does not represent the only difference between the two studies. The papers also vary with regard to the empirical strategies they employ. *Dupont* and *Primova* adopt a qualitative methodological approach by focusing on two specific cases and analyzing them in detail. The study by *Schmitt* and *Schulze*, in contrast, is based on a large number of observations that are analyzed by descriptive statistics, mostly by using frequency analysis and illustrating distributional characteristics. Both strategies are seminal and yield numerous important insights. The more theory-driven paper by *Dupont* and *Primova* clearly benefits from the use of qualitative methodology. Likewise, since *Schmitt* and *Schulze* are predominantly interested in uncovering patterns of instrument use their quantitative approach is appropriate.

This point brings us to the third difference between the papers, that is, the prominence given to theoretical considerations. In this regard, the paper by *Dupont* and *Primova* is not only rooted in the theoretical literature on EPI/CPI, but it also bears the potential of furthering the state of theorizing. In this regard, the conclusion in particular contains important explanatory attempts that future studies may find helpful when elaborating their theoretical frameworks. In contrast, the contribution that *Schmitt* and *Schulze* make to the literature is empirical, although the authors equally take into consideration theoretical arguments. However, in this case the function of theory is to motivate the research questions guiding the paper. Both ways of incorporating theoretical considerations are legitimate and generate valuable insights.

On the basis of the two contributions we can answer the principal research questions guiding this mini-special issue. To recall, the first question is about the similarity of energy and environmental policy instruments, whereas the second question addresses the effectiveness of the integration of environmental and energy policy goals. In response to the first question, the study by *Schmitt* and *Schulze* emphasizes that there are notable differences between energy and environmental policy instruments. While the authors do not explicitly seek to contribute to the literature on EPI/CPI, their results have important implications for it. The low degree of congruence in policy instruments raises doubts about the possibility of effectively integrating environmental and energy policy at the EU level. This expectation is confirmed by *Dupont* and *Primova*, who show that despite the importance of climate change in the rhetoric of the European Commission, in reality, an integration of environmental goals into energy policy is difficult to achieve. Thus, with regard to the second question we have to recognize that the effectiveness of policy integration is far from perfect.

Conclusion

What general conclusions can be drawn from such differing papers on the energy-environment nexus at the EU level? Firstly, despite the differences, both studies agree that there is a certain degree of interdependence between energy and environmental policy goals. They also concur that the use of EU energy policy for achieving sustainable development does not automatically produce the expected policy results. This may stem from differences in the preferences of the actors involved in policy making (see *Dupont* and *Primova*) as well as a lacking compatibility of instruments used in the two policy fields (see *Schmitt* and *Schulze*).

In this context, it should be further noted that concerning the goals of environmental policy subfields other than climate change, the existing EU energy policy might actually threaten their realization. For instance, the EU invested heavily in strengthening energy crop production in order to boost the use of bio fuels (see, e.g. Faaij, 2006). While this instrument may indeed be desirable for lowering the greenhouse emissions due to the specific combustion characteristics of bio fuels, it conflicts with the goal of preserving biodiversity since energy crop production often leads to monocultures. Hence, normative approaches to the energy-environment nexus that explicitly call for the proper application of the concept of ‘principled priority’ should take into consideration that such a prioritization of policy goals

may also entail a rank-ordering of different environmental policy goals. However, such a differential approach to the multiple dimensions of environmental policy is even more strongly at odds with the principle of sustainable development than an imperfect cross-sectoral integration of policies.

Secondly, these studies demonstrate that the relationship between EU energy and environmental policy can also be compellingly approached from other analytical perspectives than EPI/CPI, although we acknowledge that this framework offers a number of advantages. In this regard, the study by *Schmitt* and *Schulze* moves beyond the EPI/CPI framework by adopting an instrument perspective. This approach is innovative and could potentially lead to the emergence of a third analytical perspective on the study of EU energy and environmental policy.

Thirdly, this mini-special issue indicates that there is still room for improving the theorizing of the relationship between EU energy and environmental policy. To be sure, most theoretical approaches – especially those relying on EPI/CPI – have predominantly searched for the “bottlenecks holding back integration” (Lenschow, 2002b: 16). It is quite remarkable that ‘positive’ perspectives have received only scant attention compared to those that put forward ‘negative’ expectations. This is even more surprising as there are numerous theories that could, in principle, be employed for achieving a more balanced theorizing and to derive more nuanced expectations.

Policy-oriented learning, for example, represents an appealing alternative theoretical approach (see, e.g. Nilsson and Persson, 2003; Nilsson and Eckerberg, 2007; Hartlapp, 2009; Radaelli, 2009; Adelle, Russel and Pallemmaerts, 2011). Another line along which theorizing could be improved is by a more explicit use of theories of policy change. In this context, one viable approach is given by the advocacy coalition framework, which conceives of policy making as the result of the competition between coalitions of actors advocating beliefs about certain policy options. Nilsson, Nilsson and Ericsson (2009), for instance, base their explanation of the rise and fall of the Guarantees of Origin, i.e. an EU policy instrument designed to achieve the renewable energy targets, on the role of advocacy coalitions. Alternatively, the policy subsystem adjustment model as put forward by Howlett and Ramesh (2002) might be employed, which is of additional advantage in that it includes considerations about policy spillovers and therefore provides a particularly appealing perspective for analyzing EPI.

In this regard, the contribution of *Dupont* and *Primova* already represents a step forward as the authors elaborate a micro-foundation for the EPI/CPI framework. A systematic integration of this approach with the framework put forward by Adelle, Russel and Pallemmaerts (2011) could provide a powerful theoretical underpinning for the analysis of the formulation of integrated policy measures. The main advantage of this theoretical approach is that it allows for deriving differential theoretical expectations regarding the actual degree of policy integration due to the identification of various explanatory factors. Of these, some can point to more effective integration and others to a less effective one. This helps to overcome the explanatory determinism inherent in many approaches to EPI/CPI. Moreover, it facilitates the formulation of testable hypotheses.

Based on the insights gained from the two articles, we argue that there are more incentives for a compelling theorizing and empirical research on the relationship between EU environmental and energy policy than there are challenges. To gain an even better understanding of the topic, however, the scope of the research interests is crucial. In this regard, we encourage the formulation of clear-cut and rather ‘small’ research questions. While this strategy entails a constrained empirical focus, it might prove more appropriate for illuminating the causal mechanisms underlying the complex relationship between EU energy and environmental policy, that is, the micro-level processes that bring about the observed outcomes (see, e.g. Gerring, 2008; Hedström and Ylikoski, 2010). Understanding how exactly the variables are interrelated helps to produce more complete explanations than macro-level approaches that only shed light on the specific empirical characteristics of the variables.

References

Adelle, C., Russel, D. and Pallemarts, M. (2011) ‘How far is the EU integrating its energy and climate change policies?’ in F. Morata and I. Solorio (eds.) *European Energy Policy: The Environmental Dimension*. Barcelona: Autonomous University of Barcelona, pp. 21-43.

Biermann, F., Davies, O. and van der Grijp, N. (2009) ‘Environmental policy integration and the architecture of global environmental governance’, *International Environmental Agreements* 9(4): 351-369.

Börzel, T.A. and Risse, T. (2000) ‘When Europe Hits Home: Europeanization and Domestic Change’, *European Integration Online Papers* 4 (15): 1-19, <http://eiop.or.at/eiop/texte/2000-015a.htm> [accessed on 11 November 2011].

Braun, M. (2009) ‘The evolution of emissions trading in the European Union – The role of policy networks, knowledge and policy entrepreneurs’, *Accounting, Organizations and Society* 34(3/4): 469-487.

Buchan, D. (2009) *Energy and Climate Change: Europe at the Crossroads*. Oxford: Oxford University Press.

Buchan, D. (2010) ‘Energy Policy: Sharp Challenges and Rising Ambitions’, in H. Wallace, W. Wallace and M. Pollack (eds.) *Policy-Making in the European Union*. Oxford: Oxford University Press, pp. 357-380.

Collier, U. (2002) ‘European Union Energy Policy in a Changing Climate’, in Andrea Lenschow (ed.) *Environmental Policy Integration: Greening Sectoral Policies in Europe*, London: Earthscan Publications, pp. 175-192.

Damro, C., Hardie, I. and D. MacKenzie (2008) ‘The EU and Climate Change Policy: Law, Politics and Prominence at Different Levels’, *Journal of Contemporary European Research* 4(3): 179-192.

Dobbins, M. and Tosun, J. (2011) ‘Marketization of Energy Policy in Central and Eastern Europe’, in F. Morata and I. Solorio (eds.) *European Energy Policy: The Environmental Dimension*. Barcelona:

Autonomous University of Barcelona, pp. 137-154.

Eberlein, B. (2008) 'The Making of the European Energy Market: The Interplay of Governance and Government', *Journal of Public Policy* 28(1): 73-92.

Eising, R. (2002) 'Policy Learning in Embedded Negotiations: Explaining EU Electricity Liberalization', *International Organization* 56(1): 85-120.

Faaij, A.P.C (2006) 'Bio-energy in Europe: Changing technology choices', *Energy Policy* 34(3): 322-342.

Falkner, G., Hartlapp, M. and Treib, O. (2007) 'Worlds of Compliance: Why Leading Approaches to European Union Implementation Are Only "Sometimes-True Theories"', *European Journal of Political Research* 64(3): 395-416.

Gerring, J. (2008) 'The Mechanismic Worldview: Thinking Inside the Box', *British Journal of Political Science* 38(1): 161-179.

Hartlapp, M. (2009) 'Learning about policy learning. Reflections on the European Employment Strategy', *European Integration online Papers Special Issue* 1(13): 1-16, <http://eiop.or.at/eiop/texte/2009-007a.htm> [accessed on 11 November 2011].

Hedström, P. and Ylikoski, P. (2010) 'Causal Mechanisms in the Social Sciences', *Annual Review of Sociology* 36(1): 49-67.

Howlett, M. and Ramesh, M. (2002) 'The Policy Effects of Internationalization: A Subsystem Adjustment Analysis of Policy Change', *Journal of Comparative Policy Analysis* 4(3): 31-50.

Jacob, K. and Volkery, A. (2004) 'Institutions and instruments for government self regulation: environmental policy integration in a cross-country comparison', *Journal of Comparative Policy Analysis* 6(3): 291-309.

Jacobsson, S., Bergek, A., Finon, D., Lauber, V., Mitchell, C., Toke, D. and Verbruggen, A. (2009) 'EU renewable energy support policy: Faith or facts?', *Energy Policy* 37(6): 2143-2146.

Jordan, A.J., and Lenschow, A. (eds.) (2008). *Innovation in Environmental Policy? Integrating the Environment for Sustainability*. Cheltenham: Edward Elgar.

Jordan, A.J. and Lenschow, A. (2010) 'Environmental Policy Integration: A State of the Art Review', *Environmental Policy and Governance* 20(3): 147-158.

Jordan, A.J., Wurzel, R., Zito, A. and Breuckner, L. (2003) 'European Governance and the Transfer of "New" Environmental Policy Instruments', *Public Administration* 81(3): 555-574.

Jordan, A.J., Huitema, D., van Asselt, H., Rayner, T. and Berkhout, F. (eds.) (2010) *Climate Change Policy in the European Union: Confronting the Dilemmas of Mitigation and Adaptation?* Cambridge: Cambridge University Press.

Kingdon, J.W. (2003) *Agendas, alternatives, and public policies*. New York: Longman.

- Knill, C. and Lehmkuhl, D. (1999) 'How Europe Matters. Different Mechanisms of Europeanization', *European Integration Online Papers* 3(7): 1-19, <http://eiop.or.at/eiop/texte/1999-007a.htm> [accessed on 11 November 2011].
- Knill, C. and Lenschow, A. (2003) 'Modes of Regulation in the Governance of the European Union: Towards a Comprehensive Evaluation', *European Integration online Papers* 7(1): 1-32, <http://eiop.or.at/eiop/texte/2003-001a.htm> [accessed on 11 November 2011].
- Knill, C. and Liefferink, D. (2007) *Environmental Politics in the European Union: Policy- Making, Implementation and Patterns of Multi-Level Governance*. Manchester: Manchester University Press.
- Knudsen, J.K. (2011) 'Environmental Policy Integration (EPI): Renewable fuel for an EU energy policy', in F. Morata and I. Solorio (eds.) *European Energy Policy: The Environmental Dimension*. Barcelona: Autonomous University of Barcelona, pp. 44-61.
- Lafferty, W.M. and Hovden, E. (2003) 'Environmental Policy Integration: Towards an Analytical Framework', *Environmental Politics* 12(3): 1-22.
- Lafferty, W.M. and Knudsen, J. (2007), 'The issue of 'balance' and trade-offs in environmental policy integration: How will we know EPI when we see it?', *EPIGOV Paper* 11(1): 1-38.
- Lenschow, A. (1997) 'Variation in EC environmental policy integration: agency push within complex institutional structures', *Journal of European Public Policy* 4(1): 109-127.
- Lenschow, A. (ed.) (2002a) *Environmental Policy Integration: Greening Sectoral Policies in Europe*, London: Earthscan Publications.
- Lenschow, A. (2002b) 'Greening the European Union: An Introduction', in A. Lenschow (ed.) *Environmental Policy Integration: Greening Sectoral Policies in Europe*, London: Earthscan Publications, pp. 3-21.
- Mastenbroek, E. (2005) 'EU Compliance: Still a 'Black Hole'?', *Journal of European Public Policy* 12(6): 1103-1120.
- Morata, F. and Solorio, I. (eds.) (2010) *European Energy Policy: The Environmental Dimension*. Barcelona: Autonomous University of Barcelona.
- Nilsson, M. and Eckerberg, K. (eds.) (2007) *Environmental policy integration in practice: Shaping institutions for learning*. London: Earthscan.
- Nilsson, M., and Persson, A. (2003) 'Framework for Analysing Environmental Policy Integration', *Journal of Environmental Policy and Planning* 5(4): 333-359.
- Nilsson, M., Nilsson, L.J. and Ericsson, K. (2009) 'The rise and fall of GO trading in European renewable energy policy: the role of advocacy and policy framing', *Energy Policy* 37(11): 4454-4462.
- Oberthür, S. and Pallemarts, M. (2010) 'The EU's Internal and External Climate Policies: an Historical Overview', in S. Oberthür and M. Pallemarts (eds.) *The New Climate Policies of the European Union: Internal Legislation and Climate Diplomacy*, Brussels: VUB Press, pp. 27-63.

- Oberthür, S. and Roche Kelly, C. (2008) 'EU Leadership in International Climate Policy: Achievements and Challenges', *International Spectator* 43(3), 35-50.
- Padgett, S. (2003) 'Between synthesis and emulation: EU policy transfer in the power sector', *Journal of European Public Policy* 10(2): 227-245.
- Pointvogl, A. (2009) 'Perceptions, realities, concession-What is driving the integration of European energy policies?', *Energy Policy* 37(12): 5704-5716.
- Radaelli, C.M. (2009) 'Measuring policy learning: regulatory impact assessment in Europe', *Journal of European Public Policy* 16(8): 1145-1164.
- Renner, S. (2009) 'The Energy Community of Southeast Europe: A neo- functionalist project of regional integration', *European Integration online Papers* 1(13): 1-21, http://www.eiop.or.at/eiop/index.php/eiop/article/view/2009_001a [accessed on 11 November 2011].
- Russel, D. and Jordan, A.J. (2009) 'Joining up or pulling apart? The use of appraisal to coordinate policy making for sustainable development', *Environment and Planning A* 41(5): 1201-1216.
- Sabatier, P.A. and Jenkins-Smith, H.C. (eds.) (1993) *Policy Change and Learning: an Advocacy Coalition Approach*. Boulder: Westview Press.
- Sabatier, P.A. and Weible, C.M. (2007) 'The Advocacy Coalition Framework: Innovations and Clarifications', in P.A. Sabatier (ed.), *Theories of the Policy Process*, Boulder: Westview Press, pp. 189-220.
- Schmidt, S.K. (1996) 'Sterile Debates and Dubious Generalisations: European Integration Theory Tested by Telecommunications and Electricity', *Journal of Public Policy* 16(3): 233-271
- Solorio, I. (2011) 'Bridging the Gap between Environmental Policy Integration and the EU's Energy Policy: Mapping out the 'Green Europeanisation' of Energy Governance', *Journal of Contemporary European Research* [forthcoming].
- Tiberghien, Y. and Schreurs, M.A. (2007) 'High Noon in Japan: Embedded Symbolism and Post-2001 Kyoto Protocol Politics', *Global Environmental Politics* 7(4): 70-91.
- Tosun, J. (2011) 'When the Grace Period is Over: Assessing the New Member States' Compliance with EU Requirements for Oil Stockholding', *Energy Policy* 39(11): 7156-7164.
- Treib, O. (2008) 'Implementing and complying with EU governance outputs', *Living Reviews in European Governance* 3(5): 1-30, <http://www.livingreviews.org/lreg-2008-5> [accessed on 11 November 2011].
- Vedder, H. (2010) 'The Treaty of Lisbon and European Environmental Law and Policy' *Journal of Environmental Law* 22(2): 285-299.
- Youngs, R. (2009) *Energy Security: Europe's New Foreign Policy Challenge*. London: Routledge.

***Acknowledgments**

We want to express our gratitude to Jordan for his help to gain a complete overview of the state of research and Christina Kannenberg for proof-reading.