

Renewable Electricity and Biofuels in European Union Policy-Making:
Case Studies in Targets and Definitions

Thesis submitted in fulfilment of requirements for the degree of Doctor of Philosophy

by

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August, 2021

Declaration

I hereby declare that this thesis and the work presented in it is entirely my own. Where I have consulted the work of others, this is always clearly stated.

August, 2021

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Acknowledgements

First of all, I would like to express my deepest gratitude to my primary supervisor, Dr. Jeremy Larkins, for his invaluable advice, his patience with the multitude and changeability of my research ideas, and for being always available for providing some additional supervisory feedback. I am also thankful to my second supervisor, Prof. Carl Levy, for his guidance throughout the various stages of this research project. My gratitude extends also to the Goldsmiths College and the members of the Department of Politics and International Relations for the institutional support provided, without which I could not have successfully completed my research.

Furthermore, I am greatly thankful to Prof. Markus Haverland, Dr. Duncan Liefferink and Prof. Stephan Stetter for generously taking their time to read some of my thesis chapters and for commenting on them. Similarly, I would like to thank Prof. Frans Berkhout, Dr. John Turnpenny, Dr. Branwen Griffith-Jones, and Dr. Christopher Boyle, for an opportunity to discuss some of my research ideas and results with them, and for their incisive advice.

I would also like to thank all the EU officials, who were interviewed for the purpose of this research project, for providing rich accounts of the policy-making processes inside EU institutions. Thanks to their detailed recollections, this thesis could profit from a much more nuanced understanding of the EU legislative processes than otherwise possible.

A very special and heartfelt thank-you, however, is reserved for late Prof. Peter Gowan, my former tutor, who was and remains an inspirational figure for me. Without his encouragement, I would probably not have embarked on this journey of doctoral research.

Finally, I am deeply thankful to my parents for all their support throughout the time spent as a research student.

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Abstract

The competence of the European Union (EU) in the policy area of renewable energy has expanded significantly in the last two decades, resulting in a detailed legislative framework that stipulates *inter alia* a number of EU-level and national targets, along with definitions determining a range of energy sources, which are countable toward these targets. At the same time, in contrast to other aspects of this policy area, the two intertwined policy issues of targets and definitions remain understudied in the discipline of political science, particularly at the stage of policy formulation within the overall policy cycle, which involves future scenario modelling and, more generally, the application of policy formulation tools. Trying to fill this gap, this thesis studies the policy-making on renewable electricity and biofuels targets and definitions, stipulated by the 2001/77/EC, 2003/30/EC, 2009/28/EC, and the 2015/1513 EC Directives, and by implication engages with the emerging literature on tools for policy formulation.

The theoretical framework applied integrates historical institutionalism with a more fine-tuned understanding of the role of agency, sought through the specification of such concepts as dimensions of power. The framework's application further aims to examine the role of supranational, governmental and non-governmental actors in the policy-making processes, respective how different interest constellations played out within the structures of the EU legislative processes.

The thesis argues that the policy outcomes of targets and definitions were influenced by structural constraints in their impact on a number of EU policy actors. More specifically, the targets were pre-shaped mainly by supranational institutions, in accordance with their assessment of external and internal structural constraints in energy and climate change policies. Member states, by comparison, prevailed on the formulation of definitions, being primarily interested in the reduction of the costs of compliance with the EU legislation in-the-making.

Keywords: renewable energy policy; renewable electricity; renewable fuels; biofuels; EU policy-making; tools for policy formulation; critical juncture; process tracing; path dependence

Introduction

The integration of renewable energy policy at the European Union (EU) level evolved as a dynamic process starting in the mid-1990s and has resulted in an elaborate legislative framework being currently established at the supranational level. This growing EU competence in renewable energy (RE) policy over two decades was possible against the background of remarkable salience of promotion of RE worldwide, particularly during the 1990s and 2000s (Wurzel and Connelly, 2011). Hence, this EU-level legislation could expand rapidly even though the EU competence on renewable energy was first formalised through the Lisbon Treaty in 2008¹ (TFEU, Art 194(1)). Today this area of policy embraces a number of variously ambitious pieces of legislation, the milestones in this body of legislation being: the 2001/77/EG Directive on the promotion of electricity from renewable energy sources; the 2003/30/EG Directive on the promotion of the use of biofuels or other renewable fuels; the 2009/28/EC Directive on the promotion of the use of both renewable energy sources, which has repealed the other two preceding Directives; and the 2015/1513 Directive, usually referred to as 'ILUC Directive' due to its concern with the phenomenon of indirect land-use change². By focusing on these four pieces of legislation, the overall this study seeks to shed light on what drives the integrative processes leading to the legislative outcomes³ of the four Directives, More specifically, the purpose of this study

¹ The adoption of the Directives of 2001 and 2003 became possible because the Treaty Establishing the European Community provided the EU with a competence to legislate on renewable energy on the legal basis of its environmental competence and its common market competence (Hirschl, 2008, pp. 368-369).

² The phenomenon of ILUC occurs because “biofuels policies raise the supply and demand for agricultural feedstocks. *Ceteris paribus*, this will increase prices in those commodity markets as a result of which ... land elsewhere will be brought into agricultural use to produce those commodities” (Kay and Ackrill, 2012, p. 303).

³ While the former two directives of 2001 and 2003 are setting indicative targets – 12% renewable energy of gross national renewable energy consumption by 2010 (Directive, 2001), and a minimum 2% share of biofuels in total consumption of transport fuels in 2005 to be raised to 5.75% by 2010 (Directive, 2003), the 2009 directive, by contrast, introduces a binding target of a 20% renewable energy share of the European Union’s overall energy production, and a 10% sub-target for energy consumption from renewable sources in transport, by 2020 (Directive, 2009). The ILUC directive, in its turn, amends the percentage that first-generation biofuels can contribute to the 10%

is to describe and explain how and why particular numerical values and definitions for RES-E and RES-T were agreed in the policy-making processes on the Directives 2001/77/EC, 2003/30/EC and 2009/28/EC. This piece of research therewith covers a time scope of over a decade, between the first and last pieces of legislation.

The empirical scope of this study is a narrow one; it focuses exclusively on two policy issues within Directives studies – targets and definitions for renewable electricity and renewable fuels in transport (RES-E and RES-T). Thereby, targets determine the renewables share in national and overall EU energy consumption, aimed at being reached by means of a piece of legislation. Definitions, in turn, are complementary with targets since they serve to specify types of renewables that can be counted toward attainment of the targets and the growth of which is stimulated by means of the EU legislation in question.

The narrow empirical focus of this thesis, however, implies covering a range of policy issues pertinent to targets and definitions. Thus, the study encompasses: computer-based modelling exercises applied to calculate targets, such as the overall EU targets and the sub-targets (for RES-E and RES-T); the approaches to distribution of the overall EU targets among member states; the approaches to establishing trajectories or interim targets to guide the implementation process of targets; the methods of calculation of targets applicable at the stage of their implementation; and the formulation of the definitions for what counts as renewable electricity and biofuels⁴, which implies a differentiation between a variety of technologies, methods of production and types of raw materials for renewables, eligible toward the targets' attainment.

Because of choosing this focus of study, this thesis will also be particularly attentive to the early stages within the entire policy cycle, at which scientific research is conducted to examine the planned policy initiatives by means of computer-based modelling tools,

target in renewable fuels in road transport, reducing it to maximum 7% (Directive, 2015).

⁴ Throughout this study, renewable fuels are referred to as biofuels for the reason that the promotion of renewable fuels meant primarily the promotion of biofuels. A differentiation between renewable fuels and biofuels is made whenever renewable fuels other than biofuels become the focus of this research.

aimed, for example, at drawing up alternatives future scenarios under the impact of different policy initiatives and at estimating costs and benefits of those initiatives. More specifically, this thesis incorporates the stage of policy formulation into the overall process of decision-making on legislative proposals. It does so, in order to better understanding how the numerical values of the targets for renewable electricity and renewable energy in transport were initially arrived at and subsequently advocated in the policy-making process.

Treating both, targets and definitions, as a single focus of this study can be justified on the basis that these two policy issues are closely interlinked. Definitions for renewable energy determine what range of energy sources can contribute toward the implementation of legislation, and therewith provide important information on how much effort to meet the target is required on the part of member states. Besides, only by looking at targets and definitions as one policy unit is it possible to assess how environmentally (and climate-change) ambitious a piece of legislation is. This is considered important in this study, as definitions might be formulated in ways that reduce the policies' environmental impact. For example, a definition might be quite broad in scope and hence embrace energy sources with even negative emissions balance, yet be defined as renewable. By scrutinising the definitions that accompany the numerical targets in EU legislation on renewable energy, one can avoid mistakenly judging the environmental ambitiousness of a piece of legislation by looking solely at the numerical values of its targets, frequently encountered in the media, and made erroneously by many politicians. Besides, a definition of renewable energy sources can imply the promotion of particular technological solutions in favour of others and this way impact the quality of implementation of legislation. Similarly, a definition of as approach to calculation of the numerical values of targets is very specific on a wide range of assumptions about how these targets will be met, e.g. whether an energy type will be sourced domestically or (also) imported, and what political incentives for the promotion the energy type should be chosen.

However, a definition alone cannot be taken as an indicator of a Directive's legal commitment. Even if a definition's composition serves the desired purpose, the target that accompanies this definition might just be indicative, that is non-binding and hence might lead to poor compliance with this EU legislation by a member state. In other

words, features of a target such as its numerical value and its legal strength (i.e. either whether binding or indicative) signal the amount of effort required to implement a piece of legislation, (whereas a definition reveals which policy goal or goals are actually pursued by a piece of legislation).

A differentiation between the legal aspects of targets and their definitions is also important because more than one goal underlies the Directives being studied. Officially, the EU has justified its renewable energy development (that is RES-E and RES-T) in terms of the main double-goal of security of energy supply and the reduction of greenhouse gas emissions in line with its commitment to the Kyoto Protocol, additional goals being rural development, technological innovation and economic competitiveness (European Commission, 1996a, p. 3; 1997a, p. 4, pp. 6-7; 2008, pp. 2-4).

Thereby, it is important to point out that the individual goals set for EU-level renewables promotion might not always be compatible. For example, a definition of renewable energy sources which identifies waste incineration as a renewable source of energy contributes to the security of energy supply because it diversifies sources of electricity production. At the same time, such a definition's contribution to environmental protection, and more specifically to climate change mitigation, is questionable at best, because waste incineration implies emitting environmentally harmful gases (as discussed in chapter four). Similarly, a Directive that incentivises the promotion of first-generation biofuels, and has few or no explicit instruments for the promotion of specifically second-generation biofuels⁵, can be criticised for not being geared toward GHGs reduction because some biofuels emit more than conventional fuels. At the same time, such a piece of legislation can make a substantial contribution to the goal of rural development, giving farmers an additional outlet for their products, and the goal of security of energy supply, leading to a diversification of energy sources in transport.

⁵ “Biofuels can be identified as 'conventional' or first-generation (1G), derived from agricultural feedstocks; or as 'advanced', derived from non-food inputs. Advanced biofuels can help reduce or avoid the downside of 1G biofuels. The problem is that, as yet, there is virtually no large-scale commercial production of advanced biofuels; even though, in many cases, the technologies are understood at the laboratory or demonstration-plant scale” (Kay and Ackrill, 2012, p. 296).

By examining separately how the single policy issues (pertaining to targets and definitions) have taken shape in the EU policy-making processes, it is not just possible to cast light on the relative weight given to different goals in connection with single policy outcomes; it also allows to establish what actors were successful in setting through particular policy goals and what rationales they had for doing so. More specifically, an overview of all the stages in the policy-making process and consideration of the influence of single policy actors during these stages can aid an understanding of what structural and institutional constraints and what actors within whose constraints gave the single aspects of legislation their final form. Further, the detailed understanding of the goals of the legislation in question, sought here, enables a better assessment about whether the EU is indeed the environmental leader that it claims to be in the context of international negotiations of greenhouse gas (GHG) emissions reduction.

Thus, combating climate change might not be *de facto* (versus *de jure*) the goal envisaged by the Directives of 2001, 2003, 2009, and 2015. However, the EU as a global player in the negotiations of the Kyoto Protocol and its follow-ups, conventionally referred to the above pieces of legislation (in addition to its Emission Trading System), as serving the purpose of climate change mitigation. This allowed the EU to confirm its role of a global environmental leader who is leading by own example (compare Oberthür and Dupont, 2011, p. 89).

Whether the EU can legitimately claim such an ambitious role in the international arena is mainly discussed in the literature on the Union's efforts at controlling its environmental footprint by establishing the Emission Trading System (ETS) (led by e.g. Haigh, 1996; Wurzel and Connelly, 2011; Oberthür and Dupont, 2011; Pallemarts and Williams, 2006). As this policy area is exclusively aimed at the domestic implementation of internationally-made commitments to the mitigation of climate change, the success of its implementation can be interpreted as a direct indicator of whether the proclaimed commitment to environmental leadership by the EU is substantiated. Thereby, the success of the implementation of national policies can be easily measured by the amount of GHG saved by EU member states, as done by Oberthür and Dupont (2011), who claim that, at least throughout the 1990s, the self-presentation of the EU as an environmental leader lacked credibility.

The above scholarly discussion is related to a more general one that revolves around the fact in the post-Cold War era, the EU has increasingly begun to justify its global position on the basis that it is informed by the normative principles of *inter alia* sustainable development, peace, freedom, democracy and good governance. Today, there is a growing body of literature that seeks to provide a better understanding of how normative the international approach of the EU is (Tocci, 2008, p. 21). Within this body of literature, one can discern three main viewpoints. From one of them, Europe is seen as *sui generis* supportive of normative global governance (Laïdi, 2008, pp. 4-5). According to this view, represented by Adler and Crawford (2006), the normative character of the EU has developed considerably and was prominent during the last couple of decades. From the second point of view, the European pursuit of supporting norms in the world system is determined structurally and is, hence, instrumental in nature. Thus, foreign policy is considered to constitute a means through which the Union seeks to escape competitive disadvantages respective to the rest of the world. The EU is increasingly faced with these disadvantages due to the cleavage between its advanced domestic environmental norms and the less advanced global ones. Besides, the EU needs to instrumentalise the normative argument due to its lack of hard power, especially evident *vis-à-vis* the more military-powerful United States (Laïdi, 2008, p. 5; Postel-Vinay, 2008, p. 39). From the third point of view, to fully grasp the normative power of the EU, it has to be viewed in a broader context and over a longer period of time – a view held by Diez (2005). The same idea is defended by Hix (1999), who pays attention to the spatio-temporal development conditions of international norms in their influence on Europe, claiming that Europe in the post-1945 era was doubtlessly a norm-setter (e.g. because it had contributed to the creation of the first worldwide international organisations through cooperative participation in their establishment). The community, however, has lost this character and has increasingly exerted geopolitically motivated influence in the process of European integration. This study attempts to indirectly contribute to these debates by examining what were the drivers behind the stipulation of the EU Directives under study, with a specific focus on targets and definitions in this legislation.

Despite being core features of RE legislation, the policy issues of targets and definitions have remained understudied in the discipline of political science. The lacunae in

research are particularly pronounced regarding the understanding of policy choices and decisions on targets made during the stage of policy formulation. This policy stage is primarily aimed at the preparation of a Directive Proposal, the work for which is accomplished either within the European Commission (hereafter Commission) or by subcontracting external scientific expertise usually to conduct studies for the Commission. The policy stage can involve the modelling of future scenarios (e.g. to examine effects of alternative policy initiatives on the EU market) and the application of other tools for policy formulation. Therewith, the scholarly neglect of computer-based tools for policy formulation, also with recourse to the involvement of epistemic communities outside of governmental bodies, is rather symptomatic in policy studies (Jordan and Turnpenny, 2015). As elaborated on in more detail in the following chapter, such policy formulation tools have generally failed to attract the interest of scholars in political science, and have re-emerged only recently as a research field mainly due to the explosive application of computer-based tools in policy-making across different jurisdictions, including the EU.

The renewable energy policy area remains similarly under-explored as regards several of its single legislative aspects. For instance, the legislative outcomes in the policy area remain puzzling against the background of the previously established course of RE policy. Thus, the decision by the European Council to commit to the binding 20% in renewable energy consumption by 2020 could hardly have been anticipated in the light of the former reluctance on the part of member states to make a far-reaching commitment to the promotion of renewables (Nilsson *et al.*, 2008, p. 2). Comparably, the gradual evolution of biofuels toward a remedy for various environmental and economic problems facing the EU was an unparalleled approach toward the issue area (Di Lucia and Kronsell, 2010, p. 545; Dunlop, 2010, pp. 351-352); its salience is even more puzzling given the private sector's initial reluctance to invest in biofuels (Eikeland, 2006, p. 2).

At the same time, the final form and shape of the European renewable energy framework is of far-reaching influence, not solely as a framework structuring the deployment of renewables within the EU, but also as a foundation for successive RE measures within the EU. Apart from setting the EU regional course, the legislative framework in question is equally significant as a potential model for emulation in other

parts of the world, and as a standard that can be advocated by the EU with reference to its domestic green policies (Goldthau, 2017). In addition, the EU RE legislation can be seen as a factor strongly affecting the global prices of crops because of incentivising cultivation of biofuels in third countries, which is also done not necessarily in compliance with the EU's own sustainability criteria (as discussed in the chapter on the 2009 Directive) (Alexandratos, 2008, pp. 666-667). These criteria are difficult to impose on supplier countries because the existing sustainability criteria for biofuels in the EU legislation potentially conflict with the WTO rules (Ackrill and Kay, 2011; Daugbjerg and Swinbank, 2015).

Taking into account why the outlined topic deserves a systematic examination, the purpose of this study is formulated as: to explain and describe why and how particular numerical values and definitions for RES-E and RES-T were agreed in the policy-making processes on the Directives 2001/77/EC, 2003/30/EC and 2009/28/EC, (the ILUC Directive of 2015 being treated as an outlook to the Directive of 2009). Therewith, my main research question is: what structural pressures and processes behind them determined the final legislative shape of the targets and definitions for RES-E and RES-T, as enacted by the Directives 2001/77/EC, 2003/30/EC and 2009/28/EC? This question is accompanied by the following additional questions: 1) what processes and structural pressures launched the policy-making, resulting in the Directives 2001/77/EC, 2003/30/EC and 2009/28/EC?; 2) what accounts for the choices of policy formulation tools for the calculation of numerical values of the EU targets and their distribution among member states?; 3) how can the choice of legal strength of targets for RES-E and RES-T be explained?; and 4) how was the scope of the definitions for RES-E and RES-T arrived at?

While this section dealt with this study's purpose and with the void in executing literature on the topic of policy-making on RE targets and definitions (for more on this see literature review), the next section turns to my theoretical framework. Specifically, it introduces the theoretical concepts constitutive of the theoretical framework of this study and seeks to justify the choice of particular theoretical concepts as applicable to the analyses of the empirical scope tackled.

The theoretical framework for this study is based on historical institutionalism (HI), in its rational form, making the assumption that policy actors act in accordance with the logic of rationality. More specifically, the historical institutionalist concepts of critical juncture and path dependence are applied. That is, the drivers that shape policy outcomes are understood as three types of structural conditions (permissive, productive and antecedent) that either open a critical juncture or shape processes at a critical juncture. In addition to these structural conditions that open and shape a critical juncture, this thesis also seeks to acknowledge agency respective its impact on processes taking place within the critical juncture; that is, the thesis specifies actors' preference formation by means of agent-centric historical institutionalism, and their respective capacity of realising these preferences, differentiated in line with dimensions of power. These additional theoretical concepts are considered complementary to historical institutionalism because they allow specifying the behaviour of actors within the structural constraints of historical developments leading to a critical juncture and structuring it. Accordingly, the theoretical framework of the study seeks to straddle a dichotomy of structure and agency, without neglecting one in favour of the other. Besides, when dealing with EU policy actors, the study also seeks to understand how their interactions are structured institutionally, e.g. *through the co-decision procedure*⁶ that applies to the policy area studied, being an institutional arrangement that is putting the European Parliament (hereafter Parliament or EP) and the Council of the European Union (hereafter Council) on the same footing (Tsebelis and Garrett, 2000, p. 15).

⁶ The co-decision procedure was introduced by the Maastricht Treaty in 1992 and has substantially transformed the EU system of governance toward the empowerment of the European Parliament (Burns *et al.*, 2013, p. 941). The version of the co-decision procedure specified in the Treaty of Amsterdam is commonly referred to as co-decision II (to differentiate it from co-decision I by Maastricht Treaty) (Tsebelis and Garrett, 2000, p. 10), the former being of importance for this study. Co-decision II provides for the possibility of two parliamentary readings of a legislative proposal. If during the two readings no agreement on a legislative text is reached, a Conciliation Committee is set up, consisting of representatives of the Council and the Parliament. The work within the Committee is aimed at the formulation of a joint text, which, if agreed on, needs to be approved by both the Council and the Parliament for the legislative proposal to be adopted; otherwise, the proposal lapses (Thomson and Hosli, 2006, p. 392). In the Lisbon Treaty, the co-decision procedure was renamed as the 'ordinary legislative procedure' of the EU (De Parfouru, 2008, p. 493).

To further justify the above theoretical choices, one also needs to resort to preliminary knowledge sourced from the existing literature on this policy area and from the EU documents on these pieces of legislation. Thus, it is known primarily from the secondary literature that the policy-making processes of interest were subject to the involvement of a number of different types of actors – supranational, national and private, all of them trying to advance their dissimilar policy preferences (as discussed in detail in the literature review of the next chapter). Thus, “trying to balance various objectives and conflicting interests [in RE policy]” the EU governors were presented with a range of governance dilemmas when negotiating this policy, stemming *inter alia* from the diversity of national interest in RE promotion (Hildingsson *et al.*, 2011, pp. 18-19). This is why the role of agency needs a detailed theorisation as regards the preference formation of different types of actors participating in the EU-level policy-making. As already mentioned, this will be achieved by adopting concepts developed by agent-centric historical institutionalism (ACHI). The advantage of such concepts is that they build on the theoretical foundations of historical institutionalism and further develop them toward being expanded to a specification of how and why policy preferences are formed within the frame of EU-level policy-making processes. In so doing, ACHI departs from the rational type of historical institutionalism, assuming bounded rationality as a logic guiding preference formation in actors. At the same time, ACHI does not raise the issue of the relative strength of various types of actors in the policy-making process – a theoretical issue covered by the application of the concepts of three dimensions of power, which allows capturing the dimension of open conflict as well as the dimension of conflict hidden from direct observation.

While acknowledging the role of agency, the heavily-institutionalised structures of the EU in their disciplining effect on the interactions of actors during the policy-making process cannot be neglected either. The same applies to structural pressures external to the EU. This is because the EU-level promotion of renewables has been continuously justified as a remedy to the main double-goal of security of energy supply to the EU and the EU commitment to the international efforts at mitigation of climate change. More specifically, in its various documents, the European Commission refers to renewable energy as contributing to the achievement of this main double-goal, and also as a contribution to rural development, technological innovation and economic competitiveness. Furthermore, by presenting renewable energy as interlinked with many

policy areas governed at the EU level, the Commission advocate the same level approach to the promotion of RE sources, i.e. the Community level (European Commission, 1996a, p. 3; 1997a, p. 4, pp. 6-7; 2008, pp. 2-4).

The main two challenges of climate change and energy supply were furthermore thoroughly examined by the Commission in various studies, in reliance on which policy Proposals on renewable energy were made. That is, it is known that the EU renewable energy policy, in the same way as the EU energy policy more generally, has been subject to detailed scientific scrutiny through modelling of its potential future development in the EU. Such modelling was primarily aimed at gauging the impact of alternative EU policies and of the broader context of a changing and globalising world outside of the EU on the RE development within the Community (European Commission, 1997a; 2008). This approach to policy formulation shows that EU policymakers were particularly careful about building their judgments with respect to several structural and institutional factors in their impact on the take-up in renewable energy sources (RES) in the EU.

The anticipation of the impact of structural pressures on the development of the EU renewable energy policy and the longer-term perspective needed to understand how these structural pressures have built up in first place, necessitates the application of the approach of historical institutionalism. This approach not only helps to understand how a critical juncture on the policy-making process was opened under the impact of structural pressures, but also accounts for the institutional structures guiding the ensuing policy-making process. While providing a theorisation of structural and institutional constraints to the agency, historical institutionalism is compatible with the additional theoretical concepts geared at specifying the role of agency, outlined above.

To reconstruct the policy processes of interest and to fill existing empirical gaps, more than 30 semi-structured interviews were conducted with EU officials, who participated in the making of legislation in question, and with representatives of the epistemic community, who were responsible for modelling exercises commissioned by the Commission. A detailed account of the technique of elite interviewing, which was applied in the study, is provided in the methodology chapter. Further information sources consulted embrace documentary evidence (such as documents by the

Commission, the EP and the Council, media coverage of EU-level policy-making, and scientific studies related to EU policy impact), as well as the secondary literature primarily in the discipline of political science.

The collected data is analysed employing the process-tracing approach because generally, the study of the EU policy developments is amenable to process-tracing. Besides, when applied to small-N case studies, the approach has the advantage of being able to structure and analyse the rich empirical evidence on each case study, often made available through conducting semi-structured interviews (Dür, 2008, pp. 562-563). By the same token, process tracing constitutes the conventionally applied approach in political science for analysing EU-level integrative dynamics (Schimmelfennig, 2015, p. 98). This methodological choice is further justifiable against the background that it allows tracing long- and medium-term developments (potentially path-dependent in nature) that enable the commencement of policy-making processes in the EU and that take place during these processes. Besides, the processes of EU-level policy-making are well amenable to the analytical method of process tracing due to its reach conceptual foundation (as further elaborated on in the chapter on methodology).

The Basic Structure of the Study

This study is divided into a further eight chapters. The first chapter starts with a review of the empirical literature on renewable energy policy, paying particular attention to the literature on targets and definitions. In so doing, the chapter seeks to establish the degree to which the policy-making processes on single policy issues are currently understood in the discipline of political science and reveals gaps in the literature on these processes. The chapter then revisits the literature on tools for policy formulation and introduces the conceptual basis of this literature.

The next chapter, chapter one, is dedicated to a detailed discussion of the theoretical framework of this thesis, treating single theoretical approaches constituting the framework. It does so with respect to aspects of their disciplinary state-of-the-art, their critique and their compatibility with each other. The chapter begins with historical institutionalism, which is at the core of the theoretical framework of the present study. It

proceeds with the supplementary theoretical and conceptual features of this theoretical framework. In the conclusion of this chapter, the hypotheses of this study are presented.

Chapter two, in turn, deals with the research design for this study. Firstly, it reviews the existing literature on how to treat small-N case studies methodologically, implicitly trying to identify points of agreement within this literature as regards the criteria for selection of a research design for a study. In the following step, the chapter discusses the technique of elite interviewing and provides a rationale for the choice of single methodological solutions applied to conduct interviews for this study. The chapter concludes with a conceptual framework of process tracing and some additional aspects of my research design, such as data generation, data analysis, and generalisation of research findings.

In chapter three, I provide a historical overview of the renewable energy measures and pieces of legislation at the EU level which proceeded and to some extent prepared the Directives examined in this study. The overview also aims to clarify the context leading to the initial preoccupation with renewable energy at the level of the EU. In addition, the chapter reviews the landscape of actors, active in the EU-level policy processes on renewable energy, along with their positions on the policy area of renewable energy and on related policy areas.

Chapter four is the first empirical chapter of this study, dealing with the 2001 Directive on renewable electricity promotion. It begins with an overview of legislative issues dealt with in this study, turning then, first, to policy-making processes behind the choice of numerical values of the targets, and second, to the processes on negotiations of definitions. The assessment of the processes leading to the choice of a numerical value for the overall target primarily concentrates on the decisions by the Commission and its interaction with external modelling experts. Subsequently, issues of the distribution of the overall target among member states and of defining RE sources implies examining a wider range of policy interests in all three EU institutions. In broad terms, the chapter finds that, while the overall target is moulded primarily by the Commission, the definitions strongly reflect the policy choices of member states.

The fifth chapter proceeds with an analysis of the negotiations of the 2003 Directive on biofuels. This chapter is somewhat smaller in scope in comparison to the chapter four for the following reasons: first, the overall target was predetermined in the modelling exercise preceding the 2001 Directive and dealt with in chapter four; second, the unequal distribution of the overall target among member states did not take place in the case of biofuels legislation; and third, the definitions of the 2001 Directive were partly transferred from the 2001 Directive to the 2003 Directive. Hence this chapter concentrates on policy-making processes that determined the legal strength of the target and on remaining definitions. The chapter establishes that by contrast to the 2001 Directive, the overall policy-making process on the 2003 Directive was largely structured by member states, with the result that the target became indicative – an outcome that became possible because of differences in institutional settings between the negotiations on respectively renewable electricity and renewable fuels.

Chapter six analyses policy-making processes on targets and definitions of the 2009 Directive. The chapter commences with an overview of some policy developments structuring the subsequent stage of conduction of Impact Assessment for the Directive. In so doing, the chapter first looks at a string of events in EU institutions, seeking to reconstruct how they led to an agreement on the approximate numerical values of RES-E and RES-T targets. Then, the rest of the chapter first tackles a range of policy issues on renewable electricity, such as the distribution of the overall target, the trajectory for reaching the national targets, definitions for renewable electricity and approaches to the calculation of renewable electricity. The chapter then discusses policy issues related to the promotion of biofuels, such as the scope of the definitions of renewable fuels and the counting toward the target. The chapter finishes with an outlook on more recent biofuels policy, i.e. the ILUC Directive, by reconstructing two stages in the policy-making process: the stage of formulation of the ILUC Proposal by the Commission and the ensuing discussions of the policy Proposal in the Council.

In the chapter that follows, the policy issues discussed in the proceeding chapters are juxtaposed and compared. That is, the processes that were dealt with that far in this study are once again revisited, in so doing putting an emphasis on the long-term dynamics in the development of the EU renewable energy policy. This way the chapter

provides a longer-term perspective on the evolution of this policy area at the level of the EU.

The last chapter evaluates the findings of the study by answering the questions asked by this study and by validating or invalidating the hypotheses of this study. The chapter also revisits the theoretical and methodological concepts employed to the analyses of RE policy in order to reevaluate their explanatory leverage. In the last step, the chapter discusses the limitations of this study and suggest some ideas for future research that can build on the findings the present study.

Chapter 1: Literature Review and Theoretical Framework

This chapter integrates a review of the literature (both empirical and theoretical) relevant for this study and an elaboration of a theoretical framework for this study. The choice of treating these two subject areas in one chapter was made for the purpose of better demonstrating how the state of the art in the first has implications for the choices made in the second. This chapter proceeds as follows. It begins with a review of literature on renewable energy policy-making, summarising existing knowledge and pointing to gaps in research. The chapter continues with an evaluation of single theoretical approaches within the context of their development, starting with historical institutionalism and then turning to the concepts of dimensions of power and ACHI. In so doing, the theoretical and conceptual foundations for the applied theoretical framework are established. In the last step, this chapter sets out the hypotheses of this study. (The chapter which follows this one is devoted to a discussion of the case studies' research design options and with a selection of a research design for this study.)

1.1 Key Literature and its Limitations

The EU policy area of renewable energy has been gaining importance in the discipline of political science in parallel with the expansion of legislation in this policy area at the EU and national levels. Yet, scholarly attention has not been distributed evenly between

the various aspects of the policy area, neglecting some policy issues and some phases in policy-making processes. Amongst the best-understood aspects of RES policy are those that remain under the competence of national governments. By implication, there are several studies providing an overview of existing renewable energy policies across the EU, such as overviews by Reiche and Bechberger (2004), Ackermann *et al.* (2001), Haas *et al.* (2011), and Abdmouleh *et al.* (2015). National RES policies are furthermore analysed under the aspect of whether they converge across the EU, this aspect being explored *inter alia* by Jansen and Uyterlinde (2004), Kitzing *et al.* (2012) and Jacobs (2016). The body of literature on national RE policy also enquires into the reasons behind governmental choices of particular RE policies in EU member states, explored by e.g. Menanteau *et al.* (2003), Toke and Lauber (2007), Marques *et al.* (2010), and Schaffer and Bernauer (2014).

However, particularly strong scholarly attention has been paid to the national policy instruments for renewable electricity promotion, such as feed-in tariffs, tradable green certificates, and tenders, aimed at implementation of EU-level legislation. Thereby, different domestic policy instruments were studied under the aspect of their relative effectiveness for promoting renewable energy. Thus, the subject of instruments' comparative effectiveness has yielded a relatively rich literature consisting of *inter alia* contributions by Harmelink *et al.* (2006), Held *et al.* (2006), Carley (2009), Dong (2012), Jenner *et al.* (2013), Ragwitz and Steinhilber (2014), and Nicolini and Tavoni (2017).

Similarly, single studies have been conducted on the development of national biofuels (or renewable fuels) support policies, either specifically in pioneering member states, by e.g. Wiesenthal *et al.* (2009), or in all EU member states as regards their reactions to the EU biofuels legislation, by e.g. Eikeland (2006), Bomb *et al.* (2007), Di Lucia and Nilsson (2007), Ninni (2010), Cansino *et al.* (2012), and Linares and Pérez-Arriaga (2013). In this body of literature, the focus lies on the difficulties in the implementation of the 2003 Directive and the lessons that can be drawn from this experience.

Much less attention, however, has been paid to EU-level policy-making processes on renewable electricity and biofuels. This rather narrow literature is characterised by lacunae in empirical evidence on stages in policy-making and on negotiating positions

of actors involved with the policy-making processes in question. Yet, this body of literature acknowledges that the RE policy-making was exposed to attempts to influence policy outcomes by a plurality of actors. In this vein, some scholars, such as Janzen and Uyterlinde (2004, p. 95) and Toke (2008, pp. 3002-3003), claim that these policies have been subject to lobbying by a number of interest groups, including conventional and renewable energy producers, large consumers and environmental NGOs, among others with the objectives of avoiding undesired competition and/or higher costs of policy implementation.

Furthermore, Directives of 2001, 2003, 2009 and 2015 were treated with different degrees of interest in political science. The scholarly treatment of these pieces of legislation range from almost complete neglect of the entire legislative processes on the Directives in question to a thorough illumination of specific policy issues of single Directives.

The first Directive in the policy area, the 2001 renewables Directive, was a subject of study of single contributions by e.g. Lauber (2002, 2005) and Rowlands (2005), with a focus on inter-institutional decision-making. These articles mainly cast light on the positions of EU institutions and on inter-institutional negotiations, leading to the policy outcome. Thereby, these anglophone articles are complementary to single literary sources published only in German, such as by Hirschl (2008), and hence largely unknown to the English speaking reader. The complementarity is provided by the stronger attention of the germanophone contributions to the role of non-governmental actors in the policy-making processes and their lobbying within the EU institutional structures, by comparison to the anglophone articles. Hence, some germanophone literature will be integrated into the present study in order to gain additional empirical evidence on the negotiations of the 2001 and 2009 Directives. Besides, to be able to gain some additional empirical evidence, a further stream of literature will be resorted to that consists of the coverage of this legislation in the discipline of law. The legal perspective on policy issues of interest can help interpret alternative policy formulations as regards their implementation requirements, and also occasionally provide details on legislative policy-making processes studied. From within the legal literature, the authors consulted are amongst others Ladefoged (2010), Van Steen (2010), and Werring *et al.* (2006).

The second Directive in the policy area of renewable energy, the 2003 biofuels Directive, is almost a complete blind spot in the study of EU-level renewable energy policy-making in political science. Single exceptions are the article by Delvaux (2004) and Werring *et al.* (2006). The former article concentrates on legislative policy-making processes in EU institutions; the latter, with its legal account, grants additional insights into the policy-making processes in question and provides interpretations of legislative decisions. Against the background of this small body of scientific literature on the 2003 Directive, media coverage and official documents by EU institutions on this Directive make a significant contribution to the exploration of the policy outcomes of this piece of legislation.

The 2009 Directive, covering *inter alia* renewable electricity and biofuels, is the most intensively studied RE Directive in political science to date. The drivers behind institutional positions have been assessed by amongst others Müngersdorff (2009), and Boasson and Wettstad (2010). Therewith, the EU-level policy studies concentrate primarily on the issue of policy instruments. Specifically, the issue of the Commission's intention to harmonise RE support schemes was scrutinised by Toke (2008), Nilsson *et al.* (2009), and Lauber and Schenner (2011), while the formulation of several policy issues connected to the promotion of biofuels was discussed by Eikeland (2006). However, in particular, the early stages in the policy-making process, especially the stage of policy formulation (as is elaborated on in the following) reveal a substantial lacuna in this body of literature.

The Directive of 2015 (often referred to as the ILUC Directive) is treated as an outlook on the 2009 Directive in this study. An outlook was considered necessary since some major decisions on the biofuels policy at the EU level were postponed in the negotiations of the 2009 Directive and resumed only some years later. Due to being a relatively recent piece of legislation, the policy-making process accompanying the Directives negotiations has received comparatively scant attention in political science so far. Instead, the ILUC Directive, both as evolving and as adopted piece of legislation, features mainly in the debate on the role of this legislation in its contribution to the development of low-carbon transport fuels in the EU. Specifically, the effectiveness of the ILUC Directive on lowering greenhouse gas (GHG) emissions within the overall EU

climate change strategy by 2020 is discussed by, for instance, Kim *et al.* (2013) and Malins (2012), while Bowyer *et al.* (2015) assess the Directive's contribution to the EU climate goals by 2030.

In the case of the aforementioned first three Directives, the negotiations on policy instruments have enjoyed by far the most extensive treatment in political science, which is in line with the political scientists' focus on the same policy issue at the national level, as discussed above. Hence, negotiations of support schemes are relatively well-understood regarding the drivers and interests behind the negotiating positions of single actors, and respective institutional turf battles within the policy-making processes leading to the policy outcome; these issues are treated in the work by Lauber (2012; 2005; 2002) as regards the 2001 Directive, and by Nilsson *et al.* (2008) with respect to the 2009 Directive.

By contrast, the policy issue of definitions of renewable energy sources in the Directives at hand has been treated rather superficially. Thus, definitions are dealt with as one of several policy issues being attention-worthy, without making them an exclusive focus of single studies in the articles by Rowlands (2005), Müngersdorff (2009) and Lauber (2012). This relatively small body of research shows diverging actors' interests on single aspects of definitions, which have led to difficulties in finding an agreement, especially during the negotiations of the 2001 Directive. Thereby, the negotiating positions of governments on definitions were shown to be in line with existing national definitions and policy practices.

By comparison to the issue of definitions, the targets of 2001, 2003, and 2009 Directives have been treated in even less detail. While the positions of the EU institutions on targets have been acknowledged by Rowlands (2005), Lauber (2005), and Müngersdorff (2009), the stage of the targets' formulation as drafted by the Commission remains a 'black box' within the literature on RE policy-making.

At the same time, some literature on EU-level renewable energy policy-making is characterised by its search for an appropriate theoretical approach to this policy area. Thus, different theoretical lenses were adopted comparatively within single studies, which have helped illustrate the relative importance of different actor groups in their

interactions with EU institutions, as well as the differences in policy preferences of member states in the Council during the negotiations (compare Boasson and Wettestad 2010; Nilsson *et al.*, 2009; Eikeland 2006). For example, the congruence analysis by Boasson and Wettestad (2010), which acknowledges a broad range of multi-level influences on RE policy-making in the EU, stemming from *inter alia* the national and EU level, juxtaposes four theoretical perspectives to account for each level of influence: liberal intergovernmentalism; multi-level governance; new institutionalism; and international regime. As in the present study, the two authors pay equal attention to global, regional and national levels (as interacting within the EU institutional framework) in their impact on the policy outcomes. Thereby, Boasson and Wettestad (2010) demonstrate that the Commission's and Parliament's cooperation with organised interest groups had an effect on certain policy outcomes and that the entrepreneurial activity of Commission officials made an impact on the formation of member state negotiating positions, which in turn shaped the policy outcomes.

In addition, further studies show that coalition-building among member states, rooted in domestic regulatory preferences, also sheds light on EU decision-making processes and outcomes in the RES policy area, such as studies by Rowlands (2005) and Nilsson *et al.* (2009). Thus, for example, the contribution by Rowlands (2005) analyses and explains legislative outcomes in the light of vote distribution in the Council. Respective governmental preference formation, the study by Rowlands (2005) finds that the full understanding of member states' positions can only be achieved by taking into consideration the domestically established standards and practices within RE and other policy areas, such as the policy area of environment and waste treatment. A similar formative influence of the Common Agricultural Policy (CAP) on domestic decision-making regarding biofuels has been identified as highly significant by Suck (2008).

1.2 Policy Formulation Tools and Stages

It can be further gauged from the above literature overview that the existing studies on RE policy have concentrated on the inter-institutional stage of negotiations. This implies that the earlier stages in the policy cycle, and in particular the stage of policy-formulation, were strongly neglected.

Tools for policy-formulation constitute one of the three main categories of all policy tools available to policymakers, the other two categories being tools for policy implementation and procedural tools, such as education and training. The category of policy-formulation tools (also referred to as ‘analytical tools’, ‘analycentric tools’ and ‘policy-analytic methods’) carry the purpose of facilitating informed decisions on how to approach policy problems identified at the stage of agenda-setting. The question of how to approach the identified policy problem is solved by means of collecting and evaluating large amounts of information to explore various policy options (Turnpenny *et al.*, 2015, pp. 4-5).

The aforementioned lack of scholarly attention to the policy-formulation within the overall policy cycle is not unique to RE policy studies. Rather, this policy stage remains under-researched in all EU policy areas which utilise tools for policy-formulation. Such tools, as for instance future scenario modelling or cost-benefit analysis, are conventionally employed to explore a range of available policy alternatives and to prioritise some of the policy solutions over others. This scholarly neglect of policy-formulation tools (PFTs), according to Turnpenny *et al.*, (2015, p. 5), can be attributed to the fact that since the 1960s, the development and the use of PFTs have largely been disconnected from mainstream research on policy-making and policy change. Only recently have Jordan and Turnpenny (2015) provided a classification of tools for policy-formulation, as well as a categorisation of the stages underlying the process of their application. Compared to this work, previous accounts of the application of PFTs have concentrated rather on specific types of tools applied in a single policy area. For example, the discussion of scenario modelling by Berkhout *et al.* (2010) and Berkhout *et al.* (2014) is focused of the application of this policy tool exclusively in the policy area of climate change. This is why, for the purpose of this study, I employ the conceptual foundations on PFTs borrowed from the recent and comprehensive contribution to this literature by Jordan and Turnpenny (2015), the single concepts being specified in the following.

Further noteworthy is that recent years have seen growing scientific interest in policy-formulation tools after decades of being outside of the scope of most policy analyses. While in the 1950s and 1960s, such tools found wide application primarily in the fields

of defence and budgeting in the EU and USA, the value of PFTs was subsequently undermined. That is, such tools became degraded as ‘technocratic’ and positivist and “[t]he very idea that policy analysis should seek to provide analytical solutions for ‘elites’ was challenged” (Turnpenny *et al.* 2015, pp. 15-16).

Recently, however, policy formulation tools have regained their former popularity becoming regarded as an analytic solution to challenges of *inter alia* energy security and climate change, due to growing importance and great complexity of this type of challenges. Parallel to the rediscovery of tools-based solutions, the diversity policy-formulation tools has grown exponentially as new tools became invented (Turnpenny *et al.*, 2015, pp. 5-7); hence, today there is a great number of different types of policy-formulation tools. By comparison, in Jordan and Turnpenny (2015) attention is paid primarily to such categories of tools as scenarios, participatory assessment, computerised models, multi-criteria analysis and cost-benefit analysis. To encompass all the different types of tools in one definition, policy-formulation tools are defined by Jordan *et al.* (2015) in a broad manner, as:

[A] technique, scheme, device or operation (including – but not limited to – those developed in the fields of economics, mathematics, statistics, computing, operations research and systems dynamics), which can be used to collect, condense and make sense of different kinds of policy relevant knowledge to perform some or all of the various inter-linked tasks of policy formulation (Jordan *et al.* 2015, p. 270).

To better understand the process of policy-formulation under application of PFTs, it is suggested by Turnpenny *et al.* (2015) to differentiate between *five* single steps or tasks constituting the process of policy-formulation. The first step, *problem characterisation*, is aimed at establishing the existence of a policy problem (or problems) using some form of data collection and can be described as an extension of the agenda-setting policy stage. This step allows policymakers to select certain forms of evidence in order to support action on specific policy issue(s). In the second step, *problem evaluation*, one seeks to understand the sources or the underlying causes of the problem and the extent of the problem. The evaluation of a policy problem, furthermore, strongly conditions the type of policy formulation tool selected for further application. Next, the third step of *specification of objectives* sets to clarify the objectives to be met and to stipulate the

timescales for policy action to be adhered to. Then, during the fourth step of *assessment of policy options*, different policy options are compared, and recommendations on policy design(s) are made. Since different policy options bring with them different costs and benefits, public officials during this stage need to weigh up the available policy solutions against each other and subsequently draft a policy Proposal. A policy Proposal, in turn, contains policy options, which are meant to be advanced to the ratification stage. Finally, the fifth step of *policy design* takes place before the adoption of the final policy and involves selecting policy instruments to realise the policy goals determined. Because the same policy goals can be reached with different policy instruments, the task at this stage is to select a particular mix of policy instruments from within the available policy toolbox (Turnpenny *et al.*, 2015, p. 9).

1.3 The Choice of Theoretical Framework

The rest of this chapter consists of the following major sections. The first section provides a short overview of new institutionalism, concentrating on its major tenets. The second part of this chapter then focuses specifically on the theoretical framework of historical institutionalism (HI), beginning with the essence of this theoretical approach. Next, it seeks to elaborate on some concepts pertinent to HI – critical junctures, permissive and productive conditions, path dependence and increasing returns, drawing *inter alia* on contributions by Capoccia and Kelemen (2007), Soifer (2012), and Pierson (2016). These concepts, being primarily aimed at establishing structural constraints for policy change, are in the third part framed in light of conceptual frameworks devoted to clarifying the role of actors in political processes, i.e. the concept of dimensions of power and the preference formation of actors, the specification of the latter undertaken by reviewing Büthe (2016a; 2016b).

1.4 New Institutionalism – the Core of the Approach

New institutionalism had sharpened its contours and become recognisable as a new paradigm in political science by the end of the 1980s (Lowndes and Roberts, 2013, p. 28; Peters, 2019, p. 1). Already by the late 1990s, it was conventionally referred to as

constituting an important research agenda in political science, being central to the discipline (Boin, 2008, p. 88; Goodin and Klingemann, 1998, p. 17). For instance, Peters (1998, p. 205) identified new institutionalism as a new growth area, firmly on the agenda of virtually every journal and conference in political science. The popularity of this theoretical approach is closely connected to one of its major achievements, namely its ability to have refocused political science on the importance of the legacy of history to political processes and the impact of interrelated rules, regimes and practices in political life on actors. Prior to the widespread recognition of this approach, these thematic foci were rather on the periphery of the discipline (Goodin and Klingemann, 1998, pp. 17-18; Schmidt, 2006, p. 98).

At the same time, ‘new institutionalism’ by no means represents a homogenous theoretical approach (Pollack, 2019, p. 109; Ryfe, 2006, p. 137; Thelen and Steinmo, 2008, p. 1). It is rather a catchphrase for a general approach in social science, and an umbrella term for a variety of new institutionalist schools, which can provide competing explanations of political processes (Ripoll Servent and Busby, 2013, p. 3; Lichback, 2012, p. 25; Reich, 2000, p. 501). In political science, distinctive schools or varieties of new institutionalism have evolved because scholars working within this general approach imported concepts from traditions that have little in common, such as those of economics and sociology (Aspinwall and Schneider, 2001, p. 1-2). Hence, what is considered as ‘new institutionalist research’ might depend on the specific school of new institutionalism applied by a researcher (Peters, 2019, p. 22).

In the face of a rich literature produced in all the varieties of new institutionalism, Guy Peters concedes that it is justified to ask whether there is enough of a common core among the new institutionalist schools to justify the assumption that they belong to one overall institutionalist approach (Peters, 2016, p. 59). Trying to find this common core, Peters (2019; 1999) raises the question as to what makes an approach genuinely institutionalist. Replying to Peters (1999), Olsen maintains that an essentially institutionalist approach:

[A]ssigns more explanatory power to the organization and legacies of institutions than to properties of individual actors and the broader societal

contexts [... being] a specific approach that aspires to make sense of how such institutions emerge, function, and change (Olsen, 2009, pp. 9-10).

By comparison to the above, for many political scientists, the theoretical core of institutionalism is expressed in the almost self-evident claim that ‘institutions matter’ (the definition of an institution being discussed later in this chapter) (Saurugger, 2014, pp. 79-80; Lowndes and Roberts, 2013, pp. 6-7; Schmidt, 2006, p. 98). As recently specified by Peters (2019), institutions might matter in the sense that an institutionalist approach places an explicit emphasis on the role of institutions in analysis due to their ability to structure political processes. An institutional context is expected to mould actors’ behaviour and to some extent reduce uncertainty respective to their environment, for the reason that structures (or institutions) create greater regularity of human behaviour than would occur in their absence (Peters, 2019, p. 23). Structure, in the dichotomy of structure-agency, is weighted more strongly; hence, institutionalist scholars take the former as their starting point in conducting research (Peters, 2012, pp. 174-177). An ordering effect of institutions on the organisation of policy, in new institutionalism, is also found in relation to how power is constituted, exercised, legitimated, controlled, and redistributed (March and Olsen, 2011, p. 163). More generally, the ordering effect of institutions is regarded by Koning (2016) to be the most significant theoretical achievement of the institutionalist research in political science, because of:

[P]roviding compelling explanations of why seemingly suboptimal outcomes persist when they are not endorsed or even actively opposed by political elites. The main explanation, of course, is that this stability is caused by institutions: formal or informal rules, such as public policies, legal structures, organisational mechanisms and standard operating procedures (Koning, 2016, p. 641).

The above preliminary attempt to identify the theoretical core of new institutionalist research shows that the question of how to delineate new institutionalism is debated, with different explanations being provided. This can be attributed to the fact that scholars working within the research tradition of institutionalism have recently made great strides in developing their theoretical and empirical research in new directions

away from its original foundations (discussed below) (Peters, 2019, pp. 1-2). More specifically, the rapid theoretical developments and changes in institutionalist theory over the last thirty years have taken place by mirroring significant changes in political institutions themselves (Lowndes and Roberts, 2013, p. 2). Therefore, the best approach to discuss new institutionalism, according to Thelen and Steinmore, is to identify how it has distinguished itself from earlier research traditions in political science and the social science more generally, and to show its current state of development (compare Thelen and Steinmore, 1998, p. 3).

In accordance to the above approach, the present chapter turns to an overview of the new institutionalist canon encompassing the basic assumptions of new institutionalism. This overview should allow us to more clearly distinguish between what new institutionalism is and what it is not, and more importantly, what stands in contradiction to the internal logic of this approach.

New Institutionalism and Its Various Schools

In the late 1970s and early 1980s, many scholars started to argue that institutions should have a more prominent place in the explanation of political action (Schmidt, 2006, p. 101). As a result, by the end of the 1980s, the institutionalist approach to politics became firmly endorsed in social science (Lowndes and Roberts, 2013, p. 1). Therewith, scholars interested in political institutions asserted not only that institutions matter, but sought to examine “to what extent, in what respects, through what processes, under what conditions, and why institutions make a difference” (March and Olsen, 2011, p. 163). The scholarship preoccupied with those questions became known as ‘new institutionalism’ – a term coined by James March and Johan Olsen (1984) in their seminal article discussing what they perceived to be the weaknesses of political science of their time, and how to deal with it (Peters, 2012, p. 16; Peters *et al.*, 2005, p. 1281; Boin, 2008, p. 88; Immergut, 2006, p. 240). More specifically, the authors assessed the implications for theoretical development on the organisation of political life stemming from the fact that:

Social, political, and economic institutions have become larger, considerably more complex and resourceful, and *prima facie* more important to collective life. Most of the major actors in modern economic and political systems are formal organizations, and the institutions of law and bureaucracy occupy a dominant role in contemporary life (March and Olsen, 1984, pp. 734-735).

Hence, what typifies the new institutionalism, or constitutes its core, is *inter alia* the attribution of high importance to institutions (Schmidt, 2006, p. 101); i.e. all institutionalist scholars, whatever their affiliation to specific institutionalist schools, share the basic premise that behaviour of actors cannot be understood without the analysis of ‘institutions’, within which actors make decisions and which provide the analytically-crucial context for actors’ behaviour (Aspinwall and Schneider, 2001, p. 3; Schmidt, 2006, p. 101).

In addition, some of the tenets of new institutionalism, such as being concerned with both *informal* and *formal institutions*, can be further specified in terms of its departure from its predecessors, e.g. from old institutionalism⁷ (Lowndes and Roberts, 2013, p. 29). First, the new approach exhibits an explicit concern with the *development of theory*

⁷ As the name implies, new institutionalism was preceded by an older version of institutionalism, the so-called old institutionalism (Schmidt, 2006, p. 99; Peters, 1998, p. 205), which occupies a special place in the development of political science, being granted the status of the ‘historic heart’ of the discipline, characterising political science in the first half of the 20th century (Peters, 1998, p. 205; Lowndes and Roberts, 2013, p. 23). Old institutionalism until the early 1950s can be equated with the entire discipline of political science during that period because the research interests in political institutions were central within the discipline (Scott, 2014, pp. 6-7; Lowndes and Roberts, 2013, p. 1, 18). While the first systematic thinking about political life and institutions can be traced back to antiquity (Peters, 2019, p. 4; Steinmo, 2008, pp. 118-119), and to the work by the first political philosophers such as Aristotle and Plato on as to “which political institutions produce the best type of society and individual” (Rothstein, 1998, pp. 136-137), the discipline of political science began to crystallise only in the latter part of the nineteenth century. This is where the roots of institutionalism and the tradition of old institutionalism lie (Peters, 2019, p. 4). Thereby, old institutionalism, as a body of research was largely *descriptive* and *formalistic*, being focused on formal-legal institutions, e.g. constitutional issues and public law (Immergut, 2006, p. 237), and on surveying the relations among different levels and branches of a government (Schmidt, 2006, p. 99-100). Implicitly, this research was largely *atheoretical* as it did not manage or aim to advance explanatory theory (Schmidt, 2006, p. 100; Rothstein, 1998, p. 140; Thelen and Steinmo, 1998, p. 3).

and methodology, instead of delivering descriptive accounts of institutions as in the older tradition (Peters, 1998, p. 206-207). Second, instead of being preoccupied with formal aspects of political institutions – a feature of old institutionalism – new institutionalists analyse the actual functioning of institutions in interaction with how it affects the behaviour of actors in these institutions (Peters, 1998, pp. 206-207). Implicitly, as already mentioned, not only formal institutions (such as legal frameworks), but also informal ones (e.g. networks of interacting organisations, or a set of shared norms) can play a role in this analysis (Peters, 2012, p. 19). And finally, new institutionalists are preoccupied with *delivering explanations of outcomes* of institutional functioning, such as public policies or other policy decisions, whereas old institutionalism did not show much concern for what governments did. Therewith, new institutionalism reflects the more recent *public policy movement* in political science, which can be described as political scientists' preoccupation with the "benefits and burdens that the governments actually produce for their citizens" (Peters, 1998, pp. 206-207).

Last but not least, by contrast to old institutionalism, new institutionalism is *non-functional* in character, in contrast to functionalism. The latter postulates that institutions change in response to external conditions, such change serving the function of allowing them to continue performing the same function as before the change, this way adapting to the new requirements of the environment of an institution. Yet, functionalism generally overestimates the flexibility with which and the range within which, institutions are capable of change (Koning, 2016, pp. 641-642). March and Olsen (2011) express their critique of the functionalism-inspired explanations of institutional change in the following way:

The changes that occur are more likely to reflect local adaptation to local experience and thus be both relatively myopic and meandering, rather than optimizing, as well as "inefficient," in the sense of not reaching a uniquely optimal arrangement Even when history is relatively "efficient", the rate of adaptation is likely to be inconsistent with the rate of change in the environment to which the institution is adapting (March and Olsen, 2011, p. 163).

One empirical emphasis of new institutionalism is the persistence of cross-national differences despite common challenges (Thelen and Steinmo, 2008, p. 5), which stands in contradiction to another the earlier research tradition, i.e. behaviorism⁸ (Thelen and Steinmo, 2008, p. 6). Institutional configurations in different national contexts became central to the new institutionalist perspective because the intermediate-level institutional factors (e.g. corporatist arrangements, party structures, networks between economic and state-bureaucracy groups) constituting these configurations helped explain the incentives for and constraints on political actors' behaviour in different countries (Thelen and Steinmo, 2008, pp. 5-6). Thus, one of the achievements of new institutionalism is its ability to compare institutions; i.e. it enables a comparison of institutional dynamics across countries and even regions, making it possible to evaluate how similar those dynamics are (Peters, 1998, p. 207). One effect stemming from the scholarly 'return to the state' is that grand theorising was rejected in favour of a *middle-range theorising* because its allowed scholarly attention to shift to diversity within groups of the same phenomena.

Moreover, by contrast to the behaviourist approaches, new institutionalism puts forward the theoretical argument that institutions are more than just agents that facilitate exchange between actors and may serve in lowering transaction costs. Instead, institutions became perceived as being able to act on their own, i.e. as actors able to develop their own action strategies in order to pursue their own (*self-*)interests (Saurugger, 2014, p. 80). As phrased by Orren *et al.* (2004):

⁸ Behaviourism became a new paradigm in political science from the late 1950s, by challenging the previously dominant of old institutionalism (Lowndes and Roberts, 2013, p. 26), and by gaining the centre stage in political science in the following two decades (Schmidt, 2006, p. 100). Although the behavioural revolution swept across the entire social science, it was particularly pronounced in political science, essentially transforming the discipline (Katznelson, 2012, p. 98; Peters, 2019, pp. 12-13). This paradigm change resulted in the shift of focus from the description of formal political institutions to the description of the behaviour of actors that populate these institutions. Scholars promoting this shift argued that "analysts should focus not on the formal attributes of government institutions but instead on informal distributions of power, attitudes, and political behaviour" among individuals and groups (Thelen and Steinmo, 2008, p. 4). Institutions were considered as simply emerging from an aggregate of individual actors' "roles, statuses and learned responses" (Lowndes and Roberts, 2013, p. 27). Implicitly, theories applied by behaviourists had obscured the differences between countries and their institutions (Thelen and Steinmo, 2008, p. 6).

The claim of new institutionalism is that institutions do not merely express or reflect or deflect elements in their political surroundings. Institutions participate actively in politics: they shape interests and motives, configure social and economic relationships, promote as well as inhibit political change (Orren *et al.*, 2004, p. 78).

A further development of new institutionalism away from earlier research traditions (of behaviourism and rational choice theory⁹) pertains to the diversification of empirical interests of new institutionalists. More recently the predominant interest in the state has given way to a wider empirical scope in new institutionalist research, encompassing the research fields such as “the study of European integration, comparative political economy, comparative industrial relations, or comparative industrial governance” (Scharpf, 2000, p. 762).

Despite several distinctive characteristics uniting the overall institutionalist approach, it evolved not as a single and coherent approach, but as distinct, and sometimes competing institutionalisms (Reich, 2000, p. 501; Campbell, 2004, p. 3; Peters, 2019, p. 2, p. 22). It is common to point out three major new institutionalisms – historical, rational choice, and sociological institutionalism (compare Pollack, 2019, p. 109; Koning, 2016, p. 639; Radaelli *et al.*, 2012, p. 539; Immergut, 2006, p. 240; Campbell, 2004, pp. 3-4; Pollack, 2001, p. 227; Thelen, 1999, p. 369). However, as acknowledged by Boin (2008), there is no agreement in political science as to how many institutionalist schools can be distinguished. Guy Peters (1999), for instance, identifies seven schools¹⁰ (Boin, 2008,

⁹ In the 1980s, the influence of behaviourism diminished substantially and rational choice theory (which was continuously evolving during the 1950s, 1960s and 1970s) took over its place of dominance. The major assumptions of the rational choice theory are that “individuals are rational and behave *as if* they engage in a cost-benefit analysis of every choice” to be made (Lowndes and Roberts, 2013, p. 27, emphasis in the original). The construction of stylised models of political behaviour was the ambitious aim of the theory, seeking to understand the interaction of self-interested individuals, considering those processes as the sole forces determining political outcomes, and treating institutions as little more than an accumulation of individual choices (Lowndes and Roberts, 2013, p. 1, pp. 26-27).

¹⁰ In his earlier and more recent work Peters (2019; 1999) differentiates between the following seven types of new institutionalism – normative, rational choice, historical, empirical, discursive and constructivist, and sociological. A distinction can also be

pp. 88-89). As to how the three main schools of new institutionalism became widely applicable specifically in the EU studies is considered in the next section.

1.5 New Institutionalism in EU Studies

The institutionalist tradition has by now firmly established itself in EU studies, contributing to a proliferation of EU analysis with an explicit interest in formal and informal institutions and their effect on EU functioning. More specifically, the institutionalist approach spread into EU studies at the beginning of the 1990s, as the EU proved to be an attractive arena for institutionalist research examining the effect of institutions on political processes (Dowding, 2000, p. 126). Despite its origins in comparative politics, the approach was successfully incorporated into EU studies, thereby putting the institutional set-up of the EU into the limelight of research. By this move, EU scholarship was reflecting broader contemporary trends in political science, i.e. the entire discipline was taking up insights from new institutionalism (along with economics, sociology, and law); thus, aligning itself to this trend made EU studies more integral to the discipline (Jupille and Caporaso, 1999, pp. 429-430).

The theoretical wealth of the overall new institutionalist approach has been adopted in EU studies by incorporating its different variants (compare Jupille and Caporaso, 1999, p. 429; Rosamond, 2004, p. 114). However, the very first institutionalist analyses applied to the study of the EU were a prototype of today's rational choice institutionalism, and date back to the 1980s. It was the path-breaking work by Fritz Scharpf on 'joint-decision traps' in the EU and other federal systems that introduced institutionalism to EU studies (Pollack, 2019, pp. 113-114). In his two seminal articles (1985, 1988) Scharpf complained that traditional approaches (such as neofunctionalism) had turned a blind eye to the impact of decision-making rules on the European integration process. Thereby, Scharpf's assertion of the crucial role of institutions in European integration was contemporary with the pioneering work by March and Olsen

made between four forms of new institutionalism; thereby, the aforementioned three schools are complemented by a more recently identified fourth type of discursive institutionalism – a theoretical innovation advanced primarily by Vivien Schmidt (2008; 2010) (Radaelli *et al.*, 2012, p. 539).

(1984), who announced the new institutionalist paradigm shift in political science more generally (Aspinwall and Schneider, 2001, p. 6).

One explanation for the increasing importance attributed to the institutionalist approach in European studies points to the growing scholarly fatigue of the intergovernmentalists' narrow focus on member states, and its neglect of supranational actors and structures (Saurugger, 2014, p. 79). An additional explanation for the endorsement of new institutionalism pertains more generally to a previous rejection of grand theorising in EU studies; this critique had been levelled primarily against functionalist approaches already in the early 1970s because of their aim to develop a set of general laws that would explain the dynamics of regional integration in the EU and across the world. By contrast to such over-ambitious theoretical goals, social scientists in EU studies shifted their attention toward a new style of developing middle-range theories, seeking to explain single aspects of EU functioning, instead of trying to explain the process of European integration as a whole (Rosamond, 2004, pp. 112-113). This rejection of theoretical approaches focused on explaining regional integration went hand in hand with the recognition on the part of EU scholars that the EU is about much more than the integration process. The previous centrality of the question as to why integration occurs became perceived as being increasingly obsolete. Instead, scholars became more interested in the effects of integration, and in so doing began treating the EU not as a phenomenon to be explained, but as a factor that allows the analyst to explain other phenomena (see below) (Rosamond, 2004, pp. 112-113). In this theoretical context, the institutionalist turn in EU studies appears natural because of its middle-range theoretical grasp and its treatment of (EU) institutions as independent or intervening variables to explain a variety of processes and outcomes (Rosamond, 2004, pp. 114-116). Besides, the EU is one of the most heavily institutionalised regional integration projects worldwide¹¹, which leaves little doubt as to the importance of its institutional structures in explaining how it functions (Saurugger, 2014, p. 79; Rosamond, 2004, pp. 113-114).

¹¹ There are currently two EU treaties (TEU and TFEU), which function as the constitution of the European Union and which set the limit for EU competences (Murswiek, 2014). These, by implication, define the roles of EU supranational institutions (such as the European Commission and the Court of Justice) and intergovernmental institutions (such as the Economic and Social Committee), determining how those institutions should interact. Noteworthy is that scholarship interested in EU structures has revealed that formal procedures and practices co-exist

Today, new institutionalist analysis is the mainstream approach in European studies, and in political science more generally. Subjects studied by applying these approaches are as diverse as “the relative power of institutional actors, examinations of the complexities of bargaining between actors from different levels and evaluations of the role that norms and socialisation play in the process of European integration” (Aspinwall and Schneider, 2001, p. 6). The wide variety of topics covered by the institutionalist approach in EU studies implies a high level of empirical division of work between the various schools (Pollack, 2019, p. 114). Thus, rational choice institutionalism concentrates on more short-term events in all three major functions of EU-level governance (legislative politics, executive politics and judicial politics), while historical institutionalism is dedicated to longer-term political developments in the EU with the aim of understanding path-dependent processes (Pollack, 2019, p. 110). *Sociological institutionalism* (SI), by comparison, has contributed to EU studies with the empirical focus primarily on the European Commission, but also on decision-making processes more generally¹² (Aspinwall and Schneider, 2000, p. 4).

After outlining the differences between the major strands of new institutionalism, this chapter continues by concentrating on historical institutionalism, the approach lying at the core of the theoretical framework of this thesis. Hence, the section that follows takes a closer look at the major concepts developed by historical institutionalists.

1.6 Theoretical Core of Historical Institutionalism

During the past several decades, historical institutionalism has become “a leading approach to institutional analysis”, according to Peters *et al.* (2005, p. 1276). The

with informal institutional provisions. This work further suggests that policy-making processes are decisively structured by regularized practices that have no formal status within the treaties. “In spite of that, the established routines are frequently thought of as institutions” (Rosamond, 2004, pp. 113-114).

¹² The primary goal of these studies is to analyse the cultural and cognitive structures shared by EU actors (Saurugger, 2014, p. 94). More specifically, “actors are guided by collectively shared understandings of what constitutes proper, socially accepted behaviour” (Börzel, 2010, p. 7).

approach developed during the 1960s and 1970s, parallel to the other new institutionalist schools – rational choice and sociological institutionalisms (Hall and Taylor 1996, p. 936; Moser and Sager, 2015, pp. 440-441). Two paradigmatic works established the parameters for the development of the approach that later became known as historical institutionalism and both have strongly influenced the conduct of research by historical institutionalists – Samuel Huntington’s *Political Order in Changing Societies* (1969) and Theda Skocpol’s *States and Social Revolutions* (1979). The distinguishing characteristic of these two works was their innovative double-goal of, first, producing testable, variable-based propositions, and, second, of answering big questions about state and society. The crystallisation of this research endeavour has been influenced by the behaviourist tradition of research, which had shaped the training of these two scholars. More specifically, their graduate training was framed by the Social Science Research Council’s (SSRC) Community on Political Behaviour, which represented the effort by political scientists to join the behavioural revolution (Katznelson, 2012, pp. 98-99). Furthermore, the SSRC was the sponsor of the Community on States and Social Structures in 1982, with Skocpol as a lead academic. The Community sought to “explore substantive issues that matter by attending to the beginnings, development, concatenation, and causal effects of modern state understood as an organisational constellation of institutions”, yet, without sacrificing the behaviourists’ high standards of method and evidence (Katznelson, 2012, pp. 99-100).

These initial early moves in establishing the foundations of historical institutionalism started to attract young scholars, therewith giving further rise to this approach’s development. This resulted in significant diversification of the empirical scope of research undertaken within the school of historical institutionalism toward subjects as diverse as “public policy, welfare states, types of political economy, patterns of interest representation, and movements of social change” (Katznelson, 2012, p. 100). At the same time, the empirical focus of historical institutionalism remained confined by major intellectual developments in the 1970s and 1980s – the renewed interest among comparativists in, first, the state and, second, in institutional arrangements, both formal and informal, under the aspect of their impact on behaviour and policy choices in western democracies (Peters *et al.*, 2005, p. 1279).

Hence, over the last few decades, historical institutionalism has become most prominent in delivering explanations of policy developments in advanced industrial countries (Béland, 2009, p. 701). There is a large comparativist literature that scrutinises the level of the nation state through this lens. Therewith, examined are the unique economic and political traditions that shape how states react to social demands and external change (Aspinwall and Schneider, 2000, p. 18). As expressed by Thelen, “the macro-historical analysis of critical junctures that set countries along different developmental paths has long been the bread and butter of historical institutionalism” (1999, p. 389). Therewith, the common emphasis of this work was on sequencing and timing, and on how political and economic processes interact toward the formation and evolution of institutional structures. Besides, these studies were typically “configurative”, i.e. studying political processes not in isolation, but within the broader context of related processes and under consideration of their temporal ordering (Thelen, 1999, p. 389).

The methodology of emerging historical institutionalism was influenced by the criticism levelled against Marxism at the time. Marxist assumptions about structure, agency and historical pathways were losing legitimacy. Therefore, Marxist materialism was replaced by historical institutionalism with a more static and cross-sectional organisational materialism. That is, without giving up the attention to structural causation, historical institutionalism reverted to “more conventional case comparative research based on the construction of comparable and divergent cases, relying heavily on John Stuart Mill’s methods of similarity and difference” (Katznelson, 2012, p. 100).

The *contemporary approach* is distinct from the earlier roots of historical institutionalism discussed above (Peters *et al.*, 2005, pp. 1281), even though historical institutionalism continues to endorse a longitudinal and procedural orientation characteristic of the earlier works of historical institutionalists (Roberts and Geels, 2019, p. 222; Peters, 2016, p. 60). More recent historical institutionalist research, however, differs from those foundational works in several respects. These are elaborated on in the following.

There are three common features that characterise the current historical institutionalist scholarship in political science. First, this scholarship addresses substantive questions that are of interest not only to fellow scholars but also to the broader public. Second, time is taken seriously when developing explanatory arguments about the outcomes or

puzzles under study. And third, instead of studying just one institution or process at a time, historical institutionalists scrutinise a context, that is, they hypothesise, about the combined effects of institutions and processes on the institution studied (Pierson and Skocpol, 2002, pp. 695-696).

An additional common feature of historical institutionalist research is that it is built on the assumption that institutions are not typically created for functional purposes (Amenta and Ramsey, 2010, p. 16; Pollack, 2019, p. 110). As recently specified by Pollack:

[H]istorical institutionalist scholars generally reject ‘functionalist’ explanations for institutional design, in which political institutions are assumed to have been deliberately designed by contemporary actors for the efficient performance of specific functions. In contrast with this view, historical institutionalists argue that institutional choices taken in the past can persist, or become ‘locked in’, thereby shaping and constraining actors later in time, in ways that may have been quite unintended by original designers. History, in this view, is ‘inefficient’, in the sense that institutions and policies at any given time are unlikely to be optimally adapted to current circumstances, but are instead shaped and constrained by the ‘dead hand’ of past choices (Pollack, 2019, p. 111).

At the same time, historical institutionalism is not a coherent body of thought (Aspinwall and Schneider, 2000, p. 17), the basic differentiation being made between the normative or ideational form with its focus on beliefs, values and cognitive scripts, and the non-ideational form of historical institutionalism, which assumes rational interests in actors (these have been discussed earlier in this chapter) (Scott, 2014, p. 39). The further lines of division within the approach are summed up by Pierson and Skocpol (2002), who summarise the current state of the art accordingly:

[S]tudies using historical-institutionalist strategies of analysis vary in many important ways. ... Some offer suggestive interpretations ... , while others develop explicit models framed in general terms Some historical-institutionalist studies draw extensively from primary sources ... , while others synthesize findings from secondary publications And some deploy arguments about strategic choice and the impact of the rules of the game ... , while others adopt culturalist modes of explanation (Pierson and Skocpol, 2002, p. 694).

Besides, several developments since its formative stage have allowed HI to become “both empirically rich and analytically sophisticated” (Fioretos *et al.*, 2016, p. 21). As regards the level of analysis, by contrast to the macro-historical scope of earlier research in HI more recent literature refers to the approach as a meso-level political science approach (compare Roberts and Geels, 2019, p. 222; Peters, 2016, p. 60; Thelen and Steinmo, 1992, p. 11). According to Thelen and Steinmo, although macro-level structures (such as class) are recognised as being capable of constraining behaviour, it is advisable to focus on intermediate-level institutions and their capacity to mediate the effects of macro-level socio-economic structures, because this provides greater analytic leverage in explaining variations (e.g. among capitalist countries) (1992, p. 11). Moreover, the more recent HI research developed toward more actor-centred approaches at a lower level of analysis, by taking this development into two directions – the materialist one, as well as that centred on how ideas and beliefs shape actors’ interpretations of the world around them. Thereby, the former direction has contributed to a ‘productive erosion of boundaries’ between HI and RCI, as already discussed (Fioretos *et al.*, 2016, p. 16). Despite the emphasis of HI on institutions and their constraining effect on the behaviour of actors, institutions are not perceived as the only cause of political outcomes. Instead, institutional configurations, that are expected to structure a political situation, are analysed along with players, their interests and their strategies, as well as the distribution of power among them, paying significant attention to how they relate to one another (Thelen and Steinmo, 1992, pp. 12-13).

Methodologically, not all current research in this tradition is comparative; that is, some studies are explicitly comparative, while others concentrate on just one institutional context (Pierson and Skocpol, 2002, p. 694). Some further methodological developments in HI pertain to the refinement of research methods, stemming from preoccupation with two challenges currently faced by historical institutionalists. First, there is a challenge of *equifinality*, i.e. the possibility that mechanisms anticipated by different meso-level theories lead to the same outcomes. “A second challenge that has led historical institutionalists to refine their use of qualitative methods concerns how to identify which of multiple potential historical events gave rise to an outcome” when trying to establish for example “which of two or more potential critical junctures is the source of the outcome of interest” (Fioretos *et al.*, 2016, p. 18). Thereby, HI has

responded to these challenges among others by paying more attention to methods of *elaboration of sequence*, e.g. utilizing *process-tracing* (Fioretos *et al.*, 2016, p. 17). (The method of process-tracing is also applied in this thesis and is discussed in the next chapter on methodology.)

With regard to the popularity of comparative methods in HI, Lieberman notes that although within historical institutionalist scholarship “some analysts rely largely or partially on statistical methods, most employ comparative historical analysis to develop and test their arguments” (2001, p. 1015). The latter type of research is conducted by adopting a method of *cross-case analysis* combined with *within-case analysis*. While the main cross-case methods are J.S. Mill’s methods of agreement and difference, the “within-case methods include inductive process tracing and modes of hypothesis testing such as hoop tests and counterfactual analysis” (Falleti and Mahoney, 2015, p. 211). Such tests also constitute part of the methodology chapter of this thesis, where they are discussed in more detail.

The *methodology* of historical institutionalism is also characterised by treating institutions as central explanatory variables. Yet, the hypotheses are not based on simple bivariate relationships. Instead, historical institutionalist studies “explain outcomes in terms of the joint effect of changing, noninstitutional variables (which I will describe as background variables) and “sticky” institutional factors that tend to change more slowly” (Lieberman, 2001, p. 1013).

The *empirical* landscape of the research interests of historical institutionalists has also expanded more recently. As noticed by Fioretos *et al.* (2016, p. 20), “[f]rom methodological and conceptual refinements, and from greater exchange with other traditions of analysis, come opportunities to extend the empirical scope of historical institutionalism”. The formally predominant tendency within HI of leaving out of the research scope *informal institutions* has become increasingly obsolete as it was recognised that “informal institutions—unwritten understandings and practices – also can have strong consequences for political behaviour and preferences” (Fioretos *et al.*, 2016, p. 20). Similarly, for Thelen and Steinmo institutions in contemporary HI are defined as “both formal organisations and the informal rules and procedures that structure conduct” (1992, p. 2).

As regards specific research interests, presently a wide variety of publications may qualify as historical institutionalist (Cairney, 2012, p. 78). On the one hand, the nation state remains high on the research agenda of this scholarship, producing a substantial literature (Aspinwall and Schneider, 2000, p. 18). On the other, EU policies equally have become increasingly important as a new research focus in this institutionalist school¹³. However, contrary to the historian's typical approach, i.e. immersion in a detailed chronological narrative, historical institutionalists place a much stronger emphasis on conditions and mechanisms, through which the past structures the present (Warlouzet, 2016, pp. 727-728; Aspinwall and Schneider, 2000, pp. 17-18).

Generally, the primacy of long-term factors in this approach leads, in EU studies, to heightened attention to past decisions made by EU institutions and by member states, agreed on in day-to-day policy-making and intergovernmental conferences. These decisions are assessed regarding their potential to accumulate a web of structures, forming the ongoing political processes in the EU (Beach, 2005, p. 23). As formulated by Aspinwall and Schneider (2000), historical institutionalism in EU studies "stresses the role of prior commitments and institutional and policy stickiness in the process of European integration"; however, the approach does not attempt to make predictions about whether there is a general tendency toward or away from EU integration; "rather it predicts that agency rationality, strategic bargaining, and preference formation are conditioned by institutional context" (Aspinwall and Schneider, 2000, pp. 17-18).

1.7 Historical Institutionalism and the Punctuated Equilibrium Model

An additional line of division within the research tradition of historical institutionalism, in addition to the (ontological) one outlined above, is drawn by two distinct waves or

¹³ The recent diversification of research interests of historical institutionalists away from the nation state toward international organisations also implies the application of historical institutionalism to the study of international institutions and regimes other than the EU, which appear to increasingly display unintended consequences in their functioning as a result of enduring past decisions (Fioretos, 2017, pp. 12-13). Hence, currently HI "is firmly established in areas of research within Comparative, American, European, and International Politics" (Fioretos *et al.*, 2016, p. 21).

traditions in historical institutionalism (Hall, 2016, p. 38). The *first wave* in HI (also referred to as the traditional approach) emphasises, in general terms, the stability of institutions, while the *second wave* emphasise the capacity of institutions to change *gradually* and not abruptly¹⁴ (Peters *et al.*, 2017, p. 615). Based on the preliminary empirical evidence (see introduction), this thesis is dealing with the instances of rather abrupt policy change. Hence, in the following only the former type of HI is considered and incorporated in the theoretical framework of this study.

The *first wave* in HI was developed to answer the question of “why and how institutions maintain the policy ‘paths’ on which they have embarked”, institutions, such as policies, being perceived as displaying a tendency to persist until there is a shock that interrupts the preceding stability (Peters *et al.*, 2017, p. 615). This traditional theorising of institutional change is represented in the work by, for instance, Paul Pierson (2004) and Theda Skocpol (1995), who adopt a *punctuated equilibrium model*. The central idea behind the accounts of punctuated equilibrium in HI is that “key political and economic institutions emerged in the context of some historical choice point – once in place, they are stable and structure the subsequent logic of political development” (Thelen and Conran, 2016, p. 56). Consequently, this model conceptualises institutions as being relatively stable, i.e. as following particular historical trajectories determined at a past point in time. Major changes to those trajectories are commonly caused by exogenous factors and occur episodically and discontinuously (Bick, 2016, p. 343). Therewith, the basic assumption of the approach is that once an institution is set on a path, “often meaning once it selects a policy, it is likely to persist on that path unless there are strong

¹⁴ The *second wave* in HI has evolved over the past decade and is exemplified in the collective volumes of Streeck and Thelen (2005) and Mahoney and Thelen (2010) (Hall, 2016, p. 38). It aims at advancing our understanding of endogenous and incremental change in institutions (Pollack, 2019, p. 112). Some scholars advise researchers to co-apply the two waves of HI, and thus to understand gradual change as taking place during periods of relative stability within a PE model (Boas, 2007, p. 34). However, empirical contributions that have managed to straddle the divide between the two types of institutional dynamics (i.e. punctuated and gradual) are an exception rather than common practice. For example, in their pioneering article on the development of the EU budget system, Ackrill and Kay (2006) identify institutional change through the layering of new institutions, which takes place parallel to the path-dependent dynamic of an institutional matrix.

pressures brought to bear – a punctuation ... that will divert it from that path” (Peters, 2016, pp. 60-61). Krasner (1984) was the first to argue that politics reflects a punctuated equilibrium pattern – a recognition upon which two influential concepts of critical junctures and path dependence were developed (Hall, 2016, p. 38).

The concept of punctuated equilibrium, when applied to the study of *policy-making*, is rooted in the notion that the agendas of policy-making institutions and the entire political systems, change suddenly, hence representing “punctuations” within the pattern of policy change. Specifically, the notion that “change can be brought about only, or at least primarily, through producing sharp breaks from the trajectory on which the policy is moving” is now commonplace in the literature on dynamics of policy-making (Peters *et al.*, 2005, pp. 1289-1290). Thereby, there is by now a considerable body of literature that has established a punctuated pattern to a policy change, in e.g. a wide range of jurisdictions and institutional arenas (John, 2012, p. 83).

Another theoretical development of particular importance to the study of EU politics pertains to the discussion of the concept of critical juncture as advanced by two landmark articles – Capoccia and Kelemen (2007), and Soifer (2012) (Pollack, 2019, pp. 111-112). The following section first dwells on a discussion of the concept of critical juncture by reviewing the aforementioned and related literature. Next, the section moves on to the concept of path dependence, which together with the concept of critical juncture forms the overall dynamic of a punctuated institutional development, this way expanding on concepts pertaining to the first wave of HI.

1.8 The Concept of Critical Juncture – The State of the Art

According to Fioretos *et al.* (2016, p. 12), the concept of critical juncture (CJ) features prominently within historical institutional scholarship. Along with the entire dual model of punctuated equilibrium, the concept of critical juncture has played an important role in historical institutionalist scholarship (as well as in macro-comparative scholarship) for over half a century (Büthe and Jacobs, 2017, p. 1). Specifically in political science, “the concept has been most systematically developed and applied in the area of historical institutionalism (and, more generally, in comparative historical analysis)”

(Capoccia, 2016, p. 90). The explanatory power of the concept lies in its ability to provide valuable insights into trajectories of political change, which are subdivided into the periods of innovative formation of institutions and subsequent periods of the stability of institutions in the shape obtained (Collier and Munck, 2017, p. 2); thereby, “[t]he causal logic behind such arguments emphasises the lasting impact of choices made during those critical junctures in history” (Capoccia and Kelemen, 2007, p. 341).

There are two guiding questions, raised by the concept of critical juncture:

(1) Why do these institutions come into existence—i.e., what happens at the critical juncture? (2) How does their self-perpetuating character operate—i.e., the legacy of the critical juncture? (Collier and Munck, 2017, p. 2).

Aimed at answering these questions, the concept is not intended to explain a general model of political change. Rather the concept of critical juncture has particular explanatory leverage when it comes to understanding a punctuated trajectory of innovation and stability of institutions, or in other words, the dynamic of institutional discontinuity, followed by institutional continuity (Collier and Munck, 2017, p. 2).

A wide range of empirical topics has been subjected to analysis that draws on the concept of critical juncture (Hogan and Doyle, 2009, p. 124). It has found broad application in the subfields of comparative politics, international relations, and American political development, to specific topics such as “national social welfare policies, U.S. constitutional law, EU law and budgetary policy, labour unions, agenda setting in policy-making” (Capoccia and Kelemen, 2007, p. 345).

Despite the importance of critical juncture as a key concept in historical institutionalism, and in political science more generally, it has often been criticised for its lack of methodological and conceptual rigour (Hogan and Doyle, 2009, pp. 211-212; Hogan and Doyle, 2007, p. 883; Pierson, 2004, pp. 5–6; Hogan, 2006, p. 660). The exception to this tendency of scholars to fail to theorise the concept rigorously has been macro-historical analysis, where it has received a thorough theoretical treatment¹⁵

¹⁵ “The study of critical junctures and their legacies ... [has] been an abiding concern among scholars engaged in macro-comparative analysis” (Collier and Munck, 2017, p.

(Hogan and Doyle, 2009, p. 212). Yet, no similar degree of theoretical rigour regarding critical junctures can be found in the institutional analysis of smaller historical scope. That is, the latter type of work tends to concentrate on processes of path dependence to the neglect of conceptual and methodological refinement of the concept of critical juncture (Hogan and Doyle, 2007, p. 883). Thus, “strong tools for understanding continuity were not matched by equally sophisticated tools for understanding political and institutional change” (Hogan, 2006, p. 658). At the same time, the conceptual sophistication of macro-historians has shortcomings when applied outside of this level of analysis, as developed specifically for large-scale historical studies¹⁶ (Capoccia, 2015, p. 147; Hogan and Doyle, 2009, p. 212; Capoccia and Kelemen, 2007, pp. 342-343).

Seeking a better definition of critical juncture, political scientists engage *two related debates* about how a critical juncture should be theorised. One debate considers whether a critical juncture should be understood and assessed merely as a part within the model of punctuated equilibrium, which ‘locks in’ a path-dependent process, or should be scrutinised and conceptually specified on its own, as a process in itself. Another revolves around the relative importance of agency and structure in the process of moulding a critical juncture. Within the *former debate*, one position holds that a critical juncture is of interest only as a function within the overall pattern of punctuated equilibrium, and hence largely as a formative moment for a path-dependent process, thus leaving out of the scope of research considerations related to processes taking place

2). The reason for the importance of the concept of critical juncture in macro-historical analysis is that the majority of studies within this literature are comparative case studies. Therewith, critical junctures are analysed with regards to their potentials to set similar cases (e.g. similar states) on different developmental paths that lead to different institutional formations. Hence, those “branching tree” periods are understood in this research as essential for explanation of differences in the cases compared (Capoccia 2016, pp. 90-91). A macro-historical timescale also characterises early examples of the concept’s application. Thus, Karl Polanyi in his classic work from 1944 discusses what he calls ‘critical periods’ under the aspect of their impact on the rise of the modern market economy. Another pioneering work by Lipset and Rokkan (1967) traces the origins of West European party systems to situations of critical junctures in the history of single nations (Capoccia and Kelemen, 2007, p. 344).

¹⁶ For example the concept of critical juncture, within comparative historical analysis, is distinguished by being applicable only to the study of “*path-dependent* institutions and not to all forms of institutional development” (Capoccia, 2015, p. 147, emphasis in the original).

within a critical juncture. For example, for Pierson “junctures are critical as they place institutional arrangements on trajectories that are difficult to alter” (2004, p. 135). Capoccia (2016, p. 90) even suggests that the minimum common denominator among dissimilar definitions of the concept of critical juncture in political science is their focus on so-called ‘distal historical causation’ – “events and developments in the distant past, generally concentrated in a relatively short period, that have a crucial impact on outcomes later in time” (Capoccia 2016, p. 90).

Another type of contribution, in reaction to the aforementioned position, seeks to define a CJ by more consciously concentrating on the time period during which a critical juncture unfolds. Thus Hogan (2006) expresses disapproval with the frequent conflation of critical juncture and path dependence within a single discussion. In his words, it is “important to keep discussions of path dependence and critical junctures distinct, otherwise one runs the danger of concept stretching” (Hogan, 2006, p. 661). A similar position is held by Stark (2018) who maintains that:

[N]ew institutional scholars have been preoccupied with the reproduction of policy and its path dependent nature rather than its emergent moment. Freeing the analysis of critical junctures from deterministic notions of path dependency is therefore important because it allows us to better focus on the reform period itself rather than the (supposed) stability that bookends it (Stark, 2018, p. 25).

The need to improve the explanation of the processes *during* a critical juncture is also discussed against the backdrop of how the concept was deployed traditionally. The critique of traditional treatments of critical juncture identifies an underdeveloped understanding of what constitutes a critical juncture (Soifer, 2012, p. 1588). As explained by Hogan and Doyle (2009, p. 213), “[w]ars, revolutions, coup d’état, changing balance of power, demographic changes, and social movements were regarded as critical junctures, producing overwhelming mandates for policy and or/structural change”; however, “[s]ometimes there are no wars, or other great events, such as those listed above, that can be held to account for dramatic policy and/or structural changes”, which “raises all sorts of questions as to what exactly is a critical juncture, and how do we define a critical juncture?” (Hogan and Doyle, 2009, p. 213).

The *latter scholarly debate* (on how a critical juncture should be theorised) is led by scholars with a pronounced interest in critical junctures themselves, who ponder on the age-old and enduring question of the balance between agency and structure¹⁷, specifically at critical junctures. On the one hand, as pointed out by McCauley *et al.* (2018), in addition to the structural elements of a CJ, agents instigating change constitute an important variable in the study of institutional outcomes. Moreover, the very definition of a critical juncture by some researchers, e.g. by Capoccia and Keleman (2007), incorporates a claim that during critical junctures agents are empowered in their ability to bring about institutional change (McCauley *et al.*, 2018, p. 318). By contrast, Christiansen and Vanhoonacker (2008), advise us to be attentive to structural conditions when “new or changing institutional development points in a direction marking a departure from the existing developmental path” (Christiansen and Vanhoonacker, 2008, p. 754).

Other researchers position themselves regarding the question of the relative importance of agency vs. structure by arguing that the importance of agency varies from critical juncture to critical juncture. According to Hogan, some critical junctures appear structured by antecedent conditions much more than others (Hogan, 2006, p. 661). In the same way Capoccia (2016) re-states a point by Collier and Collier (1991) that some critical junctures can permit agents considerable discretion as to their choices, while at other critical junctures agents’ choices appear deeply embedded in structural, antecedent conditions (Capoccia 2016, p. 91). This debate is joined by scholars who on a more critical note, notice that empirical research drawing on the concept of critical juncture is either more attentive to agency at the expense of structure or vice versa. As put by Collier and Munck (2017, p. 4) “[s]ome scholars view the uncertainty of outcomes and substantial degrees of freedom in actor choices as a defining feature of critical junctures [whereas] [o]ther scholars view critical junctures more deterministically” (Collier and Munck, 2017, p. 4). A similar point is made by Capoccia (2016, p. 93) and Katznelson (2003, pp. 281-282), who criticise research on critical junctures for being disproportionately focused on either the structural, antecedent conditions in their impact

¹⁷ Mintrom and Thomas (2018, pp. 156-157) advice to be attentive to structural conditions, such as prevailing economic, political and social conditions that impact on the opportunities for single policy players to realize its interests; in other words, one “should consider the most significant economic, political, and social factors that shape their operating context” when analyzing the space for maneuvering for agency.

on the critical juncture, i.e. impersonal factors such as socio-economic conditions, or on the interactions of key actors during the critical juncture.

These two debates help to inform the present study in the following ways. Firstly, it is recognised that in order to avoid the stretching of the CJ concept, it needs to be treated separately from that of path dependence, which is done by treating these two concepts separately. Second, this research remains aware of the possibility that the conceptual specification of critical juncture can be skewed towards underscoring either agency or structure. Therefore, I seek to discuss the concept of critical juncture by paying equal attention to the importance of agency and structure.

Therewith, the role of agency is elaborated upon in one of the next sections. First, however, the role of agency is outlined in connection with the explicit conceptualisation of how critical junctures come into existence and how the agent's space for manoeuvre is restricted by structural conditions, by specifying the various types of conditions enabling this process, such as permissive and productive conditions to a critical juncture.

1.9 Permissive and Productive Conditions of a Critical Juncture

Building on the insight by Capoccia and Kelemen (2007) that during a critical juncture structural constraints are weakened and therefore agents' impact on the outcome of interest becomes much more probable, Soifer (2012) seeks to develop this idea further by asking why some moments in time are characterised by the reduced importance of structural constraints compared to others (Soifer, 2012, p. 1574). In so doing, Soifer (2012) makes a thoughtful contribution to the literature on institutional change during a critical juncture (compare Pollack, 2019, p. 112; Stark, 2018, p. 27; Capoccia 2016, p. 94). The value of his contribution lies, on the one hand, in singling out the importance of so-called 'permissive' and 'productive' conditions within a critical juncture (Capoccia 2016, p. 94). On the other hand, his contribution "makes a distinction between aspects that create the climate for change and aspects that drive forward the form of a change" (Stark, 2018, p. 27). At the same time, Soifer's focus on structural conditions of a critical juncture does not deny the potential causal role of agency,

although he positions himself as agnostic regarding “the relative importance of such factors versus structural conditions during a critical juncture in generating the outcome of interest” (Capoccia 2016, p. 94).

The overarching aim of Soifer (2012) is to formulate a definition of critical junctures “based not on their effects, but on exactly what allows and produces change in these moments” (Soifer, 2012, p. 1573). Aimed at answering this question, Soifer (2012, p. 1584) suggests we consider a critical juncture as a conceptual framework containing several components and proposes ways to specify those components.

Specifically, Soifer’s conceptualisation of a critical juncture builds on the recognition that many critical juncture accounts incorporate a loosening of structural constraints, which opens up space for change. However, there is no explicit understanding of why structural constraints are reduced during some moments, and hence, this reduction of structural constraints is not incorporated into the conceptual framework of a critical juncture (Soifer, 2012, pp. 1573-1574). To remedy this conceptual gap and to improve causal analysis within the literature on critical junctures, Soifer proposes to differentiate between two types of causal conditions that operate during a critical juncture – permissive and productive conditions, describing them in the following way:

[T]he permissive conditions ... represent the easing of the constraints of structure and make change possible and the productive conditions ... , in the presence of the permissive conditions, produce the outcome or range of outcomes that are then reproduced after the permissive conditions disappear and the juncture comes to a close (Soifer, 2012, p. 1573).

Soifer defines permissive conditions as “those factors or conditions that *change the underlying context to increase the causal power of agency or contingency and thus the prospects for divergence*” (Soifer, 2012, p. 1574, emphasis in the original). Besides, the emergence and disappearance of *permissive conditions* coincide with an opening and closing of a CJ “that can be quite lengthy, even if the change itself is produced in a more punctuated manner”, and during which “divergence may occur, and that divergence may have long-term consequences” (Soifer, 2012, pp. 1574-1575). A further feature of a permissive condition is that it emerges *exogenously* (Soifer, 2012, p. 1576).

Therewith, Soifer claims that “when we identify a critical juncture, we should delineate it by the presence of some set of permissive conditions” (Soifer, 2010, p. 7).

In comparison with permissive conditions, *productive conditions* do not define the temporal limits of the critical juncture, and they operate only within the possible space opened up by permissive conditions. Therewith, productive conditions influence the outcome, produced by the change during a critical juncture. By implication, the variation in the outcomes of different critical junctures can be understood only with reference to productive conditions. However, productive conditions on their own are insufficient to produce change – first permissive conditions need to start operating in order to reduce the constraints of structure. Only within the rules and structural constraints do productive conditions effect change and divergence between critical junctures opened by the same permissive condition(s). Subsequently, the change is locked in, after the critical juncture comes to a close (Soifer, 2012, p. 1575; Soifer, 2010, pp. 10-11). Productive conditions, therewith, are defined by Soifer “as *the aspects of a critical juncture that shape the initial outcomes that diverge across cases*” (Soifer, 2012, p. 1575, emphasis in the original).

Permissive condition(s) will, most commonly, appear in the form of a necessary but insufficient element(s) of a critical juncture. Similarly, productive conditions “can never be sufficient causes since they alone cannot produce the divergence caused by a critical juncture. Most commonly, they ... take the logical form of necessary but insufficient causes” (Soifer, 2012, p. 1575). The conceptual framework outlined above is, however, not limited to only two components (permissive and productive conditions). Instead, Soifer incorporates a further element at work during a critical juncture – *critical antecedent*, similar to how it was identified by Slater and Simmons (2010). Core to the definition of a critical antecedent is the insight that critical junctures do not begin with a blank slate, but incorporate some conditions that started operating before the critical juncture opened, and which can be responsible for *variation* across cases of critical junctures initiated by the same permissive conditions. As defined by Slater and Simmons, critical antecedents are “*factors or conditions preceding a critical juncture that combine in a causal sequence with factors operating during that juncture to produce a divergent outcome*” (2010, p. 889, emphasis added). Further noteworthy is that Soifer (2012) and Slater and Simmons (2010) agree that “critical antecedents are

connected to the productive condition” since a critical antecedent can influence the value taken by a productive condition, and, in turn, influence the change at a critical juncture and the divergence between comparable critical junctures (Soifer, 2012, p. 1576).

In addition to the three aforementioned components operating during a critical juncture, Soifer (2012; 2010) also recognises *mechanisms of reproduction* that set in with the closure of a critical juncture and are responsible for making the outcome of a critical juncture persist over time. As expressed by Soifer (2012), “[m]echanisms of reproduction are the factors that are sufficient to keep an outcome in place after the factors that produce it have disappeared. They are thus a component of a complete critical juncture framework” (Soifer, 2012, p. 1577, emphasis added). Although mechanisms of reproduction need to be incorporated into the framework of critical juncture to make it complete, Soifer’s landmark contribution of 2012 elaborates in great detail only on the previously neglected components of permissive and productive conditions. In contrast, mechanisms of reproduction are considered by him as a concept already thoroughly treated in political science (compare Soifer, 2012, p. 1577). Thus, this sub-section now turns to consider literature with an exclusive focus on mechanisms of reproduction, to show variation in definitions of the concept and to discuss their respective values within the conceptual framework of this thesis.

1.10 Path-Dependent Processes

Although the major goal of this study is to explain processes and outcomes at critical junctures, path-dependent processes need to be accounted for as well. This is important not only because, as specified above, a critical juncture produces mechanisms of reproduction, but also because a critical juncture is shaped *inter alia* by antecedent conditions that are launched prior to the beginning of a critical juncture and that might as well display mechanisms of reproduction. Put differently, a critical juncture might be shaped by processes that are path-dependent in character. Hence, in the following, the concept of path dependence (PD) is scrutinised for the purpose of being applied within the theoretical framework of this thesis.

Path dependence is a commonly used concept in historical institutionalism, which allows researchers to explain long-term institutional persistence and stability. The concept also finds increasing application in studies of EU integration (Ackrill and Kay, 2006, pp. 114-115). More generally, it is nowadays a commonplace in social science to explain a process as path-dependent in character (Jackson and Kollman, 2007, p. 1). Thus, the study of path dependence now occupies a central research area in political science and sociology (Mahoney, 2006, p. 129).

Even though path dependence is currently one of the most widely applied concepts in social science, it is used in different ways and with various degrees of conceptual rigour (Mahoney and Schensul, 2006, pp. 455; Rixen and Viola, 2009, p. 1, 5; Greener, 2005, p. 62). That is, the concept is sometimes used to make a vague point that ‘history matters’ (Rixen and Viola, 2015, p. 302; Gerschewski, 2015, p. 236; Mahoney, 2006, p. 129). Such an interpretation of PD is associated with the risk of conceptual stretching (Greener, 2005, p. 64; Pierson, 2000a, p. 252). Besides, there is disagreement among scholars as to what mechanisms¹⁸ are subsumed by the concept, which in part might be due to the remoulding and expanding of the concept in the course of its adaptation in social science from the discipline of economics¹⁹ (Rixen and Viola, 2009, p. 1, pp. 5-6). More specifically, while political science and sociology have incorporated many insights that were formulated initially by economists (Conrad, 2019, p. 204), these social disciplines have also developed their distinctive conceptual contributions, some of which challenge the core assumptions of the original concept, as discussed in the following (Mahoney, 2006, p. 129).

When dealing with the scientific rigour of the concept of path dependence, a general distinction is made between a broader and a narrower type of concept (Selbmann, 2015,

¹⁸ “Mechanism process accounts reject covering-law regularities for large structures such as international systems and for vast sequences such as democratization. Instead, they lend themselves to “local theory” in which the explanatory mechanisms and processes operate quite broadly, but combine locally as a function of initial conditions and adjacent processes to produce distinctive trajectories and outcomes” (Tilly, 2011, p. 527).

¹⁹ As argued by Howlett and Goetz, the application of the concept of path dependence in politics and sociology is considered to be less specific than that initially developed in economics (2014, p. 483).

p. 2). For example, the broader concept of path dependence is used by historical institutionalists with the aim of understanding how much past decisions shape the availability of alternatives for future, emphasising in so doing the timing and sequence of events (Ebbinghaus, 2005, p. 14).

Two Types of Path Dependence

Many valuable insights on path dependence in social processes were provided *inter alia* by Mahoney (2000, 2006) and Pierson (2000a, 2000b, 2004), as acknowledged by Blatter and Haverland (2014a, p. 119). Whereas Pearson concentrates only on one type of path dependence that is launched and upheld by increasing returns, to which I refer below, Mahoney (2000, 2006) by contrast provides an overview of the two major types of path dependence. According to him, these two types of path-dependent processes analysed in political science and sociology are: *reactive sequences* and *increasing returns sequences* (Sarigil, 2015, pp. 222-223; Mahoney, 2006, p. 130).

A *reactive sequence* is distinguished by a reaction-counterreaction dynamic. In this dynamic, an initial event causes a reaction that logically leads to another quite different event, the latter event triggering, in its turn, its own reaction, and so on. Therewith, this chain of reactions and counter-reactions continues until resulting in an outcome of interest (Mahoney and Schensul, 2006, pp. 456-457). Other authors similarly emphasise the importance of “the order or sequences of events prior to the observation of the outcome” when dealing with path-dependent processes (e.g. Jackson and Kollman, 2007, p. 1). Such a process can be illustrated by the following example of how the first efficient steam engine and the resulting dramatic improvement in the extraction of coal led to the Industrial Revolution in England:

Cheap coal made possible cheaper iron and steel. Cheap coal plus cheap iron made possible the construction of railways and ships built of iron, fueled by coal, and powered by engines producing steam. Railways and ships made possible mass national and international distribution of metal tools, textiles, and other products that could be more cheaply made with steam-powered reinforced machinery (Goldstone, 1998, p. 275, quoted in Mahoney and Schensul, 2006).

By contrast to the above, an *increasing returns sequence* is characterised by a process, “in which a particular outcome happens to occur, and then this outcome is subject to *self-reproducing mechanisms*, causing the outcome to endure across time, even long after its original purposes have ceased to exist” (Mahoney and Schensul, 2006, p. 456, emphasis added). Although these two types of path dependence are based on different mechanisms, they are “both common in the literature, and they are both often regarded as legitimate applications of path dependence” (Mahoney and Schensul, 2006, p. 456).

The methodological intricacies of adapting both types of path dependence are scrutinised in the methodology chapter. That is, the methodology adopted in this study pays equal attention to reactive sequences and to increasing returns sequences. At the same time, the latter type of path dependence is a rather complex concept, consequently a lot of effort was undertaken in adapting it from the discipline of economics into social science. Hence, it is considered necessary to devote the following section to a more detail explanation of increasing returns.

Increasing Returns as a Mechanism of Path Dependence

W. Brian Arthur and Paul A. David are two economists who, by dealing with the adoption and diffusion of technological standards, have developed the concept of path dependence and its mechanism of increasing returns (using the terms ‘increasing returns’, ‘self-reinforcement’ and ‘positive feedback’ synonymously) (Rixen and Viola, 2009, pp. 6-7). Therewith, the development of the concept of path dependence was meant to make a contribution to the debate about whether markets are selecting most efficient technologies (Beyer, 2015, p. 150). More specifically, the concept challenged two assumptions of the neoclassical, equilibrium-based microeconomic theory that: first, “market forces will ensure that the most efficient technological solutions will finally prevail”, and “[s]econd, that decisions are, in principle, reversible and will be reversed if and when better technologies become available” (Simmie, 2012, p. 755).

Contrary to these assumptions, the cases of path-dependent processes show that minor advantages for some technology, product or standard can have important consequences

for its allocation within the market, disregarding its efficiency (Liebowitz and Margolis, 1995, p. 206). Such minor advantages can allow a technology (product or standard) to gain a leading position on the market, which results in increasing returns; that is, rules, institutions, habits, etc. are developed around the technology that are costly to change. The cost of change, in turn, prohibits discarding the original solution (Simmie, 2012, p. 755). Thus, “[i]t has been claimed, for example, that historical accidents may have left us with the wrong types of automobiles, video recorders, nuclear power plants, and typewriter keyboards” (Liebowitz and Margolis, 1995, p. 206). Specific examples of relatively inefficient technology dominating the market can be found in works by David (1985) on the QWERTY keyboard²⁰ and by Arthur (1990, 1992) on the adoption of VHS instead of Betamax²¹ (Simmie, 2012, p. 755). Although the development of the concept of path dependence profited initially solely from the empirical evidence on technological standards (Rixen and Viola, 2009, pp. 6-7), the later application of the concept became much broader because it has proven useful at different levels of analysis. For example, the emergence of entire regions, such as Silicon Valley, could be explained with the help of the concept (Garud and Karnoe, 2001, p. 5).

The theoretical concept developed in economics, as outlined above, was subsequently transferred to social science. Pierson is considered to be one of the most prominent

²⁰ “Paul David argued in his seminal article, “Clio and the Economics of QWERTY” (1985), that the keyboard layout in digital keyboards used in modern computers and other electronic devices today was in fact designed to reduce the speed of the typist. This “inefficient” keyboard layout was introduced in order to generate a working solution to a practical problem of clashing and jamming of the mechanical parts of old typewriters. As the typist was slower in typing texts, the number of clashes and jams was reduced. Therefore, the typist could type more and longer. However, modern computers, laptops, and other electronic devices do not have such problems. Digital keyboards nevertheless have used QWERTY as the standard layout. The industry was locked in to an “inferior” technology that obstructed progress in typing technologies. A solution was passed on to next generations despite the fact that the problem did not exist anymore” (Yalcintas, 2012, p. 1092).

²¹ “There is a common perception ... that Beta was superior to VHS, and the market's choice did not represent the best economic outcome. ... Home users of video recorders benefit from compatibility with other home users. Compatibility allows them to exchange recorded materials with other people and allows participation in the rental market for prerecorded movies. VHS is now the dominant format for home video recording. Thus consumers choices of videorecorder formats may exhibit path dependency: decisions by earlier adopters can be expected to have some effect on the decisions of later adopters” (Liebowitz and Margolis, 1995, p. 208).

authors in justifying the applicability of path dependence in social science (Gerschewski, 2015, p. 241). Pierson's work is influenced by that on path dependence in economics to the extent that it also revolves exclusively around the identification of increasing returns (Greener, 2007, p. 101); thus, in his classic article "Increasing Returns, Path Dependence, and the Study of Politics", path dependence is defined as relying exclusively on increasing returns processes (Schwartz, 2004, p. 5; Deeg, 2001, pp. 9-10). At the same time, Pierson acknowledges that "[l]imiting the concept of path dependence to self-reinforcing processes in no way precludes the investigation of other ways in which sequences can matter in explaining social outcomes"; that is, "[f]or some theorists, increasing returns are the source of path dependence; for others, they typify only one form of path dependence" (Pierson, 2000a, pp. 251-252).

Pierson's interest in increasing returns processes is substantiated by the claim that they are at the core of political and social interactions (Gerschewski, 2015, p. 241); that is, increasing returns are even more common in social and political life than in economics (Schwartz, 2004, p. 5) because they "characterize many important parts of the social world"²² (Pierson, 2004, p. 10; Pierson, 2000a, p. 253). In general terms, according to Pierson, specifically in politics it is easier to continue moving along the same path than to set out on a new course even if the new path is considered technically superior (Bardach, 2011, p. 948). Besides, increasing returns, as a mechanism of path-dependent processes, is a promising area of inquiry partly due to the sensitivity of the path-dependent analysis to the role of history and temporality (Pierson, 2000a, p. 252), which is advantageous because in social science many processes can be understood only within a long-term perspective, whereas snapshot analysis will often overlook important explanatory factors (Pierson, 2005, p. 40; Pierson, 2000b, p. 494). In Pierson's own words:

²² Generally, in the realm of politics switching from one path to another is much more difficult than in the realm of economics. For example, "those with property rights over a firm are generally in a relatively strong position to remake their organizations as they choose. Lines of authority are clear, and the relevant decisionmakers are likely to share the same broad goal of maximizing profits. By contrast, formal political institutions are usually change-resistant ... [since] in many national settings 'nested rules' created by ordinary legislation must pass through multiple veto points, often requiring broad supermajorities" (Pierson, 2000b, pp. 490-491).

[I]ncreasing returns arguments justify efforts to stretch the temporal horizons of political analysis. They can redirect the questions political scientists ask, which will contribute to a richer appreciation of the centrality of historical processes in generating variation in political life. [Besides] [...] increasing returns arguments highlight the need to consider hypotheses based on temporal ordering—the possibility that the particular sequencing of events or processes may be a key part of the explanation for divergent outcomes (Pierson, 2000a, p. 252).

The idea of increasing returns or positive feedback is, for example, also applicable to policy-making systems (Bardach, 2011, p. 948). Specifically, the analysis of positive feedback effects of *policy* enables an exploration of self-reinforcing features of legislation (Pierson, 2005). This may reveal that policy initiatives “may start small but grow substantially over time”, the true significance of small initiatives becoming apparent only in the context of their evolution throughout an extended period of time. Such a pattern of long-term development of policies differs significantly from the ‘grand legislative dramas’ that are of particular interest for analysts interested in ‘snapshot’ explanations (Pierson, 2005, p. 39). By expanding on this idea, Pierson advises us:

[N]ot [to] see policy enactment as the end of the story. Approaching public policy as a matter of policy development suggests, moreover, that we should not necessarily treat enactments as the beginning of the story either. If it is crucial to consider what happens after enactments, it is also important to think carefully about what happens before. Here again, the snapshot orientation of much social science creates big problems. Too often, it leads social scientists seeking explanations of policy outcomes to focus their inquiries on aspects of causal processes that unfold very rapidly and immediately prior to the outcome of interest. Yet many things in the social world take a long time to happen (Pierson, 2005, pp. 39-40).

By integrating the ideas of self-reinforcing and positive feedback dynamics into political science Pierson draws on research by Arthur and North (Pierson, 2004, p. 10). In general terms, Pierson identifies two key universal elements constituting increasing returns that capture most analysts’ understanding of path dependence: “[f]irst, they pinpoint how the costs of switching from one alternative to another will, in certain social contexts, increase markedly over time”, and “[s]econd, and related, they draw attention to issues of timing and sequence, distinguishing formative moments or

conjunctures from the periods that reinforce divergent paths”; therewith temporality is at the heart of the analysis since in “an increasing returns process, it is not only a question of what happens but also of when it happens” (Pierson, 2000a, p. 251).

The way in which Pierson borrows from economics is reflected in his reference to experiments involving Polya urns, as a foundation for explaining the overall logic of increasing returns. In so doing he uses the same type of explanation as in the work by Arthur (1989, 1990) (Greener, 2007, p. 101). Polya urns exhibit positive feedback and are characterised by an element of chance, which, combined with a decision rule, yield a sequence of actions (Pierson, 2004, p. 17). As expressed by Pierson:

The basic logic of increasing returns processes can be captured in a simple mathematical illustration. Imagine a very large urn containing two balls, one black, one red. Remove one ball, and then return it to the urn, accompanied by an additional ball of the same color. Repeat this process until the urn fills up. What can we say about the eventual distribution of colored balls in the urn? Or about a series of trials in which we fill the urn and then start over again one hundred times? (Pierson, 2000a, p. 253).

Based on the above illustration, increasing returns are understood in the following manner: “[i]n an increasing returns process, the probability of further steps along the same path increases with each move down that path. This is because the relative benefits of the current activity compared with other possible options increase over time”; put differently, “the costs of exit—of switching to some previously plausible alternative—rise”, and this is why increasing returns processes can also be described as positive feedback processes or self-reinforcing processes²³ (Pierson, 2000a, p. 252). By implication, path dependence is defined in a narrow sense as “social processes that exhibit increasing returns” (Pierson, 2000a, p. 252).

Seeking to specify the mechanisms of institutional reproduction, Pierson again strongly draws on Arthur (1994), who provides a “foundation for developing hypotheses about

²³ For example, “[k]nowledge intensive sectors are prone to positive feedback. Countries that gain a lead in a particular field, for whatever reason, are likely to consolidate that lead over time. The result is a high degree of specialization” (Pierson, 2000a, p. 255).

when increasing returns processes are likely to operate in the social world” (Pierson, 2000a, p. 254). The achievement of Arthur's work (1994), in Pierson’s view, lies in addressing not only the characteristics of increasing returns processes but equally the *conditions* that give rise to those processes (Pierson, 2004, p. 24). Summarising Arthur's work (1994), Pierson (2000a, p. 254; 2000b, p. 492) points out four features of technology within its social context that generate increasing returns:

1. *Large set-up or fixed costs*. These create a high pay-off for further investments in a given technology. With large production runs, fixed costs can be spread over more output, which will lead to lower unit costs. When set-up or fixed costs are high, individuals and organizations have a strong incentive to identify and stick with a single option.
2. *Learning effects*. Knowledge gained in the operation of complex systems also leads to higher returns from continuing use. With repetition, individuals learn how to use products more effectively, and their experiences are likely to spur further innovations in the product or in related activities.
3. *Coordination effects*. These occur when the benefits an individual receives from a particular activity increase as others adopt the same option. If technologies embody positive network externalities, then a given technology will become more attractive as more people use it. Coordination effects are especially significant when a technology has to be compatible with a linked infrastructure (e.g., software with hardware; automobiles with an infrastructure of roads, repair facilities, and fueling stations). Increased use of a technology encourages investments in the linked infrastructure, which in turn attracts still more users to the technology.
4. *Adaptive expectations*. If options that fail to win broad acceptance will have drawbacks later on, then individuals may feel a need to "pick the right horse." Although the dynamic here is related to coordination effects, it derives from the self-fulfilling character of expectations. Projections about future aggregate use patterns lead individuals to adapt their actions in ways that help make those expectations come true (Pierson, 2000a, p. 254, emphasis added).

However, according to Pierson, an analyst cannot simply apply arguments developed in economics to the realm of politics but has to modify path-dependent claims by adapting them to the specific features of the political world (2004, p. 30; 2000a, p. 252). In searching for a way to apply these economic insights to politics, Pierson turns to North (1990), who makes the argument that all four features which Arthur (1994) identifies when investigating increasing returns in technology become applicable to institutions (Pierson, 2004, p. 26). This is because setting up a new institution involves overcoming hurdles such as high fixed or start-up costs, considerable learning effects, coordination effects and adaptive expectations (Pierson, 2000a, p. 255; 2000b, p. 492). By

elaborating on those points, Pierson makes an important contribution to the recent institutionalist debate on how to specify the *mechanisms* of institutional reproduction (Deeg, 2001, p. 9). This is achieved by Pierson through identifying four prominent and interconnected aspects of politics that exhibit increasing returns processes: “(1) the central role of collective action; (2) the high density of institutions; (3) the possibilities for using political authority to enhance asymmetries of power; and (4) its intrinsic complexity and opacity” (Pierson, 2004, p. 30; 2000a, p. 256).

The central role of collective action is relevant to the extent that actors constantly adjust their actions by taking into account how they expect others to behave (Pierson, 2004, p. 33). “Whether you put energy into developing a new party, or join a potential coalition, or provide resources to an interest group may depend to a considerable degree on your confidence that a large number of other people will do the same”, because of the high start-up costs that many types of collective action require²⁴ (Pierson, 2000a, p. 259).

The institutional density of politics specifies that institutions are prone to increasing returns to the extent that “institutions can help actors overcome various dilemmas arising from collective choice situations”— especially the need to coordinate their behaviour by disciplining expectations about the behaviour of others (Pierson, 2000a, p. 258). Also, existing institutions have usually made individuals, who use them, invest in them, by making those individuals develop specialised skills, deepen relationships with other individuals and organizations (as well as develop particular political and social identities). Hence, replacing old institutions with new ones results in the loss of the aforementioned investments and requires new ones, related to the operation of new institutions (Pierson, 2004, p. 35).

Political authority and power asymmetries is an aspect that for Pierson (2000a, 2004) is closely related to the different dimensions of power, some of which are hidden

²⁴ “Lipset and Rokkan's (1967) work on political parties in Europe exemplifies this dynamic: Key historical junctures produced major political cleavages. These political divisions became organized into political parties. Once they have surmounted initial start-up costs and fueled processes of adaptive expectations, these parties are reproduced through time, which generates "frozen" party systems” (Pierson, 2000a, p. 259).

(discussed in more detail below). Pierson (2000a; 2004) refers to them as different ‘faces of power’, and holds that they allow for the demonstration of power asymmetries between actors. Actors in possession of political authority may use this authority to make changes to rules, this way further strengthening their position, which leads to path-dependent process stimulated by the mechanism of increasing returns (Pierson, 2004, p. 36; 2000a, p. 259). As a result of this process, no open conflict takes place because of strong power asymmetries between actors (Pierson, 2000b, p. 493). As additionally specified:

Increasing returns processes can transform a situation of relatively balanced conflict, in which one set of actors must openly impose its preferences on another set ("the first face of power"), into one in which power relations become so uneven that anticipated reactions ("the second face of power") and ideological manipulation ("the third face") make open political conflict unnecessary (Pierson, 2000a, p. 259).

The complexity and opacity of politics reinforce path-dependent processes because these qualities of political institutions stand in the way of evaluating the effectiveness of institutional performance. Although markets are also often highly complex, they have the advantage of the measuring rod of price, which makes the evaluation of the economic performance of a firm, or its parts, easier and, in turn, facilitates a decision in favour or against a particular institution (Pierson, 2004, pp. 37-38). By contrast, “it is often very hard to observe or measure important aspects of political performance. And, if we believe that a system is not performing well, it is still more difficult to determine which elements in these highly complex systems are responsible” (Pierson, 2000a, p. 260). Moreover, even when learning about institutional effectiveness does occur, it might be difficult to change an institution in accordance with the new knowledge (Pierson, 2004, p. 38). More metaphorically, learning still needs to be "folded back into the organizational design" (Pierson, 2000a, p. 261).

The adaptation of learning-based changes in politics faces two specific obstacles – “*the short time horizons* of political actors and the strong *status quo bias* associated with the decision rules that govern most political institutions” (Pierson, 2000a, p. 261, emphasis added). Regarding the first aspect, because of the logic of electoral politics, political actors and especially politicians are mostly interested in short-term effects of their

decisions (Pierson, 2004, p. 41; 2000b, p. 479). As an exception, political actors “will pay attention to long-term consequences only when these become politically salient or when they have little reason to fear short-term electoral retribution” (Pierson, 2000a, p. 261). Regarding the second aspect, “public policies and (especially) formal institutions—are change-resistant” because the designers of institutions and policies might have been intended on binding their successors, and because they might have wanted to bind themselves to make credible commitments to their institutions and policies, which in the long run is to their own advantage (Pierson, 2004, p. 43; 2000a, p. 262).

By pointing to the short-term horizons as one of the major characteristics of political actors Pierson (2004) also responds to the critique by Liebowitz and Margolis (1995), who challenge the concept of increasing returns in economics by stating that “[e]conomic actors ... calculate in the shadow of the future” and are hence unlikely to show myopic, short-term maximizing behaviour at their long-term expense (Pierson, 2004, p. 29). According to Pierson, for political actors, there is less incentive to calculate in the long-term than for economic actors (Pierson, 2000a, p. 256).

Apart from drawing on North (1990) to show why increasing returns processes are common in politics, Pierson also pays attention to what North calls ‘the interdependent web of an institutional matrix’. This matrix produces greater increasing returns because of the complementary configuration of organisations and institutions that create a web within which individual institutions adjust to each others’ functioning, and which makes them costly to change (Pierson, 2004, p. 27; 2000a, p. 255; Pierson, 2000b, p. 492). However, as illustrated by Ackrill and Kay (2006), the overall institutional matrix does not have to alter its trajectory, sustained by positive feedback, in a case where it incorporates new individual institutions. On the contrary, additional institutions can be agreed on by the political actors specifically to preserve the operation of an existing institutional matrix and its single institutions (Ackrill and Kay, 2006, pp. 114-117).

When advocating the importance of increasing returns as a mechanism of path-dependent processes in political analysis, Pierson also points to the prominence of *earlier events* in their effect on subsequent self-reinforcing processes (2004, p. 46). In so doing, Pierson also highlights that in path-dependent processes *sequencing* is critical.

“Earlier events matter much more than later ones, and hence different sequences may produce different outcomes. In these processes, history matters” (Pierson, 2000a, p. 253). In connection with the role of earlier events, Pierson also points out that it is crucial to study critical junctures because they set an institution along a particular path (2004, p. 48; 2000a, p. 263).

Additionally, according to Pierson, increasing returns processes are strongly related to historical institutionalist analysis. That is, the main claims of historical institutionalism in political science are well supported by the main properties of increasing returns processes. This is because increasing returns focus a researcher on processes that unfold over a period of time, and also because these unfolding processes are embedded in institutions, regardless of whether institutions are understood as formal rules and policy structures, or as informal conventions (Pierson, 2000a, pp. 264-265).

In conclusion to this section on institutional constraints to actors in political processes, I define institutions in this study in a way coherent with the conceptual framework of this section. That is, institution means “either a single or complex set of rules which govern the interaction of political actors, i.e. guiding principles which both prescribe and proscribe behaviour and are set out in the form of prescriptions – either formally established or tacitly understood” – a definition borrowed from the studies by Ackrill and Kay (2006), and Stacey and Rittberger (2003).

1.11 Dimensions of Power

The relevance of the concept of power for this study is of importance because the concept of power can be auxiliary in studying processes that unfold over time and that are structured by institutional arrangements that can advance particular political coalitions and be advanced by them. As recently acknowledged by Pierson, “historical institutionalism has been well positioned to make core contributions to our understanding of political power” (2016, p. 126).

The understanding of the concept of power and the identification of its dimensions was advanced in the famous ‘community power’ debate around the issue of whether power

is concentrated or diffused within government and society, led by such scholars as Dahl (1958), Bachrach and Baratz (1962; 1963), and Lukes (1974) (Cairney, 2012, pp. 46-47). That is, “[p]luralists such as Dahl and Lindblom maintained that power was widely dispersed in modern polities ... [and] that the existence of a variety of political resources and the potential access to dangerous venues of political activity ... prevented the concentration of power” (Pierson, 2016, p. 125). Dahl exemplified such distribution of power in his famous work of 1961 that analyses open conflict between interest groups in New Haven, Connecticut in the 1950s. Therewith, Dahl (1957) defined power as control of behaviour; that is, “X has power over Y insofar as: (i) X is able, in one way or another, to get Y to do something (ii) that is more to X’s liking, and (iii) which Y would not otherwise have done” (Goodin and Klingemann, 1998, p. 7). Dahl’s definition of power implies that we can speak about the exercise of power only when we can identify the effects of one actor’s power over another during key policy decisions (Cairney, 2012, p. 47).

This narrow understanding of power was challenged by anti-pluralists, such as Bachrach and Baratz (1962), and Lukes (1974), who termed it as the *first dimension of power*, and characterised it as being restricted to instances of open contestation or open conflict (Pierson, 2016, p. 125). A further characteristic of this dimension of power is that it is only applicable to situations of relatively balanced power distribution of resources among competing actors, which actually enables an open conflict (Pierson, 2000a, p. 259). The overall new critical point made by anti-pluralists was that “the exercise of power will often *not* take the form of open contestation”; “where the distribution of power is quite unequal we should expect to see *little or no open contestation*” (Pierson, 2016, p. 127).

A more encompassing understanding of power, according to anti-pluralists, needed to incorporate two further, non-observable dimensions or faces of power – the so-called second and third dimensions of power (Cairney, 2012, p. 47; Pierson, 2016, p. 126). Therewith, the second dimension of power, as summed up by Pierson, embraces all those cases “where competing interests are recognised (at least by the powerless) but open contestation does not occur because of power asymmetries” (2016, p. 126).

The *second dimension of power*, in turn, should be further subdivided into *two mechanisms*. Each mechanism represents a distinct manner in which power asymmetries can impact upon political processes studied without being settled openly, or without involving open conflict (Pierson, 2016, p. 126).

The first mechanism denominated as *non-decisions* was advanced by Bachrach and Baratz and refer to how formal or informal decision rules may favour some actors' interests over the interests of other actors (Pierson, 2016, p. 127). More specifically, Bachrach and Baratz (1962; 1963) questioned Dahl's preoccupation with directly observable behaviour by pointing to the type of power that can be exercised by 'setting the agenda' and by limiting public debate (Cairney, 2012, p. 47). "Contemporary social scientists would say that this type of influence refers to agenda control. It is now well understood that this is one of the principal ways in which institutions may advantage particular actors" (Pierson, 2016, p. 127).

In case of *anticipated reactions*, which is the second mechanism of the second dimension of power, open contestation does not take place because "the weaker actor rationally chooses not to engage in light of her weaker position. Contestation is costly, both because of the need to expend resources and, if you are weak, because of the prospect that the powerful will retaliate" (retaliation taking on the form of, for instance, job loss, social ostracism, or physical violence against you or your close ones) (Pierson, 2016, p. 127).

There is also a third, ideational dimension of power; it reveals that influencing views and ideas of others can be aimed at for the purpose of one's own advantage (Pierson, 2016, p. 128; Pierson, 2000a, p. 259). This dimension of power, however, is of no relevance for the present study because of its ontological position.

1.12 Agent-centric Historical Institutionalism

Agent-centric historical institutionalism (ACHI), developed by Bütte (2016a, 2016b), makes standard rationalist-materialist assumptions about actors' interests. Therewith, it falls squarely within the tradition of historical institutionalism, (as implied by the name)

(Büthe, 2016a, p. 41). The general aim of Büthe's framework is to complement historical institutionalism with explicit assumptions about actors' agency within the institutional configuration of the EU, which at the same time would "allow retaining a focus on the clearly distinctive defining elements of HI" that underlie ACHI (Büthe, 2016a, p. 46, pp. 60-61).

Specifically, Büthe identifies *three* core assumptions that hold together the broad analytical approach of historical institutionalism and are central to a historical institutionalist analysis of how institutions shape politics and policy. *First*, historical institutionalist scholarship considers preferences, particularly second-order preferences regarding a policy or institutional arrangements, not as fixed but as malleable (Büthe, 2016b, p. 488). *Second*, institutions are assumed to have an independent causal effect, thereby empowering or weakening political actors in their ability to shape policy and outcomes (Büthe, 2016b, pp. 488-489). Drawing on these theoretical insights, Büthe acknowledges the importance of longer-term mechanisms, such as positive feedback. In Büthe's own words "institutions have feedback effects ... [that] might over time not only change how actors pursue their goals but also might change their interests or even constitute new actors" (2016a, p. 41). The independent causal effect of institutions is based on the assumption that institutions generally reflect the distribution of power among actors only at the time of their creation. However, power distribution and institutional set-up do not stay tightly connected because institutional equilibria cannot change along with power re-distribution in a quick or efficient manner (Büthe, 2016b, p. 489). *Third*, a key insight of traditional historical institutionalism informing ACHI pertains to considering an institution always as a part of a broader institutionalist context or configuration (Büthe, 2016a, pp. 41-42). Consequently, a study of an isolated institution that is devoid of its broader embeddedness within a particular institutional configuration cannot be anything but biased (Büthe, 2016b, p. 489).

Overall, Büthe anticipates a dynamic toward growth in supranational governance, because the broader institutional configuration of the EU reinforces this dynamic by enabling the proponents of supranational governance²⁵ (2016a, pp. 42-43). For this

²⁵ More specifically, in a context where the Commission and the ECJ are supportive of extensive supranationalist decision-making, private demands for more depth and breadth of integration (purely out of self-interest) are likely to be successful. Authority

thesis, however, this position is of no particular relevance, because, as stated in the introduction of this thesis, this study is informed by other research questions.

Despite building on the foundations of the first-wave historical institutionalism, it is acknowledged that the pioneering work on EU studies in this tradition barely mentions the factor of agency (Büthe, 2016b, p. 490). Therewith, Büthe's approach is an explicit contribution to the more recent theoretical developments in historical institutionalism that grant a more prominence to agency. Büthe's attention to agency is intertwined with an interest in institutional change because of the recognition that institutional change requires agency (2016a, pp. 45-46). As summed up by Büthe, "many HI scholars adopt common assumptions about interests and how actors pursue them" (Büthe, 2016a, p. 46); yet, this agency-attentive literature, along with the literature that utilises the explanatory leverage of HI for EU studies, nevertheless, remains rather broad theoretically and empirically (Büthe, 2016b, p. 488).

To further refine the assumptions of HI for its application in the field of EU studies, and therewith to address the aforementioned shortcoming, Büthe (2016a, 2016b) devises an actor-centric type of historical institutionalism. In so doing, he departs from a standard assumption that actors' *ex ante* interests are rationalist-materialist in nature (Büthe 2016a, p. 41), being inspired by Mayntz and Scharpf (1995) (Büthe, 2016b, p. 490). Specifically, Büthe (2016a, 2016b) draws on their assumptions about the interests of actors (individual and composite). Following Mayntz and Scharpf (1995, p. 54), actors' *initial* core interests are assumed to be: "self-preservation (survival or physical well-being), power (or freedom), and plenty (possession of at least basic resources and a general preference for more over less)" (Büthe, 2016b, p. 490). In pursuing these interests, actors are furthermore assumed to be acting strategically²⁶ (Büthe, 2016b, p. 490).

transfer back to member states is, however, difficult *inter alia* because it requires a supermajority or even unanimity (Büthe, 2016b, p. 492; Büthe, 2016a, p. 52).

²⁶ I understand *strategic action* as a line of actions, aimed at specific goal attainment, pursued in anticipation of other actors' reaction to those actions and enabled through the use of informational advantages and institutional positions.

Despite adopting the assumption that actors are rational and strategic in pursuing their goals, it does not imply that those preferences are fixed. Instead, they may be re-moulded by institutional feedback effects and the broader institutional context. Thereby, in accordance with ACHI, the specific ways in which interests are re-shaped need to be assessed separately in each individual case (Büthe, 2016a, p. 47). More specifically, a distinction is made between first-order preferences and second-order preferences. The former type of preferences comprises the initial rationalist–materialist interests of actors, while the latter type refers to those initial preferences after being moulded and reshaped by the *institutional context* surrounding the actors. As Büthe puts it, “second-order preferences over institutions should ... depend greatly on how actors are constituted and on the institutional context in which they operate” (2016b, p. 490).

Consequently, there are two steps in the application of ACHI: first, one needs to “identify the key stakeholders and determine the interests that such potential actors are likely to pursue”; second, one has to “theorize how those actors, their interests, and the way in which they pursue those interests will be affected by the opportunities and constraints of the broader institutional configuration and by institutional feedback” (Büthe, 2016b, p. 490).

The overall self-interested character of actors involved with processes at the EU level applies to all three the types of EU composite actors – intergovernmental, supranational and private (Büthe, 2016a, p. 46). Thereby, the ACHI aims at specifying as to what are the considerations for each type of actor to translate their core interest of self-preservation, power, and plenty into second-order preferences regarding the EU-level institutional deepening (discussed in the following) (Büthe, 2016b, p. 491).

To begin with, the Commission, the Parliament and the ECJ are potentially particularly powerful as instigators of change, for the reason that they combine a high degree of autonomy with cohesiveness, whereas the European Parliament has steadily increased its potential for supranational agency, having become a more prominent actor only in recent years. These *supranational actors* are assumed to possess an inherent interest in increasing supranational integration (in line with the core interest of self-preservation), although their interest in increasing integration is constrained by the institutional context of the EU (Büthe 2016a, p. 42). The Commission and ECJ, for example, prefer

to shift authority to the supranational level because “it brings more interesting, more substantively important work for the EU-level organisations and thus enhances their influence” (Büthe, 2016a, p. 48). Thereby, Büthe notes that the assumption that supranational actors seek to *maximise their competence* is supported by a wealth of empirical studies (Büthe, 2016a, p. 48). More competence on the part of the Commission can be sought by means of its agenda-setting power and its responsibility for Proposal drafting. Indirectly, in addition, the Commission can create pro-integration actors, e.g. civil society groups or EU-level industry associations or professional associations, by, for instance, providing start-up assistance. Besides, it can frame an issue in a way that encourages and legitimises particular decisions at the EU level, or that interprets existing decision-making rules in a more supranationalist manner. At the same time, the Commission has no control over how a policy-making process that it has set in motion continues to develop under the influence of other EU actors (Büthe, 2016b, p. 491; Büthe, 2016a, p. 49).

Private actors do not often feature as important in the standard analyses of European integration and are implicitly not viewed as holding strong preferences either in favour or against the growth of supranational governance (Büthe, 2016b, p. 491). It is, however, generally accepted that private actors pursue their material interests selfishly and strategically (Büthe, 2016a, pp. 49-50). Departing from this customary assumption, Büthe claims that “these material interests lead to predictable preferences over governance arrangements, so that a focus on such private, commercial actors can help explain institutional change in the EU” (2016a, p. 50). By way of an example, the process of institutionalised market integration in the EU is addressed by Büthe regarding its potential to reshape actors’ interests and even create new actors, due to the establishment of a new institutional framework that advances the interdependence of formerly independent member states’ markets. This argument, thereby, simply applies the core premise of historical institutionalism (that institutions shape actors’ interests) to the process of regional market integration. Therewith, the degree of this institutional effect on private actors depends on the stakes that these actors hold in the structure and operation of markets in other EU countries, the stakes differing according to the degree of market integration in a specific sector (Büthe, 2016a, p. 50). As, for instance, with regards to EU state aid control, private commercial actors, all else being equal, generally *want more subsidies for themselves* and no restrictions on the acceptance of

those subsidies. At the same time, they *want fewer subsidies for their competitors*. It is particularly important for firms that their competitors do not obtain subsidies not granted to them, especially in countries with a high degree of integration of their own product markets (Büthe, 2016a, p. 50).

Firms can choose from a range of options to reach their goals. One of them is the conventional domestic lobbying of member state governments (which, however, does not guarantee success, either because competence was largely transferred to the EU level or because of the counter-lobbying by competitors) (Büthe, 2016b, p. 491). An alternative route is to resort to the institutional EU arena “*to achieve with a different political coalition at the European level what they may be politically too weak to achieve at the domestic level*” (Büthe, 2016a, p. 51, emphasis in the original). For instance, private sector actors have the option of challenging a Commission’s decision before the ECJ. This way, in the pursuit of private commercial advantages, these actors are sensitive and reactive to the broader institutional context, and also contribute to the change of this institutional context (Büthe, 2016a, p. 51).

By comparison, *member states* or governments support EU-level institutional deepening, and thus become agents of change, only under a small number of circumstances. First, member states advance further integration only when the *economic gains obtained from further integration are evaluated as greater than the economic losses* stemming from surrendered national competence (Büthe 2016a, p. 42). Second, governments of member states want to be re-elected. Hence, supranational institutional deepening is sought if advancing this interest (Büthe, 2016b, p. 491; Büthe, 2016a, p. 47). More specifically, “governments with a preference for re-election will be responsive to voters on issues of electoral salience. Such salience may be established directly by the explicit demands of constituency interest groups”; however, governments can also decide that an issue is salient “if addressing it promises to bring substantial gains in aggregate national economic welfare” (Büthe, 2016a, p. 47).

The Overall Theoretical Framework and Hypotheses

Prior to specifying the hypotheses of this study, it needs to be clarified how the co-application of the different parts of this theoretical framework can be justified. First of all, structural constraints to the policy-making processes of interest are delineated by means of the conceptual frameworks of critical juncture and path-dependence, together constituting the punctuated equilibrium model, which is core to historical institutionalism. This model, at the same time, assigns actors a significant role, yet without specifying the relative importance of agency vs. structure. In this study, this relative importance will be assessed empirically. However, in order to better conceptualise how particular types of actors form their policy preferences and under what circumstances their power of realising these preferences is distributed unevenly, this study also employs the concept pertaining to ACHI and dimensions of power.

The Hypotheses of the Study

In accordance with the established integrated theoretical framework, this study will test the following hypotheses. The first three of the hypotheses of this study are related to the conceptual framework of HI and last three to the concepts specifying policy preferences of actors.

Thereby, the below hypotheses were developed in reliance not only on my theoretical framework, but also my preliminary knowledge of the policy-making processes as discussed in the introduction to this study, where it was shown that the official justification of EU legislation in renewable energy policy was based on a number of goals (e.g. security of energy supply to the EU, technological and rural development), which can be subsumed under a more general one (also referred to in the EU documents), namely that of EU competitiveness globally, in addition to the EU commitment to climate change mitigation within the framework of UNFCCC .

H1: The policy-making processes on the Directives 2001/77/EC, 2003/30/EC and 2009/28/EC were launched by the joint response to the structural pressures of ensuring EU competitiveness and EU compliance with climate change regimes.

H2/1: Policy formulation tools, applied to calculate targets for RES-E and RES-T for EU legislation, are chosen to adjust to the structural pressures of ensuring EU competitiveness and EU compliance with climate change regimes.

H2/2: Policy formulation tools, applied to calculate targets for RES-E and RES-T for EU legislation, are chosen to adjust to the structural pressures stemming from past historic choices made at the EU level.

H3/1: The numerical values for RES-E and RES-T in EU legislation, both EU overall ones and member states individual ones, are calculated by means of policy formulation tools to adjust to the structural pressure of ensuring EU competitiveness.

H3/2: The numerical values for RES-E and RES-T in EU legislation, both EU overall ones and member states individual ones, are calculated by means of policy formulation tools to adjust to the structural pressure of ensuring EU compliance with climate change regimes.

H4/1: The EU Member states form their policy preferences on RES-E and RES-T targets and definitions in EU legislation to minimize their economic losses and/or maximize their economic gains resulting from this legislation.

H4/2: The EU Member states form their policy preferences on RES-E and RES-T targets and definitions in EU legislation to minimize their electoral losses and/or maximize their electoral gains resulting from this legislation.

H5: The European Commission and the European Parliament form their policy preferences on RES-E and RES-T targets and definitions in EU legislation with a view to expanding their supranational competences.

H6: Private interests form their policy preferences on RES-E and RES-T targets and definitions in EU legislation with a view to influencing EU legislation toward more economic gains for them and less for their competitors.

Having discussed my theoretical framework and having presented my hypotheses, the subject to be dealt with next is the methodology of this study. Thus, the following chapter is dedicated to the elaboration my methodological framework.

Chapter 2: Research Design

Having established my research goals and having laid down my theoretical framework, this chapter seeks to justify my methodological choices. In so doing, it starts with a discussion of the rationale for selecting a research design for this study from the options currently discussed in the literature on research design in small-N case studies. The choice is made by considering several features of the present study – the type of research questions asked, the prior knowledge of the topic studied and the state of theoretical development in the subject area under study, thus informing my case selection and my method. The chapter proceeds with an elaboration of the data collection technique of elite interviewing and the way it was applied for the purpose of conducting my interviews in the EU institutions. Next, in the section on the method of process tracing, it is discussed how my data is analysed. Some further features of the adopted research design, namely data generation, data analysis, and generalisation of research findings, are dealt with in the conclusive part of the chapter.

2.1 Case Studies – Major Debates on Research Design

Generally, the challenge of finding a research design²⁷ in political science is complicated by the fact that there are no clear-cut criteria for its selection. On the one hand, the wealth of experience gained in how to conduct case study research in social science has grown parallel to the development of social science and therefore can be traced back to the 1920s (Blaikie, 2000, p. 214); that is, most classic works of social science in the twentieth century represent case study research. On the other hand, notwithstanding this long tradition of using case studies to explain social reality, there is a great deal of confusion and misconception about what case studies are, as well as what they can be used for (Flyvbjerg, 2011, pp. 301-302; Blaikie, 2000, p. 226; Blatter

²⁷ *Research design* in this study is understood as a way of organising data collection in order to answer the research questions of this study. Thus, data collection can take place in accordance with e.g. factor-centric or outcome-centric research designs. By comparison, I refer to a *research approach* as to a methodological practice or tradition, such as survey research or case-studies research.

and Haverland, 2014a, pp. 18-19). The situation is further complicated by the fact that case studies can be approached “in a number of ways, for instance qualitatively or quantitatively, analytically or hermeneutically, or by mixed methods” (Flyvbjerg, 2011, p. 301). Similarly to the situation in other disciplines of social science, the recent literature in political science on case study research design and methodology²⁸, despite its exponential growth, is characterized by paradoxically inconsistent advice (Rohlfing, 2012, p. 4; Beach and Pedersen 2013, p. 5, 10; Blatter and Haverland, 2014a, pp. 14- 15). Apart from frequently neglected methodological advice, there is no formula for when to decide in favour of the methodology of a case study (Yin, 2009, p. 4).

On reviewing the larger ongoing dialogue revolving around case studies in social science through the twentieth and early twenty-first centuries, several key moments in the advancement of scientific understanding with regard to case study research can be identified. After being introduced by the Chicago School of Sociology, the first advancement in the application of case studies was through an attempt to expand the conduct of a single case study to a comparative analysis consisting of more than one case study. The next turning point came at the beginning of the 1970s, with the initial endorsement of case studies in accordance to the logic of variable-centred large-N studies (Blatter and Haverland, 2014a, pp. 15-16). However, it was the seminal contribution by King *et al.* (1994), which launched an intensive debate on the logic applied to small-N case studies in political science (Beach and Pedersen, 2016, p. 85; Blatter *et al.*, 2016, p. 2). The new wave of reflections created by this debate helped to identify types of case-study research design and, in turn, advanced the debate on how the single research designs differ regarding methodology, along with whether they are grounded in different ontological assumptions (Gschwend and Schimmelfennig, 2007, p. ix; Blatter and Haverland, 2014a, pp. 15-16). A more detailed overview of these

²⁸ In this study, a distinction between ‘methods’ and ‘methodology’ is drawn in the same way as by Haverland and Yanow (2012, p. 2), which is a common distinction in the methodological literature. Specifically, the “former designates all those tools and techniques that are used to carry out research: surveys, questionnaires, interviews, observing, participating, and the like. The latter refers to what might be called the applied philosophical positions that underpin and inform those tools and techniques: the ontological and epistemological infrastructure that forms the groundwork for a research question” (Haverland and Yanow, 2012, p. 2).

turning points, given below, allows for differentiating which features of small-N case studies need to be accounted for when selecting a research design.

To begin with, case studies had a prominent place in social sciences during the 1920s and were largely regarded as an acceptable method of social research in the United States, thriving mainly under the auspices of the Chicago tradition of sociology. Within the Chicago School case studies were applied primarily to conduct life histories. In connection with this narrow purpose, the earlier social science textbooks did not treat case study as a formal research method, considering it to be primarily an exploratory stage for other methods (Yin, 2009, p. 17). By the late 1920s and the 1930s, the case study approach was discussed under the aspect of its relative merits in comparison to ‘statistical methods’²⁹. Similar debates on the scientific merits of case studies continued after World War II, being nourished by a broader disagreement between supporters of either qualitative or quantitative methods regarding their respective advantages (Blaikie, 2000, p. 214). One major point of critique levelled against individual case studies concerned their inability to systematically compare findings across cases (George and Bennett, 2005, p. 68). Thus, during the 1960s and 1970s, case study research stood largely in the shadow of quantitative research³⁰ (George and Bennett, 2005, p. 1). That is, most methodologists followed the advice to resort to statistical method, whenever made possible by a sufficient number of cases available for investigation (Blatter and Haverland, 2014a, p. 15). Hence, even by the early 1980s, Jenifer Platt and J Clyde Mitchell still perceived an ‘eclipse of interest in case studies as a method of sociological research’ (quoted in Hammersley and Gomm, 2000, p. 1).

A gradual revival of interest in qualitative methods, and by implication in case studies, took place in much of British sociology. Thus, work on case studies which appeared

²⁹ ‘Statistical methods’ were mainly represented by the social survey which had established itself as the dominant social research in the United States during the 1930s. The concomitant scientific debate on social research of that time revolved around the question of which – case study or survey – came closer to methods applied in natural sciences, which was considered at that time a quality inherent in research of high scientific rigour (Blaikie, 2000, p. 214).

³⁰ The proportion of case study research declined sharply by comparison to quantitative methods during these decades, the expansion of the latter type of method being aided by improvements in computing capabilities, allowing evaluation of large numerical data (George and Bennett, 2005, p. 1).

during the 1970s and 1980s, amongst others by authors such as Mitchell, Eckstein and Yin, respectively, carried the purpose of advancing the notion that case studies can qualify as *comparative research* and/or as an approach to *develop theoretical thinking* (along with various classifications of case studies for these purposes) (compare Blaikie, 2000, p. 214, pp. 216-219). For example, Yin (1984) maintained that case study research can yield theoretical generalisations that allow proving and specifying theoretical concepts and theoretical interpretations in an innovative way. By implication, Yin (1984) stressed the necessity to operate with the same definitions that were used in previous research projects, which would make case studies' findings more comparable across research projects (Blaikie, 2000, pp. 216-217). Similarly, Mitchell (1983) emphasised that case study research is of particular advantage for drawing theoretical conclusions because of the richness of empirical detail that can be accumulated by a case study. Therewith, the view that the advancement of theory is the main purpose of case studies in social sciences has gained a firm grounding in the evolving scientific discourse on possibilities of case study research. In more recent contributions, a similar point has been reiterated among others by Yin (2009, p. 15), for whom generalisation from case studies is never to a population, but to theoretical propositions.

A revival of interest in case study research is also reflected in the work by Flyvbjerg (2006, pp. 221-223), who emphasises the importance of case study research for acquiring and for building up expertise, both inside and outside of academia, because of its content-dependent knowledge. The depth of understanding by means of conducting an in-depth case study, achieved particularly with the help of a well-drawn narrative that is close to all the complexities and contradictions of political reality, is an advancement of scientific knowledge in itself³¹. Although such dense narratives are difficult to generalise, this should not necessarily be perceived as a point of critique, since attention to detail and not a generalisation from a case study is the underlying goal of a piece of

³¹ An example of insight gained from such a detailed case study is provided by Flyvbjerg (2007). The article sums up developments toward an asymmetric relationship of rationality and power in politics and planning of the Danish city of Aalborg, where corruption of political leadership led to a random and self-interested interpretation of rationality in political decision-making.

research. Hence, generalisation from case studies is not always desirable³² (Flyvbjerg, 2004, pp. 15-16).

Another important point made by Flyvbjerg (2006, p. 229; 2011, p. 306) regards the misunderstanding that case study research is claimed to be most useful for generating hypotheses at the initial stage of the overall research process, whereas hypotheses testing and theory building are best served by other methods applied at a later stage in the research process. The author, by contrast, argues that “case study is useful for both generating and testing of hypotheses” (Flyvbjerg, 2006, p. 229). “Testing of hypotheses [thereby] relates directly to the question of ‘generalizability’, and this in turn relates to the question of case selection” (Flyvbjerg, 2011, p. 306). Therewith, “generalizability of case studies can be increased by the strategic selection of cases“, by e.g. applying the selection criteria by Ragin (Flyvbjerg, 2006, p. 229).

2.2 Types of Research Design for Small-N Case Studies

Raising the question of the possibility of generalising from studying more than one case, by Mitchell and his colleagues, led to the question of *how to select cases* for the purpose of such generalisation (Blaikie, 2000, p. 222). The scholarly attempts to answer the latter question involved resorting to variable-centred logic – a logic brought about by the aforementioned general endorsement of statistical techniques in the 1960s and 1970s. More specifically, the case study research began incorporating the logic of analysis underlying statistical techniques applied in large-N studies, in line with which Prezworski and Teune (1970), and Lijphart (1971) have suggested applying John Stuart Mill’s (1843) method of agreement and difference³³ for the purpose of case selection

³² While agreeing with the position that single in-depth case studies can yield important contributions to scientific knowledge, this section concentrates in the following on an overview of the development of comparative research design in political science. This is due to the fact that my initial interest, leading to the conduct of this research, was in a comparison of differences in outcomes from similar policy processes (as already mentioned in the Introduction).

³³ “In 1843 John Stuart Mill introduced the methods of difference and agreement. Originally designed for experimental research – that means research in which all relevant variables can be manipulated while everything else is held constant In the method of difference you select two or more cases that differ on the key independent

and comparison. This method is aimed at finding constant conjunctions among variables in small-N case studies. However, the method of agreement and difference started enjoying broad scientific attention only after it was taken up for a review in the seminal contribution by King *et al.* in 1994. The advocacy of adopting the logic of large-N research to small-N case studies by King *et al.* has triggered a vivid scientific discourse, in which opponents of their position continued with justifying the distinctive logic of small-N case studies and purely qualitative methodological tools as best suitable for case studies (Haverland, 2007, p. 60; Blatter and Haverland, 2014a, pp. 15-17; Beach and Pedersen 2016, pp. 85-94). The justification of a distinctive logic of small-N case studies, by simultaneously opposing King *et al.*'s position, came among others from Brady and Collier (2004), George and Bennett (2005), Beach and Pedersen (2013, 2016).

The methodological take on small-N case study research design, inspired by King *et al.*, gave rise to a new stream of literature on this topic, encompassing a continuum between two positions – ‘*quantitative imperialism*’ and ‘*qualitative separatism*’. According to the interpretation by Gschwend and Schimmelfennig (2007, pp. 14-15), the former position strictly adheres to a co-variational approach, which is grounded in cross-case comparison, while the latter position stresses the technique of causal-process tracing, which is aimed at uncovering within-case causal mechanisms leading to an outcome of interest. The same account of a divide in the contemporary literature on case studies is given by Hammersley *et al.* (2000)³⁴. With regard to research design more specifically, ‘*quantitative imperialism*’ stresses that good case study research needs to emulate the quantitative template of which a quasi-experimental research design is a result. The opposite view of ‘*qualitative separatism*’ holds that qualitative and quantitative research traditions are based on completely different logics of inquiry and that they need to be

variable while otherwise being as similar as possible. This is why Przeworski and Teune (1970, p. 32) speak of a ‘most similar systems’ design. If the dependent variable – *ceteris paribus* – varies in correspondence with the key independent variable, we detect a causal effect” (Leuffen, 2007, p. 149). “In the method of agreement, the cases should agree on the dependent variable as well as on the key independent variable. The other variables should, ideally, differ between cases” (Leuffen, 2007, p. 150).

³⁴ Hammersley *et al.* (2000) perceive two main rationales dominating the literature on small-N case studies. In their view, “various rationales can be organised under two main headings: those which appeal to direct perception of causal relations; and those which emphasize the role of comparative method, in one form or another” (Hammersley *et al.*, 2000, p. 234).

held apart. The former position is best represented by King *et al.* (1994), while the latter can be exemplified by Lieberman (1991), who strongly challenges the universal applicability of Mill's methods in the social science (Gschwend and Schimmelfennig, 2007, pp. 14-15). In Lieberman's view, Mill's methods are based on the very demanding assumption of independent causes which are rarely examined and are not likely to be found in the social world. Instead, the social world, according to Lieberman, usually consists of "complex multivariate causal patterns"; consequently, the outcome is not usually attributable to a single independent variable, but to a number of independent variables, which impact on each other while leading to an outcome (1991, p. 317). By responding to Lieberman, Becker (1991, p. 225) acknowledges the validity of his claim. However, Becker also points to the lack of technique capable of dealing with the complex social world. More specifically, Becker states that analysts recognise "that variables have a temporal order, that they occur in recognisable and variable sequences, but rather that the techniques offer no simple way of dealing with this knowledge" (1991, p. 225).

The above debate on the applicability of different research designs to small-N case studies has more recently benefited from the rising awareness of different *research interests* underlying a piece of research. George and Bennett (2005, pp. 9-12) were the first to specify two different overarching types of research interests – those pertaining to factor-centric and others to outcome-centric research. In a nutshell, in the instance of *factor-centric* design, a researcher is interested in assessing the explanatory power of particular causal factors in their influence on an outcome. In other words, a researcher focuses on the impact of one or a few independent variables (X) on a dependent variable (Y). This research goal has a direct implication for the choice of a research design, as it becomes necessary to hold constant or to 'control for' the influence of other confounding variables on the dependent variable. This can be achieved through the approximation of a quasi-experimental research template, following the logic of Mill's method of difference and agreement (Gschwend and Schimmelfennig, 2007, pp. 7-9). By contrast, in the second case of *outcome-centric* design, a researcher's goal is to provide a broad-ranging explanation for an outcome (Y), not by concentrating on the role of a single independent variable (or a small number of independent variables), but instead by accounting for all potentially relevant independent variables and their interaction. In this case, the appropriate choice is an outcome-centric research design,

since it allows a researcher to gain a broad knowledge of causal processes linking causes and effects (Gschwend and Schimmelfennig, 2007, pp. 7-9). Blatter and Blume (2008), as well as Blatter and Haverland (2014a), make the same overall distinction between factor- and outcome-centric research design, however additionally differentiating between two subtypes of outcome-centric research – causal-process tracing and congruence analysis (Blatter and Haverland, 2014a, pp. 17-18)³⁵.

This increased sensitivity to different research designs in the political science literature, with specific reference to different research goals, has, however, not always resulted in a dialogue between the proponents of different types of research design (Blatter and Haverland, 2014a, pp. 16-17). Yet, there are some academic contributions that explicitly seek to juxtapose factor- and outcome-centric research designs. In so doing, these contributions seek to identify criteria (reviewed below) that can help a researcher make the choice between the two research designs.

2.3 The Criteria for Selection of a Research Design

As pointed out by Leuffen (2007, p. 145), “[i]n an idealised research cycle, case selection usually takes place after the formulation of research questions, elaboration or compilation of theories and concepts specification”. A justification for this order as well

³⁵ Thus, Blatter and Haverland (2014a) differentiate between *three* approaches, guided by different research endeavours, therewith distinguishing between co-variational, causal-process tracing and congruence analysis approaches. More specifically, the *co-variational*, also labelled as *factor-centric* or *X-centric*, research is characterised by its focus on and interest in independent variable(s). Implicitly, it is based on the ontological assumption of autonomous causal factors that impact on the outcome without interacting with each other. In contrast, the *causal-process tracing* approach falls into a category of *outcome-centric* or *Y-centric* research and is aimed at accounting for multiple causal factors, configurations of causal conditions and social mechanisms in their impact on the outcome. Finally, the third type of research approach, *congruence analysis*, purports to make a contribution to a theoretical debate in a discipline by means of comparing different theories respective their leverage to explain a particular subject of research; this research approach applies theories as comprehensive worldviews consisting of causal propositions, which is different from the co-variational approach with its interest in single variables (Blatter and Haverland, 2014a, pp. 23-25).

as the importance of research questions and the theory for selecting a research design constitute the subject explored in this subsection.

One of the central points of departure when contemplating different research designs for a piece of research should be the specific *research interest* (encapsulated in research questions) of a particular piece of research (Sieberer, 2007, p. 164). More specifically, if a researcher is *a priori* interested in studying causal factors, i.e. one or more causal effects or mechanisms leading to an outcome, he/she is best served by *factor-centric* research design. Specifically, the goal here is “to estimate the direction and size of a particular causal effect of one or a few independent variables, X_i ($i = 1, \dots, n$), on a dependent variable, $Y \dots$. Typical research questions of factor-centric research designs are: Does X_i cause Y or what effect does a X_i have on Y and how much?” (Gschwend and Schimmelfennig, 2007, p. 8). Furthermore, it is recommended to design factor-centric research by paying close attention to the selection of cases in accordance with Mill’s methods, and to theorising a relation between dependent variable(s) and independent variable. The empirical evidence, necessary to establish co-variation between dependent variable(s) and independent variable (or the cause and effect), revolves primarily around the values of the variables, without empirically chasing the theorised causal connection (Blatter and Haverland, 2014a, p. 14, pp. 24-25).

By comparison, the *outcome-centric* research design should be applied in research that seeks to comprehensively assess many independent variables, which *in toto* lead to the outcome. Examples of such studies can be found in research on single historical events (such as the end of the Cold War), where there are no other instance of this type of event and hence no variance in the dependent variable (e.g. an end to the Cold War and no end to the Cold War). “The typical research question of outcome-centric research design is: What causes Y or why Y ?” (Gschwend and Schimmelfennig, 2007, p. 8). Outcome-centric research largely disregards the subject of pre-selection of cases. Instead, considerable effort is made to demonstrate the causal paths that connect the causes and their effects. Methodologically, such causal paths are reconstructed by means of process tracing, which is a within-case analytical technique (Blatter and Haverland, 2014a, p. 14, pp. 24-25).

It is also important to point out that the factor-centric research design is based on the ontological assumption that causal factors or single variables display autonomous behaviour, i.e. they do not interact with each other, but affect the outcome independently from each other. A different assumption is made with regards to outcome-centric research – the plurality of independent variables is assumed and analysed as intertwined in their impact on the outcome. This way, a holistic ontological position contributes to the search for combinations and interactions of causal factors (Blatter and Haverland, 2014a, p. 24).

Secondly, the role of *prior knowledge* about the subject of study in choosing a research design is also an important criterion. For example, George and Bennett (2004) suggest assessing the complexity of social reality studied when making a decision about whether a co-variational research design can be applied. Thus, the phenomenon investigated can sometimes be explained by focusing on a single variable (or a small number of variables) that are hypothesised to produce an effect. In this case, it suffices to test a simple causal relationship using a classic experiment, e.g. when a single treatment such as a new drug is assessed as to whether it makes a difference. “However, for many social and behavioural topics, the relevant causes may be complex and involve multiple interactions, and investigating these may well be beyond the capacity of a single experiment” (George and Bennett, 2004, p. 12). A similar point is made by Lieberman (1991) who advises the researcher to try to assess whether the empirical data from a typical small-N study fit the theoretical hypotheses of deterministic cause (or causes) that operate as if there are no interaction effects (Lieberman, 1991, p. 317).

Thirdly, the *state of theory development* for a given field of research is also relevant in discriminating between research designs. Thus, the factor-centric design “starts from a clearly articulated theory assessing causal effects” (Sieberer, 2007, p. 167). Similarly, according to Gschwend and Schimmelfennig, “in theoretically less advanced fields researchers often opt for an outcome-centric research design” (2007, p. 9). In the same vein, Blatter and Haverland associate factor-centric design with a deductive research strategy, which departs from the application of some theoretical underpinnings, while outcome-centric design is brought in connection with inductive research strategy, aimed primarily at theory building (2014a, p. 29).

2.4 Research Design and Case Selection

After presenting different criteria for the selection of a type of research design in the preceding subsection, this subsection is dedicated to the evaluation of these criteria for the purpose of choosing a research design for the present study. In short, this subsection concludes that some of the selection criteria justify a factor-centric research design while other criteria point to the value of process tracing, which is an analytical technique conventionally associated with outcome-centric research. These considerations suggest the selection of a research design that combines a factor-centric template with the method of process tracing. In the final step of this subsection, the conceptualisation of variables in accordance with the applied theoretical framework will be reviewed, and the type of cross-sectional comparison specified as the one undertaken in this study.

The first criterion of research design selection – the *research interest* underlying a study – points to a factor-centric research design as being appropriate for my study. As was detailed in the introductory chapter of this study, the research endeavour that has brought about this research is to explain the driving forces behind policy-making in the renewable energy policy area at the EU level (focusing, in so doing, on differences between the policy outcomes of renewable electricity and biofuels).

By contrast, when assessing the *state of theory development*, being the second selection criterion for research design, the method of process tracing is recognised as being of great advantage for the study of EU policy-making. This is because there is strong evidence that drivers, which shape EU-level policy outcomes, most probably interact with each other prior to producing the outcome. Implicitly, an assumption of autonomous causes and a linear connection between cause and effect would be unjustified when it comes to studying the phenomenon of EU-level policy-making. Moreover, in the majority of cases the theorising of a relationship between a cause and effect leading to a final policy outcome at the EU-level, without empirically substantiating the relationship, is problematic since this very relationship constitutes the subject of disagreement between multiple theories that are trying to explain the outcomes of EU-level policy-making processes.

Additionally, in relation to the criterion of *prior knowledge*, I also argue that by making reference to the wealth of knowledge accumulated in studies of EU-level policy-making, it can be claimed that these processes are too complex to allow for an assumption of autonomous causation. For this reason, EU-level policy-making strongly profits from the process-tracing as, for example, argued by Schimmelfennig (2015). In his view, the EU represents a type of social reality that is a “major field of enquiry ... in which process tracing has taken pride of place for both empirical and theoretical reasons” (Schimmelfennig 2015, p. 98). This methodological choice is also owing to the possibility that the same (policy) outcome can be achieved as a result of different policy-making processes (Schimmelfennig, 2015, pp. 98-100).

While EU policy-making is a research subject that is generally amenable to process tracing, as discussed above, the practice of tracing a process strongly relies on viewing empirical evidence through the lens of a pre-selected theoretical framework. Thereby, the application of the same theoretical lens to compare legislative processes in one policy area, in my view, can be justified against the backdrop of existing research results by, for instance, Schimmelfennig *et al.* (2015). They show that EU policy-making displays significant variance across policy areas (i.e. internal market, monetary union, and defence) (Schimmelfennig *et al.*, 2015, p. 770).

Given the above evaluation of selection criteria that speak in favour of both co-variational research design and process tracing technique, this study adopts a combination of the design and the technique. Literature sources recommending this combination of co-variational research design and process tracing technique agree on the point that this is desirable especially when Mill’s logic of agreement and difference cannot be entirely adhered to at the stage of case selection (e.g. because the natural setting does not yield the appropriate constellation of cases). Thus, George and Bennett (2005, pp. 153-157) consider the selection of cases on the dependent variable (outcome) acceptable in factor-centric research if it is augmented by the application of process tracing. This position is shared also by Bennett and Checkel (2014), who stress that John Stuart Mill himself was aware of the possibility of equifinality, i.e. the possibility that the same cause and outcome are connected via different paths. Besides, Mill recognised that there is the potential problem of omitted variables, meaning that the

comparison of most similar cases is “potentially flawed because of residual differences between the two cases in variables that are outside of the theoretical framework” (quoted in Bennett and Checkel, 2014, p. 37). Thereby, process tracing is seen as a remedy to the challenges of equifinality and omitted variables, being capable of reconstructing paths between cause and effect, at the same time paying attention to alternative explanations not covered by the chosen theoretical framework (Bennett and Checkel 2014, pp. 37-38).

Similarly to the above positions, Blatter and Haverland (2012, p. 205; 2014a, p. 41; 2014b, p. 2) advise combining co-variational with process tracing approaches, which allows to “make the assumption that factors have autonomous causal power a sensible *starting point*” on which one can base the selection of comparable cases in line with the co-variational research design; the effects of individual variables within the comparable cases can be traced in a more reliable way by co-applying process tracing technique (Blatter and Haverland 2014a, p. 41, emphasis added). In other words, the overall co-variational frame of research design is strengthened with a technique borrowed from the research design of process tracing (Blatter and Haverland 2014b, p. 2).

When adding process tracing to co-variational research design, firstly case selection, according to either the logic of difference or the logic of agreement, has to take place, so that some elimination of variables or alternative explanations is accomplished³⁶. Two studies were selected by Blatter and Haverland (2014a, p. 214) to demonstrate this two-step approach. The first study is by Peled (2002), which in compliance with the logic of difference holds some of independent variables constant while process-tracing the effect of other independent variables³⁷. The second example – the famous study by Skocpol

³⁶ Specifically for factor-centric research, it is particularly important, according to Blatter and Haverland (2014a), to strengthen longitudinal cross-case comparison (which exploits variation in the same case over time) with process tracing. Longitudinal comparison is generally regarded as less reliable than cross-sectional comparison, the former being often criticised e.g. by King *et al.* (1994, p. 134) and Ragin (1987, p. 38) for this property.

³⁷ The study by Peled (2002) investigates two management reform initiatives in Israel. “He selects the cases based on where the independent variable ‘reform style’ varies. He then chooses a reform launched by the Israeli Civil Service Commission (1994 – 96), which aimed to make the public sector more entrepreneurial and self-empowered, and a reform initiated by the Israeli Ministry of Finance (1989 – 98), which aimed to reduce

(1979) – first eliminates some rival independent variables, according to the logic of agreement, and then traces the remaining independent variables in their impact on the outcome³⁸ (Blatter and Haverland, 2014a, pp. 127-130, pp. 216-217).

Importantly, in instances of research that combines process tracing method with co-variational research design, the following piece of methodological advice applies. The empirical evidence collected to trace the unfolding of a causal process is complementary to the evidence on the scoring or classification of independent and dependent variables. Therewith, independent variables are considered simultaneously as starting conditions for a causal process, while the dependent variable(s) are seen as the outcome(s) of the process. Besides, for the purpose of process tracing, the starting conditions and the outcome are not discussed under the aspect of their specific values and are not transferred into scores. Instead, the starting condition(s) and the outcome are assessed to determine the temporal order connecting them (Blatter and Haverland, 2014a, p. 107).

Further noteworthy, Blatter and Haverland, give another instance when the application of the logic of difference, for the purpose of case selection, should be complemented by process tracing. Specifically, they advise that process tracing “might also be useful even if the dependent variable does not co-vary with the independent variable”, or, put

the costs of the public management information system. At the same time, Peled holds a number of factors constant. Both reforms unfolded in same country and in the same period of time. [...] Having controlled for these factors, he can concentrate on the legacy of the reform. However, rather than only scoring the variables to make a ‘static’ comparison, he actually traces the dynamics of the reform process. ... His causal-process observations are crucial to his argument because they provide evidence suggesting that the style of the reform process affected the civil servants’ motivation” (Blatter and Haverland, 2014a, p. 214).

³⁸ In her seminal work *States and Social Revolutions*, Skocpol (1979) first identified a constellation of two structural forces that were common across the three instances of social revolutions studied (in France, Russia and China). By finding common causes of revolutions, she eliminated the causes that had no explanatory power since they did not lead to the outcome in all three cases (following the logic of agreement, and applying the same logic once again to compare the two structural forces with the forces behind social unrest that had failed to lead to revolutions). Then, her research focused on the shared structural forces behind ‘positive’ cases (and not encountered in the ‘negative’ cases), studying the constellation of two structural forces by applying the causal process tracing. This allowed Skocpol to show in great detail that the constellation of two forces was in fact responsible for bringing about the three revolutions (Blatter and Haverland 2014a, pp. 216-217).

differently when the dependent variable has a similar value across cases despite different values of the independent variable. In this case, the researcher can apply causal-process tracing to determine “at which point in the assumed process the results failed to follow the predictions” (2014a, p. 213).

This study follows the last piece of advice since the overall research design applied is in line with the logic of difference, also known as the most similar systems research design, and because its dependent variable and independent variables do not co-vary. That is, it is known from various EU documents (as discussed in this study’s introduction) that both renewable electricity and biofuels were treated as a remedy to a combination of challenges facing the EU, such as climate change, security of energy supply and competitiveness of the EU. That is, the EU was facing the pressure exerted by obligations to global climate change regimes, and was simultaneously trying to find new energy sources to cover the ever-growing energy demand within the EU. Thus, the ensuing legislation on renewable electricity and biofuels was prepared by the same documents, under consideration of the same strategic goals tackling these challenges, which were defined by supranational institutions at the same points in time, and with the help of the same future modelling exercises (PFts such as future scenario modelling and cost-benefit calculations). This preparatory stage was followed up by the legislative processes leading to the 2001 and 2003 Directives in close temporal order (the preparatory documents for both Directives being the same). However, as can be gauged from the Directives’ final texts, the policy outcome on biofuels became considerably less binding than the one on renewable electricity, (i.e. the Directives of 2001 on renewable electricity became more binding than the 2003 Directive on biofuels), yet, not in the second round of legislating (resulting in the Directive of 2009 that encompassed renewable electricity and biofuels policies). In other words, it can be assumed *a priori* that EU institutions had the same interest in both renewable energy sources, while all the other confounding variables can be assumed constant across the two pairs of cases (– one pair comprising the Directive of 2001 and the Directive of 2003, and another pair encompassing the parts of the 2009 Directive related to renewable electricity and to biofuels respectively). Put differently, other potential independent variables in this cross-sectional template, not part of my theoretical framework (e.g. the number of EU member states, the overall budget allocated to renewable energy at the EU-level, the long-term strategies of the EU among others

respective renewables promotion, the legislative procedure of co-decision, the shape of institutional EU structures both formal and informal, the state of technical development with its impact on e.g. modelling possibilities, and the overall economic ‘climate’ in the EU), can be considered as constant. Hence, it can be expected that a difference in the outcome was caused by slight ‘contextual’ or institutional differences (for ‘context’ as a concept of -process tracing see the discussion below).

For the above reasons, and following the advice of Blatter and Haverland (2014a, p. 213), the impact of independent variables on the dependent variable is explored using process tracing, instead of being simply theorised. The tracing of the impact of independent variables on the dependent variables should allow for the detection of any interaction of independent variables and this way to account for the possibility of complex causality (in the sense that causal effect is a result of a combination of different causes and their interaction) and for equifinality.

While the overarching research design of this study is co-variational (process tracing being an auxiliary methodological component), it needs to be further specified that this research template serves solely the purpose of case comparison and not a generalisation. As already mentioned, the research interest of this study pertained initially only to the policy area of renewable energy, and hence no generalisation to other EU policy areas is aimed at.

It is furthermore noteworthy that studying *negative cases* is not helpful when applying process tracing³⁹, which distinguishes between necessary and sufficient conditions⁴⁰. If a causal factor, that was previously found necessary for the outcome in a positive case, is not present in a negative case, it does not prove that the causal factor is not necessary for the outcome. All it proves is that the causal factor is not sufficient. Hence, another

³⁹ The selection of only positive cases (in this study when a legislative Proposal manages to result in a piece of legislation) can be countered against because of the consideration that “[i]nsights from large-N studies are applied to small-N studies, and it is argued that selecting only positive cases leads to biased results” (Blatter and Haverland, 2014a, p. 101).

⁴⁰ “Necessity means that if the causal factor is absent, the outcome cannot occur; sufficiency means that if the factor is present, then the outcome must occur” (Blatter and Haverland, 2014a, p. 39).

positive case is needed to assess the role of the same presumably necessary factor, to better estimate whether it is necessary for another positive case as well. Therefore, one does not need both positive and negative cases when drawing causal inferences with the help of process tracing (Blatter and Haverland, 2014a, p. 101).

2.5 Elite Interviewing as Data Collection

To meet the data requirements of the methodology discussed above, a variety of different sources of information was consulted. First, more than 30 semi-structured face-to-face interviews were conducted with EU officials, policy advisers, and representatives of the epistemic community responsible for conducting studies for the Commission. The overwhelming majority of interviews were conducted in Brussels and a few additional ones over the phone after the research trip. Further sources of information consulted encompassed documentary evidence (such as documents by the European Commission, the European Parliament and the Council of the European Union, media coverage and summaries of scientific studies assessing developments in EU energy markets), as well as the secondary literature, primarily in the discipline of political science.

The data on policy-making processes at the EU level was collected to be analysed by means process-tracing. In general terms, process-tracing is methodologically particularly suitable for small-N studies with its rich empirical evidence on competing explanations of an outcome (Dür, 2008, pp. 562-563). Besides, process tracing constitutes the conventional technique for analysing EU-level integrative dynamics (Schimmelfennig, 2015, p. 98). While the rationale for adopting process tracing to this study is elaborated on later in this chapter, this section begins the concept of process tracing in its relation to the techniques of conducting elite interviews, which is followed by a discussion of how the method of elite interviewing was applied in this research.

As argued by Tansey (2007, p. 766), “interviewing, and especially elite interviewing, is highly relevant for process tracing approaches to case study research” because in order to understand political developments it is often necessary for political scientists to explore processes at the highest level of government. Hence, elite actors, who were

involved with these processes, frequently constitute a critical source of information for political research. The value of such interview data is also apparent when taking into consideration that process tracing is aimed at obtaining detailed information about specific events and processes and, more generally, seeks to reconstruct causal mechanisms connecting independent and dependent variables. This makes the identifying and interviewing of key political actors essential because elite interviews “can shed light on the key elements of political action that are not clear from an analysis of political outcomes or other primary sources” (Tansey, 2007, pp. 765-766). However, before proceeding with a discussion on how the techniques of conducting of elite interviews is influenced by process tracing, the term “elite” needs to be defined to be clear about what is meant when referring to an elite interview.

The definition of the term ‘elite’ is by no means uncontested in the academic literature (Siritarungsri *et al.*, 2013, p. 70; Harvey, 2011, p. 432). That is, what an elite subject is, can be variously defined (Liu, 2018, p. 1), depending upon the research area hosting the term and can gain different meanings in different contexts (Siritarungsri *et al.*, 2013, p. 70; Plesner, 2011, p. 473). Besides, in any given context, there may be more than one elite group; that is, elites can be “clustered in different parts of the societal network” (Mikecz, 2012, p. 485). By implication, a person “might be considered to qualify as an elite member in one particular region but not in another” (Harvey, 2010, p. 195). In addition, elite status is dynamic so that elite members can gain or lose their status over time (Harvey, 2010, p. 195; Plesner, 2011, p. 473).

For some scholars, one of the defining features of elites is that they, in contrast to other social groups, are relatively difficult to gain access to (compare Liu, 2018, p. 1; Mikecz, 2012, p. 483; Hertz and Imber, 1995, p. viii). Other scholars rather emphasise ‘knowledge’ and ‘power’ held by elites. Thus, an elite subject, *inter alia* a politician and policymaker, is conventionally regarded as ‘powerful’ or ‘expert’, in the view by Lancaster (2017, pp. 93-94). For Hunter (1993) and Zuckerman (1972), similarly, the elite status comes from the possession of knowledge, prestige and from being in close proximity to power (Lilleker, 2003).

By contrast to the above, however, my interest in interviewing elite subjects stemmed from their influence on legislative decision-making at the EU level in the area of

renewable energy. Hence, of particular importance for this study is the capacity of elite groups to influence political decisions in accordance with the official positions in the EU institutional landscape. Therefore, drawing on Harvey (2011, p. 433), elite members, by contrast to non-elite members, are defined in this study through their ability to exert *influence* on policy processes through their “social networks, social capital and strategic position within social structures” (Harvey, 2011, p. 433).

In the following, elite interviewing will be discussed under three aspects that feature particularly prominently in the recent literature on this subject. These aspects are: how to gain access to interviewees, how to prepare for interviews, and how to conduct interviews (compare e.g. Siritarungsri *et al.*, 2013; Mikecz, 2012; Lilleker, 2003).

The task of arranging elite interviews is generally challenging (Goldstein, 2002, p. 670; Harvey, 2010, p. 196) *inter alia* because elites are surrounded by numerous ‘gatekeepers’ who can easily deny access to potential respondents (Siritarungsri *et al.*, 2013, p. 71; Mikecz, 2012, p. 483). In the words of Odendahl and Shaw, “[t]he process of identifying and gaining access to elite subjects calls for the incorporation of strategies that include a mixture of ingenuity, social skills, contacts, careful negotiation, and circumstance” (2019, pp. 8-9). On the other hand, Lancaster (2017, p. 94) agrees with Ostrander (1995, p. 135) that the difficulties associated with gaining access to elite subjects in the academic literature may have been exaggerated by comparison to other aspects of interviewing, such as preparation (Lancaster, 2017, p. 94). In my own experience, arranging interviews with EU officials has proven to be rather unproblematic. The various online sources of information such as EU directories and the organisational charts of EU institutions, both current and historical, as well as media coverage and secondary literature, have provided extensive information that allowed for the identification of potential interviewees. Moreover, approaching personal assistants and administrative staff of various institutions (who might be identified as potential gatekeepers) on a couple of occasions has yielded additional information on whom best to interview on particular policy issues.

Therewith, when approaching individual EU officials I followed the advice by Mikecz (2012, p. 485) and Lilleker (2003, pp. 208-209) that to make a good first impression and to raise one’s chances to secure an interview, it is important already in the first communication (which was usually via email) to be specific about who I am (i.e. my

institutional affiliation), what my research is about, what type of questions I am planning to ask, and how the respondent contacted can make a contribution to my research project. Furthermore, the EU officials were approached well before my stay in Brussels and were given a wide range of interview dates to choose from, as advised by Mikecz (2012, p. 483, p. 487). Being approached in this manner, my respondent mostly either confirmed their role in the policy-making processes under study and agreed to an interview, or gave contact details of colleagues who were more intensely or exclusively involved with these processes.

In addition to this general approach of gaining access, the selection of interviewees was in accordance with the non-probability approach to sampling – a decision advisable when a representative sample is not aimed at (Goldstein, 2002, p. 672), and when process tracing is the underlying technique of study (Mikecz, 2012, p. 486). This is because process tracing is generally aimed at the reconstruction of specific processes and events, and therefore profits most from sampling that identifies all the actors involved with the policy processes studied. More specifically, targeting the first-hand participants allows a researcher to reconstruct political episodes on the basis of their testimonies, which can shed light on details not captured by documents and other sources of information, and for which hence “there is often no substitute for talking directly with those involved” (Tansey, 2007, p. 767). By implication, “random sampling runs against the logic of the process tracing method, as it risks excluding important respondents from the sample” (Tansey, 2007, p. 765).

Therewith, from the overall approach of non-probability sampling, two types of sampling were applied – purposive sampling and snowball (or chain-referral) sampling. Purposive sampling “is a selection method where the study’s purpose and the researcher’s knowledge of population guide the processes” of a selection of interviewees (Tansey, 2007, p. 770). Snowball sampling is applied “when the population of interest is not fully visible” and “where the most influential political actors are not always those whose identities are publicly known” (Tansey, 2007, p. 770). The latter type of sampling implies identifying and interviewing an initial number of respondents, who are asked to reveal other potential subjects with comparable knowledge, expertise, and degree of influence on political processes of interest (Tansey, 2007, p. 770).

In this study, approximately half of the interviews were arranged prior to the time (four weeks) spent in Brussels, doing field research. This initial number was selected to cover different stages in policy-making processes under study and to gain access to respondents in different EU institutions in order to reconstruct policy processes at full length and to triangulate between single accounts. The other half of the interviews were accumulated while on the research trip, from the referrals of the initial group of respondents to their colleagues in the same and other EU institutions, and to their policy advisers.

Turning to the aspect of the preparation of interviews, it is generally pointed out in the literature on elite interviewing that extensive preparation to an interview is an indispensable part of the process (compare Odendahl and Shaw, 2019, pp. 306-307; Liu, 2018, p. 2; Mikecz, 2012, p. 487; Lilleker, 2003, p. 210; Goldstein, 2002, p. 671). This is because “demonstrating in-depth knowledge of the research topic helps to establish trust with the interviewees” (Mikecz, 2012, p. 487). More specifically, when preparing for an interview it is necessary to research both the topic under discussion, by studying facts from existing primary and secondary sources, as well as to gather knowledge about every single interviewee and his or her specific contribution to the policy-making process (Lilleker, 2003, p. 212).

Following the above advice, each interview was prepared and structured with a specific respondent in mind, which has proven important and even necessary for conducting interviews on EU policy-making processes because each stage in these processes and each EU institution has a unique impact on policy outcomes. Hence, the roles and responsibilities of each interviewee (or small groups of interviews) differed substantially, and only questions targeted at a specific role could reveal a unique contribution by a respondent and allow gathering of nuanced details on different stages in a policy-making process. Therewith, in line with Siritarungsri *et al.*'s (2013, p. 72) advice, preparing each interview involved reading materials published by the individual respondents. My selection of such materials (as far as these related to the policy issues examined) encompassed e.g. scientific articles by EU officials, their written contributions to various conferences, and their intra-institutional PowerPoint presentations, all of which I found to be freely available on the internet.

When executing interviews, I also kept in mind, that it is important to show that the interviewer has done her homework researching the interviewee's (and his/her institution's) impact on certain policy processes and policy issues, because it usually helps to establish the interviewer's credentials (Harvey, 2011, p. 434). Besides, it was considered important during the interview to adapt questions to the informant's most well-known subjects in order to uncover deeper levels of information and to demonstrate the interviewer's own interest in personal accounts provided by the interviewee, as recommended by Mikecz (2012, p. 484).

Thereby, when interviewing elite subjects, semi-structured interviews⁴¹ are advocated as the most suitable type of interview (Leech, 2002, p. 665). The application of this interview type is frequently justified as capable to accommodate the dynamics of each individual interview, as done for example by Odendahl and Shaw (2019), Liu (2018), Lancaster (2017), and Mikecz (2012). In the words by Lilleker, “[i]f the interviews are individual-specific a list of headings or objectives are often more appropriate; this will allow the interview to be fluid and organic and the interviewer can alter the line of questioning pragmatically” (2003, p. 210).

For the above reasons, the format of semi-structured interviews was adopted to collect empirical evidence for this study. This choice was also made with the intention of meeting the requirements of my theoretical framework, which contains inductive elements (despite being mainly deductive) and which makes it necessary to allow for enough flexibility to react with follow-up questions to unexpected empirical details and unforeseen dimensions in the accounts of the interviewees. Besides, a fully structured interview format, following which each respondent is confronted with the same questions, would be rather untenable because of great differences in how single EU institutions, their sub-units, and their individual officials affect the multistage process of

⁴¹ Semi-structured interviews occupy a middle ground between unstructured and structured interviews. Unstructured interviews are “often used by ethnographers, [and] are really more conversations than interviews, with even the topic of conversation subject to change”; by contrast, “[w]hen the researcher already knows a lot about the subject matter – the categories and all possible responses are familiar, and the only goal is to count how many people fall into each category of response – structured interviews with closed-ended questions are most appropriate” (Leech, 2002, p. 65).

EU policy-making. However, because gathering empirical evidence *inter alia* through elite interviewing served the overall purpose of testing a set of theoretical assumptions, all interviews were to some extent pre-structured precisely with the aim of accepting or rejecting this set of theoretical assumptions (as well as the major alternative theoretical perspectives).

Some further recommendations pertaining to the conduct of elite interviews were equally taken into account when collecting empirical evidence. First, each interview commenced with a recommended request on the part of the researcher to record the conversation (Liu, 2018, p. 6), the practice of recording interviews possessing various benefits⁴². In my case, not a single respondent refused to be recorded. At the beginning of an interview, I also enquired about whether the amount of time initially agreed on was still available. In one case, a respondent was under acute time pressure, knowing which allowed me to concentrate on questions I was most interested in asking in that interview – an approach advised by Harvey (2011, p. 435). After this initial stage, the interview began with some general questions about the person's background, as suggested by Liu (2018, p. 2); that is, I asked the interviewee to repeat his or her name, job title, and to summarise what his or her responsibilities in connection with particular Directives and policy issues were. Only in a few cases did the respondents wish to stay anonymous.

During each interview, I also sought to follow the advice to briefly summarise the subjects discussed to show my understanding of them (Leech, 2002, p. 2), and to end an interview with an open-ended discussion, which “can be a useful way to check the completeness of the information acquired” (Mikecz, 2012, p. 484). More specifically, if the time permitted it, I conventionally invited a respondent to end the interview with

⁴² “In general, academics prefer to record rather than not record interviews because they do not have to focus on writing a lot of information down and can instead focus on conducting the interview” (Harvey, 2011, p. 436). Recorded interviews can also aid preparation to further interviews (Mikecz, 2012, p. 488), and, by listening to recorded interviews a researcher can analyse his or her own manner of address and upon this improve his or her interviewing skills (Liu, 2018, p. 4). Finally, a “recorded interview results in a complete and accurate transcript that can reveal subtle nuances and is extremely beneficial when you want to use quotations in your text” (Siritarungsri *et al.*, 2013, p. 72).

some further elaborations on ideas, recollections, or comments, undertreated but important from his or her point of view. Besides, I also applied the strategy used by Mikecz to enquire about the opportunity to follow up with some additional questions, over the phone or in writing, after analysing the obtained information (2012, p. 491), which led to two additional follow-up interviews over the phone a couple of months after the field trip.

Finally, it is necessary to mention that, in agreement with ethical research guidelines, data collection and analysis were carried out so that the privacy of those who wanted to remain anonymous has been respected, while any reference to other interviewees' names and job titles was done only if the interviewees in question agreed with such treatment of the information they provided (Mikecz, 2012, p. 489). Some additional important ethical issues arise when a policy processes studied evolve in real-time, i.e. during the time when interviewing policy officials takes place, and a researcher is capable of influencing the policy process (Lancaster, 2017, pp. 93-94). In the case of my fieldwork, one of the Directives studied in this thesis, namely the 2015 Directive on indirect land-use change, was in the last stage of being negotiated. That is, a common position by the Council has been reached toward the end of my stay in Brussels, while the ensuing inter-institutional negotiations have continued for another several months. My approach to this situation was, first, to avoid any direct references to other respondents' positions and opinions on legislative processes in question when conducting interviews. Second, I also tried to give vague responses to any questions or assumptions about other participants' involvement in the study, which was done following the suggestion by Lancaster on how to deal with evolving policy areas (2017, p. 99).

After having discussed in this chapter my research design and my technique of collecting, this chapter constitutes with the method of evaluating data. In so doing, the following section continues with an elaboration on the method of process trading, i.e. its compatibility with the research design of this study and with its conceptual toolbox. The chapter concludes with a specification of ontological and epistemological foundations of this study.

2.6 The Method of Process Tracing

The above section has concluded with a particular decision on the case selection and a method (process tracing) of their examination, for the purpose of this study. Thereby, the question of case selection was discussed as an integral part of different alternative approaches to research design in small-N case studies. Having opted for a particular case selection, this section turns to the methodological question of how to conduct research framed by this research design. Answering this question implies, first, specifying how the research approach and method need to be aligned, which, in turn, makes a critical review of the current state of the art in the development of method necessary. In the next step, this section deals with a specific *conceptual framework* underlying the method of process tracing, adopted in this study. In so doing, some concepts pertaining to the method, such as ‘contingency’ and ‘causal mechanism’, are discussed.

Generally speaking, there is an inextricable link between a social science method and its definitions and terms since, as pointed out by Gerring “it is with these key terms that we make sense of the subject matter” (2006, p. 15). With this in mind, I argue that because Blatter and Haverland’s advice on research design forms the core of the current study, their concomitant methodological and conceptual frameworks (attuned to the possibility of a combined research design) are equally employable in this study. As specified by Blatter and Haverland (2014b, p. 24) themselves, their methodological toolbox is applicable to deductively oriented small-N research design, such as co-variational analysis, combined with process tracing. Besides, the overall coherence of their methodological approach is provided by their formulation of concepts and terms in resonance with the scientific debate on small-N case studies, as well as the use of terms in the debate on process tracing (compare Blatter and Haverland, 2014a, p. 90).

The Method of Process Tracing – Current State of the Scholarly Debate

When discussing process tracing as a general method or technique, it is important to mention that it was until recently underdeveloped. The conventional application of this method went without profound reflection about what it takes to be employed

effectively. By implication, ‘process tracing’ was used rather as a buzzword than a coherent method (Bennett and Checkel, 2014, p. 4). This situation has changed dramatically since the mid-2000s when a number of comprehensive treatments of process tracing were published. The first in the range of these profound treatments was by George and Bennett (2005)⁴³ (Blatter and Haverland, 2014b, p. 6; Beach and Pedersen, 2016, p. 98), who made the topic of methodological advancement of process tracing occupy an important place in political science (Falleti, 2016, p. 456; Tansey, 2007, p. 765). However, the lively conversation about the application of process tracing has so far produced a range of quite dissimilar methodological advice and diverging understandings and interpretations of this methodological technique (Morgan, 2016, p. 489; Blatter and Haverland, 2014b, pp. 5-6; Ulriksen and Dadalauri, 2016, p. 224). Implicitly, the current literature on method with the label of (causal) process tracing⁴⁴ is characterised by “internal debate, considerable disagreement, and occasional confusion” regarding some subjects, such as “variations of the method, best practices, how to use this method to increase the validity of causal inference, and its possible integration into multi-method research” (Trampusch and Palier, 2016, p. 438).

An overview of the recent literature on the process tracing method recognises that one of the major divisions across single scholarly contributions pertains to whether process tracing is mainly applicable for the purpose of *theory building* or *theory testing*, or, as a third option, for both purposes (compare with Kay and Baker, 2015, p. 6; Mahoney, 2016, pp. 493-494; Mayntz, 2016, pp. 484-486; Falleti, 2016, pp. 456-457; Blatter and Haverland, 2014b, pp. 5-6). The most controversial, however, is the debate on the conceptual framework of process tracing. This debate is preoccupied, amongst others, with the precise meaning of the concept of ‘(causal) mechanism’, i.e. what are the

⁴³ Further examples of profound treatment of process tracing are the ones by Gerring (2006), Rohlfing (2012), Bennett and Checkel (2014), Blatter and Haverland (2012; 2014a).

⁴⁴ A slight confusion might result from the fact that Blatter and Haverland (2014a, p. 79) differentiate between two uses of ‘causal-process tracing’ – the technique of CPT that can be used as a complementary technique of co-variational analysis; but also a research design of CPT, key to a complete methodology and a potential alternative to co-variational research design. In this study, to emphasise this distinction, I refer either to a ‘technique or method of process tracing’ or a ‘research design of causal-process tracing’, or make a clear distinction contextually.

constituent parts of a mechanism and whether there are levels those mechanisms are situated at, e.g. meso- or micro-level (Gerring, 2008; Gerring, 2010, pp. 1500-1502; Kay and Baker, 2015, p. 7; Beach and Pedersen, 2016, pp. 672-696). Thereby, in the course of the debate, no agreement has been reached on even the major concepts and terms commonly used by those using process tracing (Blatter and Haverland, 2014a, p. 90, 99).

Another prominent topic of discussion in the process tracing literature regards how to establish causality, or more colloquially, what methodological tools and techniques should be available to a researcher to establish causality (see the overview by Kay and Baker, 2015, pp. 11-17). Trampusch and Palier (2016, p. 2) speak about 'methodological stretching' in connection with the large variety of suggested methodological tools to establish causality (which has a negative implication, because while the number of distinct methodological approaches grows, their role in 'real research' diminishes).

Against the backdrop of the present disagreement on the core features of process tracing, it is considered important to follow the advice of Blatter and Haverland (2014b, p. 7) and to clearly position one's research within the debate on process tracing by specifying one's methodological sources. It is also recommended to reflect on one's research design and methodological choices, to make sure that they form an overall coherent methodology (Haverland and Yanow, 2012, pp. 13-14). Besides, a specification of the core concepts of the chosen methodology is considered essential since conceptual precision is a prerequisite for any fruitful methodological debate and advancement of small-N case study research (Blatter and Haverland, 2014a, p. 90, 99).

The challenge of choosing one coherent understanding of process tracing method from a range of existing alternatives was partly resolved when making research design choices in the preceding section. However, the choice of process tracing for this study, as understood by Blatter and Haverland (2014a), is further justifiable as complementary to my theoretical framework, based largely on historical institutionalism, which is not a coherent theory, but a range of theoretical assumptions and concepts that can be mixed and matched in agreement with specific research interests. For example, my theoretical framework comprises several types of mechanism (e.g. critical juncture and path-

dependence) and is hence in line with the concepts of ‘causal mechanism’ by Blatter and Haverland. Their conceptualisation of ‘causal mechanism’ (as specified below) allows for the possibility of several mechanisms to be combined in a single (larger) causal mechanism, which provides an explanation of an outcome and can operate at more than one level (Blatter *et al.*, 2016, p. 5). (The same understanding of ‘causal mechanism’ can be found only in the works, on which Blatter and Haverland (2014a) and Blatter *et al.* (2016) draw themselves, see below for more detail). By contrast, other proponents of process tracing conventionally work with just one mechanism typically related to a single theory (Blatter *et al.*, 2016, p. 7, p. 15). This latter understanding of ‘mechanism’ is shared amongst others by Machamer *et al.* (2000), Rohlfing (2012), and Beach and Pedersen (2013, 2016).

The conceptualisation of ‘causal mechanism’ by Blatter and Haverland (2014a) and Blatter *et al.* (2016) was recently reflected upon in the book by Beach and Pedersen (2016). In their third chapter, they criticise Blatter and Haverland (2012) for confusing the purpose of theory and method, because bringing together more than one theory to explain a causal mechanism at the level of a system implies making theory follow method. Instead, in the view of Beach and Pedersen (2016), a theory should tell a researcher what single mechanism to expect, so that a method is not biased toward specific theories. In my view, however, the expectation by Beach and Pedersen (2016, pp. 1622-1680) that a single theory needs to have the leverage of a grand theory to be compatible with process tracing, is too ambitious for the sub-discipline of EU studies. This is because, first, the sub-discipline is dominated by middle-range theories, which is the result of failed attempts at grand theorising to cope with the complexity of the EU as a political system (as already mentioned in the previous chapter). Second, there is a growing tendency in EU studies toward the co-application of single theoretical approaches and concepts to obtain a fully-fledged explanation of the multifaceted phenomenon of EU-level policy-making. By making this point, I also agree with a more general statement by Kay and Baker (2015), who by taking a stance to the question of how to theorise a causal mechanism maintain that:

[T]he causal mechanisms underpinning policy change will most often derive from middle-range theories ... , [thereby, causal process tracing] is not to seek a general or grand theory of policymaking but rather

concentrate on the contingent conjunctions of mechanisms that may vary across time and space (Kay and Baker, 2015, p. 10).

Thereby, the question of how many levels of social reality need to be causally linked within a theorised mechanism is currently at the core of another debate on process tracing. Generally speaking, mechanisms leading to policy change can operate at the micro-level (individual behaviour), the meso-level (the actions of policy communities or networks), and the macro-level (institutional or social systems that structure political interaction). “All three levels can be important in determining or constituting a given policy process” (Kay and Baker, 2015, p. 8). Acknowledging this possibility, it is debated in political science whether all three levels, or fewer, need to be theorised for the purpose of tracing a (causal) mechanism⁴⁵.

To sum up, in agreement with the aforementioned justification of my methodological references, I lay out my methodological framework by drawing on three literature sources. The most important one is Blatter and Haverland (2014a), which is a second and somewhat revised version of the first edition (2012). I also consider a chapter by the same two authors (2014b), in which they focus on the method (causal-) process tracing, thereby drawing on some new empirical examples. Finally, the third source consulted is the introduction to the four volumes (Blatter *et al.*, 2016) which constitute a compendium of major works in qualitative political science. In the introduction to the compendium, the authors, according to their own claim (2016, p. 2), aim at providing some additional insights into their research approach that was developed in the aforementioned work (Blatter and Haverland, 2012, 2014a).

2.7 Conceptual Framework of the Method of Process Tracing

Having specified the rationale for adopting process tracing as a complementary method to a co-variational research design, this subsection turns to the *conceptual foundations* of the former. It is followed up in the next subsection with a discussion of the subject of

⁴⁵ For more on this debate see Falletti and Lynch (2009), Hedström and Ylikoski (2010), and Beach and Pedersen (2016, ch. 2-3).

the *toolbox* pertinent to the selected method of process tracing. Thereby, the range of methodological concepts, which needs to be defined to inform the application of process tracing comprises: contingency, configurational thinking, necessary condition and sufficient condition (as building blocks for configurational thinking), additive and interactive configurations, causal chain, and causal conjunction, and finally causal mechanism.

As background for a discussion of concepts pertaining to the method of process tracing, Blatter and Haverland (2014a, pp. 91-92) begin with the term '*contingency*', which is considered by the authors as a key term used by proponents of process tracing. Thereby, drawing on Mitchell (2002), four types of contingency are distinguished – *space-time contingency*, *evolutionary contingency*, *multicomponent contingency*, and *multilevel contingency*. The first type of contingency allows the assumption that a causal process yields different results depending on the spatial and temporal setting, in which it has been developed. Evolutionary contingency is accounted for in process tracing by attention to 'causal chains' and 'process dynamics' (see below), one component in a chain being a prerequisite for the next component to evolve. Multicomponent contingency implies that the interaction of multiple causal factors leading to a particular outcome is not simply additive in its nature; the interaction of causal factors can both strengthen and dampen their joint effect. And finally, multilevel contingency points to the fact that causality depends on different levels of analysis and their interactions, such as the level of material (or ideational) preference formation in actors, on the one hand, and the level of institutional structures, on the other.

'*Configurational thinking*' is another key term that builds the foundation of process tracing. This type of thinking implies that a researcher considers social outcomes to be: the result of a combination of causal factors; that divergent pathways may lead to similar outcomes (equifinality); and that the same causal factor can have different effects in different contexts and combinations (causal heterogeneity). Configurational thinking also implies that what leads to the outcome are 'causal conditions' instead of 'variables' in co-variational approaches (Blatter and Haverland, 2014b, p. 7). In order to answer the question of the type of effects of causal conditions and causal configurations on the outcome in question, one needs to differentiate between two types of conditions – *necessary* and *sufficient*. Thereby, the status of necessary and sufficient conditions can

also be attributed to the entire causal configurations (causal configurations being understood as combinations of causal factors). Therewith,:

A causal factor (X) is a *necessary* condition if the outcome (Y) occurs only if X exists. Nevertheless, Y does not always have to occur if X exists. In other words, Y is not possible without X, but X does not always lead to Y ... A causal factor (X) is a *sufficient* condition if the outcome (Y) always occurs when X exists. Nevertheless, Y can also occur when X does not exist. In other words, X always leads to Y, but Y is also possible without X (Blatter and Haverland, 2014a, pp. 92-93, emphasis added).

“A causal configuration (W = X AND Z) is a necessary condition if the outcome (Y) occurs only if W exists” (Blatter and Haverland, 2014a, 93). And finally, a “causal configuration (W = X AND Z) is a sufficient condition if the outcome (Y) always occurs when W exists” (Blatter and Haverland, 2014a, p. 93).

However, the recognition that a multitude of causal conditions is likely to be necessary to become jointly sufficient for an outcome when applying process tracing, does not specify as to *how* the causal factors work together. To assess exactly how causal factors interact, leading to an outcome, one needs to distinguish between the *additive* and *interactive* configurations. One can speak about an additive configuration when each factor within the configuration is in principle substitutable for another factor in its power to bring about the outcome (since each factor individually possesses some amount of causal power), being able to act independently from other factors. In contrast, interactive configuration results from a number of factors that act individually as necessary conditions and only jointly yield a sufficient condition for the outcome (Blatter and Haverland 2014a, pp. 93-94).

To additionally distinguish how individually necessary factors can jointly create a sufficient condition for the outcome, one needs to pay attention to the role of timing and temporal sequences. Thereby, two types of causal configuration are differentiated – ‘causal conjunction’ and ‘causal chain’. “A ‘*causal conjunction*’ is a causal configuration in which multiple causal conditions work together (in an additive or interactive way) at a specific point of time or over a short period of time to produce the outcome of interest” (Blatter and Haverland, 2014a, p. 94). By comparison, in a ‘*causal*

chain' causal conditions work together in a specific sequence – “specific causal conditions form the necessary (usually together with other conditions) sufficient preconditions for triggering other necessary and sufficient causal conditions at a later point in time”, the end of the chain leading to the outcome (Blatter and Haverland, 2014a, p. 94). “Causal chains imply interactive configuration because each factor in a causal chain is non-substitutable” (Blatter and Haverland, 2014a, p. 94). The interaction between factors is hence asymmetric “because each precondition influences the next factor in a causal chain but the reverse is not true” (otherwise the causal chain turns into a causal spiral, a development addressed in the section on ‘process dynamics’) (Blatter and Haverland, 2014a, p. 94).

At the same time, the term ‘*causal mechanism*’ is preserved for a specific type of causal configuration which links different levels of analysis and unites in itself different kinds of social mechanism. This understanding of a causal mechanism, thereby, is shared with other theory-oriented adherents of mechanism-based social science, such as Hedström and Swedberg (1998)⁴⁶ (Blatter and Haverland, 2014a, p. 95; 2014, p. 7; 2016, p. 15). Generally speaking, the term ‘causal mechanism’ should inform a type of research that employs the basic social theory intending to analyse human behaviour, action or communication. In other words, a causal mechanism contains a specification about an action-formation mechanism in actors, such an action-formation mechanism being often associated with rational choice theory (Blatter *et al.*, 2016, p. 5, 16). Furthermore, a causal mechanism mirrors systems’ macro-micro-macro model by distinguishing three social mechanisms linked together: ‘situational mechanism’, being an input condition that explains how social structures shape individual action opportunities. An ‘action-formation mechanism’ (already described above) generates individual actions in the next step. In the last step, individual actions are transformed into some sort of collective outcome shaped by the constraints and opportunities of institutional and social structures and processes – a process labelled ‘transformational mechanism’. Thereby, transformational mechanisms are represented in social science by, for instance, the models of strategic interaction within Game Theory or models of network effects (Blatter and Haverland, 2014a, pp. 95-96; 2016, p. 15).

⁴⁶ Blatter and Haverland (2014b, pp. 7-8) draw also on other proponents of mechanism-based social science, with a similar understanding of the concept of ‘causal mechanism’. These are *inter alia* Hedström and Ylikoski (2010), and Bennett and Checkel (2014).

In addition to the tracing of causal factors, it is equally important to take into account the *context* in which causal factors operate. '*Context*', as a concept internal to the technique of process tracing, is specified by Blatter and Haverland (2014a, p. 98) in juxtaposition with what is understood as causal factors. While the researcher is primarily interested in some causal factors because of their theoretical and methodological relevance in a study, further features assessed to gain a fuller understanding of a case are considered contextual.

2.8 The Methodological Toolbox of Process Tracing

After having laid down the conceptual framework of process tracing method in the preceding section, this section focuses on how process tracing can be applied to draw causal inferences in case studies. Thereby, it is noteworthy that the distinguishing feature of the process tracing method is its focus on the temporal and spatial unfolding of causal conditions, connecting causes and outcomes (Blatter and Haverland, 2014a, p. 107). In other words, temporal succession and spatial contiguity are understood as important epistemological foundations for detecting causal inferences – a position shared with George and Bennett (2005) (Blatter and Haverland, 2014b, pp. 8-9).

Thereby, a researcher primarily aims at reconstructing the various steps in a causal pathway that lead to an outcome, and in so doing analyses the role of causal factors at each step or sequence. The final aim of this analysis is to present comprehensive and continuous narratives of the causal process studied, which is facilitated if a researcher seeks to make empirically three types of causal-process observations: '*Comprehensive storylines*', '*smoking guns*' and '*confessions*' (Blatter and Haverland, 2014a, p. 107, 109; 2014b, pp. 10-12). These three types of empirical observation, in turn, provide the empirical basis for making a judgement on whether a causal factor is a necessary or a sufficient condition (see above), and on whether a particular process dynamic (see below) is present (Blatter and Haverland, 2014b, pp. 12-13).

'*Comprehensive storyline*' focuses on structural factors in order to detect major sequences and steps in the overall process and to identify the critical moments that have

channelled a process in a particular direction. Put bluntly, this type of observation is aimed at providing an overview of the overall process. Therewith, this observation serves two major functions: first, to find “the most important structural causal conditions that potentially have an influence on the outcome and the development of these factors over time”, and secondly, to identify the most important steps or sequences in the process of interest which are usually connected by short phases of transformation, the phases of transformation being of major importance for the further direction of a causal process (Blatter and Haverland, 2014a, pp. 111-112).

A ‘*smoking gun*’ observation represents the second type of observation, being at the same time the core of the technique of process tracing. This type of observation, together with other types of observation, can provide a high level of certainty for causal inference. The ‘smoking gun’ observation takes its name from the metaphor which pictures a smoking gun held in the hand of a suspect seconds after death was caused, and therewith stands for a piece of evidence that can help find the killer. Similarly to the metaphor, for a ‘smoking gun’ observation to be considered a strong piece of causal evidence, one causal factor (e.g. a smoking gun in the hand of a suspect) and the other causal factor (another person’s death) need to be connected by temporal and spatial contiguity. That is, the two factors need to occur simultaneously or within a short period of time, and in the same spatial location. The aim of a ‘smoking gun’ observation is to identify the actors involved in a causal sequence, and how these (individual or collective) actors behaved. By and large, this type of observation complements the bigger picture established through a reconstruction of a comprehensive storyline. Besides, a ‘smoking gun’ observation can sometimes reveal the actor’s motivations for ‘triggering the gun’ when contextual information makes a motive very plausible (Blatter and Haverland, 2014a, pp. 115-117).

‘*Confession*’ is an observation to cast light specifically on the motivations behind actors’ behaviour. There are two ways of conducting this type of observation; one way is to consider the structural factors of a given situation in the context of a behavioural theory, which specifies an action-formation mechanism. Another way to infer actors’ motives is to collect empirical evidence on explicit actors’ statements regarding why they acted in a particular way. Such ‘confessions’ can provide insights into all the constituent parts of a mechanism-based explanation. For instance, a confession can

contain information on how actors perceived a starting situation and how they defined a problem in agreement with this perception. A confession can also provide indications about the driving motivations for action (such as security or wealth) and about reflections on the anticipated consequences of these actions (which can be revealed in connection with the transformational mechanisms, such as voting rules). When working with confessions, one needs, however, to critically reflect on them and avoid taking them at their face value. This is necessary *inter alia* due to the possibility of ex-post rationalisation of behaviour. In such cases actors justify their decisions as strategic and reflective, ascribing these qualities to their decisions ex-post. Besides, statements can be made for strategic purposes, e.g. to send out signals to other actors or to strengthen the perception of their legitimacy in the wider public. Yet, when investigated together with other types of observations, confessions can help draw causal inferences by filling in the gaps in the temporal succession of a process traced. Although actors can react in anticipation of future developments, their reactions still allow the reconstruction of a sequence of actions, in which a particular stimulus triggers anticipation of future development, followed by a reaction to the anticipation (Blatter and Haverland, 2014a, pp. 117-119).

A detailed description of a causal process, which takes place between the starting condition and the outcome, is attained by means of conducting all three types of observation – ‘comprehensive storylines’, ‘smoking guns’ and ‘confessions’. Thus, a comprehensive explanation of a causal process is ideally achieved by combining all three types of observation. However, these types of observation can be further strengthened then applied together with formal logic and social theory, discussed in the following subsection.

The Logical Foundations of Process Tracing – Causal Chains

As acknowledged by Blatter and Haverland (2014a, p. 119), many scholars working in the tradition of process tracing, *inter alia* George and Bennett (2005), advocate the practice of reconstructing causal chains that lead from the cause to the effect. In agreement with this analytical solution, Blatter and Haverland (2014a) advise reconstructing entire causal chains that contain no major gaps. Yet, a narrative drawn by

such a causal chain has simultaneously to *reduce the complexity of reality* by concentrating on the most important factors in the process. As pointed out by Blatter and Haverland:

[E]ach narrative has to reduce the complex reality to focus on those factors that seem to be the most important in explaining the outcome of interest. The selection of these important factors is, to a large extent, driven by prior knowledge and the debates in the field of research. Furthermore, we can also judge the ‘importance’ of causal factors, by reflecting on their role and status within causal chains ... [using] the logic of necessary and sufficient conditions (2014a, p. 119).

In addition, drawing on Goetz and Levy (2007), Blatter and Haverland (2014a) aim at strengthening the awareness of what a causal chain, connecting a cause and effect, is. In so doing, they are distinguishing between necessary and sufficient conditions applied to sequences in a causal chain. More specifically, a causal chain can be either a chain consisting of *necessary conditions* or a chain consisting of *sufficient conditions*. Thereby, a causal factor is perceived as a necessary condition within a chain, if this factor is necessary to trigger the next step in the chain. However, a necessary factor would not be able to do so if complementary or contextual conditions would not also be working toward producing the next step (or the outcome). In contrast, if a causal factor produces the next step in the causal chain on its own, without the involvement of other factors or contextual conditions, it is considered a sufficient condition. Noteworthy is that the first sufficient condition in the chain is more important than the subsequent ones since the first condition was responsible for initiating the number of causal reactions. Hence, when assuming the presence of a chain of sufficient conditions, particular attention needs to be paid to when and where the evolution of this chain began. Overall, detection of such a chain yields greater evidence of causal strength between the cause and the effect than the causal strength provided by a chain of necessary conditions (Blatter and Haverland, 2014a, pp. 119-120).

To identify whether a condition is necessary within a chain, one can apply *counterfactual reasoning*, which implies showing that without this condition the next condition would not have occurred, and which can be conducted at all major steps within a causal chain. Generally, the necessary conditions play a greater role in

outcome-centric research. However, a claim that a causal chain consists of sufficient conditions can be bolstered by turning to coherent theoretical models that comprise a set of social mechanisms. Each social mechanism, situated at a particular level in this multilevel model, is deterministic. Such a multilevel model, which leads a researcher through a logically consistent pathway from a cause to an outcome, has to be reconstructed applying different types of observation, and in particular ‘smoking guns’ and ‘confessions’ (Blatter and Haverland, 2014a, pp. 120-121).

The Logical Foundations of Process Tracing – Process Dynamics

An additional logical foundation that can beef up the application of process tracing can be found in the work by Bennett and Elman (2006), who have developed a typology for logical reasoning, titled ‘process dynamics’. Three types of process dynamics have been identified, namely *positive feedback loops*, *negative feedback loops*, and *cyclical processes*. These process dynamics are distinguished by a ‘lock-in’ effect, which brings development in a cyclical way back to its starting point (Blatter and Haverland, 2014a, pp. 121-122). Blatter and Haverland (2014b, p. 4; 2016, p. 17) discuss *positive feedback loops* also with reference to Paul Pierson (2000a; 2004), who has identified the dynamic of positive feedback loops in path-dependent processes. Path-dependent processes, as already discussed in the theory chapter, are distinguished by self-reinforcing mechanisms, which means that “[a]s social actors make commitments based on existing institutions and policies, their cost of exit from established arrangements generally rise dramatically” (Pierson, 2000a, p. 259). Public pension schemes, to take an example, are difficult to change being very costly in terms of electoral votes because there is a strong public commitment to existing pension schemes (Blatter and Haverland, 2014b, pp. 4-5). The dynamics of positive feedback loops can also be demonstrated by the example of the relationship between election rules and party systems. In a two-party system, the parties have no interest in changing the election rules. Therefore, the election rules stay the same and continue reinforcing the two-party system. A similar mechanism is at work in multi-party systems. Here, larger parties usually rely on building majority coalitions with smaller parties, the latter being responsible for blocking any attempts to modify the election rules. *Negative feedback loops*, by comparison, can be represented by the functioning of the balance-of-power dynamics, such as in the Westphalian State

System, in which each attempt by a state to gain a hegemonic position is counterbalanced by the rest of the Westphalian State System, making a system stable over a period of time (Blatter and Haverland, 2014a, pp. 122-123).

Generally speaking, when attempting to show that a process dynamic was at work in a particular development, one needs to consider not only why a specific dynamic has set in, but also why a countervailing dynamic has not emerged (Blatter and Haverland, 2014a, p. 123). Of further note, is that process dynamics are driven by causal mechanisms that derive their explanatory leverage from basic social theories or from how these theories specify human behaviour (Blatter and Haverland, 2014b, pp. 14-15). At a methodological level, the first step in identifying process dynamics is to draw comprehensive storylines, which describe the dynamic in general terms and potentially show that the overall process is cyclical. In the next step, smoking gun observations and confessions are employed to trace the causal mechanisms unfolding on the level of sequences constituting the mechanisms (Blatter and Haverland, 2014a, pp. 121-123).

2.9 The Ontology and Epistemology of the Study

The research strategy applied to the current study is deductive – a choice determined by the research interest underlying this study, i.e. interest in the effects that have given the policy outcomes in the area of EU renewable energy their shape. Therefore, the underlying research design of this study is outcome-centric. By implication, the ontological and epistemological assumptions of this study are in line with deductive reasoning, following which the social world is perceived as consisting of regularities and patterns that exist independently from the observer and constitute the object of discovery by a social researcher. Thereby, epistemologically, the study of social reality necessitates eliminating false theories through matching preconceived theoretical explanations and empirical reality. By resorting to a deductive research strategy, it is also accepted that all data collection is biased by some pre-existing theoretical positions and theoretical interpretations by an observer, and hence is never presuppositionless (Blaikie, 2000, p. 86, pp. 104-105).

The deductive research strategy of this study, furthermore, is easily reconcilable with the method of process tracing, applied in this study. Although there is no consensus regarding the ontological and epistemological foundations of process tracing in the social sciences, it is applicable in both inductive and deductive research (Blatter and Haverland, 2014a, p. 141). Thereby, its application is recommended for cases where there is an already existing elaborate theoretical base for the study of a social phenomenon. The observable implications of hypothesised mechanisms can be better assessed by applying tests offered by process tracing (such as comprehensive storylines and counterfactual reasoning, discussed above). Thus, the tracing of particular processes can potentially help tentatively refute alternative explanations and corroborate the expected causal effects (Bennett and Checkel, 2014, p. 18).

The application of the heuristic tool of deductive research consists of two major steps. The first step of research, already accomplished in the previous chapter, comprises an elaboration of a theoretical framework and the formulation of hypotheses, which, in the second step, are tested in the ensuing process of collection and evaluation of empirical evidence (Blaikie, 2000, p. 86, pp. 104-105).

By comparison, the inductive element of the study is responsible only for a relatively minor function of a preliminary examination of the rather slim body of existing literature in the renewable energy policy area. Besides, the application of process tracing, even when conducting deductive research, always has an inductive element to it. The inductive element of this method, within a deductive research strategy, reveals itself at a lower level of empirical data collection than the level theorised. Put differently, while the theory provides an overall framework for research that is tested in a deductive way, the underlying observations that allow reconstructing sequences and causal paths, connecting the elements of a theoretical framework, allow for more inductive procedures. As put by Bennett and Checkel, the logic of deduction must be used to have a clear idea about what specific processes to expect if the hypothesised theoretical explanations are true; however, best practices of process tracing also imply being open to inductive insights, and to be able to cast the empirical net widely (2014a, pp. 375-376).

Data Generation

As already discussed above, data generation proceeds mainly in a deductive manner. Therewith, data generation was guided by the theoretically-derived assumptions about causes and effects. Consequently, empirical data are collected through the conceptual lens of my theoretical framework, with historical institutionalism at its core. Hence, theoretical concepts forming historical institutionalism and standing for independent and dependent variables will be the main reference point for generating empirical evidence. However, unlike a pure co-variational approach that is focused on establishing scores of variables, this study also aims at reconstructing causal paths connecting the dependent and independent variables (which is in accordance with the technique of process tracing). Consequently, the conceptual framework stipulated by process tracing will play an equally important role in gathering and interpreting empirical evidence.

Data Analysis

My data analysis consists of two major steps, which reflect respectively the process tracing and the co-variational elements of my combined methodology. In the first step, the empirical evidence, collected to reconstruct the temporal and special unfolding of policy-making processes, is assessed to identify causal chains and causal conjunctions. The discussion of the empirical data is focused on a juxtaposition of theoretical and methodological concepts with the available empirical evidence. Furthermore, a theoretical reflection of data implies identifying whether and how single independent variables interact with each other and with the ‘context’ external to my theoretical framework.

A *unit of analysis* singled out to assess the validity of theorised relationships will be determined in line with the focus on targets and definitions in the overall legislative procedure – the overall EU target, its splitting among member states, the legal strength of the targets, and the single definitions of sources of renewable energy. Because of the primary reference to my theoretical framework in this step of the analysis, the generalisation drawn within each case is theoretical.

The second step of data analysis stands in connection with the overall co-variational template of this study. However, this study does not seek to emulate statistical analysis, which yields ‘statistical generalisation’ of a co-variational research design. Instead, the study relies on process tracing to establish the potential impact of independent variables on dependent variable, paying close attention to the underlying *processes* in policy-making (while co-variation between variables is determined by juxtaposing scores of independent and dependent variables and hence relies on ‘*variable-scoring observations*’⁴⁷).

Besides, since the drivers of EU-level policy-making differ across policy areas, it appears almost impossible to find cases of other policy areas with the same control variables. Hence, a statistical generalisation of findings in one EU policy area to a wider population of other policy areas seems impossible. Besides, such generalisation to a wider population was *a priori* not aimed at since my research interest lies exclusively in the renewable energy policy area of the EU.

Yet, holding some control variables constant across pairs of cases in the policy area under study helps to justify their comparison theoretically. Thus, different outcomes on the same policy issue across two cases would allow attention to be drawn to differences in the unfolding causal mechanisms compared in a cross-sectional manner, and would thus help advance the theoretical framework applied in this study. In the broader context of EU studies, the theoretical insights gained would present one more instance of corroborating or refuting a number of theoretical assumptions, and this way aid accumulation of rival explanations of outcomes of EU-level policy-making across policy areas, engaging the scientific debate on the explanatory power of different theories explaining this subject.

⁴⁷ In the words of Blatter and Haverland (2014a), in co-variational data analysis “indicators that scholars have selected for operationalising variables into observable entities define which empirical information is seen as relevant and which information must be collected for each case. The relevant empirical information is used to determine the scores of each of the variables; therefore, we call the corresponding information ‘variable-scoring observations’” (Blatter and Haverland, 2014a, p. 28).

As a concluding remark to this section, my research design is briefly reconsidered under the broad categories of internal, external and construct validity. *Internal validity* pertains to whether a research design can sustain causal conclusions, e.g. by concentrating on a small number of variables (de Vaus, 2001, p. 27, 233); this aspect of validity was covered primarily in my research design selection. First, the section has dealt with how my selection of cases contributes to screening out the influence of other variables, and how my research design conceptualises independent and dependent variables in line with my theoretical propositions. Second, to trace the theorised causal link between independent variables and dependent variable, the technique of process tracing was selected, which is considered as contributing to the strength of internal validity of the research (Schimmelfennig, 2015, pp. 124-125). In connection with the former point, this chapter has also cast light on how my research is related to previous theoretical and empirical research (the topic also covered in my literature review). By covering these issues, the main strategies to create an internally valid research design were addressed (compare Gibbert *et al.*, 2008, pp. 1466-1468). *External validity* considerations, which allow assessment of a study with the possibility to generalise its findings (de Vaus, 2001, pp. 28, 237; Gibbert *et al.*, 2008, pp. 1466- 1468), were addressed in the last section of this chapter by providing a rationale in favour of theoretical generalisation (also called analytical generalisation) that involves generalising to theoretical propositions. Finally, *construct validity* is related to whether one's theoretical expectations were corroborated by results obtained through operationalisation of the concepts applied in a study. Therewith, construct validity depends on two issues: the explanatory leverage of theoretical propositions, and the measuring strength of the concepts (de Vaus, 2001, p. 30). Construct validity was addressed in the sections devoted to specification and operationalisation of theoretical and methodological concepts of this study. Besides, triangulation of sources of data was considered an additional means to strengthen construct validity (see the Introduction), in accordance with the concomitant advice in the methodological literature (compare Gibbert *et al.*, 2008, pp. 1466-1468). However, the final conclusions regarding the respective leverage of my conceptual and my theoretical frameworks can be drawn in the concluding chapter of this study, after my theoretical and methodological framework have been exposed to empirical evidence.

Chapter 3: Historical Background – Renewable Electricity and Renewable Fuels

This chapter provides a historical overview of the first renewable energy measures at the EU level, attempting to explain those in the context of contemporary challenges faced by the EU. This is done with reference to an overview of the documents by the Commission, launched before drafting the 2001 and the 2003 Directives. The role of global regimes, such as the Earth Summit and the Kyoto Protocol, in the promotion of renewables at the EU level, is equally elaborated on. Next, this section gives an overview of the landscape of actors who were involved with the EU-level policy processes on renewable energy, paying particular attention to their positions on promotion of renewables and on related policy developments. In the conclusion to this chapter, the various potential drivers behind the first two pieces of EU legislation on renewable energy, i.e. the 2001 and the 2003 Directives, are recaptured and preliminary analysed, with the result of identifying of the opening of a critical juncture in the policy area of renewable energy.

3.1 Historical Perspective – an Overview of Renewable Energy Measures in the EU

Renewable energy (RE) as a policy area under the competence of the EU emerged in 1997. This development was heralded by a White Paper, titled ‘Energy for the Future’, published also in 1997. This new competence of the EU was justified at the time, and equally thereafter, on three distinct grounds – a reduction of fossil fuel consumption as a way to a more climate-friendly and sustainable policy, the diversification and hence security of Europe’s energy supplies, as well as technological innovation and the economic benefits of additional employment and stimulus for economic growth (Howes, 2010, p. 117).

The justification of RE promotion at the EU-level, specifically as a remedy to the security of energy supply and environmental degradation, has been prominent also throughout the early history of the EU initiative on alternative sources of energy (Rusche, 2015, p. 2). Thus, the initial interest in greening the European electricity industries awakened because of rising oil prices during the 1970s. The RE promotion in Europe found support equally as a result of growing public awareness of a range of

environmental problems, such as regional and local pollution and global climate change (Gan *et al.*, 2007, p. 144). At the same time, primary justifications varied according to the respective historical context of a particular decade. In the 1970s, the oil crisis for the first time highlighted the potential of RE to increase energy security, whereas during the 1980s, RE was primarily contemplated under the aspect of its potential to contribute to a cleaner environment in the light of the problems of acid rain and trans-boundary air pollution, caused by increased use of coal – a consequence of the disruption of oil supply a decade earlier. By comparison, in the 1990s, renewable energy promotion “was presented as an important policy tool for complying with ... international obligations”, such as the Kyoto Protocol, to cut greenhouse gas emissions (Rusche, 2015, p. 2).

This section begins chronologically with the developments during the 1970s and 1980s, such as oil supply shortages and their role in the promotion of renewable energy sources in the EU, to the extent that such initiatives originated at the level of the EU. Next, this section deals with the importance of global regimes in their contribution, mainly during the 1990s, to the development of renewable energy legislation at the EU level.

As sketched out below, the very first EU measures on renewable energy were undertaken in the aftermath of the oil crisis of the 1970s, being further motivated by a range of environmental problems of global and regional scope⁴⁸ (Gan *et al.*, 2007, p. 144). Specifically, the oil shocks in 1973 and 1979, leading to disruptions of oil supply and rising oil prices, heralded the initiation of the first EU renewable energy measures. Implicitly, the priorities of energy policy, evolving at that time, were energy security and safeguarding EU economies from external energy dependencies beyond European control. In particular, the “second oil shock in the late 1970s was a reminder of the need to stay vigilant in terms of energy security” (Commission, 1996a, p. 6). Prior to that, RE has been largely neglected by EU member states⁴⁹; only in member states with

⁴⁸ The awareness of environmental problems, growing since the 1960s, helped to awaken public interest in renewable energy in the context of debates on the relative merits of nuclear power and fossil fuels-derived energy (Gan *et al.*, 2007, p. 144).

⁴⁹ During the post-World War II years, European governments have been preoccupied with big electrification projects and the creation of large integrated monopolies responsible for the generation, transmission and distribution of electricity. Concurrently, most countries in Western Europe were developing nuclear power, and some engaged in the supply of oil, coal and natural gas (Midttun and Koefoed, 2003, p. 579).

considerable natural potential for hydropower did this source of energy play a role (Midttun and Koefoed, 2003, p. 579).

In the event of a confrontation with the global dynamics of oil supply shortages, the aim to expand the share of renewable energy led to an active search for corresponding technological solutions, resulting in the co-funding of research and development, and demonstration projects of RE technological innovation, e.g. the ALTENER programme and 'Intelligent Energy for Europe'. These programmes were aimed at facilitating the examination of promising RE technology, at boosting cost-reducing measures in the cases of proven but expensive technology, as well as at stimulating research on suitable forms of RE policy promotion. These activities were accompanied by the European Union's regional policy and structural funds for the development of green technology (Janzen and Uytterlinde, 2004, p. 93). "With the ALTENER programme, the Council for the first time adopted a specific financial instrument for renewables promotion" (European Commission, 1997a, p. 6). The focus of the ALTENER programme was on research and the demonstration of renewables potential in member states. Thus, the ALTENER was responsible for financing of a range of studies to estimate the situation and the potential of RE in Europe, such as the TERES and the TERES II studies (discussed in detail in the next chapter) (Hirschl, 2008, p. 331).

From a slightly more specific and biofuels-adjusted perspective, it can be restated that the oil price shocks of the 1970s led to the endorsement of biofuels in single member states, accompanied by national research programmes on the type of fuels (Pacini *et al.*, 2013, p. 18). At the EU level, the first efforts at stimulation of biofuels began in the 1980s, which can be inferred from among others various research and demonstration programs (Faaij, 2006, p. 334). In the mid and late eighties, these research and demonstration programmes sought to advance bio-energy technologies. "The so-called JOULE program (R&D on a multitude of energy supply options, including biomass combustion, gasification, pyrolysis, digestion, etc.), and THERMIE (aimed at short- and medium-term demonstration activities, including biomass gasification)" were important in this respect, while a lesser role in research on biofuels was played by ALTENER (Faaij, 2006, p. 334). Directive 85/536/EEC was related to crude-oil savings through the use of substitute fuel components, emphasising the importance of biofuels regarding the improvement of the security of energy supply (Delvaux, 2004, p. 71); whereas technical

standards for transport fuels were addressed in the Fuel Quality Directive (98/70/EC), at the same time specifying limits for biofuels to be blended with conventional fuels (Pacini *et al.*, p. 19). Then, in the mid-1990s the importance of biofuels was re-addressed in the documents such as the White Paper of 1996 on renewable sources of energy (see below for details) (Delvaux, 2004, p. 71).

Besides, the pressure of ecological problems that grew throughout the 1970s equally contributed to a re-evaluation of the energy supply industry under the aspect of its impact on the environment (Mez *et al.*, 1997, p. 6). Thus, during the 1980s environmental issues rose on the EU agenda. More specifically, the 1980s were signified by two main drivers for change in the sector of energy policy in the EU. First, during this decade the concerns over rising emissions and acid rain gained new prominence. “It became generally accepted that the present energy system ... is responsible for much of our man-made climate change problems, and that energy consumption can result in irreparable damage to the global environment” (European Commission, 1996a, p. 6). The second major driver for reassessing EU energy policy came with the economic recession which broke out at the end of the 1980s. Thereby, the liberalisation of the EU internal market, including the creation of the common energy market, became one of the strategies to respond to the challenge for the EU to stay competitive globally (Commission, 1996a, p. 6).

The decade of the 1980s was, however, equally characterised by energy prices falling again after the oil shocks; this took away the interest in the promotion of renewable sources of energy and rendered a subsequent policy initiative by the Commission futile. That is, the goal of tripling the share of renewable energy in the EU by 2000, as formulated by the Commission in 1986, failed to find support in the Council. The failed initiative coincided with the continuous interest of the Council in fossil fuels and energy efficiency (Hirschl, 2008, p. 315). Deployment of renewable energy at that time was still considered a national responsibility by the Council, as demonstrated by the Council’s Communication of 9 June 1988. The document, whose addressees were member states, recommended renewable energy promotion as an exclusively national-level remit (Hirschl, 2008, p. 330).

From the end of the 1980s, the development of RE became important for the EU's agenda derived from the growing involvement of the EU in environmental governance at the global level. Prepared by *inter alia* the publication of the Brundtland Report 'Our Common Future' by the World Commission on Environment and Development, the decade saw the ratification of ambitious international treaties – the United Nations Framework Convention on Climate Change (1992) and the Kyoto Protocol (1997) (de Lovinfosse, 2008, p. 71; Gan *et al.*, 2007, p. 144). According to the European Commission's account, environmental concerns reached their peak at the UN Rio Conference (also known as the 1992 Rio Earth Summit) (European Commission, 1996a, p. 6). That is, early 1992 was a time of unprecedented public environmental awareness (Wurzel and Connelly, 2011, p. 6), and simultaneously a time of the significant rise in the salience of environmental issues in world politics, symbolised by the convening of the Rio Conference (Vogler, 2011, p. 31)

During the negotiations on the United Nations Framework Convention on Climate Change (UNFCCC), the EU aspired to take on the role of a climate leader (Oberthür and Dupont, 2011, p. 77). Specifically, it was the European Council that, in June 1990, came up with a declaration that the EU should assume leadership in the promotion of global-level action toward limiting GHG emissions (Oberthür and Dupont, 2011, p. 77). The EU's new leadership aspirations coincided with the decision by the US to abstain from binding commitments and to surrender its former role of a global climate leader from Rio onwards (Ackrill and Kay, 2014, p. 51). Thus, the Rio Earth Summit provided Brussels with the opportunity of "burnishing its identity as a climate leader" and EU leaders have seized this major opportunity to establish their policy leadership (Vogler, 2011, pp. 31-32).

However, as noted by Vogler, the new high moral tone on the climate issue assumed by Brussels also includes an element of hypocrisy (Vogler, 2011, p. 33). This is because "the EU signed the UN Framework Convention on Climate Change ... without having adopted adequate common policy measures to implement the agreement" – an EU-wide CO₂/ energy tax (which is discussed further below) (Wurzel and Connelly, 2011, p. 5).

The enlargement of the EU in 1995 to Austria, Sweden, and Finland, who had higher environmental standards than the rest of the EU membership, unexpectedly failed to

make a difference to the Council's ability to show 'leadership by example' in climate policy. These "[n]ew Member States had limited capacity and political weight and could not undo the unanimity requirement applying to large parts of energy-related climate policies" (Oberthür and Dupont, 2011, p. 78). This lack of strong EU-internal policy measures on climate change made its advocacy of strong global commitments to climate change rather symbolic and, hence, resulted in the "credibility gap" for the EU's role as global climate leader throughout the 1990s. This credibility gap could be somewhat narrowed down by means of ratification of Kyoto Protocol by the EU (Oberthür and Dupont, 2011, p. 75, p. 88; Barmes, 2011, pp. 47-48). The EU's commitment to an overall 8 per cent reduction in greenhouse gas emissions, against the 1990 baseline, however, can be considered as rather favourable in terms of its fulfilment (Vogler, 2011, p. 33). This is related to a particularly fortuitous set of circumstances pertaining to the 1990 baseline, and unrelated to the efforts of meeting the target. That is, Germany benefited from a reduction in its emissions because of the industrial decline in former East Germany after unification, whereas Britain lowered its emissions because of its dash for gas (gas having lower carbon content than previously predominantly-used coal) (Ackrill and Kay, 2014, p. 52; Wurzel and Connelly, 2011, p. 6). Besides, these cuts were meant to be distributed among member states according to the burden-sharing approach, which was agreed by the EU at the conference (Ackrill and Kay, 2014, p. 52).

The credibility gap resulted additionally from an absence of progress in reducing GHG emissions in the EU-15 during the 1990s; i.e. the reduction of GHG emissions was marginal and mainly related to the dash from coal to gas in the UK, and German reunification. "Emissions even increased slightly after 1994 and, at the turn of the century, were projected to increase further by 2010 without additional policies and measures" (Oberthür and Dupont, 2011, p. 76).

The eventual EU response to global climate obligations, i.e. the UN Rio Conference and in particular to the Kyoto Protocol, has found its expression *inter alia* in renewable energy documents such as the Green and the White Papers (treated in the following), and in the ensuing Directives on renewable electricity and biofuels from 2001 and 2003 respectively (Gan *et al.*, 2007, p. 144).

3.2 Preparatory Documents by the European Commission

Some of the crucial policy issues of the 2001 Directive, in particular the overall RE targets, were proposed by the Commission several years before it drafted its first Directive Proposal, i.e. the overall target was established in the documents discussed in the following. Due to the importance of these documents in pre-shaping the Directive's content, they are given a short overview in the following section, starting with the earliest – the Green Paper and proceeding with the White Paper, considered a landmark in the growing EU competence in the RE policy area. The overview of the documents in question also serves the purpose of introducing different official rationales for RE promotion, which will be subjected to further consideration and analysis in the remainder of this chapter.

The Green Paper of 1996 'Energy for the Future: Renewable Sources of Energy'

A new phase in the development of EU renewable energy legislation from the late 1990s onwards was announced in the common European strategy toward increasing the use of green energy and found its first expression in the Green Paper, submitted by the Commission on 20 November 1996 (de Lovinfosse, 2008, p. 71). The Green Paper was conceptualised as the first of a two-step approach outlining a strategy aimed at promoting renewable sources of energy in the EU. The second step in the approach was to be followed up with the Commission's White Paper 'An Energy Policy for the European Union', which sought to specify concrete policy measures. The Green Paper consists of three main parts dedicated to the subjects of: the current contribution of RE to the energy balance of the EU; the advantages of increased RE use *vis-à-vis* Community objectives; and the basic elements of a policy strategy to promote RE in the Community (European Commission, 1996a, p. 3).

Firstly, departing from the contemporary state of EU renewable energy production, the Paper turns to insights gained through a long-term energy forecast, 'European Energy to 2020', which was aimed at predicting the future energy demand of the EU. Subsequently, the Paper presents an analysis of a possible RE share in the EU (TERES II study) by means of different policy incentives. This allowed the Commission to

conclude that a goal of doubling the renewable energy share to 12 % by 2010, as a contribution to the gross inland energy consumption, would be an ambitious but realistic objective (European Commission, 1996a, pp. 15-17). As further specified by Hirschl (2008), the TERES II study was published in 1997, following its predecessor, the TERES study of 1994. The study of 1994, labelled ‘The European Renewable Energy Study’, offered the underlying assessments of alternative strategies for renewable energy promotion (Hirschl, 2008, p. 331).

In its second main section, the document details “how the development of renewables will contribute to achieving the Community's objectives as defined in the Treaty”, which are “the international commitments concerning environmental protection ... , security of supply, economic and social cohesion, and – at least in the medium to long-term economic competitiveness” (European Commission, 1996a, p. 19). By referencing an earlier document – the Commission's 1993 White Paper on Growth, Competitiveness and Employment – the present Paper makes the point that clean technologies are “a key to future economic prosperity”; however, as further stated, “in order to develop an export market it is essential that the EU industry is able to expand on its home markets” (European Commission, 1996a, p. 23).

In its last major section, the Green Paper points out that “Community policies in many different areas have implications for the development and the deployment of renewable sources of energy” (European Commission, 1996a, p. 28, 33). Specifically, a policy for the promotion of renewables will require across-the-board initiatives “encompassing a wide range of policies covering agriculture, external affairs, research and technological development, including demonstration, fiscality, regional and environmental policies” (European Commission, 1996a, p. 11). According to the Commission, this characteristic of the RE policy area, i.e. being interdependent with other policy areas under the competence of the EU, makes increased coordination at the Community level and by the Commission necessary (European Commission, 1996a, p. 33). Consequently, this consideration is followed by a range of strategies for the achievement of the RE target, acknowledging the positive implications of this goal for other policy areas and for developing the internal energy market, which in turn is aimed at “creating a stronger and more competitive industrial base to face up to the globalisation of markets and fiercer international competition” (European Commission, 1996a, pp. 33-47).

The White Paper of 1997 'Energy for the Future: Renewable Sources of Energy'

The White Paper on renewable sources of energy was issued by the Commission in March 1997. Maintaining the idea of the Green Paper of 1996 (Jones, 2010, pp. 11-12), the White Paper concludes that member states and the European Union should establish targets, which in sum would amount to the ambitious 12% contribution of renewable energy to the EU's total primary energy consumption by 2010 (European Commission, 1997a, p. 10). Therewith, the Directive was aimed at doubling the share of renewable energy use from 6% in 1997 to 12% in 2010 (Blok, 2004, p. 253).

The White Paper further acknowledges the considerable economic potential of renewable energy promotion in its contribution to the creation of local jobs and the acceleration of regional development in the face of renewable energy's uneven exploitation in the EU. The document points to the ability of renewable energy to minimise the increasing dependency on energy imports and to strengthen overall energy security of the EU. Finally, RE is considered to be pivotal in meeting the targets set out in the Kyoto Protocol. Furthermore, the White Paper discusses the potential of renewable energy technology becoming an export product, providing domestic firms in the energy sector with access to new markets, thus enhancing their global competitiveness and export potential. In this vein, the export of renewable technology is envisaged to meet the technology demands of many countries in Asia, Latin America and Africa, stemming from their growing energy needs (European Commission, 1997a, pp. 11-13). As summarised by Lauber, one of the ideas of the White Paper and the Green Paper, was "to bring down the costs of green technologies by achieving mass production on European level (reinforced by exports once leadership was reached in this area); this, in turn, required a Community-wide effort" Lauber (2005, p.45).

The White Paper also brings to light the idea of different national targets and dissimilar burden-sharing among the EU member states. According to the document, the translation of the EU's overall target into national indicative ones would aid better exploitation of domestically available resources. Furthermore, strategies of the implementation of national targets elaborated nationally, and not at the EU level, would

further increase the success of implementation. The White Paper further made some initial suggestions concerning the character of the target, by stating that an *indicative* target for the Community would be “a good policy tool”, capable of giving clear political signals and spurring action in member states (Jones, 2010, p. 12).

Importantly, the intention of the White Paper to set national sectoral targets is not restricted to just renewable electricity. Another sector covered by the Paper is transport. The entire idea of the Paper is to set national targets, “one in the electricity sector and one in the transport sector”; thus, the White Paper served the purpose of justifying two Proposals – one for the first renewables Directive and another for the first biofuels Directive (Johnston and Block, 2012, p. 304). Specifically, new policy on RE was planned as a means of addressing the slow progress and the various barriers to renewable energy growth, e.g. administrative barriers, grid management problems and lack of consumer information. Thus, the task of finding solutions to problems encountered in promoting renewable electricity (RES-E) was transferred to the 2001/77/EC Directive, whereas similar hurdles in stimulating renewable energy in transport (RES-T) were addressed in the 2003/30/ EC Directive (Howes, 2010, p. 120).

EU Negotiating Mandate for Kyoto Protocol and EU Emission Reduction Strategy

Further documents in the preparation of the 2001 Directive carry a strong focus on the Rio Conference and its follow-up conferences. Thus, on the eve of the third conference of the Parties to the UNFCCC to be held in Kyoto in December 1997, the policy area of climate change once again became predominant in the international debate. In response to these developments “a negotiating position of 15% greenhouse gas emissions reduction target for industrialised countries by the year 2010 from the 1990 level” was endorsed by the Council of Ministers⁵⁰ (European Commission, 1997a, pp. 4-5). “The

⁵⁰ More specifically. “On 3 March 1997 the EU Environment Council adopted a negotiating position on climate change that, *inter alia*, established a quantified emission reduction objective for inclusion in the Community's protocol proposal to the UN Framework Convention on Climate Change (UNFCCC). This proposal sets a 15% reduction of emissions for three greenhouse gases carbon dioxide (CO₂), methane, (CH₄), and nitrous oxide (N₂O) by 2010, individually or jointly, compared to 1990 for all industrialised countries that are parties to the Convention” (European Commission,

Council of Ministers endorsed this [negotiating mandate] when inviting the Commission to prepare an action programme and present a strategy for renewable energy” (European Commission, 1997a, pp. 4-5).

Thus, the ensuing task for the Commission in connection with the negotiating position of 15%, formulated in March 1997, was to identify a number of actions in the energy sector that would assist member states in their efforts to achieve the climate change objective. Tackling this task, the Commission prepared a Communication ‘Energy Dimension of Climate Change’ that emphasised two areas of action: renewable energy promotion and energy savings, as being of major importance in their contribution to the objectives of the Kyoto Protocol (European Commission, 1997a, p. 5; 1997b, pp. 4-6). Specifically, the document of May 1997, considers different options of GHG reductions, dismissing several of them (European Commission, 1997b, pp. 8-9). Thus, combined heat and power, being a rapidly developing technology, showed market penetration problems, thereby “even a significant penetration of cogeneration would not be sufficient to avoid an overall increase in CO₂ emissions” (European Commission, 1997b, pp. 7-8). Also the option of nuclear power is largely dismissed because “[a]fter 2010, a number of nuclear power plants will enter the decommissioning phase” (European Commission, 1997b, pp. 8-9). For more on the role of nuclear in bringing down EU emissions, the Commission refers to another document, in which the issue is circumscribed as “a highly controversial one in the Union, with many different views being expressed, in a context where Member States have different energy structures and different approaches to nuclear energy”⁵¹ (European Commission, 1996b, p. 2).

Energy efficiency and energy saving measures are judged as being able to make a substantial contribution to emissions reduction, but as not enough on their own to reach the EU negotiating commitment at the global level because “a steady increase in demand ’ is predicted despite the assumption of a fall in energy intensity of 1.3%

1997c, p. 2). However, as a result of international negotiations, the EU has assumed an obligation to reduce its greenhouse gas emissions by 8% of 1990 levels by 2008–2012 under the Kyoto Protocol (Reiche and Bechberger, 2004, p. 845).

⁵¹ According to the Commission, “the reality is that a number of Member States depend to a large extent on nuclear energy, whilst others prefer to pursue a nonnuclear energy policy, and a third group have decided to reduce dependency on nuclear-based sources of energy or to terminate the existing nuclear-plants altogether” (European Commission, 1996b, p. 3).

between 1995 and 2005, and 1.6% between 2005 and 2010” (European Commission, 1997b, p. 4). Energy efficiency is thus attributed a major role in realising the climate change objective, a comparative role being allocated to development of renewable. Hence, with the reference to the Green Paper of 1996 (see above), the Commission expected to save 386 million tones of CO₂ per year by 2010 (or 12 % of CO₂ emissions) by doubling of RE by 2010, from 6% to 12%, (European Commission, 1997b, p. 6).

The 12% target was subsequently endorsed by the Council in its Resolution of June 1998, by inviting the Commission to bring forward “proposals in order to remove obstacles to the greater use of renewables and to the trade in electricity generated from renewables” (Council of the European Union, 1998, p. 3). In so doing, the Council referring *inter alia* to the White Paper on renewable, the Kyoto Protocol and to its Resolution of the Green Paper on renewable as the documents it has acknowledged when taking the above decision (Council of the European Union, 1998, p. 3). The European Parliament endorsed the measure and even exceeded the ambition of the Commission by proposing a target of 15% by 2010, additionally calling upon the Commission to devise specific RE measures (Jones, 2010, pp. 11-12).

Prior to proceeding with an analysis of the two Proposals, for RES-E and RES-T, in this and the following two chapters, the remainder of this section turns to an introduction of policy actors in the policy areas of RE. In so doing, it is covering their positions on RE development at the EU level as well as their more general policy interests and policy approaches.

3.3 Most Important Actors and their Policy Positions

As regards the renewable energy policy area, Lauber (2002; 2005) distinguishes between two groups of actors. The former comprises the institutional actors of the EU – the Council, the Commission, the Parliament, and the European Court of Justice. The second group of actors consists of EU-external entities, encompassing the renewables industry and its associations, the energy industry more broadly, and the environmental

NGOs that participated in the decision-making processes by either consulting or lobbying the institutional actors of the EU (Lauber, 2005, p. 41-42).

Not being homogeneous, the EU internal actors incorporate a range of sub-actors that vary with respect to their prominence in the policy-making processes on renewable energy. Thus, the Commission embraces two dozen Directorates-General (DGs) that are responsible for the administrative branch, i.e. for expertise and policy generation in line with the Commission's role of the initiator of EU legislation (Barnes, 2011, pp. 41-42), and a College of Commissioners. The College of Commissioners exercised its political leadership by acting as a single body seeking to find consensus via bargaining and occasionally voting on highly controversial policy issues (an absolute majority being necessary for reaching an agreement) (Egeberg, 2013, pp. 131-132). However, when drafting policy Proposals, the Commission needs to be able to anticipate the reactions by the Council and the EP, because "the credibility of the institution would be undermined if policy measures were repeatedly proposed which were not accepted" by these two EU institutions (Barnes, 2011, p. 45). As phrased by one of the policy officers, responsible for drafting policy Proposals within the Renewable Energy Unit of the DG Energy: "while drafting a Proposal we try to anticipate whether the draft is acceptable to other EU institutions" because no one likes to on policy Proposals that have no future (Interview, Pilzeker).

As noted by Barnes, the Commission possesses cognitive skills that should not be underestimated, because it assesses a high degree of technical expertise in highly complex policy areas such as climate change. Besides, the Commission has the ability to facilitate agreements between institutions and member states, being skilled in exercising leadership and in brokering compromises (Barnes, 2011, pp. 41-42). "Within the 'Troika' the Commission had the advantage of continuously being involved in the international climate change negotiations unlike the representation from the national governments which changed every six months"⁵² (Barnes, 2011, p. 44).

⁵² The Council's informal so-called 'troika' has for a long time represented the EU in the international arena, for example during the negotiations of the UNFCCC. The troika was initially made up of the previous, current and next Presidencies. Since the 1999 Amsterdam Treaty, the troika has consisted of the current and following Presidency and the European Commission (Wurzel and Connelly, 2011, p. 17).

Within the Commission, a pivotal role in the renewable energy sector was assumed by DG Energy (DG ENER) (Lauber, 2005, p. 42), which in 2000 was transformed into DG Transport & Energy (DG TREN), put together from the two formally separate DGs – DG Energy and DG Transport⁵³. The position of DG ENER on RE could, however, change depending on the attitude of the person occupying the office of the Commissioner (e.g. regarding the role of free-market competition in RE promotion) (Lauber, 2005, p. 42). Another DG – DG Competition under Commissioner Monti – also figured as an influential participant in the negotiations of renewable energy legislation. The DG’s impact on the RE legislation resulted from its remit to formulate Community frameworks on environmental state aid that can restrict member states’ ability to subsidise renewables. Equally, this DG can initiate lawsuits against member states for violation of the Community state aid regime, which are usually settled out of court. Finally, DG Environment does not dominate the sector of renewable energy. It was, however, active in the legislative processes at hand (Lauber, 2005, pp. 42-43). With regard to its traditional administrative procedures and paradigms, DG Environment belongs to the liberal camp of advocates of market-based instruments within the Commission, environmental economics being its core theoretical foundation⁵⁴ (Jacobsson *et al.*, 2009, p. 2146).

Historically, from the reinvigoration of European integration by Delors and up to the late 1990s, the Commission did not play any significant role in bringing environmental (or climate change) policy to the EU. That is, the Delors Commission concentrated on advancing European integration through creation of the Single Market, while the ensuing Santer Commission was badly coordinated and failed to make any substantial contribution in the negotiations of a global regime for GHG emissions reduction. The

⁵³ “DG Transport and Energy (TREN) was a new and unusual DG, created in 2000. ... DG TREN combined two portfolios: Transport and Energy. As a result, it was managed by a single Director-General but was accountable to two separate Commissioners. French Commissioner Barrot was in charge of transport policy while Latvian Commissioner Piebalgs dealt with energy policy” (Schön-Quinlivan, 2011, p. 167). “In 2010, a new Commission was appointed and DG TREN was dissolved into two separate DGs: DG Mobility and Transport (MOVE) and DG Energy (ENER). These two DGs still share administrative support services” (Schön-Quinlivan, 2011, p. 167).

⁵⁴ Related worldviews are predominant in DG Enterprise and Industry, and DG Competition. These DGs are also guided in their decision making by neoclassical economic theory (Jacobsson *et al.*, 2009, p. 2146).

Prodi Commission came to office only in 1999 and it did not undermine the response of national governments to the Kyoto Protocol (Barnes, 2011, pp. 51-56).

“The European Parliament for its part has constantly underlined the role of renewable energy sources” as a contribution to EU energy consumption, as acknowledged by the Commission (European Commission, 1997a, p. 6). Specifically, the EP was interested in renewable energy in the context of its vision of a CO₂-low economy as early as the beginning of the 1980s, thereby restating this in several of its resolutions during the decade. Simultaneously, it repeatedly called for legislative Proposals on renewable energy by the Commission and the Council. Thus, in one of its resolutions from 1993, the Parliament lamented and strongly criticised the Commission’s and the Council’s lack of dedication to the promotion of RE, which eventually, according to Hirschl (2008), had the effect of establishing the ALTENER programme by the Council. The EP was equally demanding concrete legislative actions on RE in its Resolution on the promotion of renewable energy sources from 22 July 1996, which allowed the institution to formulate its detailed position on the future of the promotion of renewables. In its further resolutions, the EU institution also repeatedly pleaded for the creation of a level playing field for RE producers in the energy market by means of improving the political, legal and economic framework for RE production, without, however, going against the subsidiarity principle with respect to the role of national and local measures in subsidising renewable energy, which, in the view of the Parliament, needed to be maintained and further analysed (Hirschl, 2008, pp. 331-332).

Even though the Council of Ministers (henceforth Council) and the EP are co-legislators in the RE sector, Lauber (2005, p. 43) considers the former EU institution to be more influential than the latter, the 2001 Directive being just one example of this power distribution, as the Council was prevailing in the most of cases of conflict between the two institutions, as discussed in the next chapter. Besides, the EP was much more supportive of stringent legislation on renewables than the Council. For example, one of the conflicts in the negotiations of the 2001 Directive concerned the stipulation of either mandatory or indicative RE targets, the Council being in favour of indicative ones. Far more supportive of ambitious RE goals in comparison to the Council and even the Commission, the Parliament advocated for binding RE targets. Within the Parliament,

sub-actors that provided the foremost support for RE promotion were the Green Party and the Party of European Socialists, and, respectively, their prominent MEPs, such as Claude Turmes and Mechtild Rothe. By comparison, the European People's Party, disregarding its general support for the 2001 Directive, was quite ambiguous in its final vote, and overall more in favour of nuclear energy (Lauber, 2005, p. 43).

Heads of State and Government of the EU Member States are represented in the European Council – an institution that seeks to agree on the EU's broad political goals and strategies (Wurzel and Connelly, 2011, p. 10). With the Treaty of Lisbon of 2007, the European Council became recognised as an official institution of the EU; prior to that it had no official status, being merely acknowledged in the Single European Act of 1986. Additionally, the Lisbon Treaty significantly strengthened the leadership capabilities of the institution by creating an office of a permanent President to chair its meeting of the European Council and to represent the EU externally thereby discontinuing the practice of the institution being chaired by a member state holding presidency in the Council of the EU⁵⁵ (Lewis, 2013, p. 155). However, “even before the Lisbon reforms, the presidency had developed from a mere organizer into an important initiator and promoter of political initiatives, ... mediator and broker of different viewpoints between the member states and other Community institutions” (Bunse and Klein, 2014, p. 78). The impact of the European Council derived from “its political importance as the highest political gathering of the EU Member States” even without holding formal competence in the legislative procedures of the EU (Oberthür and Dupont, 2011, p. 76).

The relationship between the European Council and the Council of Ministers is not straightforward because, as demonstrated below, speaking with a single voice by the former institution does not necessarily result in legal commitments to that unitary position by the latter institution. Thus, for example, during the negotiations on the UNFCCC, the EU, represented by the European Council, aspired to take on the role of a climate leader (Oberthür and Dupont, 2011, p. 77). Specifically:

⁵⁵ More specifically, the European Council was headed by a EU member state who held the sixth-monthly rotating EU Presidency and who was expected to provide ‘agenda shaping’ and in so doing to act as honest broker throughout the meetings (Wurzel and Connelly, 2011, pp. 10-11).

In June 1990, the European Council declared that the EU should ‘play a leading role in promoting concerted and effective action at the global level’ and urged all countries to adopt ‘possible targets and strategies for limiting emissions of greenhouse gases’. Other than that, the European Council was not involved in detail on matters of climate policy during this period (Oberthür and Dupont, 2011, p. 77).

However, “the Council [of Ministers] was in large measure responsible for a lack of progress of EU climate policies”, which would enable it to follow its international commitments (Oberthür and Dupont, 2011, p. 78). Thus, the Proposal for an EU-wide CO₂/ energy tax was vetoed in the Council of Ministers, while the Commission’s other three Proposals on SAVE, ALTENER, and a Decision to monitor CO₂ emissions “were adopted by the Council [of Ministers] although they were insufficient for reaching the stabilisation target” (Wurzel and Connelly, 2011, p. 6). More specifically, the policy idea to impose a tax on heavily emitting industries in the EU was met with a lot of disapproval on the part of the Council of Ministers, which was contradictory to the EU’s international leadership ambitions. Several member states positioned themselves against a European CO₂/ energy tax:

[T]he UK upheld the principle of subsidiarity; Ireland, Spain, Greece and Portugal requested additional structural funding; and nuclear-minded France called for a pure carbon tax. With environmental taxation requiring unanimity, the Council abandoned the idea of an EU-wide carbon/ energy tax in 1994. Similarly, the Council substantially weakened ambitious proposals by the European Commission on promoting energy efficiency and renewable energies within the EU and cut back their budgets (Oberthür and Dupont, 2011, p. 78).

The European Court of Justice (ECJ), as an actor in the RE policy area, can be characterised as making a significant mark on the preparation of the 2001 Directive by ruling in the case between PreussenElektra and Schlesweg, two German electricity supply companies (Meyer, 2003, p. 670). The background for the conflict between PreussenElektra and Schlesweg was provided by the German Electricity Feeding Act

(Stromeinspeisungsgesetz) from 1991⁵⁶. Its effective contribution to the development of wind energy, especially in the North of Germany, was viewed with a lot of scepticism on the part of the conventional energy industry (PreussenElectra, VDEW, Schleswig AG, Hanseatische Energieversorgung AG, Rostock und Ueberlandewerke Leinetal, Sydkraft from Sweden) which had to bear a significant part of this policy measure's expenses. Hence, several of these utilities were pleading to the German courts in an attempt to challenge the lawfulness of the 1991 law, however without success case after case. From 1995 their focus shifted to the EU level and in particular to the Commission; the EU institution was confronted with several opinion letters by the utilities. The letters were aimed at making the institution aware of the alleged disproportionately high costs put on the utilities by the Electricity Feeding Act and the unequal market conditions for energy producers it had created within the EU internal energy market – a concern raised amongst others by the Swedish Sydkraft in its attempt to lobby the Commission (Hirschl, 2008, pp. 334-335).

The national disputes were transferred to the EU level, after the legal case *PreussenElectra vs Schleswig* was passed by the German court on to the European Court of Justice in Luxembourg (Meyer, 2003, p. 670). Given the ECJ's duty to control the Commission's decisions on the subject of state aid, the judicial authority had to decide whether DG Competition and the utilities were right to view the German system of fixed feed-in rates as state aid. If the ECJ had defended the position of DG Competition, it would have stopped the functioning of support systems based on fixed feed-in tariffs. However, as was found by the Advocate General, the instrument's properties unequivocally did not meet the criteria of state aid (Lauber, 2012, pp. 205-206). This ruling was announced in March 2001 and was of momentous importance for the formulation of the 2001 Directive because it reaffirmed that member states had a free choice of support schemes in order to comply with the RE Directive being negotiated at that time (de Lovinfosse, 2008, pp. 70-71).

⁵⁶ More specifically, the conflict developed over the fixed price payment for RES-derived electricity that was fed into the network system (at higher than the market price for electricity generated from conventional fuels). The utility Schleswig AG had passed the costs of the wind-generated electricity down to the network operator PreussenElectra (despite being largely owned by Schleswig). The network operator first paid, but then brought Schleswig to court (Hirschl, 2008, p. 351).

The second actor group in the RE policy area, comprising the EU-external actors, counts among others the renewable energy industry. The industry is represented at EU level by various associations of renewable energy producers: European Renewable Energies Federation (EREF), European Photovoltaics Association (EPIA), European Wind Energy Association (EWEA)⁵⁷, European Biomass Association (AEBIOM), supported by related organisations such as the European Federation of Regional Energy and Environmental Agencies (FEDARENE).

The group of EU-external actors also embraces environmental NGOs – most notably Greenpeace and World Wildlife Fund that generally sought the attention of the general public and open political conflict, by comparison to renewable energy associations that prefer to act behind closed doors. Especially during the initial stages of the formation of RE legislation, environmental NGOs were the primary defenders of the cause of renewable energy, managing to conduct campaigns during a period when renewable energy producers were still at an embryonic stage of development. Their general position was similar to that of the European Parliament, i.e. in favour of the most stringent RE measures, such as mandatory targets (Lauber, 2012, pp. 204-205).

The large power producers and their associations, such as The Union of the Electricity Industry (EURELECTRIC) and European Federation of Energy Traders (EFET), have also shown interest in the policy-making process (Lauber, 2012, pp. 204-205). However, their lobbying efforts revolved around the legislative aspect of policy instruments for RE development (Jacobsson *et al.*, 2009, p. 2146). The focus of lobbying by the conventional energy industry and the RE industry is specified in the following.

Renewable Energy Interest Groups at the EU level

⁵⁷ EWEA, for example, involved in the process of lobbying, has changed its stance over time, being first under British influence and hence in favour of tradable green certificates (TGCs), abandoning this position later on due to strengthened internal German influence, Germany being in favour of the nationally applied policy instrument of feed-in tariffs (Lauber, 2012, p. 206).

As elaborated in the previous section, the mobilisation and the lobbying activity of the utilities began in connection with the case between PreussenElektra and Schleswag. The resulting interactions between the private sector and parts of the Commission, in turn, contributed to a similar attention to EU level in segments of the renewable energy sector that also started organising at the Community level.

More specifically, the formation of RE lobby groups at the EU level was somewhat lagging behind the first supranational initiatives in the RE policy area. Prior to the publication of the Green Paper in 1996, there was almost no lobbying in the area of renewable energy in the EU institutions by either the conventional energy industry or the renewable energy industry. This situation, however, started to change quickly due to the following events. From the mid 1990s, the conflict over the German feed-in law started escalating, gaining a new dimension because of the transfer of the PreusseElectra vs Schleswag case to the EU level. Thereby, the case made visible that the EU could make a significant impact on national regulatory processes in the RE policy area, which served as a strong impetus for interest groups to organise themselves at the EU level, allowing the renewable energy industries from different member states to bring together their limited financial and staff capacities (Hirschl, 2008, pp. 334-335).

The interests of some non-governmental actors in the 2001 Directive pertained to a large extent to the policy issues of support schemes for RE promotion and the harmonisation of the schemes across the EU. As detailed above, the conflict over whether to harmonise support schemes was a long-standing one, beginning prior to the policy-making on the 2001 Directive. Therewith, the legal resolution of the conflict was important for the very survival of some renewable energy producers, whereas for conventional energy producers its importance revolved around the question of additional costs (Hirschl, 2008, pp. 335-336).

3.5 Evaluation of the Time Period

As shown above, several factors can be presumed to be responsible for the initiation of institutional deepening at the EU level in the policy area of renewable energy (which embraces renewable electricity and renewable fuels). Thereby, the very first measures

taken at the EU level to advance the promotion of renewable came in connection with the oil crises; in particular, programmes such as ALTENER and SAVE were put in place. These programmes, however, allowed member states a great degree of freedom respective the deployment of renewable energy sources because the competence for renewable energy policy was left at the national level, as restated in 1988 by the Council in its Communication.

The goal of further liberalisation of energy markets by means of deployment of renewables, as well as the overall goal of strengthening the EU competitiveness globally through liberalisation of the EU internal market also cannot provide an explanation for the opening of the critical juncture at the end of the 1990s on its own. This is because the decade experienced falling prices for fossil fuels. Hence, there was no economic justification for a replacement of oil-based fuels with renewable fuels.

The role of interest groups in the opening of the critical juncture cannot be of any significant importance. Although in the second half of the 1990s RE interest groups started organising at the EU level, this was largely for the purpose of being able to influence the EU impact at the domestic level. This stood in connection with the *Preussen-Electra vs Schleswig* case brought to the ECJ. However, the case has also contributed to the initial efforts by renewable industries at the EU-level presence and lobbying activities. Although the renewable energy industry was most probably in favour of EU-level legislation on RE, the mobilisation at the EU level only started to take shape, when, in 1997 and 1998, the EU institutions began developing an EU-level strategy for renewables, and hence could not have impacted on policy-making processes in the EU institutions.

By contrast to the above, the opening of a critical juncture, which started a process of policy-making in RE policy (on both RES-E and RES-T), can be explained through the reconstruction of a string of events (as a reactive sequence) leading to a permissive condition. This string of events began with the Rio Earth Summit, at which the EU has assumed the role of an environmental leader. The inability to correspond to this role throughout the 1990s led to a growing ‘credibility gap’, which resulted from the failure to agree on a CO₂ tax at the EU level and from the inefficiency of other legal measures (such as ALTENER) that proved insufficient to reduce the GHG emissions of the EU,

as throughout 1990s EU emissions continued to grow. In order to close this credibility gap, the EU had to enact additional emissions-reduction measures in the run-up to and during the Kyoto Protocol negotiations – a RE strategy for the EU, developed toward the 2001 Directive on RES-E and the 2003 Directives on RES-T.

When comparing the relative influence of the EP and the Council on the expansion of the EU competence in the RE area, one can recognise that the former institution had no impact on the beginning of the process. The EP was repetitively calling for the expansion EU-level competence on the type of energy already from beginning 1980s onward, in accordance with its vision of a CO₂-low economy. However, its repetitive calls for Commission's proposals on renewable energy did not lead to any activity on the part of the Commission. The Council, by comparison, started showing interest in the renewable energy at the Community level only in connection with its commitment to the Kyoto Protocol, (while a comparative proposal by the Commission in 1986 to triple RE share by 2000 found lack of support in the Council).

This lack of dedication to the promotion of RE on the EU-level on the part of the Council could only be overcome after becoming perceived as a means of coping with the credibility gap, resulting from the UNFCCC mandate, not supported by any progress in reducing GHG emissions. A closer look at the chronological appearance of EU documents connected to the publishing of the proposals on the future 2001 and 2003 Directives, confirms that. First, it needs to be noted that the results of the TERES II study (recommending 12% RE) were revealed already in the Green Paper of 1996. However, the Council started dealing with renewables only in the context of its preparations to Kyoto Protocol negotiations (held in December 1997), In so doing, it asked the Commission to examine the potential contribution of RE to the implementation of its mandate. The concomitant work undertaken by the Commission was presented in the Communication 'The Energy Dimension of Climate Change (of May 1997) with the result that renewables were attributed a major part (in addition to energy saving measures) in the strategy at CO₂ reduction, other options being judged as largely unavailable at that time.

With the call to scientifically investigate the potentials of RE contribution to CO₂ reduction on the part of the Council, and the subsequent call for proposals, a critical

juncture on EU policy-making in the RE area was opened, Thereby, the structural constraint (permissive condition) responsible for the opening was stemming from the global level of negotiations of a climate regime, which approves the second proposition of the H1. The opening of this critical juncture, as preliminary evaluated here, will be revisited at the end of the next chapter within the broader context of policy-making that has taken place during the critical juncture.

Chapter 4: The 2001/77/EC Directive on the Promotion of Electricity from Renewable Energy Sources

This chapter examines the negotiating process of the Renewable Electricity Directive, agreed in 2001. It starts with an examination of policy-making processes pertinent to the legislative aspects related to targets in the Directive, which are the numerical value of the overall EU target for renewable electricity, the mandatory strength of the target, and the distribution of the overall EU target among member states (also referred to as burden-sharing among member states). Then, the chapter turns to the policy issue of definitions of sources of renewable electricity. The chapter concludes with a summary of the findings and a preliminary evaluation of the overall policy-making processes examined. As is demonstrated by this chapter, the numerical values of the targets were shaped at the beginning of the policy formulation process by the Commission, which in so doing drew strongly on the expertise of epistemic communities and the application of tools for policy formulation. However, in relation to the definitions in the 2001 Directive, member states were of a major influence upon legislative outcomes, their positions being largely dependent on their anticipated costs of implementation of the Directive.

4.1 The Renewable Energy Directive of 2001 – an Overview of Legislative Aspects

According to Werring *et al.* (2006), the content of the 2001 Directive can be viewed as comprising four main parts, related to: 1) targets; 2) support schemes; 3) guarantees of

origin; 4) and to the functioning of the grid system and administrative procedures. The first part of the Directive implies that member states need to establish and meet national RE *targets* in domestic energy consumption and that these targets also need to agree with both Community and national objectives on energy and environmental policy.

Of the above four main parts, the present study focuses on policy-making related to the first one, which covers all of the policy aspects related to the Directive's targets. These are, apart from the overall 10% target for renewable electricity, the distribution of the 10% target for renewable electricity (RES-E) amongst member states (or burden-sharing), the legal strength of these targets (i.e. binding or indicative), and the definitions of renewable energy sources, which stipulate what energy sources can count for the purpose of compliance with the Directive.

As regards targets, the 2001 Directive obliged member states to “take appropriate steps to encourage greater consumption of electricity produced from renewable energy sources in conformity with the national indicative targets referred to in the directive's annex” (Directive, 2001, Art. 3, p. 35). These steps have to be consistent with the EU target of a 12% share of energy consumption and a 22.1% share of electricity consumption from RES. Furthermore, member states were recommended to choose RE goals that would be consistent with their national commitments to the Kyoto Protocol (Jansen, 2003, p. 20).

The above provisions on the target are laid down in Article 3 of the 2001 Directive, which constitutes the *main legal provision* of the document. Article 3, paragraph 2 of the Directive stipulates that member states need to take “appropriate steps” to reach the targets in the annex in addition to the obligation to publish reports⁵⁸ on their plans to achieve the target. The wording “appropriate steps” empowers the Commission to start an infringement proceeding if a member state fails to comply with this provision. More

⁵⁸ Article 3 of the 2001 directive outlines an obligation by every member state to publish two types of report: one of them by October 2002 and every five years thereafter on indicative future targets for the next 10 years, and on the concomitant measures planned or taken toward the targets; another report by October 2003 should analyse the success of meeting the national indicative targets in the context of the member states' climatic conditions possibly impinging on the national commitments to climate change (Jones, 2010, p. 13).

specifically, if a member state submits a report that is deemed by the Commission as inadequate for reaching the target, the Commission can attempt to demonstrate this. Thus, with reference to Article 3(2), the Commission can try to make a member state review its national RE measures and potentially succeed in this, if able to prove that the declared measures are inappropriate to attain the target (Jones, 2010, p. 14). In the course of implementation, some member states have managed to set targets significantly lower than the reference value proposed by the Commission, upon which the Commission made use of the article by successfully launching infringement procedures. However, since the Commission was unable to pursue member states for not attaining their targets, the overall progress in promoting renewables drastically differed amongst member states and was in total insufficient (Van Steen, 2010, p. 45).

4.2 Numerical Value of the Overall EU Target

An overarching target of RE contributing 12% of primary energy, as a share of the EU's gross inland energy consumption by 2010, had already been proposed by the Commission for the first time in 1996. The numerical value of this overall EU target did not undergo any changes during the ensuing years of the policy-making process for the 2001 Directive. The target was announced already in the Green Paper and constituted an approximate doubling of the percentage of RE contribution to EU energy consumption in the late 1990s (European Commission, 1996). The target of 12% was brought forward by a study of 1995 launched by the Commission – 'The European Renewable Energy Study' (TERES II), the aim of which was to assess the energy future of the EU. The study produced a number of scenarios⁵⁹, on the basis of which a figure of between

⁵⁹ Scenarios in policy research constitute quantitative tools used to illustrate the future by means of creating representations of alternative future worlds. "Scenarios are plausible representations of the future based on sets of internationally consistent assumptions about key relationships in a system, processes of change or desired end-states ... the future is pictured through the elaboration of a number of alternative worlds over which social agents may have limited control" (Berkhout *et al.*, 2010, p. 214). Furthermore, scenarios are applied to explore the impacts of different strategies when there is uncertainty regarding future developments pertaining to socio-economic factors and the climate system. "These scenarios can be used in different ways. Firstly, qualitative descriptions (storylines) and quantitative analysis can be used to describe the kind of conditions associated with certain development trajectories. Secondly, one may explore the implications of these scenarios, either in terms of physical impacts (e.g.

9.9% and 12.5% of renewable energy contribution to gross inland energy consumption by 2010' was suggested. The Commission has decided in favour of the upper estimate (Rowlands, 2005, p. 970).

As explained in an interview with McChesney, who held the positions of the Project Manager of the TERES II study and of a researcher affiliated with the ESD Ltd (Energy for Sustainable Development), the Commission, and specifically DG TREN (i.e. DG for Transport and Energy), subcontracted the ESD consultancy to conduct the TERES II study for the various reasons. First, it was necessary to conduct the TERES II study because its predecessor, the TERES study, was only a small desk study. Besides, the predecessor study did not take into account the potential for RE development in the accession states that joined the EU in 2004. Hence, the TERES II aimed at taking into account statistical data on potentials in renewables in the new member states, and, in addition, to make use of updated statistical data that was not available during the time of the TERES study (Interview, McChesney). Besides, the TERES II was regarded as necessary by the Commission *inter alia* because another large study on overall future energy consumption by the EU, 'European Energy to 2020', confirmed that the future development of RE in the EU without further policy support was not likely to make any substantial contribution to EU energy supply (Interview, McChesney).

Besides, an additional smaller study by ESD with the involvement of the Project Manager of TERES II was conducted within the larger study 'European Energy to 2020', and also revealed insufficient take-up of RE by 2010 and 2020 without any additional policy measures. The smaller study titled 'Renewables Unlimited' investigated specifically the development of RE uptake under application of the same assumptions as in the larger study, i.e. with no new policies for RE promotion, apart from the existing ones at that time (Interview, McChesney). As similarly elaborated on by the Commission, the first 'European Energy to 2020' study was initially devised for the energy policy area of the EU and its assumptions respective of future renewable energy growth were not specific enough to develop the RE policy area – the study did not incorporate the impact of different policy measures on RE promotion, planned at EU-level. The study, however, predicted that the future RE share in the EU (under the

change of climate or biodiversity loss) or in terms of costs" (Van Vuuren *et al.*, 2009, p. 54, 59).

assumption of no further policy incentives) would be between 7.4% and 9% by 2020 compared to the existing 6%. This in turn allowed the Commission to come to the conclusion that the predicted “[r]enewable energy market penetrations by 2010 ... cannot but be considered disappointingly low” and that hence new measures for RE promotion are required (European Commission, 1996a, p. 16). To assess what additional policy stimulation for RE was necessary to obtain a larger share in RE consumption within the EU, the Commission decided to sponsor the TERES II study, in which the potential effects of alternative policy initiatives on RE were studied in detail (European Commission, 1997a, p. 7).

Calculation of the Overall EU Target

The exact numerical value of the overall RE target of 12%, that is encompassing RES-E and RES-T, according to the Commission’s documents was arrived at by juxtaposing the predicted EU energy consumption in 2020, on the one hand, and the contribution that RE could make to this future energy demand, on the other. Therewith, the numerical value of 12% is directly related to the results of the ‘European Energy to 2020’ study. More specifically, the former assumption, namely the prediction of how much energy the EU will consume in 2020, was established by the then most recent long-term energy forecast ‘European Energy to 2020’. It constituted a scenario-based approach, conducted to bring more certainty with regard to how the EU energy sector might develop over the following 25 years. In so doing, the study concentrated on how the forces outside the EU, i.e. global markets and the geopolitical strategies of non-EU actors, affect and interact with the EU energy sector. Thus, the scenarios of the study make alternative assumptions about, for instance, a range of variables pertaining to global economic output, rates of growth and their implications for oil prices as well as the concomitant degree of global political cooperation, such as economic integration versus protectionism of regional markets and policy of isolationism (European Commission, 1996a, pp. 15-16).

The energy forecast developed in total four different future energy scenarios – ‘Conventional Wisdom’, ‘Battlefield’, ‘Hypermarket’ and ‘Forum’. The ‘Battlefield’ scenario and the ‘Hypermarket’ scenario, as their names imply, make strongly

contrasting assumptions respective to the degree of potential global economic integration (the former scenario depicting a world in which economic integration is unlikely due to prevalent sentiments of isolationism, protectionism and strengthening of power blocs, whereas the latter scenario picturing a world driven by self-reinforcing dynamics of market forces, liberalism and free trade). By comparison, the other two scenarios differ primarily on the degree of environmental cooperation at the global level. In the 'Conventional Wisdom' scenario, the environmental approach at the global level remains limited in the context of many of the world's unsolved social and economic problems, while the 'Forum' scenario assumes that the world will move to cooperative international structures and hence represents the ecologically driven scenario (European Commission, 1996a, pp. 15-16). More specifically, the 'Conventional Wisdom' scenario depicts:

The "business as usual" world in which economic growth gradually weakens as demographic changes slower growth in the labour force. ... Energy policy under this scenario remains fragmented as a result of unresolved conflicting objectives and the environmental approach stays limited. Energy prices increase smoothly and the price of crude oil reaches 31US\$/bbl in 2020, in real terms. Energy demand proceeds with the continuation of current action taking some concern on increasing efficiency, but nevertheless increases by close to 1% per annum. Under this scenario the renewable energy penetration remains by and large weak and leads to a market share of renewables by 2010 of 7.7% (European Commission, 1996a, p. 15).

Noteworthy (in connection with the evaluation of this section) is that the 'Conventional Wisdom' scenario represents a type of *baseline scenario*. This scenario type is characterised by its purpose of predicting a future under the assumption of a continuation of current trends and is not subjected to any new policy efforts or major feedbacks, e.g. from climate change. Hence, such scenarios are also referred to as 'business-as-usual' scenarios. A baseline scenario conventionally serves the purpose of providing a point of reference for other scenarios, the latter operating with diverse effects of alternative ranges of policy instruments and technologies (Van Vuuren *et al.*, 2009, p. 55, 58).

By comparison to ‘Conventional Wisdom’ scenario, the Renewable energy production increases the most under the assumptions of the “Forum” scenario, amounting to approximately 9% of gross inland energy consumption (with a much stronger pronounced take-up in the period between 2010 and 2020). Under the other three scenarios, the RE contribution remains much more limited – 7.7% (‘Conventional Wisdom’), 7.4% (‘Battlefield’), and 7.5% (‘Hypermarket’) (European Commission, 1996a, pp. 15-16).

Calculation of potential RES Contributions to future EU Energy Demand

By comparison to earlier studies dealt with above, the TERES II not only carried the purpose of investigating specifically the potential of renewables growth in the EU, but also went “further by adding various specific renewable energy policy assumptions to form three additional scenarios” (European Commission, 1997a, p. 7). The three additional scenarios found that a RE contribution of between 9.9% and 12.5% by 2010 to EU energy consumption was possible (European Commission, 1997a, p. 7). When developing the three additional scenarios, the TERES II study built on the ‘Conventional Wisdom’ scenario, formally developed in the ‘European Energy to 2020’ study, which is a pre-Kyoto scenario (European Commission, 1997a, p. 12). Hence the basic underlying assumptions of the scenario, mainly regarding the overall EU energy demand and the rising oil prices, were preserved within the TERES II study (European Commission, 1997a, p. 17).

Overall, the remit of the TERES II study was to assess which policy interventions would be most effective in helping renewable energy reach its highest potential and yield the greatest possible share of EU energy consumption (European Commission, 1997a, p. 17). This remit of the study, along with the fact that TERES II departed from a rather vaguely predetermined policy goal, leads to the conclusion that its scenarios fall into the category of *exploratory* scenarios, in line with its purpose of exploring future developments in the energy sector. Implicitly, the TERES II scenarios do not fall into

the category of *normative* scenarios⁶⁰, which are aimed at finding ways of reaching pre-determined policy goals (Berkhout *et al.*, 2010, p. 215).

One of the three scenarios of the TERES II study – ‘Industrial Policies’ – is based, according to the Commission, on policy initiatives suggested by the European renewable energy industry (including such impacts on a policy as subsidies and fixed buyback rates for RE, the availability of land for energy crops and the internalisation of the external costs of conventional fuels). However, this private sector input had no impact on the Commission’s final choice of the target for the planned legislation because, according to the institution: “the policies proposed by the renewable energy industry to a large extent ... are insufficient”. More specifically, the Commission has judged that “econometric modelling based on these policy assumptions [led] to a predicted forecast of a contribution by renewable energy sources to gross inland energy consumption at of 9.9% by 2010 and of 11.4% by 2020 only” (European Commission, 1996a, p. 17). As specified by the Project Manager of the TERES II study, the data collected for this and the other scenarios of TERES II was provided exclusively by research institutes of member states, which in its turn was obtained by these institutes from domestic industries (Interview, McChesney). An example for such close co-operation between ESD and similar research institutes in member states for the purpose of data supply, is the cooperation between ESD and ZEW (Leibniz-Zentrum für Europäische Wirtschaftsforschung) in Germany. “The task of the ZEW as part of this sub-commissioned project was to deliver comprehensive information on energy policy in Germany as required [by the ESD] for the envisioned scenario projections” (ZEW, 2017).

The next scenario, called ‘ExterNe Internalisation’, based on the Commission's exercise undertaken under the same name, predicted only moderate growth of RE, assuming that “all external costs of convention fuel cycles are internalised” (European Commission,

⁶⁰ Scenarios, as an approach to policy research, may be *exploratory* or *normative*. “Normative scenario planning, sometimes referred to as backcasting, starts with preferred versions of the future, and explores how they could be reached. Exploratory scenario approaches take past trends as their starting point” (Berkhout *et al.*, 2010, p. 215). This latter scenario type starts out with some assumptions about key variables that are shaping future (policy) developments and then aims at constructing plausible representations of the future (Berkhout *et al.*, 2010, p. 215).

1996a, p. 17). The underlying logic of this scenario is, therefore, very close to the common approach of conceptualising the problem of global warming in the area of EU climate change policy. The problem of global warming is perceived to be a result of the failure of energy markets to internalise the externality of greenhouse gas emissions and the costs of environmental damage⁶¹ (Berkhout *et al.*, 2010, p. 244). As admitted by McChesney, that this type of scenario building, being as such a cost-benefit analysis, was not well developed at that time and hence produced rather general results (Interview, McChesney).

Only the ‘Best Practice Policies’ scenario, according to the Commission, yielded the entire 12% in RE of gross inland energy consumption by 2010, perceived as an ambitious but achievable target. Such a rapid development in RE was expected under the assumption that “the policies that have been most effective to date in promoting the use of renewable energy sources are applied EU-wide” (European Commission, 1996a, p. 18).

The essence of the combined results of the two studies, ‘European Energy to 2020’ and TERES II, can be distilled to the prediction that overall EU energy demand is likely to grow significantly between 2010 and 2020, while ‘Best Practice Policies’ of member states to date, which can result into the RE share of 12%, were considered the most preferential to achieve significant RE market penetration by 2010 (European Commission, 1996a, pp. 18-19). Therefore, the entire explanation of a particular numerical target for the overall EU’s RE share emphasised the role of renewables as a partial remedy to the challenge of security of energy supply to the EU.

The ESD was chosen to work under contract by the Commission during a time period of rising oil prices. Partly due to high oil prices, the main issues of concern for the Commission were related primarily to the security of energy supply, such as:

[W]here the energy [for Europe] will come from, the price that we can afford to pay [for energy]. ... And how does liberalisation affect that. So, it

⁶¹ However, as acknowledged by Berkhout *et al.* (2010, p. 144), the EU is a relatively small contributor to the externality of global climate change, having contributed about 11% in 2006. Therefore, a unilateral EU climate policy is considered to be ineffective in addressing the global challenge of climate change.

was more of a land-use and energy-markets issue. Climate change was not considered that significant really [in the modelling exercise] (Interview, McChesney).

When subcontracting ESD with the TERES II study, the Commission officials made clear that they wanted specifically the SAFIRE (Strategic Assessment Framework for the Implementation of Rational Energy market penetration) model to be employed in the modelling exercise⁶². The SAFIRE model was developed by ESD, based in the UK, and was the only computer model forecasting scenarios on a liberalising energy market. In other words, the Commission was determined to employ specifically the SAFIRE model in the modelling exercise because it was the only alternative available at that time that allowed for an analysis of alternative developments on a *decentralised energy market*. Because the ESD devised the SAFIRE model and was the only consultancy working with this model at that time, the Commission made the choice to subcontract EDS to conduct the TERES II study (Interview, McChesney).

By contrast, and the apparent alternative to the SAFIRE model – the popular at that time MARKAL model⁶³ – was designed to predict developments in a centralised energy market (that is dominated by conventional government-owned energy producers, whereas a decentralised market would occur in the process of liberalisation of energy markets and would allow smaller energy producers, such as RE producers, to compete on the market). In line with the specific characteristics of the model, “the focus of SAFIRE modelling was on electricity markets; and when it came to transport fuels, ... the modellers only had some simple routines for projecting the [future] amount of biodiesel and ... of set-aside land” (Interview, McChesney). More specifically, the

⁶² “SAFIRE is a highly sophisticated database and computer model that contains, among others, country-specific databases with information on energy demand by sector, energy prices, technology costs and renewable energy resources available” (European Commission, 2000c, p. 25).

⁶³ The early development of the MARKAL model took place during the late 1970s amongst others through the involvement of scientists from the UK Atomic Energy Authority. The model was completely reconfigured and updated in the early 1990s in order to underpin an appraisal of energy technologies and of associated Research and Development programmes. The use of the model was until 2005 restricted to government agencies or consultancies working under contract for government (Upham *et al.*, 2015, p. 248).

penetration of biofuels was estimated as strongly dependent on tax relief for biofuels. In addition, the simplicity of rules for dealing with biofuels promotion did not allow for an estimate of potential indirect land-use change caused by growing biofuels consumption; this is because negative emissions from biofuels were largely unknown at that time (Interview, McChesney).

In addition, the Commission wanted to know what potential energy market developments, influenced by a growing RE share, would mean for providing subsidies to other types of energy. By and large, the Commission was concerned with the economic implications of renewables promotion, climate change implications not playing a significant role in this modelling exercise (Interview, McChesney).

With regard to the evaluation of the results of the modelling exercise, it was the Commission officials who made the choice of a particular numerical target value for RE from within the ones suggested by the modelling exercise. Hence, the role of the modellers was only consultative and impartial in the process of selecting the target's numerical value (Interview, McChesney). As already mentioned, the Commission was presented with the finding of the TERES II that between 9.9% and 12.5% by 2010 to EU energy consumption was possible (European Commission, 1997a, p. 7).

The Target of 12% in Ensuing Legislation on Renewable Energy

After being established scientifically, the target of 12 % was first presented in the Green Paper (Jones, 2010, p. 11). The ensuing White Paper simply restated the target of 12%, but at the same time also provided a target for renewable *electricity* (RES-E) – from the existing 14.3% at the beginning of 1990s to 23.5% by 2010 (Commission, 1997a, p. 43). Annex II of the paper assesses the contribution that various RE types could make toward achieving the cumulative objective of a 12% of renewables share (European Commission, 1997a, p. 37; Annex II).

The 12% target was subsequently endorsed by the Council in its Resolution of June 1997. The Resolution referred to the target as a useful guidance for the Community and member states' efforts toward more renewable energy. The European Parliament

endorsed the measure and even exceeded the ambition of the Commission by proposing a target of 15% by 2010, additionally calling upon the Commission to devise specific RE measures (Jones, 2010, pp. 11-12).

The figure for RES-E was simply copied from the White Paper into the Proposal of the 2001 Directive and in so doing recalled that in the White paper the “12% share of total renewable energy ... has been translated into a specific share for the consumption of electricity produced from renewable energy sources of 22.1%”; while the downward adjustment of the figure, from 23.5% to 22.1% for RES-E was a result of the Commission’s updated and hence lowered estimate of total EU electricity consumption in 2010 (European Commission, 2000c, p. 3). As is elaborated on further in the next section, the overall target was decreased once again in connection with changes in some individual targets for old and new member states.

Evaluation – Numerical Value of the Overall EU Target

The section above shows that it was the Commission’s cooperation with modellers from EDS and its access to national data, as well as decisive choices made during the policy formulation process, that brought about the numerical values of the two targets (for RE of 12% and RES-E of 22,1%). This also means that the Commission at this stage of the policy cycle was the only EU institution responsible for making decisions that could have influenced the results of the modelling exercise and therewith the numerical value of the overall EU target.

To examine the role of the Commission, and any other potential actors, at this stage in the policy cycle in more detail, it is necessary to evaluate its influence at each single step in the policy formulation process. This allows for a better understanding of the sources of influence and rationale behind them respective single decisions made in connection with the modelling exercise.

As discussed in the previous chapter, the process of policy-formulation under application of PFTs can be subdivided into five steps, the first step being *problem characterisation*. This step carries the purpose of establishing the existence of a policy

problem (or problems) by means of collection of data and evidence, which justifies the necessity of dealing with the problem.

This initial stage of problem characterisation was formulated exclusively by the Commission, by means of evaluating the EU energy demand forecast by 2020 (with the help of ‘European Energy to 2020’ study) and the potential of renewables to contribute to the EU energy supply (explored in ‘Renewables Unlimited’ and the TERES studies). This allowed the Commission to identify the policy problem as the lack of penetration of RE on the EU market despite growing energy demand of the EU (i.e. in the context of growing discrepancy of energy demand and supply of the EU). Hence, the very necessity of exploring the potential contribution of renewable energy to the overall EU energy consumption, and hence of conducting the TERES II, came from the anticipated shortages in EU energy supply.

The second step of *problem evaluation* casts light on the underlying causes of the problem and on the extent of the problem. This step also involves the choice of specific tools for policy formulation to be applied in the next steps of policy-formulation.

The sources of the policy problem could be further assessed when zooming on the factors examined in relation to the future EU energy demand and supply. Thus, the anticipated shortages in EU energy supply were demonstrated by the ‘European Energy to 2020’, by juxtaposing the domestic energy demand and the domestic and external energy supply to the EU by 2020. Thereby, the scope of the challenge of future energy demand was assessed as being partly dependent on the ‘global context’, e.g. global demand in fossil fuels and global oil price developments, and could demonstrate strong structural pressure on the EU to develop new policies in response to anticipated energy shortages. More specifically, the type of this external structural pressure (which can be theorized as a permissive condition within the critical juncture framework) helps explain more generally why the policy-making process on renewables promotion at the EU level was launched, resulting preliminary in establishing the percentage of renewables contribution to the overall energy consumption in the EU. As regards the future role of renewables in the overall energy mix of the EU, even also charged as insufficient because of the lack of strong policy measures aimed at renewables promotion in member states.

The choice of particular policy formulation tools to estimate future RE growth within a decentralised market, was equally made by the Commission, but as a reaction to a past choice (or an antecedent condition) of the liberalisation of the EU energy market. This antecedent condition was decisive for the Commission's decision to employ a particular computer model, namely SAFIRE, because it was the only model capable of reconstructing processes on a liberalising energy market. The Commission needed to account for the process of energy market liberalisation, and consequently had to make the choice in favour of this computer model. As a consequence, the EU institution had else to opt for the UK-based ESD as its subcontractor to conduct the TERES II, because the ESD modellers invented the model and were the only modellers working with this computer model at the time of policy-formulation of legislation in question.

At the same time, he needs to be mentioned that the choice of SAFIRE computer model and was in line with the Commission's own intended future shape of the energy market, which is a liberalised market. Hence, the choice of a particular computer model was made at this stage by the Commission in compliance with its own plans for and efforts at the realisation of market liberalisation. In addition, the specification that the modelling exercise should be run on the SAFIRE model, to estimate future RE growth within a decentralised market, was equally made by the Commission.

While some conditions in their impact on the results on TERESII study's stemmed from longer-term developments, there was also some space for the Commission to set the *remit* of the study and thus partially determine how the study was conducted. This was achieved by the Commission in the third step of *specification of objectives*, which aims at clarifying the policy objectives to be met and to set the timescales for policy action.

The purpose of the study was presented by the Commission to the modellers in the following way. First of all, the exploration of renewables promotion had to be conducted, according to the Commission, as a contribution to security of energy supply, and by implication the EU global competitiveness, but not at any cost. Thereby, the affordability of renewable energy was of major concern for the Commission. Especially the context of the high oil prices at the time of outsourcing of this study to the ESD made the Commission worry about how the oil prices will developed and whether the

costs of renewables promotion would make sense when taking into account the potentially rising oil prices of the future. Further economic concerns by the Commission were related to the role of liberalisation of energy markets and of the land use on stimulation of renewables,

The primary preoccupation by the Commission with the economic variables can also be exemplified with its concern about how renewables promotion would affect other energy players respective their market well-being and the amounts of subsidies they will require if renewables take up as anticipated in the study. In addition, it was important for the institution to estimate the employment benefits from potential renewables growth, i.e. in the RE sector and the related sectors.

By contrast, climate change was not presented to the ESD as a significant topic of enquiry within the modelling exercise by the Commission. Hence, the savings of CO₂ did not feature as important in the TERES II study; this can be further corroborated by the following considerations. Firstly, the Commission took the decision not to address the question of potential CO₂ emissions of different renewable sources, despite being aware that not all renewables are CO₂ neutral. Specifically, the Commission clearly pronounced in some of its documents that a life-cycle assessment of different types of biomass is necessary to ensure the CO₂-positive effect of the energy source. At the same time, biomass was expected to deliver by far the greatest RE share of overall EU energy consumption – 8,5% in biomass of the 11,5% of total RE consumption of the EU, biomass being followed by a distant second RE type – hydropower, the future contribution of which was predicted to amount to only 1,93% (European Commission, 1997a, p. 49).

The *assessment of policy options*, being the fourth step, revolves around the comparison of different policy options and the selection of the ones that are presented in the draft of the policy Proposal of a piece of legislation. After conducting the modelling exercise, the results of all the three scenarios were presented by the ESD to the Commission. Thereby, no recommendations on the part of the ESD as regards policy option were made. That is, the ESD scientists, who ran the modelling exercise, abstained from expressing their opinions on best policy solutions from among the range of choices that they came up with. Thus, the choice of the 12% target as an overall target for renewable

energy consumption in the EU by 2010, and this by means of the best policy options in member states, was taken exclusively by the Commission. In so doing, the EU institution adhered to its initial intention (in line with exploratory scenarios in the study) to find policy options which would yield to a maximum share in renewable energy by 2010. (The fifth step of *policy design* involves selecting policy instruments, and can involve a modelling exercise; the step takes place before the adaptation of the final policy and lays outside of the empirical scope of this research.)

In addition to the above processes, to fully examine the influence of the Commission upon the overall target, one also needs to take into account the fact that the only legally binding provision of the 2001 Directive relates to national targets in *electricity* consumption. Thus, the key legal power of the Directive is concentrated in Article 3 that concerns the challengeable nature of national measures for reaching the RES-E target. At the same time, this target in electricity consumption was never approved by the Council or the EP. Their endorsement applied only to the overall 12% target in renewable *energy* as proposed in the Green Paper, while the dissipation of the 12% into two targets – one for electricity and another for biofuels – was first mentioned in the ensuing White Paper and was undertaken by the Commission.

However, the influence by the Commission was not the only source of influence on the modelling exercise as many aspects of the modelling exercise were predetermined by structural pressures, and specifically by *antecedent conditions* (conditions that start operating before opening of a critical juncture, but shape policy processes during the critical juncture, as theorised within the frame of this study's theoretical framework). That is, a range of assumptions was made in the modelling exercise pertained to past historic choices and their contemporary and anticipated future effect on the functioning of the EU energy markets and implicitly on the potential of renewables uptake.

First, the nearing EU enlargement had to be taken into account in the TERES II study and the RE potentials of new member states had to be added to the ones by old member states, which was omitted by preceding studies, and which was one of the reasons for why conducting TERES II, in addition to the TERES study, became necessary.

Besides, the extrapolation of past and contemporary trends into the future within the modelling exercise played an important role because of the type of scenarios which were at the core of the modelling exercise. First, TERES II study was built on the ‘Conventional Wisdom’ scenario (borrowed from the ‘European Energy to 2020’), by incorporating its assumptions on EU-internal and EU-external factors shaping the EU energy demand. Thereby, the ‘Conventional Wisdom’ scenario is a so-called ‘business as usual’ scenario, distinguished through extrapolation of contemporary trends into the future, under the assumption of no major alterations in these trends. By the same token, the ‘Best Practice Policies’ scenario is working with already existing policies in member states, this way forecasting into the future a development of existing policy frameworks for RE in member states. This particular choice of scenarios, as the ones yielding the final choice of targets, also shows that the private sector made no impact on the choice of the targets since its contribution was restricted to other scenarios, which yielded numerical values other than 12%, and was regarded by the Commission as not the optimal way of promoting renewables.

To sum up, I argue that the overall numerical value of the EU renewable electricity targets was established by the Commission as a means to ensure the competitiveness of the EU as a market area. This is because the stages of policy characterization and problem evaluation revolve around the increasing discrepancy between EU energy demand and supply, while the renewables as a remedy to this challenge were analysed under various economic aspects, with the aim of finding most economically-effective policy goals and approaches on the EU energy market, in its current and future shape. This is why H3/1 can be validated. This implies that the H3/2 is invalidated because climate change played no role at this stage of policy formulation.

The remaining important assumptions within the modelling exercise pertained to a number of past or historic choices on the functioning of the EU, such as the liberalisation of EU markets and the enlargement of 2004. That is, the model (SAFIRE) and the consultancy working with it were chosen to incorporate for the dynamics of the liberalisation of EU energy market into the modelling exercise. This additionally validates H2/2.

4.3 Numerical Values of Individual Targets for the Member States

As discussed in the next section, due to the pressure by member states, the targets of the 2001 Directive were not binding, but only indicative. Nevertheless, the question of how to distribute the burden-sharing of the overall EU target amongst member states did carry a particular legislative weight. Hence, the numerical values of individual targets assigned to member states by the Commission were the subject of discussion and partial amendment during the policy-making process.

The agreement that *individual* targets were the appropriate means to achieve the EU RE goal had already been reached during the early stages of the policy-making process. As a reaction to the Green Paper, the EU institutions submitted detailed comments on the paper's elaboration on the renewable energy strategy, in which both the EP and the Council opted for individual targets⁶⁴. In response, the Commission introduced individual targets for renewable electricity for each member state in its Proposal for the Directive. The values of these targets started as low as 5.7% for Luxembourg, up to 78.1% for Austria (European Commission, 2000c, Annex).

The process of calculating individual targets in the Commission started after the publication of the White Paper in 1997, so that the individual targets for member states were first presented in the Draft Directive (Voogt *et al.*, 2001, p. 19). When explaining its approach to establishing single targets, the Commission emphasised the salience of "technological and economic potentials in each Member State" as variables in target calculations (European Commission, 2000c, p. 25). Besides, according to the Commission, for the purpose of the calculation, the "latest existing Member States targets and policies" have been used as reference (Rowlands, 2005, p. 969). Specifically, in the first step of the calculation procedure, the Commission assessed the existing targets in member states and concluded that "they are not sufficiently ambitious to reach collectively the overall 12% objective, or the specific RES-E share" (European

⁶⁴ In its Resolution, the Council is not just reaffirming the aim of sustainable economic growth, but also urges its member states and the EU level to establish individual targets for member states. The European Parliament comes to a similar conclusion, emphasising great environmental and economic benefits of RE promotion and calls in its Resolution on the Commission to stipulate single targets for member states (European Commission, 2000c, p. 8).

Commission, 2000c, Annex). To establish the individual targets, the Commission used the SAFIRE energy model, already applied in the TERES II study. “For this exercise, SAFIRE has been run on a country by country basis for the 15 EU countries”, using the ‘Best Practice Policies’ scenario of the TERES II study, “which is the scenario that lies behind the 12% objective of the White Paper” (European Commission, 2000c, Annex). Eurostat provided the latest data for this exercise (on gross electricity consumption and recent technological developments, e.g. progress in wind energy technologies and market penetration curves) that was employed along with the figures from the ‘Conventional Wisdom’ scenario (European Commission, 2000c, Annex).

Three member states, however, perceived the targets assigned to them by the Commission as too high and managed to readjust them – Finland managed to lower its target from 35.0% to 31.5%, the Netherlands from 12.0% to 9.0%, and Portugal from 45.6% to 39.0%. The lowering of these targets amounted in sum to a decrease in the overall EU target in RES-E consumption, the new one constituting 21.7% (Rowlands, 2005, p. 969). The overall effect from the reduction of the indicative targets for these member states totalled in lowering the EU targets from 22.1% to 21.7% (which equals a reduction from 675 TWh to 662 TWh) (Voogt *et al.*, 2001, p. 22). The cuts in targets took place during the negotiations of the Commission’s Draft in the Council led by Ministers of Energy, with the result that three new targets advocated by member states found an entry in the adopted 2001 Directive (Rowlands, 2005, p. 969).

The rest of the targets were taken over from the Commission’s Draft Directive. Thus, although the Commission was unilaterally responsible for the calculation of these targets, they remained largely unchallenged by all the other member states, disregarding the fact that the new targets were higher than the ones declared by member states themselves. Besides, for many observers of the negotiations the issue of national targets appeared an obscure one since many at that time were “curious as to how the Commission calculated the national targets, for no particular formulae, or rigorous presentation of decision-making processes” were revealed during the negotiating process (Rowlands, 2005, p. 970).

Resulting from the decision-making above, the Directive stipulated individual national targets, featured in detail in the Annex of the 2001 Directive (Directive, 2001).

Individual targets amounted in total to the EU-wide goal of 22,1% share in renewable electricity consumption, which is a partial target of the overall indicative RE target of 12% by 2010 in the EU-15 (Jansen and Uytterlinde, 2004, p. 98).

The RES-E target was once again readjusted in 2004 to 21% as a consequence of the 2004 EU enlargement (Jansen and Uytterlinde, 2004, p. 98). In the course of the accession negotiations of the ten countries, the new members committed to similar RES-E targets, the numerical values of which was within the range of 7.5% for Poland and 49.3% for Latvia. Their targets were determined in the negotiations of the Accession Treaties and were published therein. Thus, for the EU-25 the overall target of the Union was adjusted downwards, incorporating the share of new member states to 21% (Jones, 2010, p. 13; Jansen and Uytterlinde, 2004, p. 98). Thereby, the targets for new member states were negotiated bilaterally with the Commission before the accession (Werring *et al.*, 2006, p. 26).

In the bilateral negotiations with the Commission, some accession states simply accepted their new RES commitments. Thus, Lithuania, Latvia and Estonia verified their targets in the accession agreement with the EU (Lithuania's target implied an increase in RES-E from 3.3 to 7%, Latvia — from 42.4 to 49.3%, and Estonia — from 0.2 to 5.1%) (Streimikiene and Klevas, 2007, p. 672). The accession negotiations with the Czech Republic, by contrast, offered an example of an accession state seeking to lower its target. Hence, the negotiations for the target for 2010 with the Czech Republic were complex and resulted in the acceptance of 8% in RES-E on the part of the accession state. Importantly, the justification for a lower target by representatives of the Czech Republic pertained to two factors: “the existing and relatively low share of electricity produced from renewable sources (3.15% of gross electricity generation in the year 2000)”, and “the low predicted expansion of electricity generation from renewable energy sources” (Sivek *et al.*, 2012, pp. 469-470). Given the fact that the target for renewable fuels (RES-F) was invariably 10% for all member states, the lowering of the RE target for the Czech Republic yielded a slight downward adjustment of the overall EU target in renewable electricity.

The above section illustrates that a single legislative aspect, in this case, individual targets for member states, was shaped jointly by two actors of the EU – the legislative outcome, preconceived by the Commission, was altered slightly in accordance with the interests of member states (both old and new). This took place during the negotiations of the Directive by the old member states, and during the negotiations of the Accession Treaty by the new ones.

As is shown in the above section, the policy issue of individual targets was shaped primarily by the Commission. Thereby, the primary concern of the Commission with the competitiveness of the EU as an economic area was the underlying rationale behind calculating individual targets, in the same way as it determined the numerical value of the overall target (see the previous section). That is, to calculate individual targets, the Commission run the SAFIRE energy model, which is same model as the one employed in the TERES II study. This time the computer model was run on a country by country basis. However, it was using the assumptions of the ‘Best Practice Policies’ scenario and the ‘Conventional Wisdom’ scenario, i.e. the same assumptions as the ones underlying the TERES II study. Besides, when modelling the distribution of the overall target, particular importance was attributed to the two variables, namely technological and economic potentials in each member state. In line with this, the latest data, provided by Eurostat and fed into the modelling exercise, was on gross electricity consumption and recent technological developments in member states, such as progress in technological development and market penetration curves by renewables.

The above shows that the overall rationale by the Commission as regards its approach to calculation of individual targets for member states was the same the one behind the calculation of the overall target, the same computer model being applied and the same assumptions being used, which validates H3/1.

A countervailing force to the Commission’s strong impact of the policy issue of burden-sharing came from within the Council. Three national targets were adjusted downward during the negotiations of the Directive. A similar development took place in the negotiations of the Accession Treaties, reducing the overall target once again. These adjustments, initiated by old and new member states *in toto* were, however, non-

significant, accounting in sum for only 1.1% (from 22.1% to 21%) of the EU overall target. Thereby, the rationale for the adjustment of the targets on the part of single member states pertains to a difference between their self-assessed national renewables potentials and the ones estimated at by the Commission. Thus, the EU-level anticipated policy developments were interpreted by some member states as too demanding, and thus overburdening these member states by comparison to other member states, if left unaddressed. Thereby, only the assumptions underlying the modelling exercise were challenged and not the modelling exercise itself. In order to avoid these disproportionately high costs of policy implementation, the Commission-estimated potentials could be successfully challenged by member states, with the result of lowering of target in single cases. This underlying the logic of policy preference formation on the part of member states aimed at the lowering of the costs of EU-level policy implementation validates H4/1.

4.4 Binding or Indicative Targets of Member States

Turning to the issue of decision-making regarding the legal strength of the targets, (i.e. either binding or indicative), it is notable that initially the Commission initially preferred binding targets. This attitude was expressed in its first Draft by stating that binding targets possess the advantage of accelerating the achievement of 12% RE production and hence can substantially contribute toward the attainment of the EU's Kyoto Protocol commitments. Thus, the Commission was trying to establish targets that would be stronger than just indicative, but at the same time would not compromise extensive flexibility of implementation on the part of member states (Rowlands, 2005, p. 969). This would allow member states, "in the light of national circumstances, to identify the strategy best suitable to achieve their climate change commitments and, if necessary, to adapt the strategy in the light of future developments" (European Commission, 2000c, p. 4).

The attitude of the Council toward the RE targets was characterised by its preference for indicative targets, which was expressed already in its reaction to the Green Paper in its Resolution. The assumed position hence contrasted strongly with the one by the Parliament which had expressed a clear preference for binding commitments to the

targets (Hirschl, 2008, pp. 344-345). During the time of the Directive negotiations, the position by the Council in favour of indicative targets was restated in March 1999. It was formulated by energy ministers, convened by the German Council Presidency that began in January 1999 and discussed the Commission's policy ideas on the Directive. The ministers almost unilaterally, except for Denmark, agreed that they would not approve binding targets. This decision was a signal against the Proposal by the Commission that suggested the highest strength of targets (Hirschl, 2008, p. 348).

In this way, the Commission's initial endorsement of binding targets in the Proposal met harsh opposition on the part of almost all member states. In the face of this opposition, the Commissioner responsible for the Directive, Loyola de Palacio, saw herself forced to give up binding targets, despite her personal preference for those. Indeed, all member states, apart from Denmark and later on Germany, were in favour of indicative targets. Thus, virtually all ministers in the Council exerted pressure on the Commissioner (Lauber, 2005, p. 45).

With the above position in the Council, the major conflict line in the discussion of the Draft was drawn between the Council and the Parliament (Rowlands, 2005, p. 970). The two institutions held opposing positions on the strength of the targets. Thus, the Parliament in its Report from the first reading in November 2000 demanded an extensive number of amendments, one of the amendments in favour of binding targets. The Commission had amended its Proposal upon the first reading in the Parliament and the Council, already by 28 December 2000. The amended Proposal incorporated only a small number of amendments by the Parliament, while the Common Position by the Council was recognised as a basis for further debate. For example, the legal strength of binding targets, strongly endorsed by the Parliament, was rejected by the Commission (Hirschl, 2008, pp. 366-367, p. 369).

In its second reading, the Parliament decided to continue supporting binding targets. Moreover, rapporteur Rothe was very active in trying to persuade single member states in the Council of the Parliament's positions. This attempt was successful to an extent, in that, under the impact of her lobbying Germany altered its view and joined Denmark in its preference for binding targets. The change in Germany's position toward approving binding targets did not, however, affect the legislative outcome on the issue, indicative

targets being approved in the end. Yet, the new position held by Germany managed to secure the possibility of a future revision of the legal strength of the targets by the Commission – it was agreed that such a Proposal on the revision of the targets’ strength could be submitted on the basis of the monitoring of the success of the targets’ implementation (Hirschl, 2008, p. 371).

The indicative nature of individual targets was further reinforced by member states in the part of the Directive dedicated to notes associated with the individual targets of member states. Therein six of the fifteen member states commented on their ability to reach the target. Several of these comments stressed the fact that their targets are a function of the overall national electricity demand and declared that their ability to reach the targets assigned by the Commission dependent on whether the current estimates of their future gross energy consumption in 2010 (and other factors such as weather conditions) will be confirmed (European Commission, 2001a, pp. 39-40). In other words, if the future final consumption in a member state deviates from the assumption, the assigned national RES-E target will be changed accordingly by a member state⁶⁵ (Voogt *et al.*, 2001, p. 22).

In conclusion, the Council retained the upper hand with regard to the policy issue in question since the wording in the final version of the 2001 Directive confirms the mode of indicative targets assigned to member states (Rowlands, 2005, p. 970). As summed up by Lauber (2012), the Directive in its final shape commits member states to indicative targets (Art. 3), member states only being required to take appropriate steps toward the targets and to document their efforts in regular reports. The Commission shall evaluate the reports and if found that “member states fail to live up to their targets without valid reasons, it shall make appropriate proposals which may include mandatory targets” Lauber (2012, p. 207).

⁶⁵ “The indicative targets are directly linked to the electricity consumption in each member state. They are specified as a proportion of gross electricity consumption Owing to the ‘proportional’ specification of the targets, the actual RES-E consumption required in 2010 is variable since it is dependent upon the actual consumption achieved in this market year. Therefore, electricity saving activities will reduce the total commitment for RES-E. Consequently, this will provide an added incentive through reducing the total development costs of RES-E, in particular for those countries that are net RES-E importers” (Voogt *et al.*, 2001, p. 22).

The Legal Implications of Individual Targets

The legal implications of individual targets are not the same for the old member states (EU-15) and the new ones, constituting the group of ten that joined the EU in 2004. As elaborated on below, the new member states' commitment to RES-E is more binding than the similar commitments by old member states.

The exact obligations of the Directive regarding individual targets for old member states are found in the final version of the Directive, Article 3. The article provides that all member states are "to set themselves national indicative targets" (Werring *et al.*, 2006, p. 24). Despite the decision that member states are allowed to choose and set themselves their national targets, it is noteworthy that Article 3 still obliges member states to establish targets that are conform with the individual targets of the Annex of the 2001 Directive, and that these targets are notified to the Commission. Hence, the Annex "lays down a clear obligation for Member States to make an effort to meet the target"; thereby, Article 3 serves as a "general obligation that these reference values are taken seriously by the Member States and that they clearly feel a commitment to them" (Werring *et al.*, 2006, p. 24). Thus, the first paragraph of Article 3 mandates that member states are under a clear obligation to make an effort to meet the targets (Werring *et al.* 2006, p. 24). Moreover, in the event that member states substantially deviate from indicative targets with respect to their legal transfer into national law and their implementation, they will have to expect binding targets as the outcome of the new round of legislation in the policy sector of renewable energy⁶⁶ (Werring *et al.*, 2006, pp. 26-27).

By contrast to the old member states, the ten accession-states of the 2004 enlargement, could not set their targets themselves, i.e. their target values could not be treated as reference values, but as values to be transposed into national legislation unchanged.

⁶⁶ More precisely, "[i]n the recital 7 and the articles 3(3) and 3(4) extra safeguards have been introduced on two aspects via a reporting mechanism, notably that Member States achieved their targets and that these targets are high enough. Moreover there is a clear indication that the Commission (supported by the European Parliament) will come forward with more binding proposals if the result of these assessments is not satisfactory" (Werring *et al.*, 2006, pp. 26-27).

This, by implication, freed them from the obligation of notifying the nationally set targets to the Commission, in accordance with Article 3(2) (Werring *et al.*, 2006, p. 26).

Evaluation – Legal Strength of Individual Targets for the Member States

While the Commission was mainly responsible for setting the numerical values of national and overall EU-level targets (see the previous sections), another characteristic of national targets – their legal strength – was determined by the Council. Even though the overall idea of the Green Paper by the Commission to impose individual national targets was applauded by both the Council and the Parliament, their opinions diverged over whether the targets should be mandatory or indicative. While the Parliament was trying to establish mandatory targets and the Commission failed to develop a strong stance on the issue, the Council almost overwhelmingly rejected a binding commitment to individual targets. The opposition on this issue from the Parliament managed to materialise only indirectly, by achieving a legal grounding for new legislative Proposal, implying a possible future revision of the targets' strength in the case of non-compliance.

The Council's position on the issue in the negotiations of the Directive cannot be discussed in isolation from the policy issue of the numerical values of individual targets, dealt with in the previous section, where it was demonstrated that the Commission's targets were in the majority of cases higher than the self-declared ones. However, even after the slight reduction of a small number of individual targets, the Directive still presented, according to Reiche and Bechberger (2004), a great challenge for all member states. Even the frontrunners had to improve their RE-performance considerably. Thus, for example, “[t]he required increase for Portugal seems very small; this [was], however, a significant challenge since the electrical consumption [was] expected to grow by more than five per cent each year” (Reiche and Bechberger, 2004, p. 16). In Greece, Ireland and Spain, the electricity demand was also still rising at the time. While in member states like Austria, electricity markets were characterised by stagnation and overcapacity (Reiche and Bechberger, 2004, p. 16).

The fact that Denmark and Germany were home to the largest RE equipment manufacturing industries in the EU (Rusche, 2015) can explain their deviation from the common position in the Council. That is, both member states would profit from highest legal strength of targets across the EU as suppliers of RE equipment, the demand in equipment growing because of binding EU-level commitments. This way, the economic gains from export of RE equipment would most probably outweigh the costs of implementation of binding legislation in these two member states would. Admittedly, the theoretical framework applied in this study cannot fully explain why Germany was not in favour of binding targets from the beginning of the policy-making process; (however, it is possible that the overall economic gains by Germany were found to be insignificant, losses underweighting only slightly).

The Council's opposition to binding targets has reached its highest expression in the comments provided by some of the member states, who tried to strengthen the indicative character of their national targets, and even to reduce their legal strength to reference values under certain circumstances. Thereby, these comments clearly state that the member states were concerned with the efforts of implementation of the EU Directive, trying to prevent excessive costs, which would result from the readjustment of national approaches to electricity generation to meet the targets, which corroborates H4/1 in particular in the case of the commenting member states.

The new member states had, however, much weaker leverage in the negotiations of the individual targets with the Commission by comparison with old member states. This is due to the rules by the Accession Treaty, according to which the applicant states need to adopt the *acquis communautaire* of the EU in its entirety. Hence, the margin for challenging existing EU legislation was rather small for new entrants, and the nexus of the targets' numerical values and their legal character was largely accepted in the form in which they were previously accepted by the old member states in the Directive's negotiations. Besides, due to the weak position of the new member states *vis-à-vis* the Commission in the negotiations of the accession, their targets became more binding than the ones for the EU-15. Thus, the result of the accession negotiations in connection with the legal strength of targets can be explained by means of *institutional constraints* in form of the EU accession rules faced by new member states.

4.5 Definition of Biomass

The definition of renewable energy constituted another point of dispute between member states and EU supranational institutions. The disagreement was most clearly pronounced as regards agreeing on definitions for two types of renewable energy sources – biomass and hydropower – in connection with how encompassing the definitions should be, e.g. either excluding or including particular types of biomass and types of hydropower installations (de Lovinfosse, 2008, p. 74). These considerations, as shown in this section, relate in turn to, first, the flexibility on the part of member states to meet their targets and, second, to their competence in granting support to renewable energy producers in agreement with environmental state aid.

More specifically, the definitions applied in the 2001 Directive subsequently played a major role in the implementation of the Directive in member states for three reasons. Firstly, renewable energy sources, and in particular electricity from renewable sources, is subsidised in many member states, being eligible for public support and environmental state aid, while the guidelines for the latter are issued by the Commission with reference to the definitions in the Directive, Article 2. Secondly, the definitions formulated for this piece of legislation have found an entry in several other pieces of legislation agreed at the EU level; implicitly, the calculation of member states' targets in fulfilment of the objectives of the 2001 Directive, and other directives applying the same definitions, takes place in reliance of these definitions⁶⁷.

In the 2001 Directive, biomass is defined as a renewable source of energy, being listed in the definition which encompasses different types of 'renewable sources of energy' (Directive, 2001). The definition of 'renewable sources of energy' is a generic one, meaning that it embraces RE types that need to be further defined (since they can potentially stem from a number of RE production methods and/or a range of materials). One such RE type is biomass. It is provided in the Directive with a separate definition

⁶⁷ The pieces of legislation borrowing definitions from the 2001/77/EC Directive on the Promotion of Electricity from Renewable Energy Sources are Directive 2003 /30/EC on the promotion of biofuels, Directive 2003 /96/EC for the taxation of energy products and electricity, and Community guidelines on State aid for environmental protection (2001/C 31/ 03) (Werring *et al.*, 2006, p. 20, 22).

because a large range of raw materials, residual substances, and types of waste can be either included in or excluded from the biomass definition, which, if included into the definition of biomass, can be eligible toward the 2001 Directive's target attainment.

The definition of biomass, was, apart from the hydropower definition, which will be discussed later in this section, a policy issue that divided the EU institutions in the negotiations of the 2001 Directive (Rowlands, 2005, p. 968). The point of contention pertained in particular to whether to recognise a 'biodegradable fraction of industrial and municipal waste' as renewable (de Lovinfosse, 2008, p. 74). The negotiations on this contested issue resulted in a broad definition, from which "general waste incineration has been excluded but the biodegradable fraction of waste can be considered renewable" (Jansen and Uytterlinde, 2004, p. 99). Therewith, the final Directive text provides the following definition of biomass:

'biomass' shall mean the biodegradable fraction of products, waste and residues from agriculture (including vegetable and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste (Directive, 2001, p. 35).

By comparison, the first Directive Draft by the Commission defines biomass much more narrowly. Its definition embraced only 'products from agriculture and forestry, vegetable waste from agriculture and from the food production industry, untreated wood waste and cork waste' (Rowlands, 2005, p. 968). Thereby, the question of how to further mould this definition of biomass proposed by the Commission became a subject of conflict and division both within the Parliament and the Council (Hirschl, 2008, p. 366).

More specifically, the conflict revolving around the extension of the definition of biomass in the EP mirrored the conflict lines moulding the discussions in the Council because the MEPs were split on the subject not only across parties but also across national affiliations. Thus, some of the conservative MEPs pleaded for the inclusion of all types of waste, while other MEPs, primarily social democrats from Finland and Ireland, pleaded for the inclusion of specifically peat. Because of this internal disagreement, the Parliament could initially not form a coherent definition of biomass

(Hirschl, 2008, pp. 366-367). In particular, it was debated extensively in the EP how to interpret the meaning of ‘biodegradable fraction’ in generation of electricity.

The process of finding a single position in the EP was accompanied by successful lobbying by a renewable energy coalition, consisting of the rapporteur Mechthild Rothe, who was a rapporteur of the Committee on Industry, External Trade, Research and Energy (ITRE Committee), and the associations of the renewable energy industry, e.g. EREF, BWE and BEE (Hirschl, 2008, pp. 370-371, p. 375). That is, “[t]he decisive role of establishing informal contacts [with MEPs] was played by the rapporteur Mechthild Rothe, who was supported by the renewable energy interests” (Hirschl, 2008, p. 370). The lobby efforts by this coalition managed to divide the liberal and conservative fractions of the EP (the liberal fraction becoming persuaded of a more narrow definition) – a split that, in turn, could be overcome toward a common position only through a compromise by the two opposing groups (Hirschl, 2008, p. 375). That is, the single position was reached through mutual compromising of the two EP fractions on two policy issues from different definitions, which entailed that biological household waste was included into the Parliament’s definition, while large-scale hydropower was excluded (see next section on hydropower definition) (Hirschl, 2008, pp. 366-367). As a result, the EP formulated its original position, according to which only “electricity produced from *separated* biodegradable biomass” was recognised as renewable (Werring *et al.*, 2006, p. 22, emphasis added).

In its turn, the Council undertook additional adjustments to the definition, by defining biomass as amongst others consisting of ‘the biodegradable fraction of industrial and municipal waste’. This wording implied not only that a wider range of waste counts as renewable, but also that it does not have to be ‘digested’ or separated to fit the definition. Such a definition incentivises the recovery of energy from waste in the EU under the application of environmentally harmful methods⁶⁸. Therewith, the Council assumed a position that contrasted considerably with that of its co-legislator respective

⁶⁸ The inclusion of unseparated waste into the biomass definition can be seen as problematic not only from the environmental point of view, as it discourages recycling. Investment in treatment of unseparated waste also causes less favourable market conditions for the more sustainable energy sources, due to the possibility on the part of member states to reach their EU targets by channelling investments into this cheaper ‘renewable’ option (Rowlands, 2005, p. 968).

waste separation. Further noteworthy that the Council in its Common Position, by contrast to the EP, incorporated not only municipal wastes in the definition, but also the industrial waste (Janzen and Uytendinck, 2004, p. 99). Initially, some members of the Council, most notably the UK, Italy, and the Netherlands, wanted to incorporate all waste into the definition with the aim of being able to meet their targets with less effort (Hirschl, 2008, p. 371). Biomass waste incineration counted as a relatively prominent energy source in these member states since they either already possessed considerable existing electricity generating capacity from waste at the time, or were planning to expand it. Hence, waste as an energy source in the Directive gave them, according to Rowlands (2005, p. 968), a chance of meeting their national targets. The three member states however deviated from this position under the power of argument of the Parliament and the Commission (Hirschl, 2008, p. 371). As acknowledged earlier, the EP's own stance on waste treatment was, in its turn, brought about by a split within the institution, provoked by the lobby efforts of the renewable energy coalition (Hirschl, 2008, p. 375).

In March 2001, the Council agreed on its Common Position which was perceived negatively not only by the Parliament. The Commission was also sceptical in its reaction, not just about the issue of inclusion of biodegradable fractions of waste into the definition, but also about the entire definition of biomass by the Council, considering it to be too broad (Hirschl, 2008, p. 369). In its Communication on the Council's position, the Commission expressed itself as being concerned foremost with biodegradable waste in the Council's definition that recognises it as renewable. In the Commission's view this definition had the potential to incentivise the incineration of waste without separation into biodegradable and non-biodegradable, thus standing in contradiction to the objectives of first re-using and recycling of waste, as laid down in the Community's waste management hierarchy. Similarly to the Parliament's position, the Commission would have preferred to exclude the non-separated waste from the definition of biomass. At the same time, the Commission reluctantly accepted the Council's position as a compromise against the background of the necessity to make a major step forward in promoting RE at the EU level (European Commission, 2001a, p. 3).

In the course of reaching the final compromise on the Directive between the Council and the EP, the latter institution came under pressure from several member states and, as a consequence, abandoned its initial position on the policy issue of waste. This means that the expression as proposed by the Parliament – “electricity produced from the incineration of the biodegradable part of non-separated municipal waste shall be excluded from this definition” – was deleted from the Directive (Werring *et al.*, 2006, p. 22).

Many environmental groups as well as the Commission strongly criticised the definition of biomass by the Council. Yet, this critique was not far-reaching enough to prevent the transfer of the biomass definition from the Council’s Common Position into the 2001 Directive, word by word (Janzen and Uytterlinde, 2004, p. 99; Rowlands, 2005, p. 968).

Despite being criticised, some member states accepted their targets, as proposed by the Commission, yet expressed their preference of counting electricity from non-biodegradable waste fractions toward their targets as well. This position was expressed in the footnotes to the 2001 Directive submitted by some member states. For example, Italy concluded that its target of 22% in RE consumption by 2010 would be a realistic one, based on the assumption that the renewables share included both “the contribution of the non-biodegradable fraction of municipal and industrial waste” (Directive, 2001, pp. 39-40). Luxembourg also commented on its target of 5.7% by assigning waste incineration an important role in its attainment. The member state stated that one of the conditions under which it considered the target as reachable was that a “municipal waste incinerator in Luxembourg, which in 1997 accounted for half the electricity produced from renewable energy sources, can be taken into account in its entirety” (Directive, 2001, pp. 39-40).

Generally, footnotes by member states, such as the above ones, are unilateral statements by member states⁶⁹, “which according to the Legal Service of the Commission have no influence on the Directive and the targets as such. However, Member States can use

⁶⁹ “The table with reference values per Member State is completed with a large number of footnotes which can be divided into two groups. Footnotes indicated by *, **, ***, **** which are general explanatory footnotes. Footnotes indicated by figures (1), (2), (3), ... etc which are unilateral declarations of member states when they accepted the reference values” (Werring *et al.* 2006, p. 63).

these footnotes as arguments when they do not meet their targets or when they want to set lower national indicative targets” (Werring *et al.*, 2006, pp. 64-65).

The rationale behind the Council’s position on the biomass definition can be understood in the context of domestic approaches to electricity from waste in member states, i.e. the practice of burning non-separated waste for the purpose of electricity generation being applied in most member states at the time of negotiations of the 2001 Directive. Therefore, defining electricity from the incineration of the biodegradable part of non-separated municipal waste as renewable would allow member states generating electricity from this type of waste to count it toward their respective targets set in the 2001 Directive (Werring *et al.*, 2006, p. 22).

The established praxis of the incineration of non-separated waste was also reflected in the national definitions of renewable energy sources of many member states. Thus, some member states that advocated non-separation of waste had domestic legislation in place favouring this approach to energy from waste. For example, two large member states – France and Spain – were using definitions of RE in their domestic legal frameworks, according to which electricity from burning of non-separated waste was considered as renewable. In France, more specifically, the RE definition encompassed “municipal and industrial wastes for incineration” (Reiche and Bechberger, 2005, p. 183). Similarly, definition of renewable energy sources in Italy counted “energy from organic and inorganic waste”; while according to the Spanish RE definition, “plants that used urban wastes, industrial wastes, and biomass as the main fuel” were placed in a group of energy producers eligible for state support (Reiche and Bechberger, 2005, p. 183-184). For the Netherlands waste incineration constituted a relatively important renewable energy source (Jansen and Uytterlinde, 2004, p. 99). That is, in the Netherlands, in line with “a covenant between government and producers ... producers [were] forced to co-combust biomass”, which spurred a tendency toward the co-combustion of biomass in coal plants (Reiche and Bechberger, 2005, p. 183-184). In comparison, a rather non-specific RE definition regarding the issue of waste treatment was used domestically by some further member states (Reiche and Bechberger, 2005, p. 183-184).

To sum up, the attitude of the Council toward the treatment of waste in the biomass definition can be further elaborated on when taking into account the institution's overall position toward the rest of the definition. Thus, apart from defining waste broadly, the Council managed to expand the definition further by adding animal fractions of waste to the vegetable ones, (whereas the Commission's definition specified, and the EP's implied, that only vegetable waste fractions can be counted as biomass). The Council also made its mark on the biomass definition by extending the range of industries operating with RE (Rowlands, 2005, p. 968). Moreover, the member states did not want the biomass definitions established in their national legislations to be prevented from application at the domestic level. Hence, the Council added recital 9, stating that "[t]he definition of biomass used in this Directive does not prejudice the use of a different definition in national legislation, for purposes other than those set out in this Directive" (Werring *et al.*, 2006, p. 22). Similarly, Rowlands (2005, p. 968) maintains that under the bottom line all member states had an interest in ensuring that the definition was a possibly bloated one, so that they had a wide variety of "renewable" energy sources at their disposal for meeting the EU target. Such a provision gave member states the advantage of less effort and more flexibility in ensuring compliance with the 2001 Directive.

Evaluation – Definition of Biomass

The policy issue of how to define biomass in the 2001 Directive was influenced by the EU-internal and EU-external actors. However, it was the Council that have managed to exert decisive influence on the final version of the biomass definition in the negotiating process, by transferring its preferred wording of the definition from its Common Position to the Directive. Thereby, one can distinguish between several aspects of the definition, which were strongly impacted by the Council. These are the aspects of: whether to separate waste and whether to count both biodegradable and non-biodegradable fractions of waste toward targets; whether to add animal fractions of waste to the definition, or alternatively to reduce the definition to vegetable ones; and finally, whether to include only municipal, both municipal and industrial fractions of waste to the definition of biomass.

Starting with the policy aspect of waste separation, it is important to restate that the Commission and the Parliament were in favour of waste separation and biodegradable waste in the definition. For the Commission, this position was connected to its waste management hierarchy, which the institution saw jeopardised by the definition in-the-making. The Parliament formed its position in favour of waste separation and the eligibility of biodegradable waste of post separation toward the target under the influence of the coalition lobby, embracing the rapporteur Mechthild Rothe and renewable energy industry, (even if in doing so by compromising on the policy issue of large hydropower). However, the Council presented itself as a strong counterforce to both supranational EU institutions on this policy aspect, putting through a definition that does not require separation for the purpose of target meeting.

At the same time, it does not mean that the two supranational EU institutions did not make any mark on the final shape of the biomass definition. That is, they have managed to prevent the development of a most radical position in a part of the Council at an early stage in the policy-making process on the definition – the position favouring both the biodegradable and non-biodegradable fractions eligible toward the target. This radical position was held by *inter alia* the UK, Italy, and the Netherlands because of strongly relying on non-separated waste burning for the purpose of electricity generation. Put differently, a strong initial position by the Commission and the EP in favour of waste separation to be encouraged in the definition allows understanding why the Council abstained from developing the negotiating position of counting waste incineration in its entirety as renewable. Instead, the Council took on a more modest stance of counting biodegradable fractions from non-separated waste toward the target attainment, and was able to set it though, as a compromise to the initially held position by supranational institutions.

In addition to the above changes, in line with the Common Position by the Council, the biomass definition was expanded to include not only vegetable but also animal fractions of waste, as well as industrial waste apart from municipal waste. The Council's striving for a broader definition can be attributed, similarly to the case of hydropower (see next section), to the rationale of maximising freedom of implementation of EU legislation and, as a consequence, minimising costs of compliance, being able to cover national targets with a wide variety of biomass types, which validates H4/1.

Besides, the Council made sure that national definitions of biomass stay in power in national legislation (by adding recital 9), which furthermore equally demonstrates that the institutions was resolute in preventing any potential impact of EU-level legislation on established national approaches that would lead to the readjustments of energy generation and hence to the rising costs of electricity generation at the national level. Thus, the sum of Council's efforts at moulding the biomass definition allows one again corroborating the assumption that the Council in its preference formation was guided by the effort to minimise the costs of implementation of EU-stipulated legislation, as hypothesised with the reference to the ACHI concept of the preference formation in actors (H4/1).

The efforts of the lobby renewable energy industry are equally better understandable when taking into account that the requirement of separation of waste would make the meeting of the EU-set targets much more strongly reliant on the efforts of promoting renewable electricity generation, rather than non-separated waste burning. This would lead to additional subsidising of the renewable energy industry, which was represented by RE associations in the lobby coalition, which validates H6.

4.6 Definition of Hydropower

The contested issue pertaining to the definition of hydropower did not concern the general 'renewable' status of the source of energy since there was a broad consensus that technically it can be considered as a green type of energy. What caused a dispute was the way of mentioning the RE source in the definition, which would determine whether to grant support to large-scale hydropower installations. Thus, the dispute pertained primarily to large-scale hydropower installations, being defined as hydroelectric installations with a capacity above 10MW.

Generally speaking, the proponents of the promotion of large-scale hydropower installations were inclined to treat this source of RE in the same way as the 'greenest renewables' (e.g. solar and wind), arguing that all presently available technologies should be used to reduce GHG emissions in the face of the urgent problem of climate

change. Contrary to this position, the opponents were maintaining that large-scale hydropower had already reached the state of economic competitiveness in the EU electricity market, and for this reason should not be entitled to additional state support (Rowlands, 2005, p. 968).

In this debate, the Commission sided with supporters of the promotion of small hydropower installations. The institutions had acknowledged a number of advantages of promoting small-scale hydropower already in the White Paper of 1997, by pointing *inter alia* to the fact that small installations have much lower environmental impact. More specifically, the Commission stated that:

[T]he existing technical and economic potential for large hydropower plants has either been used, or is unavailable due to environmental constraints. In contrast to this situation, only about 20% of the economic potential for small hydropower plants has been so far exploited. In addition, many existing small hydro plants are out of operation, often as a result of a lack of specific incentives as to maintenance and other costs, as well as the overall grid pricing situation, but can be refurbished with relatively modest outlay, especially in the case of typically rural and relatively isolated installations. European Union countries dominate the world market for small hydro equipment (European Commission, 1997a, p. 39).

The Commission retained its position in favour of specifically small hydropower promotion in its Directive Proposal. Therein, while defining all hydropower as renewable, the Commission envisioned providing subsidies to only small hydropower. The institution tried to achieve this by means of specifying the scale of hydropower installations – information that the Commission suggested providing in tradable certificates. Such a take on the subject is expressed by the Commission in the following manner:

[L]arge hydro is in principle competitive, and in the absence of evidence to the contrary, there is no reason why large hydro should benefit from a future harmonised European wide support system, e.g. a green certificate system. Article (5) thus stipulates that certificates shall specify, in the case of hydroelectric installations, whether the capacity is above or under 10 MW. This will allow to exclude large hydro from having access to a harmonised support system (European Commission, 2000c, p. 13).

Thus, in Article 2 of the Directive Proposal, not all hydropower installations are recognised as renewable sources, only the ones with a capacity below 10 MW. This definition, however, is of no impact on the calculation of the national targets since in the next Article (Article 3) the text further states that for the purpose of meeting national targets, large installations with a capacity above 10 MW are considered renewable sources of energy, and are correspondingly constituting a partial contribution toward meeting national targets (Rowlands, 2005, pp. 969-970). The Commission provides a justification for allowing the contribution of large hydropower toward national targets by stating that the well-known 12% indicative objective of the White Paper included electricity from large hydropower. “It would of course be possible to carve out mathematically large hydro from the White paper objective and the Member States’ targets, but this would lead to a corresponding reduction of the well-known 12% objective and related national targets, and could give rise to confusion” (European Commission, 2000c, pp. 12-13).

In the first reading, the initial amendments of the Proposal by the EP were sketched out in the Report by rapporteur Rothe, which appeared in November 2000 (Hirschl, 2008, pp. 366-367). The Report supported the Commission on the question of whether to allow for the option of subsidising large hydropower. Consequently, the Report confined the RE definition to small hydropower “with a capacity below 10 MW” (European Parliament, 2000, pp. 18-19).

The Council formulated its Common Position quite soon thereafter in a meeting on 5 December 2000. In its reaction to the Commission’s and the Parliament’s positions, the Council developed its own stance, in line with which all scales of hydropower installation were defined as renewable. Such an encompassing definition, together with Article 5 on guarantees of origin, gave member states the right to continue with establishing nationally what scale of hydropower would be regarded as support-worthy. More specifically, the Article states that to indicate the capacity of a hydroelectric installation, the authority should employ the ‘guarantee of origin’ (a certificate awarded specifically to the source of renewable electricity) (Rowlands, 2005, pp. 971-972).

The amended Proposal by the Commission from 28 December 2000 incorporated only some policy stances by the Parliament, declaring the Common Position by the Council as a basis for further debate. This applied also to the contested aspects of the definition of renewable energy sources by the Council. Yet, the acceptance of the Council's version of the definitions by the Commission was not a compromise on the part of the latter institution. This is because the question of definitions had by that point in time lost for the Commission its significance due to a plan of revising state aid guidelines for the environment. The necessity to revise guidelines became apparent with the decision by the ECJ on the *Preussen-Elektra* case (see chapter three for more detail). The judgement of the Advocate General was already known by that point in time and made clear that state aid cannot be considered in its broader meaning any longer. Taking this into consideration, the Commission started formulating new state aid rules to be in force from 02 April 2001 until the end of 2007, replacing state aid rules in place since 1994. In so doing, the Commission could determine which renewable energy and energy efficiency measures were to be regarded as measures aimed at environmental protection and therefore eligible for subsidising outside of the negotiations on the 2001 Directive (Hirschl, 2008, p. 369).

In the second reading, the Parliament presented an internal position that abandoned the exclusion of large hydropower from the definition. As already outlined in the previous section, this position resulted from an internal split within the EP on the scope of biomass definition, which could be overcome only by means of a trade-off between two policy issues pertaining to different definitions, (i.e. by incorporating biological household waste into biofuels definition, while dropping large-scale hydropower from the definition of renewable energy sources). That is, one part of the EP agreed to expand the biomass definition against the agreement by other EP part to exclude large hydropower from RES definition (Hirschl, 2008, pp. 366-367). Although a compromise amongst factions of the EP could be found thanks to internal negotiations conducted by rapporteur Rothe, assisted by the renewable industry lobby, the EP could not set its position on the definition in the inter-institutional negotiations (Hirschl, 2008, p. 371).

The Council's position was of decisive influence in the inter-institutional negotiations since its position was copied into the 2001 Directive. Hence, the restriction of the

definition of hydropower to installations of 10MW and less was dropped (de Lovinfosse, 2008, p. 74).

The resultant decision on whether to subsidise hydropower was, at the same time, not necessarily in line with the prevalent form of domestic treatment of this renewable energy source in member states prior to the enactment of the 2001 Directive. Most member states have already excluded hydropower above 10MW from any state support. As summed up by Reiche and Bechberger:

Hydropower is ... defined as a renewable source in all EU Member States, but there are also limitations. There are only a few countries which do not exclude large hydropower from their subsidy programmes. Most Member States like the UK exclude hydropower above 10MW, in Germany the limit is already at 5MW. There is one case (The Netherlands) that has taken small hydro-plants off the list altogether for renewables supported by the national promoting system (Reiche and Bechberger, 2004, pp. 843-844).

However, making hydropower constitutive of the definition for RES allowed reaching RE targets by sourcing the least expensive types of renewable energy, as maintained by Janzen and Uyterlinde (2004). In other words, the measure allowed adding the energy source to the range of sources accountable for the purpose of meeting of national RE targets, which could at the same time be excluded from access to supporting schemes, due to its market maturity. This approach strongly contradicts with the initial position of the EP that wanted to exclude large hydropower from the definition altogether.

Evaluation – Definition of Hydropower

Notwithstanding the agreement by the Commission, the EP and the Council on whether large hydropower is ‘renewable’ in the sense that it should contribute to the achievement of national targets, there was considerable disagreement between the Commission and the EP, on the one hand, and the Council, on the other, regarding where the competence over support to hydropower should lie, i.e. at the national or the EU level. Initially, the Commission tried to follow its line of favourable treatment of

small hydropower. This was aimed at by means of differentiating between scales of hydropower installation in its definition of renewable sources of energy. Besides, the institution wanted to seize control over support to different scales of hydropower via an EU-wide trade in green certificates, which had to contain information on the hydropower scale, as proposed by the Commission.

The Commission gave up its idea of differentiated treatment of different hydropower scales – a development that took place in the context of a requirement for new state aid guidelines, which left the final decision on whether to subsidise large hydropower in the hand of the Commission. The EP similarly reneged on its definition that excludes large hydropower and by implication also state aid for this source of renewable energy. This happened as soon as an internal disagreement on the RE definition needed to be overcome toward a majority in the plenary. A majority could be obtained only by compromising on the issue of large hydropower in favour of another policy issue (i.e. biomass definition). Hence, the EP did not position itself as an opponent to the Council on the issue of state aid to large hydropower in the inter-institutional negotiations.

Without strong opposition on the policy issue of subsidies to large hydropower on the part of both supranational institutions, the Council managed to establish in the 2001 Definition that all hydropower is granted the legal status of RE and that consequently large hydropower can be subsidised. Thus, by being able to preserve the status quo of its control over subsidising hydropower, the Council reduced the potential mismatch between the EU and domestic legislation on the hydropower, and also on the harmonisation of support schemes, by implication reducing at least potentially the implementation costs of the 2001 Directive, which corroborates H4/1.

The formation of the Council's positions can also be viewed in the broader legislative context. That is, parallel to discussing the issue of hydropower the Council was confronted with the Commission's intention to establish a pan-European tradable certificates scheme. Thereby, a differentiated treatment of hydropower in the 2001 Directive would contribute to the functioning of the scheme – according to the Commission's Directive Draft the scale of hydropower would be indicated on the certificates.

The Council's categorically rejected the pan-European scheme, because all member states wanted to retain control over the types of support schemes applied nationally (Hirschl, 2008, p. 370). The Council's concern with the expansion of supranational competence in RE area though harmonisation of RE support scheme found its additional expression in its decision on how to justify EU legislation in a policy area not yet under the competence of the EU at that time. Specifically, the Council has clearly expressed itself in favour of environmental basis (Article 175(1) of the TEC)⁷⁰ and not the common market legal basis as the appropriate basis for the 2001 Directive (Hirschl, 2008, pp. 368-369). In line with its overwhelming dismissal of Commission's control over national support schemes, member states formulated a position toward maintaining their control over support to hydropower at the national level as well. Thus, in the confrontation with the Commission, the Council could form its internal agreement on how specific the 2001 Directive should be respective state aid for different hydropower producers, which also validates H4/1, since harmonisation of support schemes across the EU would make many member states change this policy instrument, which would mean high adjustment costs for those member states.

4.7 Conclusions

In general terms, the assessment of single policy issues in this chapter could corroborate several of the hypothesis of this study (H3/1, H2/2 H4/1, H6). Specifically, it was shown that the overall legislative outcome on targets and definitions has been shaped on the one hand by the supranational institutions of the EU, i.e. mostly by the Commission that was preoccupied with the EU competitiveness globally. However, the national impact of this EU-level legislation, as proposed by the Commission was restricted by the influence of the Council in policy-making process. Thereby, the Council was mostly united in its preference for EU legislation, which would not require any alterations of the domestic practices and legislative frameworks related to renewable and conventional energy generation. As a consequence, the overall EU target was shaped by the

⁷⁰ The Treaty Establishing the European Community provided the EU with a competence to adopt renewable energy legislation on *inter alia* the legal basis of its environmental competence –Article 175(1), which more recently has been renumbered to Article 192(1) of the Treaty on the Functioning of the European Union (TFEU) (Peeters, 2014).

Commission, while the definitions were moulded primarily by the Council. However, the policy issue of burden-sharing was formed by an interaction of the two EU institutions, even though the Council's impact (in form of reductions of the individual targets by member states) was rather insignificant.

The Parliament, by contrast to its co-legislator and the Commission, did not manage to make a strong mark on the Directive's final shape, partly because it was divided internally. The indecisive policy position by the institution on specifically definitions of the Directive provided the sole avenue for private interests to influence the piece of legislation. Their lobbying efforts, thereby, were aimed at more demand for the type of energy they produce and less demand for energy produced by their competitors.

Methodologically, the study of policy-making processes represents a causal chain consisting of necessary conditions. The chain started with the study on EU energy supply and demand by 2020. The results of this study (necessary condition) together with the Commission's overall commitment to liberalisation of the EU energy market led to another study, focusing on the role of renewables in a liberalised market. The second study, TERES II, thereby, yielded the overall EU numerical target and served as an indispensable input (necessary condition) for the negotiations on the distribution of the overall target. The policy decisions on the definitions, by contrast, are interpreted as causal conjunctions. The single policy-making outcomes on definitions are owed primarily to a particular constellation policy interests in the Council so that multiple causal conditions needed to work together in an additive way to bring about a common position in the Council.

Chapter 5: Directive 2003/30/EC on the Promotion of the Use of Biofuels or other Renewable Fuels for Transport

The biofuels Directive of 2003, by comparison to the 2001 Directive discussed in the previous chapter, covered a much smaller number of policy issues. More specifically, while the 2001 Directive legislated over the distribution of the overall EU target amongst member states and over whether individual member states' targets should be binding or indicative, only the last issue of the legal strength of the target became a subject of debate in the case of the 2003 Directive. This is because the overall target could not be re-distributed differently among member states, as this would result in strongly varying content of vehicle fuels between member states. As regards definitions, one of them, agreed on for the 2001 Directives, was transferred to the 2003 Directive. Thus, only one definition was formulated specifically for the 2003 Directive, as discussed in this chapter. Hence, emulating the structure of the previous chapter, this chapter commences with an overview of legislative aspects of biofuels Directive. Then, the chapter proceeds with the legislative processes on the 2003 Directive, going through single policy issues, by starting with targets and then turning to definitions in the Directive. In the conclusion of this chapter, the policy results of the 2003 Directive are revisited and analysed with the help of my theoretical framework.

5.1 Biofuels Directive of 2003 – Overview of Legislative Aspects

As noted by Talus (2013), the biofuels Directive of 2003 became short in content as well as indicative and oriented towards reporting. A similar conclusion has been drawn by Delvaux (2004) who refers to the 2003 Directive as to a 'light' version of a potential legislative outcome. In his view, this was mainly due to the failure to endorse a strong legal statement through mandatory targets, to which the Commission wanted to commit member states in its Directive Draft. Instead, the Council agreed on a Directive with a mere requirement for indicative national targets.

When analysing the final version of the 2003 Directive, its content can be subdivided into four main parts. The first part on definitions encompasses a definition of biofuels, a definition of biomass and a non-exhaustive list of products that shall be considered

biofuels (Directive, 2003, Art. 2, p. 44). The next part of the Directive stipulates targets, 2% by 2005 and 5.75% by 2010 of all petrol and diesel on the market (Directive, 2003, Art. 3.1, pp. 44-45). Then the legislative text specifies the requirements for implementation related to different forms of biofuels, as well as to the monitoring of and reporting on the 2003 Directive by member states and the Commission (Directive, 2003, Art. 3.2-Art. 3.5, Art. 4, pp. 45-46). The remaining part of the text concerns transposition and administrative provisions of implementation of the Directive (Directive, 2003, Art. 5-Art. 9, p. 46).

When undertaking a comparison between the Proposal for a Directive by the Commission and the final text of the Directive, several other legislative issues, subject to changes in the course of the negotiating process, come to light. The main differences between the two documents were pointed out by Werring *et al.* (2006). These differences pertain to the numerical values of targets and to a definition, both legislative issues becoming less ambitious and more open to interpretation. Thus, the final version of the Directive differs from the Draft Directive published by the Commission as follows:

- Its scope and title are extended to include “biofuels or other renewable fuels”.
- In article 2.2, a fuller list of types of biofuels is given than in the proposal, and the list is illustrative rather than exhaustive.
- Member States are required to set “national indicative targets” for the market share of biofuels rather than ensuring the share of a minimum proportion (article 3.1, sub-paragraph a).
- The target market share for 2005 and 2010 have become “reference values” (article 3.1, sub-paragraph b).
- The target market shares for the intervening years 2006-2009, and the target market shares for blended biofuels in 2009 and 2010, have disappeared.
- Member States can choose to set targets that differ from the reference values. These differences should be “motivated”; a list of elements, on which this motivation may be based, is provided (article 4.1, third sub-paragraph) (Werring *et al.*, 2006, p. 73).

The negotiating process yielded the final text of the Directive, the operational part of which is Article 3(1). It provides that member states should ensure that a certain percentage of biofuels is placed on their markets, a reference value of such a share being 2% by 2005 and 5.75% by 2010. As is elaborated on below, the reference values only need to be taken into account by member states when they are setting themselves their

indicative targets. However, member states are not required to achieve their self-imposed targets. Hence, the Commission obtained the right to begin infringement procedures solely in connection with the obligation of setting national targets (subsequently making use of this right), but the legislative text of the Directive did not empower the Commission to pursue member states for the scope of the effort toward meeting the targets (Jones, 2010, pp. 14-15). Moreover, there was a possibility, under certain conditions, for member states to deviate from the reference values when transposing this Directive into national law (Werring *et al.*, 2006).

The overview of the above amendments to the Commission's Draft Directive shows that the institution had to give up on many of its initial ideas, particularly in connection with the composition of the target (subsumed under the first two points by Werring *et al.* (2006) and respectively the legal strength of the targets. However, some legislative aspects pertinent to the technical side of biofuels promotion, presented by the Commission already at the stage of drafting the Directive, remained unchallenged by other EU institutions, accepting the Commission's justification for the shape of the following three legislative aspects.

Regarding the first legislative aspects, at the time of Proposal drafting, the biggest share of biofuels in transport within the EU came from pure biodiesel used in adapted engines, building a car fleet running on pure biofuels. Thereby, the biggest number of such 'pure-biofuels cars' was home to Italy. However, the use of pure biofuels in cars was not regarded by the Commission as a measure that can significantly advance biofuels production. This is because the Commission expected that it would be difficult to stimulate biofuels in the EU without promoting the practice of blending biofuels with conventional fuels. The practice of blending was regarded as easier implementable as it would not require any technical adjustment to conventional car models within the EU. According to the Commission, biofuels blended with conventional fuels "can be used in the existing vehicles and distribution system and thus do not require expensive infrastructure investment" (European Commission, 2001b, pp. 6-8). Thus, in the 2003 Directive the use of both pure and blended biofuels is endorsed (Directive, 2003, Art. 2, p. 45).

Respective the second legislative aspects, the Commission has judged and was not challenged on the issue that the targets' numerical values should be 2% by 2005 and 5.75% by 2010. These two numerical values, in their turn, were calculated by the ESD – a consultancy to which the Commission has outsourced the TERES II study, as already discussed in the previous chapter. The overall target of 12% for renewable energy by 2010 (covering renewable electricity and biofuels) was subsequently subdivided by the Commission into two constitutive targets, one of them being the biofuels target, presented in the Draft for the 2003 Directive – 5.75% by 2010. (It became accompanied by an interim target of 2% by 2005, as proposed by the Commission.)

The third legislative aspect pertains to the decision by the Commission that the two targets for biofuels of 2% and 5.75% should not be unequally distributed among member states (by contrast to how it was done in case of the overall EU target for renewable electricity, set in the 2001 Directive). Thus, the burden-sharing in the case of biofuels promotion by means of the 2003 Directive was the same for all member states, (i.e. all member states had to attain the same two targets of 2% and 5,75% by 2005 and 2010 respectively). The Commission justified this approach to individual targets with the consideration that the unequal re-distributed of the overall target among member states would result in varying content of vehicle fuels in member states. The variation in composition of vehicle fuels (i.e. dissimilar percentages of biofuels mixed to conventional fuels) would have a negative effect on mobility in Europe. This is because EU citizens would be confronted with different fuel-compositions in different member states when travelling by car (Interview, Pilziker 6).

In addition, while drafting the 2003 biofuels Directive, the Commission suggested a complementary measure of tax exemption for biofuels in order to additionally reinforce their market penetration. Because biofuels were more expensive than conventional fuels, one of the main ways in which member states were able to support biofuels production was by exempting biofuels from some or all of the excise duties payable on petrol and diesel (European Commission, 2001b, p. 7, pp. 31-32). Such exemptions usually qualify as state aid and hence require prior approval by the Commission. An additional approval by the Council for general fuel tax exemptions – as opposed to specific exemptions, for example for pilot projects – was also required, and achievable only by unanimity in the Council. As attaining unanimity in the Council is cumbersome,

the Commission had set out to make it easier for member states to use exemptions to fuel excise duty to support biofuels by means of proposing a new piece of legislation. Hence, the Draft for the biofuels Directive was accompanied by a Draft Directive setting out the conditions for exemptions from the unanimity rule in the Council to lift or reduce fuel excise duty on biofuels or on certain mineral oils containing biofuels (Delvaux, 2004, p. 74).

Having presented an overview of the legislative content of the 2003 Directive, and having discussed which aspects of the Commission's Draft were altered or remained unchanged in the ensuing process of negotiations of the Directive, the section below turns to the targets of the Directive. In so doing, it focused on the policy issues pertaining to legal strength of the biofuels target.

5.2 The Legal Strength of Biofuels Targets

The Commission published a Proposal for a biofuels Directive in November 2001. The explanatory memorandum of the Proposal for a biofuels Directive identified the main benefits of increased use of biofuels as stemming from: the security of energy supply through replacement of oil, reductions in emissions of greenhouse gases in accordance with the EU commitments under the Kyoto Protocol, and more income and employment in rural areas, through production of raw materials for biofuels (European Commission, 2001b, p. 17).

The core of the Commission's Directive Draft was a requirement, stated in Article 3(1) and further specified in part B of the Annex of the Draft, that member states shall ensure that a minimum proportion of biofuels is sold on their markets. This minimum proportion of biofuels was planned to grow by 0.75% per year in the EU's total fuel consumption, reaching 2% in 2005 and 5.75% in 2010. These figures are comparable with a biofuels market share of approximately 0.2% in 2000 (Werring *et al.*, 2006). According to the Commission, "[t]o allow time to establish the necessary production facilities, a quantitative commitment should not be applied before 2005 when 2% biofuel substitution would appear to be a realistic target" (European Commission, 2001b, p. 18). Furthermore, the two targets to be reached by 2005 and 2010 are in line

with the ambitious programme for the transport sector to promote biofuels and other substitute fuels, as proposed by the Green Paper ‘Towards a European Strategy for Energy Supply’, the aim for these fuels being “to account for 20% of total fuel consumption by 2020” (European Commission, 2001b, p. 17). On the grounds of this preparatory legislation, the Commission wanted to commit member states to binding targets, as set out in its Directive Proposal (Werring *et al.*, 2006, p. 86).

The first response to the Proposal came from the Council, which was formulated at the meeting of industry and energy ministers, held in Luxembourg on 6 and 7 June 2002. According to the Draft Minutes of this meeting “[f]ollowing the Council's examination of the Proposal, and pending the European Parliament's Opinion ... a large majority of delegations agreed on the text”; however several delegations expressed a strong opinion regarding the legal strength of the targets (Council of the European Union, 2002a, p. 10). The statement by delegations from Belgium, Denmark, Ireland, Luxembourg, Portugal, Sweden and the UK stated that “the inclusion of these provisions in this Directive does not imply their consent to the principle of mandatory targets” (Council of the European Union, 2002a, p. 13). The meeting in Luxembourg furthermore led to the broad agreement on a Presidency compromise text concerning the Proposal – with a preference for indicative targets and for numerical values understood as reference values. However, the aim of the overall Proposal on the promotion of biofuels was seen as justifiable by member states as a means “to contribute to ensuring that the climate change *commitments made in the Kyoto Protocol are fulfilled* and that the Union’s energy dependence on third countries is reduced” (Council of the European Union, 2002b, p. 27, emphasis added).

As regards the Parliament, it was decided that the ITRE Committee would be responsible for dealing with the Commission’s Proposal, several other Committees being asked for their opinion. Subsequently, the ITRE Committee appointed the MEP María del Pilar Ayuso González as its rapporteur (European Parliament, 2002, p. 4).

The ITRE Committee formulated its response to the Directive Draft in June 2002. Thereby, the legislative aspect of the legal strength of targets was kept by the ITRE in the same way as preconceived by the Commission in its final Directive Draft, e.g. with targets of a binding strength (European Parliament, 2002, Amendment 36, p. 24).

Furthermore, the ITRE Committee, in the first reading, not only approved the highest legal strength for the targets, but it also added an obligation for member states to submit detailed reports on environmental impact and the costs associated with the implementation of the binding targets⁷¹ (European Parliament, 2002, Amendment 36, p. 24-25; Amendment 14, pp. 78-79).

To illustrate the impact of the Council in the negotiations on the aspect of the legal strength of targets, Delvaux (2004) compares the amended content of Article 3, as formulated in the Commission's amended Proposal and the final text of the Directive. This is done with the aim of juxtaposing the binding nature of the targets stipulated in the earlier document with the watered-down negotiating outcome that granted member states a lot of flexibility regarding the Directive's implementation. The choice of comparing the *amended* Proposal by the Commission is made to indicate that the Proposal had already incorporated the Parliament's position on the legislative text initially proposed by the Commission (Delvaux, 2004, pp. 72-73). The wording of these two legal documents reads as follows. According to Article 3(1) of the amended Proposal for a Directive:

Member States *shall ensure that the minimum proportion of biofuels sold on their markets is 2%*, calculated on the basis of energy content, of all gasoline and diesel for transport purposes on their targets by the 31 December 2005 and that this share increases, aiming towards a minimum level of blending, in accordance with the schedule set out in Part B of the Annex (Delvaux, 2004, p. 73).

By comparison, according to Article 3(1) of the final Directive, the following applies:

1. (a) Member States *should ensure that a minimum proportion of biofuels and other renewable fuels* is placed on their markets, and, to that effect, shall set national indicative targets.

⁷¹ The "climate balance" of biofuels depends *inter alia* on the amount of fossil energy used in their production and the emission of pollutants when they are used (Werring, *et al.*, 2006, p. 82). The necessity of monitoring the climate balance and environmental balance of biofuels stems from the scientific uncertainty regarding the greenhouse gas emission of different biofuels. Scientific studies offer a wide range of values for the GHG balance of different biofuels (Werring, *et al.*, 2006, p. 82).

(b) (i) *A reference value for this targets* shall be 2%, calculated on the basis of energy content, of all petrol and diesel for transport purposes placed on their markets by 31 December 2005 .

(ii) *A reference value for these targets* shall be 5.75%, calculated on the basis of energy content, of all petrol and diesel for transport purposes placed on their markets by 1 December 2010 (Delvaux, 2004, p. 73).

Importantly, the formulation of Article 3(1) in the final Directive repeated the wording of the Common Position by the Council adopted in November 2002. Thereby, the position by the Council on Article 3 in the first reading clearly indicated its intention to abandon mandatory targets (which was finally set through because the wording for the Article by the Council is identical with the wording of the final Directive, cited above) (compare Council of the European Union, 2002c, Article 3, p. 10).

The Parliament, in its turn, had not reviewed Article 3 in its Recommendation for the second reading from February 2003, in so doing accepting the Council's take on the legal strength of the targets (European Parliament, 2003). As a consequence, the legal strength ascribed to the targets by the Council was transferred word for word into the final text of the Directive.

As is demonstrated above, in its amended Draft (which incorporates the EP's response to the first Directive Draft) the Commission sided with the EP on the issue of legal strength of the targets – both institutions being in favour of binding ones. As to what allowed the Council to put through its position by reducing the targets to non-binding reference values in the text of the final Directive is elaborated on in the following

Negotiating Process in the EU Institutions

By voting on the Commission's Directive Draft on 10 June 2002, the ITRE Committee of the EP endorsed the proposed binding character of target, (as well as the numerical values of the targets, i.e. an increase of biofuels use in all member states to 2% of fuel use by 2005, and 5.75% by 2010). At the time when the Committee's opinion was passed to the full assembly for scrutiny, related legislation to introduce tax breaks for biofuels became a subject of discussion in the EP (see above for more on tax breaks

Directive) (ENDS, 2003e). In a reaction to the legislative Proposal for a tax breaks Directive, the EP has expressed itself in favour of a legislation that would make it easier for the EU member states to exempt biofuels (used in road transport sector) from excise duties. Upon this reaction by the EP, the Council decided to juxtapose two policy issues from different Directives and “confirmed it wants non-binding indicative targets instead of the mandatory targets proposed by the European Commission [for the 2003 Directive]” in return for tax break for biofuels (ENDS, 2003d). The Parliament depicted of this negotiating situation in its Explanatory Statement on the Common Position by the Council in the following manner. “The problem is that the tax directive must be unanimously approved by the Ecofin Council; some delegations to the Council have already expressed their intention to block that directive until the targets are made indicative” (European Parliament, 2003, p. 14). The position by the EP as regards the relative importance of binding targets and tax breaks on biofuels is further elaborated on in the following statement:

We would like to encourage mandatory targets, but this does not seem to be the most practical option at the moment. If achieving the targets is made mandatory, the tax directive will remain blocked in Council because of the opposition of some Member States, and that directive is essential in the short term. Without it, those Member States wishing to promote biofuels will have no clear, fixed legal framework enabling them to authorise corresponding special tax exemptions for biofuels and biofuel blends (European Parliament, 2003, pp. 14-15).

The contradiction over the legal strength of the targets between the Council and the EP did not create a situation in which the two institutions would possess the same leverage in this decision-making process. As revealed by a parliamentary source, MEPs would have only a narrow margin for manoeuvre to fight the Council in the second reading, because the Council made the adoption of the Directive on tax breaks for biofuels conditional upon the agreement of the EP to non-binding targets for biofuels Directive. At the same time, regarding a decision on the tax breaks Directive, the Council was clearly in a secure position since a decision on tax breaks required unanimity among member states and gave the Parliament only a consultative role; therefore, the EP had no power to enforce conciliation talks (ENDS, 2003d). As a result of this, “[t]he European parliament has dropped its insistence that EU member states agree to legally

binding targets boosting the use of biofuels in road transport fuels”; in so doing, the MEPs in the Energy Committee backed the decision by their rapporteur Maria del Pilar Ayuso González that one should not jeopardise the Directive on tax breaks for biofuels and therefore give in to the Council’s demand of indicative targets (ENDS, 2003e). As put by the rapporteur herself:

[T]he council's decision to adopt non-binding indicative targets was a failure of will. But pursuing the issue was not the most practical option since some member states were retaliating by vetoing the tax breaks directive, which is essential in the short-term (ENDS, 2003e).

In its turn, the EP's Committee on Environment, Public Health and Food Safety (ENVI Committee) also voted for only minimal changes to the Council's Common Position (ENDS, 2003e). Hence, as a result of the decision-making process, the Council managed to avoid a mandatory minimum share of biofuels to be put on the market. This, in turn, enabled member states to introduce measures in connection with biofuels promotion in a gradual and flexible manner (Euractiv, 2002).

Positions within the Council

Having discussed the institutional context that has allowed the Council to transfer its preference for non-binding targets into the final text of the 2003 Directive, despite resistance to this by the EP and the Commission, this sub-section turns to the reasons of why the Council, in its majority, was opposed to binding efforts at stimulating biofuels use.

Disregarding the fact that the Council managed to agree on a Common Position in the intra-institutional negotiations, initially member states were not united on the added value of new legislation on biofuels. As recalled by a former DG Agriculture policy officer, amongst the most interested in EU biofuels policy were France and Germany, because of very active biofuels policies in Germany and France, both being countries with strong agricultural sectors. Positive about biofuels was also Sweden; the member state “for instance started already to develop sector using ethanol with flex-fuel

vehicles. They were also developing the use of biogas in transport” (Interview, Pilziker). The support for the future Directive by these member states contributed to the adoption of the 2003 Directive. However, there was also a camp of member states explicitly against binding targets. According to some further recollections by the interviewee:

Some member states were very reluctant against the idea to have even an indicative target. Some member states made even clear that they were not keen to implement this indicative target. ... For example, Denmark was very critical, the UK was also very critical. ... So we had a whole mixture [of positions], but all for quite different reasons (Interview, Pilziker).

Thus, in the case of Denmark, the rejection of a binding biofuels target came in connection with the realisation that the achievement of this target would largely depend on the stimulation of first-generation biofuels⁷². Because second-generation biofuels technology was still in a nascent stage of development, the member state considered the Directive stipulating any binding targets as premature. Instead, Denmark was interested from the beginning in the promotion of only second-generation biofuels (Interview, anonymous).

When taking stock of the national-level dedication to biofuels at the time of the negotiations, one is confronted with quite dissimilar national situations. Suffice to say that “by 2006, more than 80% of the total EU biofuels were produced by only four

⁷² What is referred to as ‘first-generation biofuels’ is the production of biofuels which relies on oily crops for biodiesel and on sugar and starch crops for bioethanol. The production of these two types of renewable fuels, which are considered as conventional biofuels, makes use of mature technology, available at industrial scale. The advantage of this technology being mature is however accompanied by the disadvantages that the production of these conventional biofuels depends on food crops, and that greenhouse gas savings can be limited and in some cases even negative, which, in turn, depends on the production process. By comparison, advanced or ‘second-generation biofuels’ can be made from a large number of by-products, e.g. straw and woody biomass, the greenhouse gas emissions savings of which are higher than the ones by conventional biofuels. On the negative side, however, the technology for second-generation biofuels (e.g. ligno-cellulosic ethanol or Fischer-Tropsch-diesel) is much less well developed than the technology for first-generation biofuels (Wiesenthal *et. al.*, 2009, p. 792).

Member States, namely Germany, France, Italy and Spain” (Wiesenthal *et al.*, 2009, p. 790).

A similar assessment is made by the Commission in its Directive Draft. The institution estimated the promotion of biofuels among the EU member states as enormously variable, stating that only six member states “make any real contribution to the total European biofuel production”, the six member states being France, Austria, Germany, Sweden, Italy and Spain (European Commission, 2001b, pp. 19-20). The fact that different EU member states have opted for differently ambitious approaches for developing biofuels, e.g. preferring different bio-energy types, is also linked to their dissimilar natural conditions for growing biofuel crops, in addition to the structure of the energy system and political priorities for the agricultural and forestry sectors, which differ in member states as well (Faaij, 2006, pp. 335-336).

Legal Implications – From Indicative Targets to Reference Values

It is further noteworthy that the Council in its Common Position did not refer to the numerical values of targets as to ‘*indicative targets*’, in its formulation of Article 3(1), but instead used the expression ‘*reference values*’. This choice of wording is, in its turn, related to how member states can choose to transpose Article 3(1) of the 2003 Directive into their national law. More specifically, the expression ‘reference value’, applied to the numerical values of the targets (of 2% and 5.75% for 2005 and 2010 respectively), not only implies that the targets are non-binding, but also that member states can choose other numerical values for targets than the ones found in the Directive. That is, the numerical values in the Directive are only supposed to serve as references for member states to establish their national targets. This, however, does not free member states from providing explanations to the Commission regarding why national targets might derogate from values in the Directive. The freedom for member states to select their own numerical values for the national targets is somewhat restricted by Article 3, sub-paragraph (a). This sub-paragraph has the function of imposing two requirements on member states, of which the first is “to ensure that a minimum proportion of biofuels and other renewable fuels are placed on their markets”, while the second is “the obligation to set indicative targets” (Werring, *et al.*, 2006, p. 77). At the same time, the

first requirement is functional for the realisation of the second requirement, or in other words, the indicative targets must ensure “that renewable fuels are placed on the market, while a target of zero could not do this. Therefore, a target of zero would not appear to be compatible with the Directive” (Werring, *et al.*, 2006, p. 77). Yet, derogations from the targets in the Directive, when establishing these in the national legislation of member states, were permitted in the cases of: limited national natural potential for biofuels production in a member state, and also because of the “use of biomass for other energy uses, or production of transport fuels from other renewable sources” in a member state (ENDS, 2002a).

Hence, from the legal point of view, the Council managed to dilute the legislative text from a binding commitment to the targets of a particular numerical value, as proposed by the Commission and endorsed by the EP, to targets that only need to be higher than zero. The wording of Article 3(1), formulated by the Council, can be further criticised for its weakness of establishing whether a member state that has failed to achieve a target higher than zero would be in breach of the 2003 Directive. To establish this, one needs to pay special attention to the expected effectiveness of the promotion measures by a member state to achieve its biofuels target, respective whether the measures give market actors (such as farmers, biofuels producers, fuel suppliers and public authorities) enough impetus for investments into biofuels, and an indication of the market share of biofuels that a member states wants to be placed on the market. This is because the investments into biofuels and their magnitude are key to targets’ attainment (Werring *et al.*, 2006, p. 78). By implication, if a member state established a non-zero target with promotion measures that could be expected to ensure the target’s achievement, the member state would not be in breach of the Directive (Werring *et al.*, 2006, p. 78). Therefore, to initiate an infringement proceeding, the Commission would be faced with the difficult task of proving that a promotion measures to reach the target, taken by a member state, were not sufficient to actually achieve the target (Werring *et al.*, 2006, p. 78).

After having presented the positions of the EU-internal actors within the policy-making process in question, a comparable overview of positions on the 2003 Directive by the EU-external actors (or non-governmental actors) is due. The overview is provided in order to assess the potential contribution to the policy-making by the latter actor type.

The environmental NGOs sharply criticised the Commission for its plans to promote biofuels, complaining about risks to European biodiversity and wildlife. The necessity of promoting biofuels in the EU was perceived as motivated by the intention to help EU farmers diversify their land use since alternatively it would be possible to produce biofuels much cheaper abroad (ENDS, 2003a). For instance, the European Environmental Bureau (EEB) called on the European Commission to withdraw its Proposal, being concerned with the damage to biodiversity and the danger of extinction of more wildlife (ENDS, 2003a). Similarly, the European Federation for Transport and Environment (T&E) – a transport campaign group raised the concerns over air quality, reminding that according to Commission's own research within its Auto-Oil II programme, some biofuels perform worse in terms of exhaust emissions than conventional fuels (ENDS, 2003b).

Similarly, vehicle and fuel manufacturers were against biofuels promotion at the EU level (ENDS, 2003a). For example, the European Petroleum Industry Association (Europia) warned in a position paper that premature development of biofuels without taking into consideration environmental, logistical and economic issues may lead to regrettable actions. The association further pointed out that scientific studies come up with different results, some confirming the potential of biofuels to contribute to the security of energy supply and to reduce emissions, yet others showing less favourable results (Euractiv, 2003). The research arm of the oil industry, Concawe, conducted its own study in connection with the proposed Directive, coming to the conclusion that the CO₂ saving potential of biofuels are strongly dependent on the raw material used⁷³

⁷³ Specifically, Concawe concluded among others that “producing ethanol from agricultural sources such as beet and wheat would prevent only 26% of the greenhouse gas emissions released by making ethanol from traditional fossil fuel sources. The

(ENDS, 2003c). A concern with innovation was raised by a group of Swedish biofuel developers represented by the Orango environment consultancy. In their opinion, a Directive that is almost exclusively geared to bioethanol and biodiesel would stifle innovation because of ignoring other biofuels that cannot be blended with conventional fuels (ENDS, 2003c).

To sum up, there was a rather surprising agreement among different private and third sector interests on a straightforward disapproval of a biofuels Directive as there was strong criticism on the part of many private interests and the third sector regarding the Commission's Directive Draft. Thereby, environmental NGOs, as well as the oil industry, both concurred on the point that the environmental impact of promoting biofuels was in sum rather negative than positive.

Evaluation – Binding or Indicative Targets for Biofuels

As illustrated above, decisive in settling the score between the Parliament and the Council regarding the legal strength of the targets (by 2010 and the interim one) was the simultaneous policy-making on tax breaks for biofuels. Against the background that the decision on tax breaks required unanimity in the Council and was at the same time important for the EP, the latter institution had no choice but to make concessions to the Council as regards the targets' legal strength. Thus, the biofuels targets of the 2003 Directive became non-binding.

The tactic of making the tax breaks Directive conditional on indicative targets in the 2003 Directive by the Council, thereby, to led to the change in the Parliament's long-standing position on the policy issue. That is, binding targets were deemed appropriate in the Draft by the ITRE Committee, and later on in the plenary. This position by the EP

figure rises to 37% if residues such as animal feed are reused as well. A better option, the study suggests, is the production of rapeseed methyl ether as an additive, which would save 47% of the greenhouse gas emissions associated with its fossil equivalent, or 56% if residues are reused. The report warns, though, that both types of biofuel production have the potential to release significant amounts of the highly potent greenhouse gas nitrous oxide that could cancel out the climate benefits" (ENDS, 2003c).

was backed up by the Commission in its first Directive Draft and in the amended Draft as well. Thereby, the legislative outcome of indicative targets was also not in line with the positions by NGOs and the private sector, which in unison were voicing their disapproval of the 2003 Directive, the same way as they did not approve of any promotion of biofuels or specifically biofuels to be blended into conventional fuels.

The constellation of the above positions left the Council as the prevalent actor in the policy-making on targets legal strength as it has managed to set through its policy interest in spite of other actors' initial opposition to indicative targets. The Council, furthermore, could not only establish indicative nature of targets but also reduce numerical values to mere reference values, as formulated early in the policy-making process, in a Common Position by the Council, and subsequently transferred to the final Directive. This preference for reference values instead of the transposition of numerical values (2% by 2005 and 10% by 2010) into national legislation, as proposed by the Commission, was not backed by the EP. The latter institution approved initially of the same two numerical values as the percentages of biofuels to be sold on market.

Taking into account the diversity of national approaches to biofuels, as well as the reluctance on the part of some member states to take measures in compliance with the 2003 Directive, one can conclude that the national preferences for non-binding targets and for reference values stood in connection with national approaches to biofuels. In particular, such a vague formulation of the policy issue of targets would allow member states interested in further biofuels promotion to do so, and at the same time free member states not sharing this interest in biofuels from taking any substantial initiative on the fuels type, as was intended by e.g. Denmark. As already mentioned, the strategy of no-implementation of the 2003 Directive was most probably intended by several member states, which subsequently submitted targets lower than the reference values⁷⁴. Thereby, non-attainment of EU biofuels targets by member states would be almost impossible to lead to infringement proceedings by the Commission because of the exact wording of Article 3(1) of the Directive, which was equally formulated by the Council.

⁷⁴ “The biofuels directive established a reference value of a 2% share for biofuels ... in 2005 and 5.75% in 2010. ... The indicative targets set by Member States for 2005 were less ambitious, equating to an EU share of 1.4%. The share achieved was even lower, at 1%” (European Commission, 2006d, p. 7).

At the same time, a Directive enabling an option of tax breaks for biofuels only contributed to member states' freedom of proceeding with the chosen national approaches to biofuels promotion, as it provided member states interested in tax exemptions for biofuels with an EU piece of legislation allowing this.

The lack of empirical evidence specifically on the policy issue of reference values does not allow for a firm conclusion of why the Council was capable of winning on the policy issue, as it did not make this issue conditional on the tax breaks Directive. However, it appears that the Council's success with reference values in the negotiations was possible for the same reason as its success with the indicative character of targets. At the same time, because indicative targets and reference values serve the same purpose of making of the implementation of the Directive less impacting on the national level and less costly for member states as regards the implementation of the Directive, which allows validating H4/1.

The above acknowledgement of strongly diverging biofuels approaches by member states, however, leads to the question of why competence over biofuels was not left at the national level, i.e. why the Council did not simply aim at vetoing the Commission's Proposal. To answer this question, it further needs to be taken into account that the Proposal for the 2003 Directive was closely associated with the EU commitment to the Kyoto Protocol. As expressed by the Presidency compromise text of 2002 (i.e. in the earliest position by the Council on the future legislation), the intergovernmental institution was internally in agreement that a Proposal on a biofuels Directive is justifiable in its function of ensuring that climate change commitments made in connection with the Kyoto Protocol are fulfilled. Hence, the reason of why the Proposal on biofuels was not rejected by the Council is explicable against the background of the necessity to make a contribution to GHG savings in accordance with its global commitment (even if only a formal one). At the same time, the credibility of the second justification by the Council in the same text, related to the EU-level biofuels promotion as a means of reducing the Union's energy dependence on third countries is challengeable. This is because the Council was striving for a possibly watered-down and non-ambitious piece of legislation, i.e. a rather symbolic one, which would have no practical impact on the established national approaches to biofuels or on the lack of

such, and thus would make no change to the role of biofuels in the improvement of the security of the EU energy supply.

To sum up, the legislative result on the issue of targets' legal strength are explained as an expression of the Council's Common Position, being the lowest common denominator of the single member states' positions, on the one hand, and the pressure to enact biofuels legislation in response to the Kyoto Protocol. This allows demonstrating that the Council formed its policy preference on the policy issue within the confines of a critical juncture, which was launched under the structural pressure of compliance with the Protocol (as discussed in chapter three).

5.3 The Definitions of the Biofuels Directive

This section discusses the legislative issue of definitions, since, as established at the outset of this chapter, the policy issue has steered some controversy in the negotiating process (Werring *et al.*, 2006). As already mentioned, one of these definitions of the 2003 Directive were copied from the 2001 Directive.

Article 2 of the Commission's Proposal for the 2003 Directive is dedicated to definitions. The first part of Article 2(1) specifies that biofuels "means liquid or gaseous fuel for transport produced from biomass" (European Commission, 2001b, p. 33). This definition, in turn, requires a definition of biomass. Thereby, the *definition of biomass* provided by the 2003 Directive is the same as the one found in the renewables Directive of 2001(Article 2 b). Notably, the definition excludes non-organic wastes⁷⁵ (Werring *et al.*, 2006, p. 75).

⁷⁵ Furthermore, the definition is aimed at clarifying the practical application of biomass that is countable toward the target. This purpose of biomass application is in line with the initial idea of the Commission to address fuel dependency in the transport sector. By implication, this definition in Article 2(1), sub-paragraph a, specifies that not all biofuels from biomass are eligible toward the target stipulated by the Directive. It is not enough for the fuel to be produced from biomass to be counted toward the target, it also needs to be used in transport. This specification is significant since some fuels from biomass can find multiple applications for energy purposes and hence be utilised in sectors other than transport, e.g. biodiesel can serve as a substitute for heating oil. Therefore, the above definition is a functional definition of biofuels, providing that the

The second part of Article 2 in the Commission's Proposal also provides a list of products that are identified as biofuels and hence can contribute to compliance with the 2003 Directive. These products are listed in the Annex of the Directive Proposal (Commission, 2001b, Annex).

While the Parliament, in its ITRE Report, kept the issue of definitions unchanged, i.e. as formulated by the Commission (European Parliament, 2002), the Council in its Common Position from the first reading undertook considerable changes to the Directive Draft (Council of the European Union, 2002c, Art. 2, pp. 8-9). As summarised by Werring *et al.* (2006), the Council explicitly stretched the scope of the Directive by changing the title, from the one that refers only to biofuels, to a title that refers to the promotion of the use of "biofuels or other renewable fuels" for transport (Werring *et al.*, 2006, p. 75). By implication, the Council in its first reading also added a definition on what counts as 'other renewable fuels'. In so doing, the intergovernmental institution specified such renewable fuels as fuels "other than biofuels, which originate from renewable energy sources as defined in Directive 2001/77/EC" and which are used in transport⁷⁶ (Council of the European Union, 2002c, Art. 2, p. 9). This change pertains only to the first part of Article 2. However, the second part of the Article was also amended. Specifically, Article 2(2) provides a fuller list of types of biofuels than in the Proposal. Besides, this list is illustrative rather than exhaustive (Werring *et al.*, 2006, p. 75). Specifically, the Draft Statement by the Council that gives reasons for amending the Draft Directive states that the list of products considered biofuels should be an "open list, which may be adapted to technical progress in accordance with the Comitology procedure" (Council of the European Union, 2002d, p. 3).

same product can count toward the target if used for transport purposes, but not for the purpose of production of heating or electricity (Werring *et al.*, 2006, p. 74).

⁷⁶ For example, the definition of other renewable fuels (Article 2.1, subparagraph c) makes possible for electricity or hydrogen to be used in powering vehicles and hence can contribute toward obtaining the target, provided that this electricity or hydrogen has been produced from renewable energy sources, that is if the battery of an electric car is charged with electricity from wind power, or if wind power is used to make hydrogen (Werring *et al.*, 2006, p. 75).

In the same document, the Council added to the list of biofuels the three products (bio-MTBE, synthetic biofuels and biohydrogen) (Council of the European Union, 2002d, p. 3). Thereby, the list was made open to technical innovation only by the Council in its Common Position; the comparable list of the Commission's Proposal is an exhaustive one (compare European Commission, 2001b, p. 36), and the EP's amendments do not challenge this quality of the list (European Parliament, 2002; European Parliament, 2003). As regards three new products added to the list of biofuels, the EP opts for adding of just one product, namely "pure vegetable oil from oil plants" if it is "compatible with the type of engines involved and the corresponding emissions requirements" (European Parliament, 2003, Amendment 7, p. 9).

As a result of inter-institutional negotiations, the Council's re-formulations of Article 2 respective the open character of the list and the new products added to the list were copied to the final Directive. The single product added by the EP equally lengthened the list of biofuels (compare Directive, 2003, p. 44, p. 46).

Evaluation – Definitions for Biofuels and Other Renewable Fuels

Similarly to the previous case of the legal strength of the targets, the Council's position was once again of significant influence on the final shape of the policy issue of definition of biofuels in the 2003 Directive. However, the changes to the definitions undertaken by the Council were not commented on by single member states, while the media coverage of the issue of definitions did not specify why the Council could gain the upper hand on the legislative issue. However, it appears that the Council could prevail on the issue of definitions for the same reason that allowed for its success with legislative strength of the targets. This assumption can be strengthened when taking into consideration that the changes by the Council to the Commission's Proposal on the both policy issues (i.e. targets legal strength and definitions) were expressed in the same document – the Common Position by the Council from the first reading. Thereby, the Common Position respective targets and definitions remained unchallenged by other EU institutions in the view of the treat to veto the tax break Directive by the Council.

The Council's influence on the scope of the definition of biofuels pertains to two policy issues: first, the definition was made an open list amenable to technical progress, and second, the definition was made longer by expanding the list of products countable as biofuels by three additional products. To establish the rationale behind these two policy preferences, it needs to be kept in mind that at the time of the legislative processes studied, member states of the EU, if promoting biofuels, were interested in different types of biofuels (*inter alia* due to dissimilar geographical conditions, as discussed in the previous section). Moreover, some member states, e.g. Denmark, perceived the 2003 Directive as premature because of lack of technical progress in relation to production of second-generation biofuels. In the view of such diverging approaches to biofuels promotion in member states, the Council needed to make the biofuels list in the definition longer, and make it open to new products resulting from technical advancements, this way satisfying both, the preferences for production of different biofuels types and the preferences for potential innovation in technology of biofuels production. Such an open and elongated definition of biofuels allowed for continuation with dissimilar national approaches to biofuels, without impinging on the expenses of compliance with the EU Directive, which would result from national level adjustments to the EU-level requirements on biofuels promotion, which validates H4/1.

5.4 Conclusions

As mentioned at the beginning of this chapter and demonstrated throughout the chapter, the 2003 Directive became a light version of the Proposal by the Commission.; that is, the numerical values of targets became reference values, binding targets were changed to indicative ones, and the definition of biofuels became quite broad. All of these changes, with more or less certainty, can be attributed to the strong position by the Council in the policy-making process on the Directive. The strength of the Council's position, in its turn, was provided by the requirement for unanimity respective the decision-making on the tax breaks Directive, the approval of which was made conditional by the Council on the changes to the 2003 Direct in line with the same institution's policy preferences.

Several further features of the final shape of the 2003 Directive were owed to path-dependent processes, found not only in the realm of politics, but also in economics. Thus, the decision to promote biofuels mainly as a blend in conventional fuels was justified by the Commission and accepted by the two co-legislators in connection with the widespread use of technologies related to conventional car models and the road infrastructure serving these cars. More specifically, the Commission argued that the promotion of biofuels blended into conventional fuels would not result in any adaptation costs to the types of cars that EU citizens are driving and the infrastructure for the maintenance of this car fleet. This justification is based on more than one type of increasing returns to a path-dependent process of prioritising the established technology on a market. The increasing returns related to the prioritising of biofuels blends in the Directive of 2003 stem from, first, large set-up costs of the vehicle-related infrastructure of the EU and second, from the coordination effects of the existing car fleet in the EU and the infrastructure adjusted to this car fleet (e.g. fuelling stations and car repairing services).

Similarly, the decision to make all member states adopt the same numerical value for targets (reaching 2% by 2005 and 5.75% by 2010) was owed to the existing car infrastructure, which was the same across the EU. Dissimilar regional changes to the infrastructure would challenge the mobility of EU citizens (for example, because of the increasing returns of learning effects connected to the habits and the expectation by EU citizens of being able to use the same types of fuels all over the EU).

Besides, path-dependence, as found in politics, also played a role in giving the 2003 Directive its form, when it came to the calculations of the overall biofuels target of 5,75% by 2010. As already discussed in the previous chapter, the overall EU target for renewable energy (and by implication its dissipation into a target for renewable electricity and for biofuels) was arrived at with the help a modelling exercise that paid careful attention to the existing legislative frameworks at the EU and national levels. As a consequence, the calculation of the overall target was aimed to fit this existing institutional matrix, gearing it to the goal of strengthening of the EU competitiveness. The biofuels target of the 2003 directive, being derived from the overall target, similarly matches the EU institutional matrix and aims at improving its functioning under the aspects of the competitiveness of the EU.

The overall outcome of the 2003 Directive can be described, applying the terminology of process tracing, as a causal chain that has ended in causal conjunction. The causal chain was assessed in the previous chapter in relation to the calculation of the overall target for renewable fuels. It was identified as a chain consisting of necessary conditions because single stages in the use of policy formulation tools were structured primarily by the Commission's decisions, each decision thereby building a necessary condition for the next step in the policy formulation process. However, the decisions by the Commission were not sufficient conditions for the next policy step because many other factors shaped every single step in policy-formulation, such as data availability and the availability of particular policy formulation tools. The process of target calculation (being a causal chain consisting of necessary conditions) was followed by the stage of proposing a target for biofuels by the Commission and resulting into a policy-making process of the 2003 Directive. The policy-making process consisted of two readings in the Parliament and the Council. The simultaneous negotiations of the tax breaks Directive impacted on the negotiations in the second reading of the 2003 Directive, building a causal conjunction in the process of policy-making on biofuels and producing the policy outcome and in which two necessary conditions needed to interact in an additive manner to become jointly sufficient to yield a the policy result discussed in this chapter.

Chapter 6: Directive 2009/28/EC of the European Parliament and of the Council on the Promotion of the Use of Energy from Renewable Sources

Analogous to the preceding two empirical chapters, this chapter starts with an overview of documents and processes, preparing the release of the Proposal for the 2009 Directive. At this preparatory stage, the objectives of the future 2009 Directive – promotion of RE and biofuels – became perceived as ripe for the EU agenda. The processes leading to the Proposal consisted of a string of events, in the course of which one institution after another formed its position in favour of a new RE Directive. Hence, the introductory section to this chapter serves the purpose of tracing the processes of position formation on the new RE policy at the EU level in single EU institutions. After this overview of the preparatory stage, this chapter turns to a detailed discussion of single policy issues, pertaining to targets and definitions. Thus, this chapter covers: targets for RES-E and RES-T and their legal strength; distribution of the overall RES-E target between member states; the trajectory for the target attainment; the definition of energy from renewable sources; the rules for the calculation of targets for different RE sources; composition of the RES-T target and the definition of biomass. The last two sections of this chapter are dedicated to an outlook and therewith focus on the ILUC Directive (which determined the shape of some policy issues left open the Directive of 2009). Therewith, the last two sections cover the modelling exercise for the ILUC Directive and the negotiating processes leading to policy outcomes of interest.

6.1 Directive of 2009 – Overview of Legislative Aspects

Johnston and Block (2012) view the 2009 Directive on Energy from Renewable Sources as consisting of the following key legislative parts:

- An EU-level commitment to ensure that, by 2020, 20% of the EU's total energy needs are obtained from renewable energy sources (RES);
- an obligation on all Member States to ensure that at least 10 per cent of their energy needs for road transport are met through renewable energy sources;
- the division of this [20%] target between the EU's twenty-seven Member States in the form of separate, legally binding minimum renewable energy

- targets, established on an individual basis for each Member State to achieve the overall EU target;
- a method to permit one Member State to invest in the production of renewable energy in another Member State or a third country, so that the resulting renewable energy would count towards the investing Member State's target;
 - rules to overcome administrative barriers to the development of renewable energy and to ensure access to the grid, in particular for electricity from renewable energy sources (RES-E);
 - rules for the calculation of the share of renewable energy for all these purposes;
 - EU-level sustainability criteria for biofuels and bioliquids (Johnston and Block, 2012, ch. 4).

From the above parts of the 2009 Directives, only the first three ones, and the rules for the calculation of the targets, enjoy extensive attention in this chapter. Implicitly, the parts of the Directive on *inter alia* the investment and the administrative barriers in development of RE, as well as the access of RE producers to the grid lie outside of the scope of this study.

6.2 Formation of Institutional Positions Prior to Proposal Drafting

European Parliament's Position Formation on Renewables Promotion

Some initial discussion, leading to the future 2009 Directive, had already started in 2004 and continued until 2007 when finally the Proposal for the Directive was launched. This preparatory policy stage consisted of several events, in the course of which one institution after another became convinced of the necessity of a new Directive. As summed up by an EU official at the Secretariat of the EP, “[endorsement of renewables] has been built up in the middle and second half of the 2000 years, 2005, 2006, 2007, until 2008/9” (Interview, Götz). The Parliament, thereby, was the first institution to call for a new Renewables Directive. Its position on renewable energy policy beyond 2010 had crystallised well before the Commission released its Directive Draft. The venues that shaped the EP's attitude toward the future of renewable energy promotion at the EU level were the conferences in Berlin and Bonn. The Berlin conference was organised by the Commission and the German government in January 2004, being a follow-up

conference to the Johannesburg conference, at which the EU committed itself to the objectives of sustainable development and poverty alleviation in the world, among others through the promotion of renewable energy sources⁷⁷. At the same time, the Johannesburg conference was organised for the purpose of preparing for the International Conference for Renewable Energy held in Bonn in June 2004⁷⁸. The conclusions of these conferences had been well acknowledged by the Parliament (compare European Parliament, 2004a). Hence the institution called for a RE target by 2020 by stating that:

In April 2004, the European Parliament considered the recommendations of the Berlin Conference. It urged the Commission and the Council to start a political process of setting ambitious, time tabled targets for increasing the share of renewable energy in final energy consumption ... and called upon the Commission and the Council to make the necessary efforts to reach a target of 20% for the contribution by renewable energy to domestic energy consumption in the EU by 2020 (European Commission, 2004).

This call for a 20% target mirrored the general understanding amongst the conference-participant MEPs about the future RE in the EU, which was underpinned by a range of technical studies that justified a target of at least 20% of gross inland consumption in 2020 for the EU25 as an appropriate long-term goal for renewable energy promotion (European Commission, 2004).

After the preparatory Berlin conference, the conference in Bonn further reaffirmed the goal of poverty alleviation and good policy laid down at the Summits of Johannesburg

⁷⁷ “The World Summit on Sustainable Development (WSSD) held in Johannesburg in September 2002, addressed the broad aspects of sustainable development with a strong focus on the need to alleviate poverty as a matter of urgency. One of the main outcomes of the WSSD, was the general acceptance that energy, and in particular renewable energy, was one of the key priorities to alleviate poverty and to achieve long-term sustainable development. In Johannesburg, the EU committed itself to taking a lead through the EU Energy Initiative for Poverty Reduction and Sustainable Development (EUEI) and through the Johannesburg Renewable Energy Coalition (JREC)” (European Commission, 2004, pp. 40-42).

⁷⁸ The conference in Bonn was a follow-up to the Johannesburg conference and it aimed to produce a strong political declaration and an ambitious international action plan, including various commitments and guidance for good policy, as set out at the Johannesburg conference (European Commission, 2004).

(European Commission, 2004, pp. 40-42). Thereby, the conference did not go unnoticed by the EP, its reaction to the conference being expressed in another Resolution. Specifically, 'Resolution on the International Conference for Renewable Energies in Bonn', apart from calling once again for the 20% RE target, made a reference to the core foci of the conference, namely renewable energy promotion and its contribution to the dimension of the EU's cooperation in international relations. Particularly regarding development cooperation, an important role was assigned by the EP to sustainable energy's potential for poverty reduction. Another global dimension that the EP paid attention to in its Resolution was the implementation of the Kyoto Protocol, which all governments were urged upon by the EU institution. The Parliament also called on member states "to promote the use of biofuels, particularly in public transport" (European Parliament, 2004a).

A detailed position had been formulated by the EP in its Resolution of 1 April 2004. Apart from the *target of 20%* in renewable energy, which was endorsed by the overwhelming majority of the House, the EP urged the Commission to introduce *binding national targets*, based on the consideration of a wide range of benefits from developing renewable energy. Furthermore, the Resolution supported "the Commission's view that the promotion of renewable energies should in future be a key element of European structural policy" and would allow "new Member States to strengthen their small and medium-sized industries" (European Parliament, 2004b). Furthermore, when justifying a promotion of specifically biofuels, the EP further stressed the benefits of producing ethanol by claiming "that the use of ethanol for fuel will contribute to boosting agricultural areas in the EU and increasing the value of agricultural raw materials" (European Parliament, 2004b). The EP also considered "that given recent reforms and cuts in financial support (CAP, sugar), promoting the use and production of ethanol for fuel could offer this sector a new outlet" (European Parliament, 2004b). The Commission itself welcomed the EP's call for a target for RE. Such a policy measure would in the Commission's view "contribute to the continued leadership already shown by some JREC (Johannesburg Renewable Energy Coalition) members, including some EU Member States" in line with the goals of poverty alleviation and good policy laid down at the Summits of Johannesburg and Bonn (European Commission, 2004).

The above endorsement of new RE targets, expressed in a position representing the entire Commission, stood in strong contrast with the Commission's position on renewables before the Bonn conference. Thus, an earlier document from 26 May 2004, in which the Commission took stock of the member states' progress in reaching the 2010 renewables targets, failed "to set new long-term targets for renewable energy consumption" and hence "infuriated renewables supporters" (Politico, 2004). This position was taken against a background of disunity within the Commission, where the cabinet of the Commission President Prodi was supportive of a new 2020 renewables target, but stood in opposition to the stance on renewables coming "from the economic and monetary affairs, competition and enterprise directorates" (Politico, 2004).

The Council's Position Formation on Renewables Promotion

While the Commission and the Parliament managed to reach an early consensus on the necessity of an ambitious future RE legislation, as outlined above, the work toward a common stance between the Council and the Commission was of a far more complex nature and evolved in several stages. As discussed below, a common position on RE between the Council and the Commission was reached toward the end of a process of jointly developing an EU energy strategy.

The first step in leading to an inter-institutional agreement on RE was made at the Hampton Court informal meeting between Heads of State and Government and the Commission, held in October 2005. It was dedicated to a discussion of the role of the EU in a globalised world and further served the aim of developing strategies for seizing opportunities and coping with challenges of recent global dynamics outside of the EU.

The Commission was active in preparing for and in following up on the Hampton Court meeting, which allowed an effective proliferation of the Commission's interpretation of policy challenges and policy solutions connected to the globalisation dynamics. For example, with the aim of preparing and structuring the meeting at the Hampton Court, the Commission had preconceived a paper titled 'European values in the globalised world', in which the institution pleaded for a reform and a modernisation of the EU, especially with regard to new technologies and cutting-edge knowledge, which would

allow it to stay competitive *vis-à-vis* a resurgent Asia and which at the same time would help to retain the value of social justice (European Commission, 2005, p. 3). The paper further argued that the required modernisation could be achievable through the completion of a Single European Market (SEM), among others in the energy sector. Besides, regarding European energy policy, the Commission also stressed the necessity of a strengthened cooperation between the EU level and the member states, which would result in a long-term and coherent energy policy, enhancing supply of energy security and contributing to other policy areas such as research, agriculture and the environment (European Commission, 2005, p. 14).

According to the press release on the Hampton Court summit, the Commission's paper was well-received among the highest representatives of member states at the summit. According to Tony Blair, who was the host of the summit, the Heads of State and Government and the Commission "could get *broad agreement to the direction of economic policy* that was set out in the paper ... commissioned from the European Commission" (Blair, 2005, emphasis added). Furthermore, in his speech, Tony Blair also underlined the central role of the paper for the effectiveness of the meeting by thanking "President Barroso and his colleagues for producing that paper", which in his view set out very clearly what challenges Europe was facing, and what as a response should happen at national and European-levels; he continued by stating that he believed he "can say clearly that there was a broad agreement to that paper as the right direction for Europe's economic and social policy for the future" (Blair, 2005).

Respective the energy policy of the EU in particular, the Commission's vision for its development also found support among member states. The vision applied foremost to the single market dimension. Even the formerly reluctant position of the UK was reshaped toward a common approach⁷⁹, as commented on at the press conference by Tony Blair:

⁷⁹ This position of the UK is less surprising taking into account that "after being a net exporter of both gas and oil, the U.K. became a net importer in 2004 and 2005, respectively ... and in 2005 the UK's EU presidency study concluded that stronger EU energy policy cooperation was necessary to improve security of supplies" (Maltby, 2013, p. 440).

[W]e feared that what would happen is the European Commission would go in and start regulating North Sea oil platforms, and causing difficulties for us and all the rest of it. If that was a European common energy policy, it wouldn't be worth having. What is worth having, however, is how do we improve the competitiveness and the efficiency of European business, how do we reduce prices for consumers, and things like how we get the best interconnection on the European grid – that is absolutely the type of thing that we should be looking at (Blair, 2005).

The Hampton Court summit ended in an overarching agreement on the necessity of economic reforms and social modernisation (European Commission, 2005, p. 3). These general ideas, preliminarily endorsed at the Hampton Court, were further developed toward *inter alia* a common energy strategy, as detailed below. Thus, after the Hampton Court summit, the Commission was assigned with the general task of taking the lead in following up on the summit with work on a number of policy areas, energy being one of them. In reaction to this, President Barroso announced his plan to “present a concept paper on the external projection of the European Union in the world. According to him, “[s]wift and firm efforts in all these areas ... [were] essential to boost Europe’s response to globalisation” (European Commission, 2005, p. 3). Barroso also announced that the Commission would prepare an interim report to give additional information on the concept paper in the next European Council in December of the same year, and to follow up the Hampton Court summit with several meetings between the Commission and national governmental representatives. Each meeting, held between 15 November and 9 December, was devoted to a different work stream (European Commission, 2005, pp. 3- 4).

The ‘Energy’ work stream dealt with the internal energy market and its practical impact. The basis for the discussion at the meeting was offered by some preliminary findings on EU energy policy by the Commission and its work on the forthcoming ‘Green Paper on a European Energy Policy’ (European Commission, 2005). Other topics of discussion comprised “Climate Change and Sustainable Energy, referring to the Green Paper on energy efficiency” (European Commission, 2005, pp. 3- 4). More specifically, this Green Paper developed a common European strategy for energy, in which sustainability, competitiveness and security of energy supply are the core principles to underpin the EU energy strategy. Besides, the Green Paper identified six key areas

where action was deemed necessary. One of these key areas was ‘An integrated approach to tackling climate change’ – a chapter under which the Commission discussed “the potential role of renewable energy in the EU future energy mix, in addition to the solutions of energy efficiency and Emissions Trading System” (European Commission, 2006a).

The Green Paper was subsequently discussed also by the European Council in March 2006 and its Presidency Conclusions requested the Commission to undertake an Impact Assessment and to investigate the option of a 15% target for renewable energy by 2015 as well as to lay out a Renewable Energy Roadmap. The European Parliament echoed this call for a target in its Resolution of 14 December 2006, suggesting 25% by 2020, furthermore proposing to subdivide this target into binding sectoral targets. The Commission, in its turn, declared its intention of carrying out an Impact Assessment to examine the feasibility of such targets beyond 2010 (European Commission, 2006b, p. 3; European Commission, 2008a, p. 2).

The Impact Assessment was presented one year later, at the Spring Council of March 2007 under the German Presidency and thus helped to reach an agreement on the 20/20/20 targets by 2020 (Van Steen, 2010, p. 48). More specifically, the Spring Council “reaffirmed the Community’s long-term commitment to the EU-wide development of renewable energies beyond 2010 and invited the Commission to submit its proposal for a new comprehensive Directive on the use of renewable resources” (European Commission, 2008a, p. 2).

The Impact Assessment and its discussion at the Spring Council of 2007 are examined in the next section. It can, however, be preliminarily concluded that the EP and the Council were guided by overlapping, but non-identical reasons for agreeing to the target for RE. As put by a high official from the Commission’s DG Energy, “there were different emphases by the different institutions, but basically, they have all signed up to what was the European Council conclusion of 2007” (Interview Nr 2, Howes).

Evaluation – Formation of Institutional Positions Prior to Proposal Drafting

The chronological order of events outlined above shows that a consensus among the three EU institutions (the Commission, the EP and the Council) on the necessity of a RE target (either binding or indicative) at the EU-level had been reached by March 2006. During this time of consensus formation, there was a number of rationales that served as a basis for an inter-institutional agreement on the necessity of a RE target beyond 2010. However, the European competitiveness in the globalising world was, I argue, of major impact because it laid the basis for a strategy developed by an interaction of the Commission and the Council. Thereby, the liberalisation of the energy market, being a part of the strategy in response to the challenge of EU competitiveness in a globalising world, comprised measures on further promotion of renewable energy.

The process of interactions of the Council and the Commission was, I argue, of major importance for position formation by the Council on the future RE legislation; hence, it deserves some additional attention. Drawing on the method of process tracing to evaluate the chain of events leading to the Council's request to examine the validity of a particular RE target, one can recognise a 'causal chain', in which one event was a pre-condition for the next one. Thereby, I argue that this causal chain consisted of sufficient conditions. A "sufficient" causal chain can be recognised here because interactions between the two institutions were closed to other events. Hence, one stage in the cooperation between the two institutions was on its own responsible for the next step in this process. Importantly, as established by Blatter and Haverland (2014a), the first causal condition in a sufficient causal chain is more important than the subsequent ones because of being the initial trigger for the entire chain of sufficient conditions. Thereby, the first causal condition – a concern with EU competitiveness in a globalising world – seen through the lens of critical juncture conceptual framework, can be identified as a permissive condition to opening of this critical juncture. This permissive condition launching the Critical Juncture on the policy-making process on the 2009 Directive, is thereby a structural pressure because it was identified by the Commission and approved by the Council as a challenge that the EU is faced with and that necessitates a strategic response at the EU level. Such a strategy was developed jointly by both institutions in various work streams post the recognition that securing of the future EU competitiveness necessitates developing new legislation – one piece of such legislation being the 2009 Directive on Renewables.

The EP, by comparison to the Council, did not manage to make any impact on in the launch of policy-making in the area of RE legislation. Despite the fact that the EP repeatedly advocated for the EU-level RE promotion in its Resolutions, starting as early as in 2004, its efforts failed to find enough support by the Commission. That is, these calls for RE legislation did not result in any systematic work on the part of the Commission as regards the preparation of legislation. Even though the Commission was participating in the same conferences and hence shared many of the EP's justifications for RE promotion in the EU, the work on an Impact Assessment began only after being requested by member states in the Spring Council of 2006.

Thus, the Spring Council of 2006 was the point at which a critical juncture for policy-making on renewable energy legislation became launched, the structural pressure (permissive condition) responsible for this being the necessity to secure the EU competitiveness in the globalising world in the medium and long run (– a recognition that has developed in the Council over a period of time in the work streams following the Hampton Court). Even though a call for a Proposal followed a year later, in the 2007 Spring Council, the Council's request of 2006 gave the Commission substantial space to conduct an Impact Assessment and also to undertake informal meetings with national representatives, which strongly predetermined the future shape of the Renewable Directive of 2009 (as discussed in the next section). This allows approving the first proposition of H1, confirming the policy-making on renewable energy was launched by a response to the structural constraint of ensuring EU competitiveness.

With this in mind, this chapter will now turn to the subject of the Impact Assessment in more detail. This will allow for a clarification as to what legislative elements of the future Directive were evaluated scientifically prior to the request for policy proposal on the future 2009 Directive at the Spring Council of 2007.

6.3 Numerical Value of the overall EU and the Biofuels Targets – Impact Assessment

As previously mentioned, the Commission reacted to the call for a RE target in 2006 by two EU co-legislators by declaring its intention to conduct an Impact Assessment to

examine the economic, social and environmental implications of an RE target (European Commission, 2006b, p. 3). As established by Dreger (2014), conducting the Impact Assessment for the 2009 Directive involved no subcontractors, i.e. all the modelling work was done within the Commission. More specifically, an “interdepartmental Commission group was set up to coordinate this work. It met seven times between April 2005 and November 2006” (European Commission, 2006b, p. 3). The Impact Assessment appeared as a document accompanying the Renewable Energy Roadmap in January 2007 and supported the choice of a 20% target in RE and a 10% target in biofuels in transport as appropriate measures for EU-level policy (Van Steen, 2010, pp. 46-47).

A target of 20% by 2020, was however not arrived at by means of comparing a wider range of numerical values for a target, but was taken as a starting point of the Impact Assessment, (forecasting different avenues for its attainment) (European Commission, 2006b, p. 13). That is, the Commission defined the task of the Impact Assessment as to examine whether this target in renewable energy in the EU is, first feasible⁸⁰, second, what are the costs and benefits⁸¹ of attaining the target, and third, what are the best policy options for reaching this target (European Commission, 2006b). Thereby, the comparison of costs and benefits was undertaken through a comparison of a ‘business as usual scenario’ vs. a scenario of an ambitious RE target by 2020, i.e. in the range of 20% by 2020 (European Commission, 2006b, p. 6). “[U]nder business-as-usual conditions, the share of renewable energy will grow to between 10.4 and 12.6% in 2020, compared with 6.5 % today [i.e. in 2006]”, according to the modeling exercise undertaken for the Impact Assessment; hence, the Community needed “to decide whether this is enough, or whether a more ambitious approach is needed” (European Commission, 2006b, p. 7). In other words, the entire Impact Assessment was meant to

⁸⁰ “The question of feasibility has two main elements: (1) Will enough biomass be available? (2) Can the electricity system cope with the necessary volume of variable power?” (European Commission, 2006b, p. 14).

⁸¹ Regarding costs of reaching 20% in RE by 2020, the “models have investigated investment needs and *additional* production costs for renewable energy under the different scenarios. (European Commission, 2006b, pp. 14-15, emphasis in the original). The potential benefits of the target were assessed under the following aspects: greenhouse gas emissions, security of supply, employment, GDP and export opportunities, biodiversity impacts and regional development and rural economy (European Commission, 2006b, p. 6).

inform “[t]he single most important choice facing the Community” – “whether to adopt a “business-as-usual” attitude to the development of renewable energy, or to adopt a coherent policy stance” of a different scale of ambition (European Commission, 2006b, p. 7).

A target (20% by 2020), as a policy goal to be assessed, was chosen by the Commission in reliance on the calls by the EP and the Council. Thus, the Commission reminds in the first part of the Impact Assessment that “[i]n 2004, the European Parliament called for a target of a 20% share of renewable energy in 2020. ... And in 2006, the spring European Council asked the Commission to look into a 15% target for renewable energy in 2015” (European Commission, 2006b, p. 6; European Commission, 2006d, p. 3). In addition, more recently the EP called for “a 25 % target for renewable energies in the EU's overall energy consumption by 2020” (European Commission, 2006d, p. 3; European Commission, 2006b, p. 6). Therewith, the “scenarios the Commission has devised to illustrate the impact of a significantly higher share of renewable energy in 2020 all imply the achievement of a higher share in the region of 15% in 2015” (European Commission, 2006b, p. 6).

Specifically, three scenarios were developed, “each with an overall share of 20% in 2020, but with a different breakdown of renewable energy between sectors” of renewable electricity, biofuels, and heating and cooling (European Commission, 2006b, p. 13). As further explained in the Impact Assessment:

Although the three 20% renewable share scenarios provide for exploring the impacts of differing the mix of renewable energy, in this part of the impact assessment, the main focus is on understanding the range of impacts that can be expected if business is left to proceed as usual, as compared with setting a target of a 20% renewable energy share (European Commission, 2006b, p. 13).

To design the three aforementioned scenarios, as well as the business-as-usual scenario, the PRIMES⁸² and Green-X⁸³ models were run. The various scenarios using “the

⁸² “The PRIMES model is a modelling system that simulates a market equilibrium solution for energy supply and demand” (European Commission, 2006b, p. 30). The PRIMES (Price-Induced Market Equilibrium System) energy system model has been

PRIMES and Green-X models have been carried out for EU25. However, to take account of the enlargement of the European Union on 1 January 2007 to include Bulgaria and Romania, a model run on the EU27 using the PRIMES model was also carried out” (European Commission, 2006b, p. 3). In general terms, the PRIMES model was designed to analyse the development on the whole energy sector by 2020, and the Green-X model to provide more detail on renewable energy development on the energy market by that point in time (European Commission, 2006b, p. 13). More specifically, the PRIMES and Green-X models were needed to:

[S]imulate the growth of different technologies in all three energy sectors. They start with the existing energy capital base and simulate its evolution based on the costs of the different technologies and the rate at which the technologies can be replaced. Thus, for both the business as

developed by the Energy-Economy-Environment Modelling Laboratory at National Technical University of Athens in the context of a series of research programmes co-financed by the European Commission. ... The model has been successfully peer reviewed in the framework of the European Commission in 1997 and in 2011. ... From mid-90s until today PRIMES has been continuously extended and updated (European Commission, 2013, p. 1). “The PRIMES model has been extensively used for energy and climate policy analysis providing key input for benchmark studies of the European Commission” (Capros *et al.*, 2014, p. 221). For example, the model “has served to quantify energy outlook scenarios for DG TREN and DG ENER (Trends publications since 1990), impact assessment studies for DG ENV, DG TREN, DG CLIMA and DG ENER and others” (European Commission, 2013, p. 1). The development of the model was motivated *inter alia* by “the need to represent the growing process of market liberalisation” (Manzos and Capros, 2006, p. 155).

⁸³ “The Green-X model facilitates a comparative, quantitative analysis of interactions between RES, conventional energy and combined heat and power (CHP) generation, demand-side management (DSM) activities and CO₂-reduction, both within the EU as a whole and for individual Member States. The model forecasts the deployment of RES under various scenarios in terms of supporting policy instruments, the availability of resources and generation technologies, and energy, technology and resource price developments” (European Commission, 2006b, p. 36). “The model Green-X has been developed by the Energy Economics Group (EEG) at the Vienna University of Technology under the EU research project “Green-X–Deriving optimal promotion strategies for increasing the share of RES-E in a dynamic European electricity market” (Capros *et al.*, 2014, p. 223). The Green-X computer model is the core product of the research project within the 5th Framework Programme of the European Commission, funded by DG Research and conducted between 2002 and 2004. “The core objective of this project is to facilitate a significantly increased RES-E generation in a liberalized electricity market with minimal costs to European citizen. To identify most important strategies the dynamic toolbox Green-X has been developed” (Huber *et al.*, 2004, pp. iii-v).

usual and the 20% scenarios, the lifetimes and investment cycles of the sector are reflected in the analysis (European Commission, 2006b, p. 15).

Thus, the overall remit of the modelling exercise by the Commission carried the purpose of comparing different options (of different effort at development of different technologies in the three sectors of RES-E, RES-T and H&C) geared at the attainment of a pre-set policy goal of 20% renewable energy consumption (as a share of the overall EU energy consumption). Therewith, the scenarios produced by the Commission represent a *normative* type of scenario, which is aimed at evaluation of a particular policy goal, e.g. respective its costs and benefits, (and not an *exploratory* type of scenario that seeks to explore possible policy options) (see chapter four for more details).

The calculation of costs and benefits of a ‘business as usual scenario’ vs. a scenario of an ambitious renewables target by 2020 was carried out as dependent on the effect of changing model parameters, “such as energy prices, CO₂ prices, energy efficiency and rates of technological learning” (European Commission, 2006b, p. 23). The central model parameters, thereby, were oil prices and CO₂ prices (i.e. the prices of Carbon Trading Certificates on the market for Emissions Trading System) (European Commission, 2006b, p. 24). That is, the parameters of growing oil prices and the general volatility of oil prices at that time were allocated a special place in the Commission’s Impact Assessment (Interview, Howes). As stated in the document, “the dominant factor influencing the cost of promoting renewable energy is the conventional energy price. When the oil price increases from \$48/bbl to \$78/bbl the additional production cost falls 99% from from €26 bn to €0 bn in the year 2020” (European Commission, 2006b, p. 24). Hence, the numerical value of 20% for the overall target was perceived as appropriate mainly in the context of high costs of conventional energy in connection with the high oil prices at that time (Interview, Howes). As further explained by Deputy Head of Directorate General Energy, who participated in the modelling exercise:

[O]ur exposure to the global energy markets and our reliance on imports, and the volatility of the fossil fuel prices were all good reasons for supporting the entire energy package, which is about indigenous sources and non-fossil fuel sources and reducing consumption overall. So, it

strengthened all the arguments for going forward with this approach. It also made a difference when we actually were modelling the different costs of the policy. When you have a high cost of fossil fuels ... the extra cost of abatement measures and renewables was less than it used to be, and for the relative cost of the rest of the package as well (Interview, Howes).

In addition to establishing cost and benefits of a 20% target⁸⁴, the Commission decided to compare these costs and benefits to the targets slightly higher and lower than the target of 20% in order “to be certain that the chosen share of renewable energy reflects an acceptable balance between the costs and benefits of reaching the target” (European Commission, 2006b, p. 22). This sensitivity analysis concentrated on four numerical values for an overall RE target – 16%, 18%, 20%, and 22% (Van Steen, 2010, p. 47). By “looking at the impact of achieving 16%, 18% and 22% shares”, the 20% share was taken as a benchmark (European Commission, 2006b, pp. 22-23). The comparison of four numerical values yielded that the 20% target would be the most cost-effective measure among the four optional ones (Van Steen, 2010, p. 47).

At the same time, the cost-effectiveness of the 20% target was particularly strongly pronounced only with respect to investment costs and additional production costs; this means that “the cost of increasing the share of renewable energy grows more sharply after reaching a share of 20% renewable energy [which] was most obvious in the case of investment costs, [while] the effect is also present in the case of additional production costs” (Van Steen, 2010, p. 47). “By contrast, the benefits (CO₂ emissions avoided and fossil fuels saved) tend to grow at a constant rate, or even grow less rapidly after 20%” target is reached (Van Steen, 2010, p. 47).

Conducting the above Impact Assessment was, however, not the only avenue for making a decision on the targets, since parallel to the European Council of March 2006

⁸⁴ “The EU's total energy bill is expected to be about €350bn in 2020. The annual cost of achieving a 20% share of renewable energy is likely to reach €24-31bn per year in 2020 ... In exchange for this cost, the EU would obtain major benefits. Annual greenhouse gas emissions would be 600-900 Mt lower. From the point of view of security of supply, fossil fuel consumption would be 235-300 Mtoe per year lower in 2020, including 50-55 Mtoe less oil imports from the Middle East and CIS, and 85-90 Mtoe less gas imports from those regions. This energy would mostly be replaced by domestically produced renewable energy. There would be substantial biodiversity benefits” (European Commission, 2006b, p. 28).

the Commission had started its public consultation (the first public consultation of two conducted). Lasting from March until September 2006, it gave the Commission a chance to confirm a positive attitude toward new binding legislation on renewable energy and biofuels⁸⁵ (European Commission, 2006b, pp. 3-4).

Impact Assessment – Target for Biofuels

When setting the stage for the assessment of the biofuels target within the 2009 Directive, it is worth taking into account that the years before its drafting, between 2005 and 2007, were characterised by a predominantly positive attitude toward additional biofuels legislation. One of the contributory factors for this attitude was the persistent problems of transport emissions and the EU dependence on fossil fuels imports, which remained unresolved due to the 2003 Directive’s poor performance⁸⁶. The biofuels endorsement, as already mentioned, was also confirmed by the 2006 public consultation. Led by the Commission, the consultation had contributed to the acknowledgement of the popularity of biofuels in all EU institutions and on the part of the overwhelming majority of other consultation-participating parties. The consultation involved, apart from member states, the private sector and NGOs. (In sum, from the 144 responses given to the Commission, 83 were by the private sector, 26 by NGOs, while private citizens, Member States and institutions accounted for the remainder of the positions taken) (Londo *et al.*, 2008, p. 4).

⁸⁵ “Complementary consultation exercises were conducted, including consultation of the European Energy and Transport Forum. This is a consultative body set up by the Commission in 2018 with 34 full members directly appointed by the Commission to represent operators (energy producers, carriers, and manufacturing industry), managers of networks and infrastructure, users and consumers, unions, environmental protection and safety organisations, and academics. ... A large majority of the Forum concluded that the European Commission should propose mandatory targets for 2020. The level of the 2020 targets should be based on ambitious and realistic assessments of national renewable potentials. At the same time, the Commission consulted stakeholders in particular on the review of the biofuels directive and on renewable energy in heating and cooling” (European Commission, 2006b, pp. 4-5).

⁸⁶ The interim target a 2% share for biofuels in petrol and diesel consumptions by 2005 was missed, as only 1% could be achieved. In only three Member States the share reached was of more than 1%. “One Member State, Germany, accounted for two thirds of total EU consumption” (European Commission, 2006d, p. 7).

When conducting the Impact Assessment on a target for biofuels, the decision by the Commission in favour of a fixed target of 10% for all member states was based on the same consideration as in the case of the 2003 Directive. As phrased by a policy officer from DG Energy, Unit of Renewable Energy:

For biofuels, or renewables in transport, the logic behind a single target was that fuels and cars in the EU already cross borders and if you have different targets, you will end up with different fuel specifications, and that is not desirable. That is why it did make sense to set one target (Interview, Deurwaarder).

The Impact Assessment also tested into different numerical values for a target – 7% and 14% (Interview, Deurwaarder). However, the target for biofuels was not profoundly discussed in the Road Map Impact Assessment itself (Eickhout *et al.*, 2008). Instead, the Road Map argued rather generally that a 10% target “is appropriate given that biofuels are the only way to significantly reduce oil dependence in the transport sector over the next 15 years and the fact that greenhouse gas reductions in the transport sector are particularly difficult to obtain” (Van Steen, 2010, p. 47). Thus, the Impact Assessment mostly relied on the results of the Staff Working Paper. More specifically, the Road Map Impact Assessment had analysed the percentage of the target relatively superficially, by referring mainly to the Staff Working Paper attached to the last Biofuels Progress Report (which also made use of a the PRIMES and Green-X models applied together) (Van Steen, 2010, p. 47). The Progress Report (while dealing in its first part with the progress of member states in consuming renewable fuels in their markets) was in its second part devoted to the question of the economic impact of increasing the share of biofuels. Two scenarios, with 7% and 14% shares of biofuels respectively, were examined toward their economic consequences for the following economic variables: fuel cost, the security of energy supply, employment and GDP, important price effects, agricultural markets and the rural economy, as well as development and external relations. The Progress Report, however, omitted the variable of land-use change outside of the EU, either direct or indirect (European Commission, 2006c).

The Staff Working Paper concluded that the shares of 7% and 14% were achievable in agricultural terms. Besides, the 14% scenario was shown to have greater positive effects than the alternative scenario of 7%. However, the scientific evidence presented in the Staff Working Paper was not followed up to the point when recovering it for the purpose of inclusion into the Impact Assessment. By making a reference to the Paper, the Impact Assessment concluded: “that – on present knowledge – there are good reasons to believe that ... in fixing a minimum target, and one which should be binding, a more cautious approach should be adopted, which leads the Commission to propose a target of 10%” (Van Steen, 2010, p. 47). More specifically, by choosing 10% instead of the optimal 14% it was admitted that land-use change of some magnitude is likely to take place as a consequence of the additional biofuels legislation by the EU. To soften the potential land-use effect, which however could not be assessed scientifically due to lack of sophisticated modelling tools, the more cautious approach to a target choice was prioritised, resulting in a 10% and not a 14% target (European Commission, 2006b, p. 26). At the same time, no justification was provided for why exactly 10%, and not another numerical value lower than 14%, was selected (compare European Commission, 2006b, p. 26).

The above explanation makes it clear that while purely scientific considerations have taken place when deciding on the numerical value of a biofuels target, an approximate estimation or ‘rule of thumb’ did also play into the choice of the target. A recollection by the policy officer from DG Energy confirms this, and show that the Commission was preoccupied with a range of economic and technical parameters when deciding on the numerical value for a biofuels target:

It was a mix of everything. I remember we had discussions at that time. There were many factors, such as the availability of land, which went into. We calculated roughly what it would mean in terms of the use of cropland. Then, of course, related to the impact on crop prices, the benefit to farmers basically. Then it was clear that biofuels cannot be mixed without limit into fossil fuels, so there were technical restriction and considerations of what maximum we can blend into fossil fuels. And you know that at that time this was very low, and now we have higher limits [for biofuels in a fuel blend], the limits have been released⁸⁷. But still, taking all these into

⁸⁷ At the time of policy-formulation of the future 2009 Directive, rules limited biofuel content to 5% ethanol in petrol and 5% biodiesel in diesel (both by volume). This fuel blend would however be not sufficient to accommodate the 10% share of biofuels

account we arrived at 10%. It was basically as simple as this. So of course science, but also the rule of the thumb considerations, in terms of what this means for the agricultural market and in terms of cost to taxpayers and to fuels consumers of course (Interview, Pilziker).

The above interview has also confirmed that a precise calculation of an optimal target for biofuels was restricted amongst others by under-developed modelling tools at that time, which would be needed to calculate the target (Interview, Pilziker). Another weakness regarding the approach to target calculation, according to Eickhout *et al.* (2008, p. 26), was that the Impact Assessment for the 2009 Directive reached its boundaries when dealing with the global-level impact of biofuels production. In particular, they were uncertain about the available land for bio-crops within the EU and consequently about the required amount of imported biofuels. The uncertainty was, in turn, related to the future availability of new technology (Eickhout *et al.*, 2008, p. 26).

Evaluation – Numerical Value of the Overall EU and the Biofuels Targets

When choosing the overall EU target in biofuels under the aspect of its numerical value, both environmental and economic variables were considered. At the same time, one sectoral target of 10% was dedicated to biofuels, and was made binding.

Besides, one can recognise the neglect of environmental factors in the calculation of the biofuels target. By and large, the approach chosen to calculate the biofuels target took care primarily of the parameters related to economic competitiveness such as the cost to taxpayers and to fuels consumers. Particular attention was also paid to the agricultural sector, by incorporating the aspects of benefits to farmers and the availability of their farm land into the approximate calculation. Technical restrictions related to the blending of conventional fuels and biofuels were equally taken into consideration. Environmental considerations, on the contrary, such as land-use change as well as its economic impact on third countries, were left out of the scope of the calculation.

consumption on the EU market (European Commission, 2006b, p. 27). “To ensure a smooth implementation of this target, the Commission, in parallel ... [proposed] the appropriate modifications to the fuel quality directive (98/70/EC) including the means of accommodating the share of biofuels” (European Commission, 2006d, p. 10).

With regard to the different stages in policy formulation by means of policy formulation tools, the decisions during these stages were made primarily by the Commission officers. At the same time, the stage of *problem characterisation* has crystallised during the years of intergovernmental negotiations, which in the end gave the Commission an impetus to conduct the Impact Assessment. The next stage of *problem evaluation* implied making various assumptions about factors that influence the future impact of a particular level of the target (oil price being particularly important). In the case of the overall target, such factors were chosen in agreement with the classic cost-benefit analysis. It is important to note however that the establishment of policy-relevant dimensions for problem evaluation diverged in the case of the biofuels target from the case of the overall target. The impact on this policy formulation stage for the biofuels target was made through the Staff Working Paper and the additional elaborations on the results of the paper for the purpose of Impact Assessment. Thereby, the Working Paper is investigating purely the economic impact of biofuels, taking into account factors such as fuel cost, the security of energy supply, employment benefits, agricultural markets and GDP. The results were subsequently evaluated in a rather informal manner by taking into account the same economic (as well as some technical) parameters.

The objectives to be met and the timescales for accomplishing this, which are established during the stage of *specification of objectives*, were largely determined in the intra-institutional negotiations. Specifically, the time scope by 2020 was set up before the conduction of the Impact Assessment. The same applies to the policy objectives of the promotion of renewable energy as such. The stage of evaluation of policy options was largely in the hands of the policy officers of the DG Energy. However, the range of acceptable numerical targets to the EP and the Council was also predetermined in the inter-institutional negotiations. Finally, the stage of *policy design* with its specifications on such issues as policy means and instruments is discussed in the rest of this chapter.

It can be concluded that because conducting the Impact Assessment started only after some major cornerstones regarding the future shape of RE policy had been laid down, the entire stage of policy formulation diverged from the classical chronological order of the five stages identified by Jordan and Turnpenny (2015). Nevertheless, looking at the

policy formulation in question through the prism of the five-stage-process facilitated identifying as to who were the actors involved with the respective tasks ascribed to each of the five stages.

6.4 Inter-institutional Agreement on Binding 20% and 10% Targets

The issue of how binding the targets of 20% and 10% should be was first addressed at a meeting in Helsinki. The meeting was organised by the Finish Presidency of the Council in November 2006 and was held at a High-level Energy Working Group. The Presidency by Finland, being confronted with the Council's and the EP's recent requests to the Commission to analyse how to promote renewable energy, and suggesting to examine respectively 25% and 15% RE shares, wanted to solicit the high-level representatives of the EU member states on a number of policy issues related to RE promotion. Regarding the legal strength of targets, the vast majority of member states expressed themselves clearly in favour of indicative or non-binding targets, nonetheless recognising the importance of enshrining of these targets in EU legislation in order to secure legislative stability for investors. Besides, the majority of member states preferred one overall target for renewable energy instead of sectoral targets set up for different types of RE, i.e. for biofuels, renewable electricity, and heating and cooling respectively (Van Steen, 2010, p. 46).

At the end of the same month of 2006, the venue of the Amsterdam Sustainable Forum offered an additional opportunity for member states to make their positions regarding the legal strength of the target known to the Commission. This third Amsterdam Forum debated the Renewable Energy Road Map and the Impact Assessment accompanying the Road Map, (whereas the fifth Amsterdam Forum in October 2007 concentrated specifically on RE support mechanisms). Thereby, the positions at the Forum mirrored the ones formulated at the Helsinki meeting, i.e. against binding targets. Furthermore, the same positions were retained at an informal meeting of member states in December 2006, with only Denmark and Germany being prepared to embrace binding targets (Interview Nr. 2, Howes).

However, between January and March 2007 (that is closely preceding the European Council of March 2007), the Commission started to network with member states on a bilateral basis. Some of the Commission's top officials, Barroso being one of them, travelled to national capitals and conducted informal negotiations with single member states' representatives. In this 'touring of capitals', the Commission representatives (Energy Commissioner Piebalgs, Environment Commissioner Dimas and member of their respective Cabinets) sought for a reaction by member states regarding the general architecture of the upcoming Directive Draft. The Commission representatives also sought to get a preliminary agreement by member states on the 20% target distribution among member states to avoid subsequent 'horse trading', i.e. the trading of different policy issues against each other by member states (Interview Nr. 2, Howes; Dreger, 2014, p. 159).

During the ensuing European Council of March 2007, member states agreed to the legally binding targets of 20% for renewable energy and 10% for biofuels (Van Steen, 2010, p. 48). The Council also formally endorsed the entire Package Proposal⁸⁸ by the Commission constituting the 20/20/20 goals, and "invited the Commission to submit its proposals to make the "20/20/20" approach a reality" (Jones, 2010, p. 22).

Importantly, this European Council served as the key venue for further agreeing on the general architecture of the future 2009 Directive (Jones, 2010, p. 22). The document debated at the European Council of 2007 was the Renewable Energy Road Map by the Commission, while framework for the agreement was presented in the Communication by the Commission, titled 'An Energy Policy for Europe' (Van Steen, 2010, p. 48). Thereby, one aspect of the architecture of the future Renewable Directive was a sectoral target of 10% in biofuels (Van Steen, 2010, p. 48).

A justification for a sectoral biofuels target in the future 2009 Directive by the Commission stood in connection with the fact that the market sector of transport was very small (when compared with the sectors electricity, and heating and cooling), which, in the absence of a binding commitment, could easily undermine the investors'

⁸⁸ The Package Proposal embraced the following targets: a 20% in reduction of GHGs by 2020, a 20% in savings of the EU energy consumption, and a 20% share of RE in the overall EU energy consumption by 2020 compared to 1990 (Jones, 2010, p. 22).

confidence in whether the market will develop and will be large enough to sell into (Hodson, 2010, p. 174). As elaborated on in the Impact Assessment accompanying the Energy Road Map, “[f]or biofuels in particular, it is clear that the market alone will do little to develop the sector. Left to choose between all renewable energies, efforts will first be directed towards electricity and heating. ... And yet, progress must be made in the transport sector”; this is because “it is the sector where fuel choice is negligible (oil constitutes 98% of transport fuels), where greenhouse gas emissions are growing most strongly and where fuel supply and price is least stable” (European Commission, 2006b, p. 26).

As regards some of these aspects in the architecture of the future Renewables Directive, a sectoral target in biofuels was proposed by the Commission and accepted by member states as the only sectoral target. This way, member states were left with the “flexibility about how they achieve their targets in recognition of the fact that this time, the targets are binding”⁸⁹ (Hodson, 2010, p. 174). More specifically, the overall 20% target could be filled with renewable electricity, biofuels (or more precisely renewable fuels) and with heating and cooling⁹⁰, and thus could be broken down by member states into their national three targets, with the exception of a binding 10% in biofuels (Van Steen,

⁸⁹ More specifically, “Member State should have the flexibility to promote the renewable energies most suited to their specific potential and priorities. The way in which Member States will meet their targets should be set out in National Action Plans to be notified to the Commission. The Plans should contain sectoral targets and measures consistent with achieving the agreed overall national targets (European Commission, 2007, pp. 14-15).

⁹⁰ The intention of making heating and cooling from renewable energy sources a part of the future 2009 Directive was accompanied by the Commission with the rationale that the “Community has not so far adopted any legislation to promote heating and cooling from renewable sources”, and consequently “renewable energy in heating has grown only slowly”, biomass use dominating “renewable heating consumption and the bulk of this is in domestic wood heating” (European Commission, 2006d, p. 8). “Little growth has occurred in the use of efficient wood-burning stoves and boilers, or biomass CHP (for industrial use), despite their potential for reducing emissions. Several European countries have promoted other types of renewable heating, with some success. Sweden, Hungary, France and Germany make the greatest use of geothermal heat in Europe; Hungary and Italy lead with low-energy geothermal applications. Sweden has the largest number of heat pumps. Solar thermal energy has taken off in Germany, Greece, Austria and Cyprus. That said, policies and practices vary widely across the EU. There is no coordinated approach, no coherent European market for the technologies, and no consistency of support mechanisms” (European Commission, 2006d, p. 8).

2010, p. 50). This implies that energy in transport countable toward the 10% is simultaneously countable toward the 20%, (even though second-generation biofuels can be counted twice toward the 10% and only once toward the 20%) (Hodson, 2010, p. 176).

A justification behind such an ambitious policy architecture for RE, as provided by the Commission, was based on the perception that the “EU and the world are at a crossroads concerning the future of energy” because the challenges of “[c]limate change, increasing dependence on oil and other fossil fuels ... [which] call for a comprehensive and ambitious response” in form of new renewables legislation (European Commission, 2006d, p. 3). Particular importance, thereby, was attributed to high oil prices and their volatility, leading to “uncertainty of energy supply and the risks of supply disruption”, and to the consideration that the “rate of import dependency is expected to rise from about 50% to 70% over the next 30 years” (European Commission, 2006b, p. 5).

Generally speaking, the time of policy-making on the package of 20/20/20 by 2020 was accompanied by steeply rising oil prices, so that “the EU’s energy insecurity was viewed as ever more under threat” (Jones, 2010, p. 24). In ‘An Energy Policy for Europe’ from January 2007, the Commission claims that “the days of cheap energy for Europe seem to be over ... [and] increasing import dependence and higher energy prices are faced by all EU members” (European Commission, 2007, p. 3). This perception of the global economic climate, and in particular the role of oil prices in the adoption of the Directive of 2009, has been reiterated from within the EP:

[O]ne driver of this policy in the EU in 2006, 2007, up until 2008 was certainly the fear of energy shortages. There was a peak oil discussion ongoing. You could see it in the financial markets with the barrel of oil \$160. We have never had this price again, but I think it matters if you have an oil price, a crude oil price of \$160 per barrel. At that time, peak oil or not peak oil, it appeared that times of cheap oil are gone (Interview, Götz).

More importantly, the Deputy Head of DG Energy, who participated in the negotiations of the 2009 Directive, admitted that high oil prices made it easier for the Commission to justify binding RE targets (by contrast to the negotiation of renewable energy targets by 2030, as it took place during the times when oil prices were quite low; this made it more

difficult for the Commission to justify binding RE targets by 2030 in the Council than in 2009, rendering them only indicative) (Interview Nr. 2, Howes).

At the same time, the challenge of the security of EU energy supply and the EU overall competitiveness as dependent on rising oil prices and growing energy dependency by the EU on third countries was seen as carrying the potential of resulting into an ‘energy crisis’ (European Council, 2007, p. 16). Thereby, a reply to the crisis, according to the Commission, would be a coherent and long-term oriented policy framework on EU Energy policy and a real Internal Energy Market (European Commission, 2007, p. 6, p. 13). Specifically, the Commission complained that some member states “prevent the Internal Energy Market from functioning” which led to lack of “price signals that new capacity is needed, leading to underinvestment and future supply crunches ... [which] can, under such circumstances make it harder for new entrants, including those offering clean energy, to enter the market” (European Commission, 2007, p. 6).

Presidency Conclusion of the 2007 Spring Council shared this take on the challenges facing the EU energy sector calling for an “integrated policy on energy combining action at the European and the Member States' level” (European Council, 2007, p. 13). In addition, “to ensure timely and full implementation of the letter and spirit of existing Internal Market legislation relating to the opening up of the gas and electricity markets” the Spring Council decided to develop a comprehensive energy Action Plan for the period 2007-2009 aimed specifically at a “response to potential [energy] crises” (European Council, 2007, p. 16).

The fact that the Council Presidency was held by Germany has also left its mark how the discussions of the new Renewables Directive were led. The President in office was Chancellor Angela Merkel, who was trying to bring about an agreement among member states in a very proactive way (Van Steen, 2010, p. 49). Her advocacy of the future piece of legislation was based on the argument that the EU needed to have a strong single voice in the post-Kyoto negotiations. In the opinion of Chancellor Merkel, “it was vital for the EU’s credibility in ongoing attempts to promote an international agreement on climate change that a real commitment to the Commission’s proposal was reached at the Council” (Jones, 2010, p. 22).

While it was eventually possible to reach an agreement on binding targets amongst member states at the 2007 European Spring Council, this agreement became possible only in connection with some explicit preconditions by the entire Council. Thus, conducive to the agreement at the Council respective the overall binding 20% target was the specification that the Commission shall allocate individual targets to single member states “*under full involvement of member states*” and “*with regard to a fair and adequate allocation taking account of different national starting points and potentials, including the existing level of renewable energies and energy mix*” (Van Steen 2010, p. 48). Besides, member states wanted to keep their right to decide over specific national targets for each sector of renewable energy (Van Steen, 2010, p. 48). In the case of a binding 10% in biofuels, the commercial availability of sustainable, second-generation biofuels was made a prerequisite for acceptance of the target. The exact wording chosen by the Council for this precondition reads as follows: “*The binding character of this target is appropriate subject to production being sustainable, second-generation biofuels becoming commercially available and the Fuel Quality Directive being amended accordingly to allow for adequate levels of blending*” (European Council, 2007, p. 21). In addition to the above specifications, as an outcome of the Spring Council, member states agreed to call on the Commission to prepare a policy Proposal for the future Directive rapidly, that is no later than in 2007 (Van Steen, 2010, p. 49).

In September 2007, the Parliament, by endorsing the target, came to a similar conclusion as the Council and the Commission. It supported the 10% target in its Report, prompting the Commission to develop a Proposal for a piece of legislation. As a consequence, a consensus seemed to have been established amongst the EU institutions as regards the mandatory nature of a relatively high target for biofuels. It is noteworthy that on the part of the Parliament, the attention paid to any risks or scientific uncertainties concerning biofuels was marginal at best – the acknowledgement of the possible negative effect of the policy measure was reduced to a single referral by the Parliament, in which the Parliament has expressed itself in favour of preserving a balanced relationship between food and energy production without jeopardizing one by the other (European Parliament, 2007, p. 82).

A important feature of the agreement on the EU overall binding target of 20% by the Council was the postponement of its distribution among member states to a later point

in time, which was planned to take place in bilateral negotiation with the Commission (Interview, Howes). Hence, while member states realised that their joint effort at RE promotion is expected to yield the entire 20% in total EU energy consumption, as to how much each of them will need to contribute to this target remained an open question during the Spring Council of 2007. “One can therefore assume that it was clear to all Head of State and Government that the 20% target would not apply to every single Member State”, which helped secure the agreement of the Spring Council of 2007 (Van Steen, 2010, pp. 49).

Evaluation – Agreement on Binding Targets

In connection with the chain of events reconstructed above, it is important to note that member states were overwhelmingly against binding targets in November 2006 (Helsinki Conference and Amsterdam Sustainable Forum) and in December 2006 (informal meeting), but had changed their opinions already by March 2007, after the ‘tour of capitals’ has taken place between January 2007 and March 2007. This is why, in my view, the time period of this position change deserves particular attention when trying to understand why it has taken place.

By and large, I argue, that the ‘tour of capitals’ and the discussions at the Spring Council of 2007 have managed to alter member states’ perception of the relative costs and benefits resulting from the new Renewables legislation. First, the economic benefits of a new piece of legislation were most probably perceived in a new light by member states after the necessity to establish a long-term and highly rigorous legislative framework for the EU energy sector could be elaborated on by the Commission at the Spring Council. That is, according to the Presidency Conclusions to the Spring Council, the risk of an energy crisis has been taken seriously by member states and addressed in line with the Commission’s version of creating a strongly integrated Internal Energy Market and a matching legislative framework, which would include RE promotion. In other words, the documents prepared by the Commission to be discussed at the Spring Council (i.e. Renewable Energy Road Map and the accompanying Impact Assessment) were detailed on the policy problems faced by the EU and presented the concomitant policy solutions, which were accepted by the Heads of State and Government, as

expressed in the Presidency Conclusions. Besides, a far-reaching, joint effort on renewable energy required a fair effort-sharing among member states (because of high costs of RE promotion) so that no member state had to face competitive disadvantages from its disproportionate investments into renewables. Thereby, binding commitments would allow the Commission to monitor and punish non-compliance on the part of member states, and hence were, most probably, perceived as desirable by the majority of member states, in the view of the need to commit to the ambitious policy.

Member states also mandated the Commission to act swiftly and to come up with the Proposals for the entire energy and climate package the same year (in 2007). This indicates that at the Spring Council, member states decided to agree on a package before the Copenhagen Conference, which would allow to re-ascertain the EU's climate leadership by example. In connection with this benefit, single Heads of State and Government most probably anticipated the salience of the Copenhagen Conference in the media, and the electoral gains they would be reaping by "leading by example". This is because, according to Götz, the discussion of the EU renewable energy legislation was linked to a media hype. The public perception was very much concerned with climate change – a situation that changed dramatically after the financial and the eurozone crises has hit, putting the public's concern with the employment and the economy on top of the priority list. Therefore, according to my interviewee, it is questionable "whether we would have the same kind of legislation in place had it been proposed three years later" (Interview, Götz).

The perception of economic losses by member states, on the other hand, was influenced by the following factors. First, an aspect that facilitated an agreement on the binding legal strength of targets during the European Council was the issue of overall target distribution among member states. As argued by Van Steen (2010), the postponement of the allocation of individual targets to member states was instrumental in bringing about an agreement on the binding commitment to targets. That is, when agreeing to the mandatory 20%, member states assumed that this numerical value would not apply to every member state, which made it easier for each member state to agree with the ambitious measure. Specifically, the precondition that individual targets should be elaborated with member states' full involvement, as expressed in the Presidency Conclusions, was of particular importance, serving as a common denominator for an

agreement. This, in turn, has left the Commission with a stronger role in transforming the European Council Conclusions into a legislative Proposal (Van Steen, 2010, pp. 49-50).

My own findings, presented in the next section, corroborate the above explanation by Van Steen (2010) because it could be shown that member states, in their overwhelming majority, have expected much lower targets than the ones allocated to by the Commission in the ensuing bilateral negotiations. (Member states did, however, not manage to challenge their individual targets, as proposed by the Commission, primarily because of the joint agreement on the overall EU target of 20% reached at the Spring Council) (see next section for details).

In addition, any doubts and reservations by member states in connection with the general architecture of the future Directive could be taken into account and addressed by means of the 'tour of capitals'. Besides, the legislative architecture developed by the Commission gave member states the freedom to choose their national sectoral targets, (apart from a binding target in biofuels, which however demanded the same effort on the part of each member state, i.e. the effort of 10% in biofuels consumption of the overall fuel consumption on the market of a country).

It can be further taken into account that the binding nature of the targets was agreed on at the highest level of Heads of State and Government, while the follow-up negotiations on the dissipation of the EU target took place at the ministerial level. This was potentially of importance because Heads of State and Government were preoccupied with the political side of the negotiations and much less with the concomitant technical side of their decisions (Interview, Götz). Hence, I argue that it is likely that the technical pre-conditions for an agreement to binding targets would have become more specific if negotiated at the ministerial level.

To sum up. the discussion above shows that the degree of commitment by member states was perceived as smaller than the actual one, made by agreeing to the binding 20% target, which validates H4/1. In addition, it is likely that an endorsement of binding targets at the EU level was promising to result in electoral gains for individual Heads of State and Government, which appears to support H4/2. At the same time, a wide range

of concerns related to the implementation costs of the future Directive could be effectively assuaged by formulating a number of preconditions for the follow-up negotiations, and by adapting the legislative architecture to the expectation by member states, which allows additionally verify H4/1.

6.5 The Bilateral Negotiations of Individual Targets with the Member States

The calculation of national targets or the breakdown of the overall target among member states has been “a rather peculiar case, where the desk officials faced a large amount of interference by the Cabinet and the Director-General” of Energy (Dreger, 2014, pp. 128-129). Initially, a team of desk officials employed two econometric models – PRIMES and Green-X – to obtain the economically most efficient option for the national distribution of the overall EU target of 20%. The initial results obtained by the drafting team through the application of these models were however strongly challenged at the higher level of the Commission’s hierarchy, including Energy Commissioner Piebalgs himself. Hence, the high levels of hierarchy asked the desk officers to change the calculation approaches (Dreger, 2014, pp. 129-130).

My interview data further reveals that the choice of a new calculation approach was motivated on the part of the Commission by the consideration that the initial calculation approach was likely to be challenged by member states. Hence, prior to the change in the calculation approach, the drafting team started with *potentials* for RE development in member states, but then realised that while it regarded those criteria as objective, “every member state would challenge these potentials” (Interview, Howes). In other words, it was concluded that burden-sharing cannot be calculated only by means of an econometric model since there would be a lot of debate on the data fed into such modelling work. Therefore, member states would be trying to out-model the EU experts (Dreger, 2014, pp. 149-150). The new-found approach to the calculation of individual targets is explained by Howes, who “led the Impact Assessment work, particularly with a view to the distribution of the RE targets among member states”, in the following manner:

50% is just an increase on your current share and it is also rewarding the member states that have done already a lot and that was part of the deal that they wanted. And then 50% GDP weighted ... [by] GDP per capita, which was all as objective, and simple, and transparent as it could be (Interview, Howes).

This calculation approach became titled as a ‘flat-rate approach’. Noteworthy is that member states with a substantial RE share in their energy mix, i.e. overwhelmingly old member states, asked the Commission for a bonus and obtained the bonus (in the form of only 50% increase on a member state’s current RE share as regards the approach). The bonus resulted in lower targets and less effort of implementation for these member states, thus rewarding them for their past successes with RE promotion. This is why, taking into account GDP as well, which is an advantage for poorer, primarily new member states, served to some extent as a weight off to a bonus for old member states.

After reaching an intra-Commission agreement on the approach for calculation of individual targets, the Commission proceeded with the bilateral negotiations on those targets with single member states, in which it could quite adroitly make its case for adopting the ‘flat-rate approach’ and for targets it has assigned to single member states. The arguments in favour of its approach brought forward by the Commission in bilateral talks pertained primarily to the clarity and objectiveness of the approach for individual target allocation. In addition, the Commission emphasised the lack of an alternative approach (to the one it has developed) – an approach, which could have been submitted on the part of a member state dissatisfied with the target it has been allocated by the Commission (Interview, Howes). The sum of arguments by the Commission presented in the bilateral negotiations with member states is recaptured in the following interview excerpt:

So, we came up with those numbers [for individual targets] ... and then we had basically an intense period of bilateral discussions with each member state, explaining what we thought their target should be and why it should be that. And most of the member states were saying that it’s far too high, and we then would say: “Well, you have signed up to 20%, and this is the objective, transparent, balanced, we think, reasonable target calculation method that we have come up with. It is not dependent on your domestic resources, because you can do it in another member state because we have created a tradable mechanism. So, we think it’s reasonable unless you can

say why it's not reasonable and what the alternative is So we had this kind of discussions with every single member state (Interview, Howes).

Disregarding the fact that member states were dissatisfied with the high targets assigned by the Commission, the flat-rate approach was at no point challenged by them. “[N]o one came up with an alternative approach that they thought they could sell to everybody else. So the targets were stable more or less all the way through [the bilateral negotiations]” (Interview, Howes).

Hence, as a result of the bilateral negotiations, member states accepted the individual targets proposed by the Commission. The only exception was the correction of its target by Latvia that could prove a statistical mistake in the data used for calculation of its target. Hence, “one member state’s target was reduced by a couple of percentage points to reflect the change in the data on their starting point”⁹¹ (Interview, Hodson).

Apart from the lack of any alternative suggestions to the flat-rate approach, there was also little time given for inventing of an alternative calculation approach on the part of member states. Thus, the factor of time constraint further contributed to the acceptance of the flat-rate approach and the targets devised by the Commission (Howes, 2010, p. 129).

Finally, it is noteworthy that the negotiations of single targets took place at a particular level in the hierarchical order of the EU institutions:

[S]ometimes it was Barroso with Sarkozy ... or it was at the ministerial level combined with Commissioner Piebalgs at that time, meeting with the different ministers. And the Director-Generals or the Deputy Director-Generals were as well going to all these meetings (Interview, Howes).

⁹¹ The statistical mistake of the member state’s data for 2005 was discovered, upon which a statistical adjustment was agreed during the negotiations. Thus, the target for the country was lowered by 2%, from 42% to 40% and was related to the erroneously too high initial estimation of RES production in the country by Eurostat (Van Steen, 2010, p. 59).

As is discussed in the previous section, the level of negotiations is an aspect that needs to be taken into account when analysing the overall results on the negotiations of the targets (their numerical values and their legal strength *in toto*). This aspect is particularly important when considered together with the policy developments discussed in the previous section.

Evaluation – the Bilateral Negotiations of Individual Targets with the Member States

As shown above, the Commission was capable of setting through its calculating approach, in so doing relying on two interlinked arguments – first, that the 20% target was already accepted as binding by member states, and second, that effectively rejecting the Commission’s approach would necessitate developing another Council-wide acceptable approach, which implied that if no alternative was presented, member states had to accept targets assigned to them by the Commission.

As discussed earlier in this chapter, the binding nature of 20% target was accepted by member states in connection with certain preconditions regarding the future provisions on the targets’ distribution among member states. Hence, it was stated in the Presidency Conclusions to the European Council of March 2007 that “differentiated national overall targets should be derived with Member States’ full involvement with due regard to a fair and adequate allocation taking account of different national *starting points* and *potentials*” (Van Steen, 2010, p. 48, emphasis in the original). However, as discussed in this section, one of the pre-conditions for accepting the binding 20% was not fulfilled. Specifically, the Commission abstained from taking into account the potentials for RE development in member states, as agreed at the Spring Council of 2007. Besides, in doing so, the Commission has selected an approach for targets allocation that would not be easily challengeable, presenting member states with the difficulty of finding an alternative approach.

The lack of alternative approaches for the overall target-distribution, in its turn, is explicable, first of all, against the background that each member state challenged only its own target, considering it too high. Hence, it would not be in the interest of a member state to devise an ‘objective’ alternative approach that would not lower its own

target at the expense of the targets of other member states and that could be endorsed by all the other member states. Put differently, the lowering of one's own target could only be achieved by making the targets of other member states higher. At the same time, it would not be in the interest of any other member state to endorse a calculation approach that would make its target higher than the one assigned by the Commission. Being faced with the conflicting interests within the Council, the task of devising an alternative calculation approach for a single member was almost insurmountable – an aspect of negotiations that member states have failed to foresee when agreeing to the binding nature of the 20% target. Apart from that, the capacity of member states to elaborate on an alternative calculation approach was restricted by time pressure. There was a general inter-institutional understanding that negotiations had to be concluded by the end of 2009, which left member states with little time for the underlying scientific work to find an alternative approach.

Hence, the Commission was able to commit member states to the numerical values of targets that it has devised single-handedly, with the only exception of Latvia (from 42% to 40%). Disregarding the fact that all member states disagreed with the high targets calculated by the Commission, favouring lower and hence less cost-intensive targets, they were not able to set through less ambitious targets for the reasons presented above.

Hence, when juxtaposing the European Council pre-conditions on future negotiation of individual targets with the actual process of their negotiations presented in this section, one can, I argue, strengthen the claim by Van Steen (2010, p. 48) that the pre-conditions were important for securing an agreement on a *binding* target of the 20% at the Spring Council. His claim could be confirmed with the help of my findings, which demonstrate that member states would have challenged their individual targets if they were announced already at the Spring Council. By implication, the postponement of target distribution gave the Commission a strategic advantage in the negotiations of individual targets with member states because the binding nature of the targets could no longer be challenged. Consequently, the Commission obtained more space for manoeuvre in allocation of individual targets, being constraint only by the necessity of finding a calculation approach that would be non-easily challengeable by member states.

Turning to the issue of the rationale behind the Commission's preference for the flat-rate approach, it is first important to note that by selecting and setting an approach that excluded potentials, the Commission was able to pursue its long-term goal of creating an Internal Energy Market, as admitted by the Commission official. The selected approach demanded consumption of renewable energy in all member states in a more even manner than the one possible if the targets would be distributed in accordance with national RE potentials; this, in turn, would stimulate trade in RE across the EU, making member states with less natural potential for RE development buy RE from other member states with more potential (taking into account GDP of a member state being further conducive for appropriate demand allocation). Therefore, the individual targets' allocation by the Commission reflected the preferences of the institution toward the energy policy, which by implication would result into expansion of its sphere of competence, making trade in renewable energy contribute to liberalisation of the EU energy market. This does not stand in contradiction with H5, however does not allow validating it because market liberalisation was a historically made choice, supported by member states.

However, the above section could show that although member states did not obtain lower targets by means of challenging the Commission's approach, they were interested in doing so (and even were successful in one single case of Latvia), which at the same time illustrated their interest in driving down the costs of implementation of the future legislation, which, similarly to the lowering of individual targets of the 2001 Directive, allows invalidating H4/1.

6.6 The Negotiation of the Indicative Trajectory

Apart from the individual targets, the Proposal for the 2009 Directive sets an indicative trajectory for the achievement of those individual targets (European Commission, 2008, Annex I B). More specifically, by stipulating the 20% target in renewable energy the Commission obtained the right to launch an infringement proceeding in the event that a member state failed to achieve its target set out in the 2009 Directive. This measure, however, would come too late to put an underperforming member state back on the path toward effective implementation of the Directive. Hence, the Commission decided that

it should create additional instruments to intervene in the process of target attainment during the period of implementation of the Directive, i.e. between 2010 and 2020. One such instrument developed by the Commission assumed the form of an indicative trajectory (Van Steen, 2010, p. 62). Article 3(2), the Proposal by the Commission stipulated that member states should promote RE sources in an incremental and structured way and in so doing not fall behind the pace of growth in renewables consumption, indicated by a trajectory. The trajectory lay down a steady growth of renewables share by stipulating intermediate targets to be reached during the time span between 2010 and 2020 (European Commission, 2008).

According to Howes (2010), the sub-targets constituting the trajectory were proposed by the Commission following the same logic as the overall RE targets. The intention behind making the individual targets binding was to strengthen their effectiveness because a binding target provides greater certainty to investors and other stakeholders regarding the policy goals by 2020 than an indicative one. Similarly, a trajectory controlling the speed at which the target was intended to be met would provide additional information to market players, further raising the targets' credibility. Therefore, member states were required to introduce effectively-designed measures, i.e. measures that ensured that the trajectory will be reached. Hence, "any deviation from the trajectory should not be by design, and national plans must demonstrate that a credible growth path will be established for reaching the target" (Howes, 2010, p. 130).

The Slope of the Trajectory

The trajectory ultimately agreed on in inter-institutional negotiations, displays the following pace of progress toward the 20% goal by means of individual targets: "Member States should achieve 20 per cent of the growth towards the target by 2012, 30 per cent by 2014, 45 per cent by 2016 and 65 per cent by 2018" (Directive, 2009).

However, the trajectory proposed by the Commission in its Directive Draft foresaw a different slope, in which 25% had to be achieved by 2012, and 35% by 2014, and with 45% and 65% by 2016 and 2018 respectively, according to the formula in Part B of Annex I. This would yield a linear path of development in renewables, with a starting

point in 2005 and the endpoint in 2020 (Van Steen, 2010, p. 62). As was expressed in the formula of the Directive Draft:

$S_{2005} + 0.25 (S_{2020} - S_{2005})$, as an average for the two-year period 2011 to 2012;
 $S_{2005} + 0.35 (S_{2020} - S_{2005})$, as an average for the two-year period 2013 to 2014;
 $S_{2005} + 0.45 (S_{2020} - S_{2005})$, as an average for the two-year period 2015 to 2016;
and $S_{2005} + 0.65 (S_{2020} - S_{2005})$, as an average for the two-year period 2017 to 2018 (European Commission, 2008).

Amendment 101 by the EP addressed some issues in connection with the indicative trajectory⁹². It did, however, not suggest any alternative sub-targets for the trajectory (European Parliament, 2008). Yet, the legislative aspect of the trajectory caused some debate during the negotiating process (Van Steen, 2010, p. 63). While the overall attitude on the part of the member states toward the trajectory as an additional policy instrument in the Directive was a positive one, the majority of the member states had positioned themselves in favour of a less steep curve at the beginning of the implementation period (Van Steen, 2010, p. 63).

A flatter trajectory for the first half of the period was “proposed by member states on the grounds that if you backload [some of the RE production], then there is a greater scope for the costs to come down, therefore making the achievement of the target cost-effective” (Interview Nr. 2, Howes). In other words, the Council argued in favour of doing less during the first half of the period for the reason that when “you develop renewable energy and scale up, the costs come down. So if you can do more later, you are doing more at a lower cost”, which was an argument that the Commission representatives accepted (Interview Nr. 2, Howes). Therefore, the final text of the

⁹² Amendment 101, in addition to the Commission’s regulation, provides member states with the possibility of granting access to its support scheme for renewable sources that are produced in another member state and to allow its renewable energy consumption to benefit from other member state support schemes. This should apply for as long as an EU-wide support scheme is not in place. In the next paragraph, it further provides that “in order to facilitate flexibility in achieving national targets pursuant to this Article, Member States may cooperate on a voluntary” basis provided by the Directive (EP, 2008).

Directive accommodated the position by the Council and hence featured a more relaxed trajectory during the first half of the implementation period. Specifically, Annex I part B of the 2009 Directive states that the first two sub-targets by 2012 and 2014 should be 20% and 30% respectively (Directive, 2009).

Binding or Indicative Trajectory and Provisions on Missing the Trajectory

The degree to which the trajectory needed to be legally binding was equally a subject of debate in the inter-institutional negotiations. The Commission in its Draft proposed an indicative trajectory (European Commission, 2008, Annex I B). The indicative character of the policy instrument was however challenged by the European Parliament; the ITRE Committee has voted for *binding* interim targets constitutive of the trajectory. Such binding interim targets would empower the Commission to impose penalties on member states for non-compliance already during the implementation period. The Council, by contrast, was in favour of a non-binding trajectory. Agreeing with the Council, the Commission held the view that a non-binding trajectory would not render the entire trajectory futile in its function of steering the progress of renewables development in member states. Instead, the Commission assumed the position that an indicative trajectory, in combination with the National Action Plans and their detailed accounts of how to comply with the trajectory, would yield an effective mechanism for enforcing the Directive (Van Steen, 2010, p. 63).

The Commission in its Draft, however, also envisioned an approach with respect to a ‘penalty’ in the case of non-compliance by a member state with the interim targets of the trajectory. The penalty took on the shape of preparing a new National Action Plan by a non-compliant member state. Specifically, it drew the following provision of how to rectify such a temporary set-back:

[a] Member State whose share of energy from renewable sources fell below the indicative trajectory in Part B of Annex 1 in the immediately preceding two-year period shall submit a new national action plan to the Commission by 30 June of the following year at the latest, setting out adequate measures to ensure that in future the share of energy from renewable sources equals or exceeds the indicative trajectory in Part B of Annex I (European Commission, 2008).

While this provision remained largely unchallenged by the EP, the Council managed to scale down its rigidity by preferring a provision that shall allow freeing a member state from the obligation of re-submitting its National Action Plan. This provision found its expression in the second part of paragraph 4 of Article 4 of the 2009 Directive, according to which:

The Commission may, if the Member State has not met the indicative trajectory by a limited margin, and taking due account of the current and future measures taken by the Member State, adopt a decision to release the Member State from the obligation to submit an amended national renewable energy action plan (Directive, 2009, p. 29).

The regulation, as outlined in the paragraph, came about as a compromise between the Commission and the Council. Initially, the Commission's approach was meant to strictly regulate the trajectory. This implied that in the case that a member state fails to meet an interim target, it would need to submit a new National Action Plan (NAP). "Council thought this is too rigid and they wanted the right scope, not going on by heavy burden of re-submitting of an entirely new Action Plan" (Interview Nr 2, Howes). The Commission "agreed as a compromise that if member states deviate from the trajectory, they have an automatic obligation to produce a new Plan. But if it was relatively trivial, relatively straightforward, then the Commission could agree that a new Plan was not necessary" (Interview Nr. 2, Howes). In other words, this compromise entailed that the Commission retained the right not to claim a new NAP in the cases of a minor deviation from the trajectory, while the Council obtained a less stringent measure that did not contain the requirement of re-submitting a NAP in every single case of deviation from the trajectory. The ultimate decision of whether to demand a new NAP remained however with the Commission.

Evaluation – the Slope of the Trajectory, its Legal Strength and Provisions on Missing the Trajectory

The legislative issue of the trajectory was shaped by two institutions – the Commission and the Council, whereas the Parliament did not manage to make an imprint on the legislative outcome on the policy issue. While the Commission devised a policy instrument that would permit the institution to exercise more control over the member states' efforts at comply with their targets, the Council was able to reduce the strength of this controlling instrument, for the following reasons.

Related to the *slope of the trajectory*, the Council managed to attain a more relaxed trajectory for the first half of the implementation period. The argument, which allowed the Council to make its case, was of a purely technical nature, i.e. based on the fact that the cost of RE promotion would diminish after the initial phase of a development project. Hence, the Council's internal agreement for a trajectory slope that allowed compensating RE growth during the second half of the compliance period reveals the concern of member states with the cost of implementation of the policy measure, which validated H4/1.

The legislative issue of *provisions on missing the interim targets* of the trajectory was shaped by both the Commission and the Council. The Commission initially proposed a re-submission of the National Action Plans by member states in any case of falling behind the interim targets to exercise a high level of control over the pace of target attainment during the implementation. However, the Council managed to relax the Commission's level of control over domestic renewable development by avoiding re-submission in cases of minor deviations from the trajectory. This has left the Council with more space for manoeuvre respective the speed of implementation of the RE targets and the administrative effort of devising new NAPs, which allow saving costs of the implementation (H4/1 invalidated).

Turning to the issue of the *legal strength of the trajectory* (binding vs. indicative), one is confronted with a different constellation of interests than in the case of the trajectory slope. The Commission and the Council were equally committed to an indicative trajectory (only the Parliament being in favour of a binding one). Hence, the decision made in favour of an indicative trajectory is based on the Commission's attitude that a trajectory is necessary to fulfil the function that it was created for, to ensure that renewables are deployed and to create investors security. This rationale mirrors the

rational for binding strength of targets. Thereby, I argue that the Council did not oppose the entire trajectory, as a policy instrument, one of for same reasons that it choose not to oppose binding commitments to RE development – the ambitiousness of the entire Directive called, in the view of each single member state, for a means to ensure equal compliance and a fair effort-sharing. Thus, in my view, the final shape of the policy issue of trajectory reflected a trade-off between the member states’ interest in controlling each others’ performance via the agency of the Commission, on the one hand, but without becoming excessively confined themselves by the supervisory power of the Commission, on the other.

6.7 The Definition of Energy from Renewable Sources

The range of energy sources defined as renewable through their inclusion in the formal definition determined by the Commission was a subject of several amendments by the Parliament and the Council. Yet, the version of the definition in the Commission’s Proposal served, as usual, as a starting point in the policy-making process. According to this document, energy from renewable sources “means renewable non-fossil energy sources: wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases” (European Commission, 2008, Art. 2a).

The expanded definition proposed by the EP featured a longer list of types of RE sources. The list also included: aerothermal, geothermal, hydrothermal, osmotic energy and snow (European Parliament, 2008, Amendment 84). Amendments 86 to 88 by the EP further proposed how to define these types of energy (i.e. aerothermal, and hydrothermal energy and geothermal). The report by ITRE noted that these substances had not been defined in a harmonious way within EU law so far. Aiming at appropriately accommodating the three new renewable sources of energy in the Directive, the report formulated the three new definitions, which were adopted unchanged in the 2009 Directive. According to these definitions ‘aerothermal energy’ is “energy stored in the form of heat in the ambient air”, ‘geothermal energy’ is “energy stored in the form of heat beneath the surface of solid earth”, and ‘hydrothermal energy’ means “energy stored in the form of heat in surface water” (European Parliament, 2008). The EP was, at the same time, less successful when suggesting to adding two

further RE sources types to the definition – ‘biomethane’ and ‘cellulosic biofuel’⁹³ (European Parliament, 2008, Amendement 94, 100).

The Council, in turn, exchanged ‘osmotic’ for ‘ocean energy’ and rejected ‘snow’. After being altered in the Council, the definition was not further amended, being included in the resulting form in the Directive. It yielded the following range of energy from renewable sources: ”wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases” (Directive, 2009).

Evaluation – the Definition of Renewable Energy Sources

It can be concluded that the definition of renewable energy sources was moulded by all three institutions toward its final shape. The result of such an inter-institutional effort of shaping the definition can be judged as being mostly technical, i.e. to better suit the broader scope of the new Renewables Directive. Specifically, Ladefoged (2010, pp. 31-32), when comparing the 2009 definition with its analogue from 2001, first notes that the former definition was derived from the latter one. Thereby, the types of renewable energy sources added to the new definition (aerothermal and hydrothermal) correspond to the extended scope of the 2009 legislation, which covers in addition to renewable electricity and renewable fuels also heating and cooling. The replacement of “wave” and “tidal” with “ocean energy” is aimed at the inclusion of a broader range of ocean-related energy sources, this alteration however being insignificant in practice due to the nascent stage of development of the corresponding technologies.

⁹³ Biomethane was distinguished from conventional methane by defining it as “methane produced from renewable sources that is upgraded to natural gas quality”; and it was claimed by the EP that this definition was due since the type of energy has been included in the definition of biofuels and at the same time constantly overlooked (EP, 2008, Amendement 100). The type of ‘cellulosic biofuel’ was defined as “biofuel derived from any cellulose, hemi-cellulose, or lignin, originating from renewable biomass” (EP, 2008, Amendement 94).

6.7 The Calculation of Targets – Wind and Hydropower Normalisation Rule, Aviation Share and Gross Final Energy Consumption

Disregarding the fact that the individual numerical values of the targets for member states remained unchanged from how they were proposed by the Commission, the details regarding how to calculate those targets were somewhat altered in the process of the negotiations of the 2009 Directive. The modification pertains specifically to hydropower and wind power that are normalised when accounting for their contribution toward a national target, meaning that they are calculated as an average of several years in a row to avoid biased results due to annual climatic changes (Howes, 2010, p. 129). The normalisation rule was applied to hydropower by the Commission already for the purpose of the implementation of the 2001 Directive because it was the praxis of the time. By contrast, the application of the normalisation rule to wind had not been done before; instead, in the 2001 Directive, the Commission was just using the existing statistical approach, as applied by the Eurostat. The rule was previously not used to calculate the contribution of wind “partly because it was new and not so significant, even if it had the same type of volatility” (Interview, Howes).

An additional dimension in the debates on the calculation of individual member states’ targets adhered to the question of how to treat the sector of aviation – a debate that could have significant political and practical implications for reaching the targets. The lead in this debate was taken by the Council, being split on the issue into two groups of member states. One group maintained that the aviation sector should not make any contribution to renewable energy promotion. Member states belonging to the other group, by comparison, defended the inclusion of the sector into the range of renewables eligible toward the target achievement. More generally, they were holding the position that the overall EU target, as well as the national targets, should be open to the development of renewables in all sectors of the economy (Van Steen, 2010, p. 61).

A compromise on the issue of inclusion had an implication for how to calculate the aviation contribution. More specifically, a compromise was reached by putting a cap on the contribution of the aviation sector to total national energy consumption, total national energy consumption being used as the denominator in calculating national shares of renewables. The cap was placed at 1.5 times (of aviation to total energy

consumption) in the EU on average in 2005, which equals 6.18% of each national target. A lower cap of 4.12% was put in place for the isolated and peripheral member states of Malta and Cyprus (Van Steen, 2010, p. 61). Article 5(6) details this provision as follows:

In calculating a Member State's gross final energy consumption for the purpose of measuring its compliance with the targets and indicative trajectory laid down in this Directive, the amount of energy consumed in aviation shall, as a proportion of that Member State's gross final consumption of energy, be considered to be no more than 6.18%. For Cyprus and Malta the amount of energy consumed in aviation shall, as a proportion of those Member States' gross final consumption of energy, be considered to be no more than 4.12%. (Directive, 2009, Art. 5(6)).

The above provision is based on the calculation of *gross final energy consumption*, which needs to be explained first. In the Renewable Energy Directive of 2009, a transition was made from accounting methods of primary energy consumption⁹⁴ to gross final energy consumption in order to measure the RE target as a share of the fossil fuels consumed. The former method of measurement, applied to measure the 12% RE share stipulated by the 2001 Directive, was abandoned in favour of the latter. This change in

⁹⁴ The renewable energy share can be measured for the purpose of target compliance with two methods, either as “primary” or “final” energy (Van Steen, 2010, pp. 50-51). The first option, also known as the ‘Physical Energy Content Method’, is used by Eurostat and the International Energy Agency to report renewable energy statistics. It is also labeled as the ‘Primary Energy Method’ or ‘Input Method’ (Harmsen *et al.*, 2011, p. 3). It has been the conventional way for measuring energy consumption in the EU, constituting the traditional way for the basis of statistics. The method typically refers to energy consumed in an economy as “gross inland consumption” (Howes, 2010, p. 127). Besides, the Primary Energy Method measures the energy content of raw material before their transformation into consumable energy. Put differently, the method “accounts for the input to an energy transformation process such as electricity generation” (Van Steen, 2010, p. 51), as implied by the name because primary energy stands for the first commodity or raw material that can be transformed to secondary energy, such as heat and electricity. Thus, fossil fuels, e.g. coal or natural gas, are a first commodity for electricity from these fossil fuels, while the produced electricity is counting as secondary energy. Crucially, for renewable sources of energy such as hydropower, wind and solar energy, the first usable commodity is electricity generated (Harmsen *et al.*, 2011, p. 3). Measuring first commodity by means of this method means more generally measuring all the energy input to a conversion process (such as electricity generation). Implicitly, the energy losses that occur in the conversion process are not accounted for (Van Steen, 2010, pp. 50-51).

accounting method should have contributed to the consistency of the 2009 Directive with other pieces of legislation, foremost with the Biofuels Directive of 2003 (Howes, 2010, p. 127).

Evaluation – Calculation of Targets

According to Dreger (2014), the technical decisions on *inter alia* the change from primary energy to gross final energy consumption and a normalisation rule extended to wind were undertaken by the Commission upon suggestions by experts from Eurostat. Because the Eurostat team was considered as holding unquestionable expertise in the subject area of the calculation of RE sources, their recommendations were too technical to be challenged; hence, these recommendations were taken at face value. The overarching rationale behind the Eurostat recommendations was to create consistency and to streamline different accounting approaches. At the same time, there was little evidence that these decisions were politically motivated (Dreger, 2014, pp. 130-131).

The question of whether renewable sources of energy used in aviation should make full, partial or no contribution to meeting national targets was resolved exclusively within the Council. The compromise reached by the two camps in the Council has yielded the final form of the text on the issues in the Directive. Thereby, the implementation of the provision about aviation was of significant political and practical implication for reaching the target. Hence, it appears that economic considerations for taking one of the two positions represented in the Council were predominant. For example, it can be assumed that the rationale for a member state to join one of the camps depended on its domestic advancement of using renewables in aviation. However, empirical evidence available on the policy issue in question is not specific enough to validate or to invalidate the theoretical assumptions of this study. At the same time, the approach of calculation of wind and hydropower, as well as the transition to gross final energy consumption from primary energy consumption, can be judged as primarily technical in character.

6.8 The Composition of the 10% Target in Biofuels

The choice of a numerical value of the 10% target, discussed above, is first gaining its full meaning when considered in connection with the composition of the target, as prescribed by the Directive. The target's composition was determined by four legislative aspects: firstly, whether the target should be aimed at incentivising only biofuels; secondly, what are the potential low-emission modes of transport that could also be made eligible toward the target (apart from cars run partly or fully on biofuels); thirdly, how to define biomass which is the raw material for biofuels; and fourthly, whether to additionally promote particular biomass substances or modes of transport by counting them more than once toward the target.

The biomass definition is discussed in the following section, while the multiple counting of biomass substances and transport modes is elaborated on in the sections dedicated to the ILUC Directive of 2015 because these policy issues were re-negotiated in this piece of legislation. This is why the section below deals specifically with the aspect of the composition of the 10% target related to the first two aspects. The decision to treat them in one section was made for the reason that these two issues were discussed in tandem during the inter-institutional negotiations and were also often considered together in the process of intra-institutional position formation. Thus, the question of whether the 10% target's obtainment should depend only on biofuels implied a consideration of the advantages of promotion of other low-emission modes of transport, such as electric rail and electric cars. This issue was debated and ultimately decided upon during the negotiations of the 2009 Directive, at the same time influencing the decision-making on other legislative aspects (see below for details). As a result, the final text of the Directive refers to a target in transport, which implies that it is not a pure biofuels target.

The Proposal by the Commission featured a target open to several types of RE in transport. At the same time, the Proposal was inconsistent in its verbal reference to the target by applying the term "biofuels target" (in its Recital 10). Such a reference to a target by the Commission became an issue that was heavily criticised by the third

sector⁹⁵. At the same time, the Commission's Proposal suggested making the target's achievement flexible to the utilisation of other renewables, without however specifying what other types of energy sources would qualify (European Commission, 2008). Hence, it comes as no surprise that there was confusion on the part of other institutions regarding how encompassing the proposed target was designed to be. As stated by an official from DG Energy, "[i]n terms of achieving the 10% in transport target, initially everyone thought it would be achieved entirely by biofuels. But in the course of this discussion it became clear that it should not be reduced to that, it is not a biofuels target" (Interview, Howes). As further recalled by an interviewee, there was always a big ambiguity regarding the composition of the target, even in case of the 2003 Directive, "given ... the practical situation, which was that the only reasonable alternative [in transport] was biofuels"; however, already the target of the 2003 Directive was "a broad target", even though it focuses on biofuels (Interview, Howes).

Yet, this ambiguity did not prevent other EU institutions from clearly positioning themselves on the legislative issue. Already at the beginning of the negotiations, the Slovene Presidency pointed out that it interpreted the target in a broad sense, not as confined to biofuels. Furthermore, in the progression of negotiations, some national governments displayed their scepticism about the share of biofuels in the target. The Netherlands, for instance, questioned the very necessity of the target, maintaining that it was not set in stone. In the view of Müngersdorff (2009, p. 30), this reaction was likely caused by the gaining on the weight of the discussion on biofuels' impact on food security in the media, being also one of the major concerns of NGOs with biofuels.

In the Report by rapporteur Claude Turmes, no provisions were made for a target in biofuels. The MEP already at that time was very sceptical about the growing production of biofuels, being aware of their contested greenhouse gas emissions balance and their potential to cause indirect land-use change. The rapporteur however could not find enough support in the ITRE Committee to completely abandon a biofuels target, as

⁹⁵ According to Müngersdorff, "[g]reen NGOs, for instance, blamed the Commission of having introduced a pure biofuel target. On the other hand, many industrial lobby organizations, like for instance the European Biomass Industry Association, pointed out that the target was already at this early stage of the policy process open for other kinds of renewables in transport as well. They accused environmental NGOs of having exaggerated the proposal's focus on biofuels" (2009, p. 13).

ITRE was generally supportive of a target in biofuels from the beginning of its work (Müngersdorff, 2009, p. 19). The final report by the ITRE Committee refers to a ‘renewable sources in road transport target’ (European Parliament, 2008, Art. 3). This expression implies that the target became restricted to the modes of *road* transportation, and thereby excluded the potential contribution of electric rail to the 10% target (Müngersdorff, 2009, p. 22).

According to Raquet, who was a policy adviser to the ITRE rapporteur Turmes during the policy-making on the 2009 Directive, electric rail would make a too large a contribution to the 10% target and hence undermine the development of other renewable energy sources in transport, as some member states could decide to cover the target mainly with the electrified rail. If the target (left open to contribution by electric rail sector) was expected to still serve its purpose of promoting several other types of renewables in transport, one would need to raise its numerical value, as explained below:

[I]f you have to include all of the rail sector, you have also to increase the volume. Again this is a question of the volume of biofuels of transport fuels for the whole transport sector. If you include a part of the transport sector, like the railways, the percentage you have to produce [in other road transport] is less important compared to the total amount. And why the railway sector, it is because it consumes a lot of energy (Interview, Raquet).

At the same time, as admitted by Raquet, for some MEPs the decision to exclude electric rail could have been grounded in the desire to source the target mostly from biofuels, and not from a range of renewables in transport. This interest would be in line with the interest of biofuels-interested member states that expected to export biofuels for cars and therewith planned to support the interests of their domestic biofuels industry (Interview, Raquet).

The intra-institutional debates on the issue of the composition of the 10% target yielded, as outlined above, a position by the EP against a pure biofuels target, and a position by the Council, according to which several member states were equally strictly against such a target. Although the EP had a stronger internal coherence on a ‘broad’ target in

more than just biofuels, for the Commission, the Council's position was decisive for the eventual agreement on a form of a biofuels target. As such, the Council's very acceptance of the target of 10% hinged upon this target being devised as a non-pure biofuels target, as explained by the interviewee from DG Energy:

In particular, given the difficulty that biofuels were facing in terms of getting approval from all member states, the 10% target became more acceptable when we explained it was not just about biofuels and we can have other fuels being in there (Interview, Howes).

Simultaneously, when trying to finalise the agreement on the inclusiveness of the 10% biofuels target, the agenda of the inter-institutional negotiations brought forward the complementary aspects of what other types of renewables in transport should be promoted by the 2009 Directive. Following considerations in the negotiations were decisive for resolving of the issue:

[W]e did not need this incentive for railways, because they are already electrifying, whereas an extra incentive for the electric car industry was needed, because it is still in a very nascent stage. So, it was about technology innovation incentive, which is why electric cars and not trains (Interview, Howes).

Within the Council, the position against including electric rail was held by member states that were conventionally perceived as 'environmentally advanced'. The justification for leaving electric rail outside of the target's scope was based on the consideration that otherwise the 10% would be covered almost exclusively by this transport mode in some member states; this would make the target attainment for member states with a lot of electric rail much easier than for other member states, such an imbalanced economic burden being in the end accepted as undesirable by the rest of member states (Interview, Zaletel).

Evaluation – the Composition of the 10% Target in Biofuels

According to Müngersdorff (2009), there is a high probability that the deviation from the Council's preference (for second-generation biofuels being market-ripe) caused the Commission's decision not to confine the 10% target just to biofuels. This assumption could not be confirmed entirely by the section above. The empirical evidence discussed shows that the Commission was quite ambiguous in its Proposal respective the composition of the biofuels target, which in turn resulted in a widespread understanding that the 10% target, as planned by the Commission, was a pure biofuels target. Without taking into account this widespread understanding, it is difficult to explain why member states, as well as NGOs, voiced their strong opposition to the 10% as restricted to biofuels. A clarification of the scope of the target could be reached through a strong position by the Council. Only after the Council has rejected a pure biofuels target in the negotiations, did the Commission clarify that the target was always meant as one in renewable fuels more generally.

The decisive consideration related to the formation of the Council's overall position on whether to include electric rail was connected to the fact that counting electric rail toward the target would create highly unequal conditions for the achievement of the target in different member states. While some member states would be able to cover the 10% almost exclusively by means of this type of transport, other member states with less electrified rail would be left with the more costly option of producing or buying first-generation or second-generation biofuels.

To sum up, it can be concluded that the overall composition of the target, which is broader than the one consisting of only biofuels, can be attributed to the Council's stance – the very acceptance of a biofuels target being made conditional upon the target's broad composition. This would allow member states to diversify their approaches toward the attainment of the target and would minimise the costs of compliance, which is in line with H5. Furthermore, since the equal economic implications for reaching the 10% figure in single member states was judged to be of the main importance for excluding electric railway from the composition of the target, it can be also judged that member states were concerned with the level playing field for their national industries within the EU and with their relative financial effort of implementation of the 2009 Directive. Therefore, the issue of the treating of electric rail in the 2009 Directive also validates H5.

6.9 The Definition of Biomass

In the same way as in the 2001 Directive, one type of renewables in the definition of ‘energy from renewable sources’ – biomass – needed to be defined separately as it can encompass a range of (raw) materials. These materials can be converted to biofuels and bioliquids, both types of fuels countable toward the 20% target as soon as they fulfil the sustainability criteria set out in Article 17(2) to (6) of the 2009 Directive. However, only *biofuels* (and not bioliquids) are eligible toward the 10% sub-target in transport (i.e. bioliquids count towards targets for electricity and heating and cooling). As regards the practical use of these two RE sources, biofuels generally replace oil-based fuels, whereas bioliquids can be used to replace a more complex fuel mix (Ladefoged, 2010, pp. 40-41).

The Draft Directive by the Commission defines the range of substances constitutive of biomass as “biodegradable fraction of products, waste and residues from agriculture (including vegetal and *animal* substances), forestry and related industries, as well as the *biodegradable* fraction of industrial and municipal waste” (European Commission, 2008, Art. 2(b) emphasis added).

As commented on by Hodgson there was a big discussion revolving around the appropriate treatment of waste in the biomass definition around the time of the policy-making on the Directive within the Commission (Interview, Hodgson). It started with the formulation of the definition in the Commission’s Draft being the same version as the definition adopted in the 2001 Directive. However, not all DGs shared this position. Foremost, DG Environment was critical of the definition. This is because DG Environment advocated the inclusion of ‘waste of no economic value’ for the reasons that treating waste of some economic value as biofuels is not a way of making a net positive environmental impact, but only leads to a substitution effect, which is similar to the effect of indirect land-use change. As further explained by the policy officer from DG Environment:

Specifically, DG Environment held that it was not just enough to say ‘waste’, it had to be ‘waste of no economic value’ because if it has an economic value it is likely to be used for something else. And if it is used for something else, the minute you are starting using it for bioethanol, you have a knock-on effect on the industries [conventionally supplied with it] ... and the consequence of the biofuels policy is that it has driven up the price for animal fat because that’s the so-called “waste” that can be counted in the Directive, which essentially stops the European oil and chemical industry from using it as a feedstock. And now they have to use palm oil instead (Interview, Hodgson).

However, the above position could not be driven through by DG Environment within the Commission. In the same way, DG Environment could not push through its position that the 10% target should fulfil the preconditions as expressed by the European Council around December 2007 (that second-generation biofuels should be available, and that biofuels used would be sustainable). In other words, DG Environment criticised the fact that the preconditions were not met, and argued that there should be a way to link these criteria to the target (Interview, Hodgson).

The negotiating process within the Commission about this policy issue was “highly acrimonious”, but in the course of the process DG Environment had to surrender its position as it was facing strong opposition from DG Energy (Interview, Hodgson). The prevalence of DG Energy in getting its position on biofuels through in the Commission became possible because of an “alliance of DGs that was including DG Energy and DG Agriculture, but also DG Trade and DG Enterprise. And this was quite a strong weight within the Commission” that was supporting DG Energy on this policy issue (Interview, Hodgson).

The definition of biomass by the Commission, eventually formulated in the intra-institutional process outlined above, underwent further adjustments in the ensuing inter-institutional decision-making. Thus, the ITRE report proposed to expand the definition toward the inclusion of the ‘separated collected’ biodegradable fraction of industrial and municipal waste, as well as to ‘aquaculture’ and ‘wastewater sludge’ (European Parliament, 2008, Amendment 89).

However, the intention by the EP to expand the definition to further sustainable sources of energy was not realised in the final negotiation. The version of the adopted definition of biofuels for the 2009 Directive remains closer to the Commission's version, expanding the scope of this definition only by the element of 'fisheries and aquaculture' without incorporating 'separated collection' of waste and 'wastewater sludge' (Directive, 2009). The definition is also inclusive of an amendment by the Council. It specifies that from all the substances listed, waste and residues need to be of biological origin. In relation to aquaculture, as proposed by the EP, the Council further expands the type of industry to *fisheries* and aquaculture. Therefore, the final version of the definition of biomass copied the one adjusted by the Council. The biomass definition, as adopted in the 2009 Directive, counts the following substances:

the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste (Directive, 2009).

Importantly, the position of the EP on waste was the same as in the negotiation of the 2001 Directive. MEPs were in favour of waste separation as it respects the waste hierarchy and allows recycling of what is possible to recycle, treating only the rest as waste. The position was supported in particular by "green MEPs, and the ITRE rapporteur, Claude Turmes, who were holding the view that only when everything is done [in terms of recycling] can we use it as biofuel" (Interview, Raquet). According to Raquet, "there was at that time [of negotiations] regarding renewables a big waste issue in Italy, so they wanted to include all the waste into the definition" (Interview, Raquet). This insight on the rationale for single member states to include all waste types into the definition, along with the positions by other institutions on the policy issue, presented above, is discussed in the following. First, however, some attention is dedicated to the legal implications of the new definition of biomass in the 2009 Directive for member states as regards its implementation.

Legal Implication – the Changes Adopted to the earlier Biomass Definition

The alterations undertaken with regard to the already existing biomass definition are in no way revolutionary. On the contrary, as concluded by Ladefoged (2010, pp. 39-40), “these changes are essentially clarifications that are unlikely to have significant practical impacts on the scope of the definition compared to the previous definition” from the 2001 Directive. The difference between the old and the new versions is confined to two new expressions: “from biological origin” and “including fisheries and aquaculture”. It might be argued that the latter addition is just a specification of what was referred to under “related industries” in the old definition. The implicit inclusion of this sector is, however, not likely to result in any significant change in energy production toward the target of the 2009 Directive since at present the energy production by this sector is relatively insignificant. Yet, the application of fish waste as feedstock for the production of biogas or biodiesel does take place. For example, “waste from fish processing plants or slurry from aquaculture basins [is] used for energy production e.g. in gas plants” (Ladefoged, 2010, p. 40).

The implication of specifying that waste needs to be “from biological origin” to be eligible to count toward the target is that biodegradable waste from non-biological origin will not make any target contribution (Ladefoged, 2010, pp. 39-40). However, so far, it had not been possible to reliably track the amount of such waste produced in member states since “methodologies currently applied to distinguish the non-biodegradable and biodegradable fractions of waste and residues are associated with uncertainty chance of a completely different magnitude” (Ladefoged, 2010, pp. 39-40). This situation of the lack of reliable statistical accounting of waste from a biological origin in member states⁹⁶ is however addressed in Article 22 of the 2009 Directive that obliges member states to provide information firstly on “how the share of biodegradable waste in waste used for producing energy has been estimated”, and secondly “what

⁹⁶ “Of the 16 EU Member States reporting energy production from incineration in 2006, five (Germany, France, Portugal, Spain and Hungary) simply reported the split between non-biodegradable and biodegradable fractions to be 50% – 50% (the default assumption recommended by the IEA/Eurostat Energy Statistics Manual in the absence of data), two (Italy and Slovakia) reported it to be 0% - 100% and 9 reported different splits suggesting that some kind of survey data or methodology was available to estimate the split”, the last nine member states being Austria, Belgium, the Czech Republic, Denmark, Finland, Luxembourg, the Netherlands, Sweden and the United Kingdom (Ladefoged, 2010, p. 39-40).

steps have been taken to improve and verify such estimates”; reports containing this information are due in 2011 and every two years thereafter (Directive, 2009).

Evaluation – the Definition of Biomass

The institutional positions in the negotiations on the biomass definition are strongly reminiscent of the discussions of the same definition that entered the 2001 Directive. Foremost, the stance of the EP did not change substantially – the institution tried once again to put through a definition that would not discourage separation of waste; however, once again the EP failed to achieve this policy goal. Thereby, the driving force behind this position formation in the ITRE Committee can be attributed to the Green Party and the ITRE rapporteur Turmes. By the same token, the Parliament was also in favour of promoting a relatively new technology of wastewater sludge.

The Council once again managed to get through its version of the definition, which became a broad one and hence flexible to implementation. Similar to the definition of 2001 Directive, the only new restrictive feature regarding how biomass can be converted to energy relates to the expression ‘from biological origin’. It does, however, not imply that the established accounting systems for distinguishing waste from biological and non-biological origin is undermined, at least in the mid-term. Hence, the above assessment largely verifies the assumption of H4/1 because the Council was responsible for shaping the definition. At the same time, this final shape of the definition grants great flexibility in the implementation of the 2009 Directive, this way allowing saving the costs of implementation, which would occur from any changes to the established practices of waste incineration in member states.

Renewables Directive and Follow-up Legislation – Outlook

The above account of the methods of cultivation of different substances and types of renewable fuels toward the achievement of individual targets in RES-T does not provide an exhaustive treatment of the subject of the calculation method of biofuels targets. Apart from the topic of double-counting of single sources of energy, there is also a topic

of sustainability criteria for biofuels discussed in the Directive of 2009. Sustainability criteria are however left outside of the scope of the present study (for detailed treatment of the subject see Müngersdorff, 2009).

However, it needs to be specified that the sustainability criteria fall into two broad categories of *environmental* and *social* criteria (Müngersdorff, 2009, pp. 30-31). The provisions for the social aspects of sustainability of biofuels were kept minimal in the 2009 Directive. Generally speaking, the argument against ambitious social provisions (that would prevent a negative impact of increased biofuels promotion on lives of peoples in the countries exporting biofuels to the EU) stood in connection with the law of the World Trade Organisation (WTO). Specifically, it was argued that there can be a potential incompatibility of binding social criteria in the 2009 Directive with the international law in general, and with the WTO regulations in particular (Dreger, 2014, p. 135; Müngersdorff, 2009, p. 14). Besides, it was claimed that such social criteria, if included in the 2009 Directive, would not be far-reaching enough because the EU would lack instruments of ensuring compliance with these social criteria in third countries. As a result of the above considerations, the biofuels producing countries are faced with the single requirement of having ratified and implemented the International Labour Organisation Conventions, if they want to qualify as suppliers of biofuels to the EU (Interview, Pilzeker).

As regards environmental sustainability criteria for biofuels in the 2009 Directive, they can be further subdivided into three sub-categories – conversion rates of high carbon stock land, biodiversity, and greenhouse gas performance (Dreger, 2014, p. 135). Therewith, one important aspect in connection to greenhouse gas emissions calculations was how to treat the occurrence of indirect land-use change (ILUC), as is discussed in the outlook to this chapter. One of the most committed proponents of dealing with ILUC in the 2009 Directive was the MEP, Turmes. Although fighting vigorously for ILUC impact to be acknowledged by the Directive, he was not successful with setting through his policy ideas in the EP (Interview, Götz). Nonetheless, in the 2009 Directive, the Commission is assigned with the responsibility of monitoring and reporting on ILUC, or more specifically on “the origin of biofuels and bioliquids consumed in the Community and the impact of their production, including impact as a result of displacement, on land use in the Community and the main third countries of supply”

(Directive, 2009, Art. 23). The issue of indirect land-use changes related to all production pathways of biofuels was mentioned explicitly in Article 23(f) (Directive, 2009). As to how the issue of ILUC was dealt with in the ensuing legislation, i.e. in the ‘ILUC Directive’, and how it has changed the share of contribution of conventional biofuels toward the 10% target, is dealt with in the rest of this chapter, therewith presenting an outlook to the negotiations of the 2009 Directive.

6.10 ILUC Directive – Modelling Exercise and its Policy Impact

The ILUC phenomenon became a topic of discussions at the EU level already during the negotiations of the 2009 Directive. The general concern was with whether biofuels were indeed saving as much greenhouse gas emissions as preliminary estimated. The report studying ILUC for the purpose of decision-making on the 2009 Directive concluded that ILUC might have been significant but could not be proven scientifically at that point in time. However, the Commission was obliged to proceed with further scientific work on the phenomenon (Interview, Vessia). Further scientific work consisted of four studies launched by the Commission in 2009 to examine the ILUC occurrence. One of the studies was “a first general equilibrium modelling study that aimed to analyse the impact of the EU biofuels mandate”, conducted by Al-Riffai *et al.* (2010); thereby, the report “published in March 2010 showed that indirect land-use changes were a valid concern, but that the degree of uncertainty regarding their magnitude was large” (Laborde, 2011, p. 7).

The work on a Proposal for the ILUC Directive began in connection with the finding that when taking into account indirect land-use change, biofuels’ GHG savings are still positive but rather in the magnitude of only 10% to 20%, (which is significantly less than the threshold established in the 2009 Directive, according to which biofuels were supposed to save 35% of GHG emissions compared to fossil fuels until 2017, and 50% afterwards). This findings were attained by means of a modelling exercise that simulated a world with biofuels and without biofuels (Interview, Vessia). David Laborde, a research fellow at the International Food Policy Research Institute (IFPRI) based in Washington, DC, who was charged by the Commission with conducting of an additional ILUC study (of 2011), discussed below, held the view that the need for action

was clear and advised the Commission to take political action (Politico, 2011). After the study was finished, the Commission started formulating a Proposal for the ILUC Directive. The development of a new Proposal became a long process, *inter alia* due to the disagreement between different DGs in the interservice procedure, as specified below (Interview, Gumbert).

The work on the Impact Assessment for the future Directive was already well underway in 2010, but the Proposal itself was completed only in October 2012. The work on the Proposal was done by a team of two desk officers, Oyvind Vessia from DG Energy and Ignacio Vazquez from DG Climate, their input making up approximately 95% of the entire work. However, there was not always an absolute agreement between Vessia and Vazquez, partly because the two desk officers “were from two different DGs, with a different point of view, so it would easily be that ... [they] had different arguments” (Interview, Vessia). In the instance of a disagreement, there was a meeting with two Heads of Units from the corresponding DGs to decide on the final text. Besides, regarding this work on the Proposal, Vessia and Vazquez “had political backing [by the Commissioners] Conny Hedegaard from Clima and Jurgen Oettinger from Energy”; whereas the Parliament and the Council were at no point involved with the drafting of the Directive (Interview, Vessia).

The above findings on biofuels’ GHG savings, in turn, were possible because of a new levels of sophistication achieved in modelling of ILUC impacts, which were not yet available in 2009 (Interview, Gumbert). In a way, it was a breakthrough in the advancement of this policy formulation tool, reinforced by the Commission itself by pushing for a better understanding of the ILUC phenomenon. The major improvement in the modelling exercise is connected with the level of elaboration of general equilibrium models⁹⁷. As such, the modelling of ILUC impacts can either be done with a partial equilibrium model or a general equilibrium model. Thereby, to make any conclusive judgements on the ILUC impact, the Commission’s officials were

⁹⁷ There are two types of economic equilibrium models: general equilibrium models that can study the entire global economy, and partial equilibrium models that can study a specific sector, such as agriculture. “All equilibrium models are based on the assumption of perfect markets and that equilibrium is reached when demand equals supply in the studied economy” (Di Lucia *et al.*, 2012, p. 11).

“dependent on very comprehensive models that were able to model the world with biofuels and without biofuels, and then compare the land-use change outcomes of the different scenarios” (Interview, Vessia). Specifically, the new study, compared to a preceding one from 2010⁹⁸, used “an updated version of the global computable general equilibrium model (CGE), MIRAGE-Biof, as well as a revised scenario describing the EU mandate based on the National Renewable Energy Action Plans of the 27 member states” (Laborde, 2011, pp. 9-10).

As such, to establish what emissions are caused by ILUC “is an extremely complex modelling exercise” (Interview, Gumbert). The complexity is owed to the fact that when comparing the scenarios of the whole world (with biofuels and without), there is a lot of elasticity in how biofuels influence markets, in the sense that the price signals sent by withdrawing vegetable oil from the global food market can be dealt with by different economic operators differently. For example, a rise in the global price for rapeseed oil can result in the replacement of this oil with another type of oil, or in choosing different cooking methods, i.e. the ones without oil (Interview, Gumbert). According to the ATLASS study, there are many important behavioural parameters that are at the same time uncertain, e.g. how farmers react to price changes being faced with the different environmental regulations and agricultural policies, and how this behaviour might change in the next ten years (Laborde, ATLASS, 2011, p. 28).

Although there was nothing new about such comprehensive modelling on a global scale (which is commonly used in the WTO negotiations to assess the economic benefits of e.g. change in tariffs on particular commodities for a particular economy), the challenge was to adapt such models to the assessment of ILUC impacts (Interview, Vessia). In the words of Vessia, in particular:

[V]ery challenging was to link these economic models [and] to also to include the land use, because land use is a very complicated topic, which has multiple drivers, many of which are not economic. But still, the

⁹⁸ The most important change in the 2011 study compared to the previous study by Al-Riffai *et al.* (2010) is the definition of the scenario considered, concerning the size of the mandate, and the ratio biodiesel/ethanol. “Several other modifications have been done involving the treatment of co-products (higher substitution), the peatland emissions (higher factor), the land reallocation among crops (better calibration) and the dynamics of food demand (less elastic)” (Laborde, 2012, p. 10).

driving force in this economic model is the price and price signals (Interview, Vessia).

There was also a range of small-scale improvements related to modelling for the purpose of ILUC assessment. One of them pertained to the recognition of the important role of co-products⁹⁹ in how much ILUC is caused (Interview, Vessia).

The modelling exercise itself was conducted for the Commission by IFPRI. The Institute applied its global equilibrium model, the MIRAGE model and as a result presented the ATLASS study (Interview, Gumbert). The reason for outsourcing this task to an independent research institute was to avoid any accusations of scientific evidence being politically coloured. Therefore, leaving the defence of the scientific rigour of the modelling work with IFPRI was important for the Commission. As put by Vessia:

[I]t can be very dangerous if it appears that you have political decisions or at least people within the political sphere dealing with assumptions [fed into the modelling exercise]. So it was very important for us to make a distinction that there is a scientific work, and then we do the political work where we look at the scientific evidence and we kind of transform it into a political message or a political plan (Interview, Vessia).

The reason for subcontracting specifically IFPRI was that the Commission already had a contract with this institute to deal with some trade issues; “and within that contract, it was then possible to expand the work and also look into trade together with land use impact. This was more kind of coincidence that turned out to be possible” (Interview, Vessia). Thereby, it is common for the Commission to expand its work with external contractors that were already involved with undertaking of work for the Commission. Specifically, “one consortium that has already conducted certain work for the Commission has a completely different advantage because they can write a better offer” (Gumbert, Interview). And the price offer for a particular modelling exercise is of

⁹⁹ In the earlier modelling one usually did not include co-products. In simple terms, the first-generation biofuels were usually not considered under the aspect of the effect of their co-products that ended on the animal feed market (e.g. the effect that co-products may have for examples on soybean production in for example South America); however, “after doing sensitivities on this specific topic, it was clear that it had a big impact” (Interview, Vessia).

crucial importance since the Commission is completely bound by certain rules of public procurement when evaluating a call for tender, i.e. the offers from different consortia¹⁰⁰. Besides, it needs to be taken into account that apart from IFPRI, “there are not that many institutes in the world that are able to engage in such a complex modelling exercise” (Interview, Gumbert).

However, for the Commission, it was also important to have alternative views, and not to be restricted to the results by IFPRI. Hence, from the beginning of the policy initiative, it was not just IFPRI assigned with the modelling exercise; the Joint Research Centre (JRC) was also simultaneously doing modelling for the Commission. However, for a number of reasons the IFPRI model became prioritised during the process of policy-formulation. First, the JRC work was only able to present their results in gram per megajoule of biofuels, which needed to be further transformed into GHG intensity figures and required another set of assumptions and more work. Second, there were also consultations held in the interservice group regarding the two modelling exercises. The progress in interservice consultations made it “more and more clear that the IFPRI model was a better model. It was representing reality in a better way, and we kind of ended up relying more on that model [by IFPRI] than on the JRC model” (Interview, Vessia).

The modelling work and the Directive Draft decisions based on it were presented to NGOs and the private sector. The intention of doing so was to make the model as open, transparent and clear as possible to non-governmental interests. At the same time, because it was an extremely complicated modelling exercise, it was also difficult to make it very transparent (Interview, Vessia). Therewith, the procedure of making modelling work and the elements of a Directive Draft open to critique by non-governmental actors (such as the private sector, NGOs and citizens) is common for the Commission. The procedure also served the purpose of collecting technical advice on how the modelling work could be improved. The suggestions for improvement were then discussed with the externally-commissioned institute (i.e. IFPRI) and could

¹⁰⁰ The Commission is trying to find best value for money, which means taking into account the quality of the previous work done by a consortium and their price offer. Steering groups of several services and also independent experts evaluate single offers separately, and the best offer wins (Interview, Gumbert).

contribute to the overall scientific rigour of modelling work, scientific rigour being extremely important when defending policy decisions based on a modelling exercise in the WTO¹⁰¹ (Interview, Gumbert).

The major feature of the policy design informed by the modelling work was a 5% cap on first-generation biofuels. The cap was restricted to first-generation biofuels because the IFPRI study was concerned specifically with first-generation biofuels (i.e. with their ILUC effect), and did not assess the possibilities of the rather marginal technology of second-generation biofuels. These confines of the study were dictated primarily by the consideration that the 2009 Directive would be in place only until 2020. In the case of the decision-making on a piece of legislation expiring at a much later point in time, e.g. only in 2050, omitting second-generation biofuels would be not good enough, because this type of biofuels might be necessary to decarbonise for example the aviation sector or long-distance transport in the future (Interview, Vessia).

Some further impact on the final shape of the Proposal can be attributed to the decision-making in the interservice group. Some observers external to the interservice process have perceived the work in the group as a huge internal fight on the file, which has made a strong impact on the final shape of the Proposal (e.g. according to informal communication by Greenpeace, the Proposal completely changed after the discussions in the interservice consultation) (Interview, Zaletel).

Gumbert, who participated in the interservice procedure representing DG Agriculture, identified *two policy issues*, which were most difficult to get an agreement on in the interservice group – the cap on biofuels target from the 2009 Directive and the treatment of ILUC values. As regards the numerical value of the 5% cap, this numerical value was taken because it froze the contemporary EU consumption of first-generation biofuels. Some DGs however were in favour of a higher cap (Interview, Gumbert).

¹⁰¹ As further elaborated on by Gumbert, “we are committed to trying to get the best scientifically defensible outcome, not only because we want to please the one or the other stakeholder, but because we have to defend our rules with world trade partners. And, I mean ... they have a lot of analytical capacity. They look extremely carefully on what we are doing [when we are modelling]. If this is not defensible, we risk cases in WTO that we do not want” (Interview, Gumbert).

The treatment of ILUC values was the subject of a major division in the interservice group. Thereby, discussed were three different options of how deal with ILUC values. These three options were prioritised by different groups of DGs. One group of DGs was in favour of including values of ILUC emissions into the calculation of sustainability criteria of different biofuels. The second group held the view that ILUC values needed to be used in the reporting of national emissions, while the third group did not want to use ILUC values in the future legislation at all. The DGs allocating less or no importance to the ILUC values were questioning the reliability of ILUC factors as well as the effect that ILUC factors would have on the investment security for private sector. These potential problems from including the values into the sustainability criteria were articulated *inter alia* by DG Agriculture; the DG argued that the ILUC values would need to be revised quite frequently because of the changeability of foreign laws and the lack of stability in science. Besides, the ILUC values, as part of the sustainability criteria, could easily become a barrier to trade¹⁰². One further consideration speaking against ILUC values in the sustainability criteria was connected to the fact that a much higher ILUC estimates for biofuels from the oily crops than that from starch-based crops were established by IPFRI. In the view of ‘dieselisation of the car fleet’ in the EU, such a measure would lead to a rapid decommissioning of production capacity of biodiesel by 2020, only to be phased out by 2030. Despite this, the decision was made to place a cap on both types of bioliquids, which can however be criticised¹⁰³ (Interview, Gumbert).

The disagreement between the three groups in the interservice group was resolved with a compromise to opt for reporting of ILUC values, which corresponded to the position of the second group, lying in between the other two more pronounced positions. This decision also implied putting a cap on the current production of biofuels since with no

¹⁰² For example, if one member state refuses to import maize-based ethanol from the US, arguing that it would add an ILUC factor on X gram of megajoule, it would be difficult to defend this argument with scientific evidence. The trade partner, in turn, could present modelling work with different ILUC estimates. Such disagreements over science could lead to a trade dispute (Interview, Gumbert).

¹⁰³ “[T]he cap has the disadvantage that it treats dirty and clean alike, as first-generation biofuels, because some of them are sustainable given the ILUC factors. But it is mainly sugarcane-based ethanol that could under certain conditions remain under 60% greenhouse gas emissions, even with ILUC. And so this is ... what we are losing with this generalised approach [to a cap]” (Interview, Gumbert).

cap and only with the reporting of values one would not change the existing legislation at all. To sum up, the “result of the negotiation process at the end of the day was to identify what is the most balanced way to go ahead” (Interview, Gumbert). In addition, the agreement on a particular cap led to an agreement on double-counting and quadruple-counting of second-generation biofuels in the Commission. Without such a multiple counting it would be very likely that the EU would “risk not meeting the 10% target”; hence, one needed mechanisms to allow for the attainment of the remaining 5% (Interview, Gumbert).

Evaluation – Modelling Exercise and its Policy Impact

The first stage in the five stages of policy-formulation, i.e. the stage of *policy characterisation* was completed before any work on the ILUC Directive commenced. The characterisation of the problem was achieved already during the negotiations of the 2009 Directive – although it had been decided that no preventive measures should be taken in the 2009 Directive, ILUC as a potential problem was recognised, and the decision to further evaluate the problem was made. The second step of *problem evaluation*, undertaken to establish the magnitude and the underlying causes of the problem was achieved through the modelling exercise primarily by IFPRI. The third step of *specification of objectives*, aimed at clarifying the policy objectives to be met and the timelines for the attainment to be set up, was already pre-determined by the Directive of 2009. The timelines remained the same, i.e. by 2020, while the overall objective of the policy to promote renewable fuels in transport had not been abandoned either, but modified to incorporate the established ILUC impact. The step of *assessment of policy options*, during which different policy ideas were compared and recommendations on single features of a policy design made, was conducted during the process of the drafting of the Proposal, and subsequently amended in the negotiations of the inter-service group.

To shed light on the fifth step of *policy design*, which led to the final adoption of a piece of legislation, the following section discusses the negotiations of the ILUC Directive in the Council. The focus lies on the processes that took place within this institution during

the first reading; this is because the decisions taken in the Council during the first reading became decisive for the final policy outcomes studied.

6.11 ILUC Directive – Negotiations in the Council

As already mentioned in the previous section, the Commission proposed to reduce the share of first-generation biofuels within the 10% target, as stipulated by the 2009 Directive, to 5%. Another major provision in the Commission's Proposal was to count double and four times particular advanced types of biofuels. This section deals with how this Proposal was encountered in the Council and what alternative solutions the Council agreed on in the process of its intra-institutional decision-making. In so doing, this section first provides an overview of the overall constellation of interests in the Council and then it proceeds with tracing of the processes leading to the final agreement on the policy issues in question by the Council in its Common Position.

The first alterations to the Draft Directive were undertaken by the Irish presidency that commenced in January 2013. The presidency was faced with very divergent views concerning ILUC in the Council and did not expect to reach a compromise during its legislative period, anticipating that the agreement would be reached only under the Greek presidency beginning in January 2014 (BEsustainable, 2013). However, the Irish presidency managed to set the general framework for a common position in the Council, whereas the ensuing Lithuanian presidency followed up with solving the remaining key issues and making suggestions for “how that general ideas, developed during the Irish presidency can be transformed into the concrete text” (Interview, Konstantinaite). As expected, the compromise was finally reached during the Greek presidency (Interview, Kołaczek).

Based on the orientation debates in the Energy and Environment Council, the Irish presidency suggested two policy options in order to deal with what turned out to be a concern with a cap of 5%, voiced by many member states in March 2013. One of the policy options was to apply the 5% threshold exclusively to oil crops only (therewith excluding cereals, sugar-rich or starch-rich crops), and in addition to this to extend the double and quadruple counting to some feedstocks to be counted not only toward the

10% but also toward the 20% of the 2009 Directive. Another policy option was to raise the 5% cap to cover all types of first-generation biofuels, and not just oil crops (Council of the European Union, 2013a, pp. 1-2).

Looking first at the member states' positions regarding the 5% cap, one can recognise two camps with opposing interests – one group of member states was in favour of a higher cap, on average 7%, and another group in favour of a lower cap, of approximately 5% (Interview, Högberg; Interview, Muner-Bretter; Interview, Kołaczek; Interview, Zaletel). The membership of the former group was identified as consisting of *inter alia* Poland, Latvia, Hungary, Czech Republic, Spain, France, Bulgaria, Romania, Estonia (Interview, Kołaczek), but also included Slovakia (Interview, Högberg). In general, these member states possessed a considerable share of first-generation biofuels in their energy mix (Interview, Zaletel). By and large, Germany can be counted in the first group. However, position formation by Germany took a long time because the country had to deal with a change in government during the EU-level process in question. The final position by Germany was supportive of a policy compromise, which implied a 7% cap (Interview, Zaletel; Interview anonymous). The opposing camp wanted to retain the 5% cap proposed by the Commission. This group counted amongst others Belgium, Denmark, the Netherlands and Luxembourg (Interview, Zaletel).

The membership of the second group that preferred a lower cap overlaps with the membership of a group of member states that wanted the ILUC factors to be counted toward calculations of GHG emissions of biofuels. Member states in favour of this provision were among others Belgium, the Netherlands and Luxembourg (Interview, Zaletel). Apart from these three member states Denmark and Sweden were also identified as belonging to this group (Interview, Muner-Bretter). However, these member states were faced with the opposition on the part of *inter alia* the Visegrád group, the latter having managed in the end to make the ILUC factors provisional (Interview, Högberg).

With regard to quadruple counting, as recalled by Muner-Bretter, it “was abandoned at the very beginning of the negotiations” (Interview, Muner-Bretter). The idea to incentivise advanced biofuels by counting them four times toward the target, as proposed by the Commission, was encountered sceptically by the entire Council – no

member state really liked this policy solution. In particular, the UK and France were opposed to this multiple counting (Interview, Zaletel). France and some other member states opposed such a provision in connection with the risk of fraud “that may arise from the advantages given to multiple counting of biofuels, especially materials that are intentionally modified to count as waste” (ENDS, 2013a). Kołaczek, however, specified that the fear of “fraud and the different misuse” in connection to quadruple counting was considered not the only disadvantage by several member states; many member states were also worried that reaching the overall biofuels target would result in much less effort for some member states (Interview, Kołaczek). An additional challenge in connection with accepting quadruple counting would be to agree on a list of biofuels, and on every element on that list, which would be problematic among others because some member states considered the ILUC science provisional (Interview, Muner-Bretter).

With no success achieved on these initial two policy options presented in March 2013 in the Council, the Irish presidency suggested in May to substitute the quadruple counting of advanced biofuels with a mandatory sub-target of 2% for advanced biofuels, as an alternative measure to stimulate the production of these biofuels (listed in Annex IX of the Draft Directive) (Council of the European Union, 2013b, p. 4). The advanced biofuels falling under this sub-target would be counted double toward the achievement of the biofuels target (ENDS, 2013b). As described above, no member state favoured the policy solution of quadruple counting; therefore it was possible to substitute quadruple counting with a sub-target for advanced biofuels (Interview, Zaletel). The suggestion to impose a binding sub-target of 2% for advanced biofuels came initially from those member states that had already some production of this type of biofuels (Interview, Kołaczek). The issue of a sub-target was defended by amongst others Belgium, Denmark, Finland, Ireland, the Netherlands and Sweden, and categorically denied by member states like France and the UK (Interview, Zaletel), and also opposed by *inter alia* the members of the Visegrád group (Interview, Högberg).

The discussion of a sub-target of 2% for advanced biofuels was transferred from the Irish to the Lithuanian presidency. Thereby, “the problem with the sub-target was that not everyone thought that it was possible to achieve a sub-target even a small one, like a half percent” (Interview, Kołaczek). Regarding the binding nature of a sub-target, there

turned out to be the lack of a majority in the Council to support this measure “because of non-existing business or market available for [such] biofuels” in the majority of member states (Interview, Muner-Bretter). In the face of such reactions to this policy issue, the Lithuanian presidency proposed a *voluntary* or indicative sub-target instead of a binding one (Interview, Kołaczek; Interview, Zaletel).

In addition, the Lithuanian presidency was responsible for suggesting a 7% cap on first-generation biofuels (ENDS, 2013c). From the negotiating effort of the Lithuanian presidency, it became clear that:

[W]henever you went over the 7% with your Proposal, there was a blocking minority already established by the member states that are more restrictive on the first-generation biofuels. Whenever you went under the 7%, there was a blocking minority established by the member states that consider first-generation biofuels an important part of their [energy] mix (Interview, Kołaczek).

To sum up, the numerical value of 7%, as a policy compromise, was developed from a series of attempts to find an appropriate percentage number by the Lithuanian presidency, different numbers being suggested and discussed to find a balanced solution acceptable to everyone (Interview, Kołaczek). Although the Lithuanian presidency thought that the file, containing the above two policy solutions, would be adopted, seven member states, building a blocking minority voted against a common solution presented by the presidency. The vote by energy ministers in December displayed a constellation of opposing preferences that consisted of Hungary and Poland, on the one hand, and Denmark, Belgium, Netherlands, Luxembourg and Italy, on the other, the latter group of member states considering Lithuania's compromise of 7% biofuel in transport fuel as too high (Farming Online, 2014).

Trying to avoid what was recognised by some as a failure to take the concerns of ‘advanced member states’ into account by the Lithuanian presidency (Interview, Zaletel), “the Greek presidency had first to understand which were the possibilities and ways forward to have an agreement in the Council” (Interview, Kaulins). The new presidency proceeded by organising internal meetings and by calling the ad hoc group

together, trying to get a sense of what the policy issues were that could allow everyone to move forward (Interview, Zaletel).

The negative vote came rather as a surprise since, for example, Poland did not make it explicit that it would not support the Lithuanian solution (Interview, Zaletel). The reason for Poland to reject the Lithuanian compromise resulted primarily from its dissatisfaction with the provision on reporting – the acknowledgement of the scientific uncertainties connected to the ILUC values was perceived by Poland as not explicit enough. Hence, Poland asked the Hellenic presidency to insert a “particular word provisional and the reference to the policies introduced by different member states” (Interview, Kołaczek). Put slightly differently, Poland held the view that the phenomenon of ILUC is caused only by member states with little surplus land, and that ILUC science is not differentiated enough with regard to this issue. As specified by Kołaczek, the scientific conclusion was made that if:

[Y]ou are growing rapeseeds, you have got 55 grams [of emissions]. They [i.e. scientists] didn't take into account that there is land available in Poland and that then you are growing rapeseed there, you do not really pressure on other parts of the world to grow something else on their land and to expand their land cultivation (Interview, Kołaczek).

The dissatisfaction with the science underlying the ILUC Proposal also pertained to the fact that the IFPRI report had (allegedly) not been scrutinised by any other scientific institutions and the methodology of the MIRAGE model was not fully available. Besides, the current state of development in ILUC science was perceived as nascent because such reports as the GTAP report has yielded completely different results than the IFPRI report, e.g. much lower values for emissions from rapeseed-based biofuels, while the International Standardisation Organisation (ISO) concluded that the science was currently too immature to specify any particular ILUC factors. The concomitant request by Poland to acknowledge such scientific uncertainties in the text was answered by the Greek presidency positively. Thereby, the final compromise achieved by the Greek presidency was possible amongst others by referring to the scientific uncertainty of ILUC values in the text of the Common Position by the Council (Interview, Kołaczek).

An additional issue discussed during the Greek presidency pertained to how to treat electric rail and electric vehicles. The agreement reached was to count power from renewable sources used in electric vehicles 5 times and from electric rail 2.5 times toward the target (ENDS, 2014a). During the negotiations, the majority of member states were in favour of the 2.5 times counting of electric rail, presumably in order to get an extra bonus for the target, perceiving the cap-restricted target of 10% in biofuels as a very big challenge in terms of its implementation. The reference to this target as to a bonus was based on the view that electric rail was not stimulating any new developments in the energy market (Interview, Högberg). The policy issue of electric rail was also viewed as an element which made the final compromise among member states easier (Interview, Muner-Bretter).

Working toward a compromise, the last two weeks of negotiations in the Council before the vote concentrated on the sub-target for advanced biofuels (Interview, Kołaczek). The policy issue of the sub-target was substantially watered down in the negotiations. While the Lithuanian presidency referred to the sub-target as voluntary, in the text by the Greek Presidency the sub-target became a reference value of 0.5%. This reference value can be deviated from under particular circumstances listed in the text (Interview, Kołaczek; Interview, Zaletel). The issue of the sub-target was discussed at the Coreper level with the result that the wording was changed from member states “shall ensure” to “shall strive to achieve” the sub-target (Interview, Högberg). In effect, this wording is an ‘exit clause’ that allows member states, who were against the sub-target, to avoid complying with the sub-target. In more detail, the Lithuanian provision would imply that member states have to set themselves a target on advanced biofuels, making reference to the numerical 0.5% indicator. The Greek provision, by contrast, provided member states with some criteria to justify a lower target. “And on the basis of these criteria there is no way that the Commission can go to the court or proceed with the infringement, because the criteria are so vague, [e.g.] cost efficiency – issues that the Commission cannot measure” (Interview, Zaletel). In the opinion of Muner-Bretter, the final agreement on the sub-target for advanced biofuels became just “the most acceptable common level” within the Council (Interview, Muner-Bretter).

Throughout the negotiations in the Council, the policy officers from DG Energy and DG Clima assisted member states representatives with their scientific expertise. For example, they gave many presentations on the topics related to the ILUC values of different biofuels, such as the availability of advanced biofuels on the market, and on how to limit the use of first-generation biofuels. Besides, they scientifically assessed the presidency Proposals being discussed:

[T]hey also tried to show us that our Proposal is a bad one. They assembled numbers and did all the calculations of all our options on the table, showing us that we will make it worse with our Proposal than what we have now in the legislation, which did not help (Interview, Zaletel).

All in all, the scientific advice from within the Commission did not make any difference to the policy decisions taken in the Council. Although providing a lot of data, at some point in time during the Lithuanian presidency "they have kind of lost their spirit" and become prepared for all the compromises possible, no longer trying to influence the negotiations (Interview, Zaletel).

The overall compromise attained by the Greek presidency was endorsed by ministers in June 2014. All the member states voted in favour of the compromise, except Belgium that voted against it, and Portugal that abstained from voting (ENDS, 2014b). It is difficult to explain how some rather minimal changes to the Lithuanian text by the Greek presidency managed to accomplish a positive vote. According to Högberg, it is likely that member states representatives were affected by some type of fatigue in connection with the prolonged and difficult negotiations. This character of negotiations would allow member states' representatives to deliver an excuse to national Parliaments of having tried everything possible and having achieved only what was possible as a Common Position within the Council (Interview, Högberg).

The above explanation by Högberg can be supported by the fact that representatives of both groups, i.e. those in favour of a higher and a lower cap, perceived the Common Position by the Council as a victory of the opposing group. For example, the watered-down sub-target for advanced biofuels was perceived as resulting from a strong influence by the group producing mainly first-generation biofuels and hence their

victory, as explained by a Swedish representative in the Council (Interview, Högberg). By contrast, for an Austrian representative, the very fact that there will be a cap on first-generation biofuels means an end to these biofuels' production in the long term and a gradual phase-out of investments in conventional biofuels. Thereby, the exact numerical value of the cap agreed on was considered as of no real importance for these anticipated developments on the market (Interview, Muner-Bretter).

Rationales for Policy Preferences

While the aim of the above section was to reconstruct the policy-making processes in the Council, this section, by comparison, concentrates on the rationales behind member states' positions held during the intra-Council negotiations. In so doing, the section seeks to establish a range of factors that were evaluated by representatives of member states when forming individual national positions on the legislative aspects at hand.

By way of an example, when the Lithuanian position was formed, the following procedure of conducting a national Impact Assessment was applied, as described by member state's representatives in the Council:

[Y]ou are looking into the regulatory regime right now, you are looking at our economic sectors, including whether we do have or do not have producers, local ones, feedstock and car fleet, [the situation] in the agricultural policy and the situation in transport. So, it is a cross-sectoral evaluation of the situation. And of course, we look into *costs*, the state right now and the projections we have (Interview, Konstantinaite, emphasis added).

Such studies were considered as a common means for the formulation of national policy preference in Lithuania on the EU legislation; and it was furthermore assumed that every member state prepares comparable studies "in order to look in more detail at what is going to be the impact of a particular policy instrument" planned at the EU level (Interview, Konstantinaite). In sum, it was believed that "there are two main issues for all of the delegations ... , the potentials [for biofuels], and the cost of possible implications of the Commission's Proposal" (Interview, Konstantinaite). Specifically, as

regards the transport sector, an assessment of the national situation pertains to, first, whether the national car fleet is dominated by diesel (which in turn is connected to climatic conditions that might not allow the use of biodiesel), second, whether a member state has a lot of public transport and whether biofuels could be incorporated into public transport, and third, whether biofuels can be promoted in other types of transport, such as lorries (Interview, Konstantinaite).

By the same token, the Swedish position, advocating a cap specifically on biofuels from oil-crops, was also rooted in some domestic factors. Thus, the member state has a lot of gasoline vehicles, which allows having a lot of bioethanol. Besides, ethanol was strongly promoted in the member state over a long period of time with a result that many flex-fuel cars contribute to the overall car fleet. The position that oil crops should be treated differently was not only connected to the fact that the Swedish government did not want to limit the production of ethanol, but also because Swedish biodiesel is made from forest residues and not from oil crops. At the same time, with regard to ILUC science, Sweden did not have a very strong position, being somewhere in the middle between proponents and opponents (Interview, Högberg). Therefore, while science was taken into consideration, it was “a political decision in the end” on the part of Sweden in the Council (Interview, Högberg).

The Polish position was also directly connected to its domestic factors. As explained by a Polish representative:

Poland has an important biofuel industry based on rapeseed, on first-generation biofuels ... worth an indicative target reaching right now 6.5% or 7% So in our opinion, the possibility to produce over the cap was artificial, because if it did not serve to fulfil the 10% renewables target, it had no justification. So we were right from the start of the negotiations well over the 5%, and even over 6% [of conventional biofuels toward the target of 10%]. ... We obviously were not happy with the cap. Our first Proposal was an 8% cap (Interview, Kołaczek).

Furthermore, the option of having a possibly high cap was seen by Poland as a possibility of sustaining a first-generation biofuels industry and protecting the investments already made into this industry, “which were made in a good faith, based

on the previous legislation, which is the Renewables Directive” of 2009 (Interview, Kołaczek). In the Council, Poland was also against the inclusion of ILUC values into the sustainability criteria. As already mentioned, this policy solution was challenged in connection with the critique of the state of the art of science on ILUC, for example, because it could only provide ranges for ILUC values for different types of biofuels (presented in the Annex of the Proposal). As expressed by Kołaczek, Poland raised the concern that if “you take different approaches and different methodologies, you receive completely different results” for ILUC values (Interview, Kołaczek). To sum up, the major factors of impact on national position formulation were the future of the biodiesel industry, the stability of the policy for investment decisions, the domestic availability of advanced biofuels and the certainty/uncertainty of science (Interview, Kołaczek).

The national policy preferences were in the case of Hungary shaped with the help of their industrial representative and consultant, who was always around during the negotiations of the ILUC Directives. It appeared that Hungary’s national representatives listened to the industrial representative because of the considerable potential job losses in the sector of first-generation biofuels production stemming from the EU legislation debated (Interview, Zatelek). More generally, for Zatelek the “situation also showed the division between East and West ... because in the East the production [of conventional biofuels] only recently started ... [becoming] an important industry” (Interview, Zatelek).

In line with the above, the overall lines of division in the negotiations were primarily attributed to the economic gains and losses in member states. Thus, a lower cap and the ILUC factors were perceived as more acceptable to member states which do not have genuine domestic production of conventional biofuels. In particular, in relation to domestic production, the ILUC factors were recognised as stopping biodiesel and incentivising bioethanol production (Interview, Muner-Bretter). Hence, the discussion of the policy issue in favour of ILUC factors appeared to be especially important for member states with a bioethanol industry (Interview, Kołaczek). In the same way, a sub-target for advanced biofuels was deemed to be of particular interest for member states that were interested in production of second-generation biofuels like Finland and Denmark (Interview, Zatelek). The same interest in the sub-target for second-generation biofuels on the part of Italy was brought in connection with that fact the member state possessed domestic industry producing second-generation biofuels (Interview, Muner-

Bretter). Respective ILUC science, it was further noted that the scientific basis for the ILUC Proposal was challenged primarily by member states that did not want to go below the cap of 7% (Interview, Högberg). Apart from science, another non-economic criterion mentioned was the public opinion. That is, the public opinion in a member state as a rationale behind national position-formation was acknowledged specifically in the cases of member states that were in favour of ILUC factors and by implication in favour of the promotion of second-generation biofuels (since these are on average emitting less than conventional biofuels and hence are perceived by general public as an environmentally friendly measure) (Interview, Högberg).

6.12 Conclusions

As was shown above, the negotiating positions of member states on the policy issues of a cap on conventional biofuels, a sub-target on advanced biofuels, and the inclusion of ILUC values into calculations of the GHG emissions of biofuels, were based primarily on national economic factors and treated under the consideration of current and future economic gains and losses from the implementation of a particular shape of the ILUC Directive. This validates H4/1 based on my theoretical framework.

The strongly divergent positions on the policy issues in question, rooted in different national approaches to biofuels, led, as a result of the negotiations in the Council, to a compromise that did not significantly change the status quo in the EU-level provisions on biofuels, by contrast to the Commission Proposal's likely effect. From a longer-term perspective, the given policy outcome can be attributed to the dynamics of *increasing returns*, discussed in the chapter one. Such a dynamic reinforces particular path-dependent processes; more specifically, a particular institutional development reinforces itself because of the growing cost of exit from the existing institutional arrangement. Applied to the policy processes above, one can recognise different path-dependent processes as regards stimulation of biofuels production in member states. Different institutional paths were taken by member states either independently from the developments at the EU-level, being owed to past national-level decisions, or in reliance on the EU biofuels legislation and in particular on the 2009 Directive. However, when the ILUC science appeared to be ripe to make amendments to the EU legislation,

national institutional and economic developments were already well underway and showed resilience to change, in the form of national positions in the Council. Consequently, the intra-Council negotiations were conducted for as long as a solution was found that compromised the existing national approaches to biofuels promotion in a minimal way possible, being the most acceptable common level to all member states (i.e. by lowering the cap from 10% to only 7% and by establishing reference value of 0.5% sub-target for advanced biofuels, which however can be easily deviated from). Thereby, the policy decisions on the cap of 7% on first-generation biofuels and the sub-target of 0.5% for advanced biofuels, as formulated by the Council, were incorporated into the final text of the ILUC Directive (Directive, 2015).

The preceding three chapters of this study were dedicated to empirical cases of the 2001, 2003, 2009 Directives (and the ILUC Directive, providing an outlook on the policy issue of indirect land-use change). This chapter will not enter into empirical details of the preceding chapters but will seek to juxtapose and compare the findings of the single chapters regarding single policy issues and single stages in the policy-making processes. More specifically, the chapter aims to point out similarities and differences in the policy-making and policy outcomes of single Directives and to view them through the lens of historical institutionalism, which is the core of the theoretical framework of this study. In addition, policy-making processes on the Directives at hand will be analysed not as separate case studies but as parts of a continuous process. This is done for the purpose of identifying longer-term historical developments and drivers behind them in the evolution of law-making in EU renewable energy policy.

7.1 Historical Institutionalism – the Applicability of the Conceptual Framework across Case Studies

Permissive Conditions as Structural Pressure Opening a Critical Juncture

There are many similarities and differences in the opening of two *critical junctures* on the policy-making processes studied. Therewith, the first critical juncture has allowed for the policy-making processes on the two first Directives on renewable energy (i.e., 2001 and 2003 Directives) to start, while the second critical juncture made it possible to begin policy-making on the 2009 Directive. These two critical junctures display a lot of similarities. However, first, it needs to be reassessed that both of them can be identified as critical junctures and thus correspond to the conceptual framework applied.

One feature that helps to demonstrate a critical juncture as being launched is the presence of a structural pressure in the form of a *permissive condition*. A permissive condition emerges exogenously and exerts pressure on the existing constraints of structure, resulting in loosening of those constraints and contributing toward its change. In so doing, it increases the causal power of agency to react to the exogenous pressure and to make (policy) change possible.

Two permissive conditions were identified in this study as responsible for launching the two critical junctures, respectively. The structural pressure of the first permissive condition stemmed from the negotiations of a climate change regime leading to the ratification of the Kyoto Protocol. More specifically, the structural pressure behind the first critical juncture, and the first two EU RE Directives, has accumulated in accordance with the growing credibility gap related to the EU compliance with its green leader role and also from the need to comply with its own negotiating mandate in the UNFCCC. Thereby, renewable energy was attributed an indispensable part in the Action Plan aimed at GHG reductions in line with the Kyoto obligations mainly due to the lack of a wide range of other emissions-saving options. Such options were either not universally accepted among the EU member states (as in the case of nuclear) or were in a nascent state of technological development (e.g. heating and cooling).

A structural pressure is identified in the above case because the negotiations of a climate change regime were themselves a response to a structural pressure which grew parallel to the inability by the EU to enact EU-level legislation with the aim of reducing its GHG emissions in line with the green leadership role assumed by the EU globally. This resulted in a ‘credibility gap’ which made the Council search for emissions-reduction measures in the run-up to and during the Kyoto Protocol negotiations¹⁰⁴.

The second type of permissive condition resulted from the pressure of maintaining EU competitiveness in the globalising world, which implied securing energy supply to the EU and diversifying supply sources *inter alia* by stimulating indigenous types of energy

¹⁰⁴Even though the EU was one of the main proponents of a climate change regime, it needs to be kept in mind that when the global commitment to GHGs reduction was made, it appeared that the costs of its compliance will not be that high thanks to the German unification and the UK dash from gas. In addition to that, when making a global commitment to GHGs reduction, the Council realised that it will lead to some form of additional EU-level legislation because the commitment-making was specified as based on a burden-sharing at the EU level (as discussed in the chapter three). This can be considered as a rational decision because an agreement on an uneven burden-sharing among member states would allow shifting the heaviest load of emissions reduction to the member states for which it would be at the least cost.

– a strategy developed jointly by the Commission and the Council. Specifically, the strategy towards renewable energy deployment, developed jointly by the Council and the Commission, was meant as a response to this structural challenge, which was first identified during the Hampton Court summit. The structural challenge of maintaining EU competitiveness was judged as particularly salient in the context of growing oil prices and the overall perception in the EU institutions that the times of cheap oil are gone. This structural pressure in the form of permissive conditions opened the second critical juncture in the policy-making on renewable energy, resulting in the agreement of the 2009 Directive.

Thereby, both pressures were *exogenous* to the EU and furthermore resulted in the relaxation of previous structural constraints to the *role of agency* in working toward policy change. As such, in the first place, the agency of the Commission was provided with more space to react to the pressure within the launched critical juncture. More specifically, in both cases, the Council acknowledged the need to react to the exogenous pressures and mandated the Commission with the task of scientifically assessing the options of dealing with the exogenous pressure. The Commission was thus provided with new space for devising a concomitant EU-wide response.

This space to manoeuvre was mainly actively used by the Commission to work toward an agreement on the 2009 Directive. That is, the Commission followed up the request by the Council not just by doing the modelling work, but also by organising informal meetings (i.e., the tour of capitals) and by actively participating in the formal ones (i.e. Spring Councils of 2006 and 2007), all of which allowed the Commission to lay the cornerstones of the future piece of legislation and to get an overarching agreement on it.

Similarly, when responding to the Council's request to examine the EU options of GHGs reduction in preparation for the Kyoto negotiations, the Commission was given a chance to devise a strategy that would be acceptable to the majority of member states. Thus, when developing its Strategy and Action Plan, the Commission, by drawing on the results of the TERES II study that presented the most cost-effective policy targets and options to promote renewables as a part of the overall emissions reduction strategy (which led to the proposals on the 2001 and 2003 Directives). By contrast, nuclear energy was not granted a part in the strategy by the Commission, being judged as a too

controversial source of energy because of not being endorsed by many member states (despite acknowledging its potential to reduce emissions).

When comparing the role of agency of the Commission during the first and the second critical juncture, one can recognise a more proactive attitude by the institution in the second case. The fact that the Commission made an extra effort of engaging in informal negotiations with member states on the future 2009 Directive (which involved the highest level in the hierarchy of the institution) can be attributed to the ambitiousness of the legislation in the making (i.e. higher targets which were proposed as binding). Thus, member states' acceptance of such far-reaching EU legislation implied getting their consent on details of the general architecture of the piece of legislation prior to the drafting of the Proposal for the 2009 Directive.

Institutional Matrix

The space to deliver responses to exogenous pressure also allowed the Commission to work toward maintaining the coherence of an *institutional matrix* of EU legislation. That is, changes to the RE policy area were viewed under the aspect of how well they fitted with the legislation of related policy areas. If the Commission perceived a mismatch between the policy areas due to the planned policy change, it proposed concomitant changes to related policy areas to keep the functioning of the institutional matrix intact.

Thus, the changes to the policy area of RE in 2009 were complemented by a plan to launch parallel Proposals. For example, the Proposal for the Fuel Quality Directive was meant to accommodate a larger share of biofuels on the market by means of adjusting the limits on the amount of biofuels that can be blended with conventional fuels. Equally, when developing the Proposals for the 2001 and 2003 Directives, it was important for the Commission to ensure a well-functioning legislative, institutional matrix of the EU. For instance, in relation to the 2001 Directive, the Commission tried to make sure that the definitions and the support schemes for renewables work in tandem toward further liberalisation of the EU electricity market, while the proposal for the 2003 Directive was accompanied by a proposal for tax breaks for biofuels in order

to make the requirement for a larger share in biofuels consumption on the markets of member states be supported by fiscal incentives for the production of biofuels, and this way to keep these two parts of the same institutional matrix aligned.

Antecedent Conditions as Structural Pressure Shaping Processes at Critical Junctures

Having dealt with permissive conditions to the opening of a critical juncture and with the resulting activity of agents within the relaxed structural constraints of a critical juncture, this chapter now turns to the procedures within a critical juncture. As was acknowledged in my theoretical framework, processes taking place within a critical juncture can be influenced by antecedent conditions, also called the critical antecedent. These are conditions that started operating before the opening of a critical juncture but can influence processes taking place during the critical juncture and change policy outcomes that become locked in with the closure of a critical juncture. Thus, antecedent conditions syndicate with other conditions operating during a juncture to produce policy outcomes, which can diverge across comparative cases of junctures.

The impact of antecedent conditions on the policy-making of the three Directives studied was powerful as the stage of policy formulation in the entire policy cycle. During this policy stage, modelling exercises were conducted to establish particular numerical values for targets and/or best policy options toward their attainment. These antecedent conditions resulted from past legal decisions on how to advance European integration and have managed to alter the outcomes of the modelling exercises. Specifically, the decision to liberalise the EU energy market and the decision of the EU enlargement of 2004 did play a role in relation to several choices made on how to conduct the modelling exercises for the Directives in question.

In the case of calculation of an overall 12% target in renewable energy (later subdivided into a target for renewable electricity and a target for biofuels), the very choice of a model (SAFIRE) as well as the choice of a consultancy (ESD), charged by the Commission with conducting a study, was guided by the reflection that the modellers and their model needed to be able to forecast the renewables uptake in specifically a liberalising market. Hence, the only consultancy working with a model that

corresponded to this requirement at that time was commissioned with a study. Besides, the EU enlargement of 2004 and the renewables potentials of new member states needed to be accounted for in the same modelling exercise. This is why the decision to conduct an updated study (TERES II study) was made in the first place by the Commission.

Similarly, the modelling exercise, undertaken for the purpose of pre-drafting of the future 2009 Directive, needed to take into consideration the EU enlargement to Bulgaria and Rumania. This is why the model (PRIMES) was re-run to calculate the difference that the two new member states could make to the achievement of the overall target of 20% in renewable energy in the EU by 2020.

Apart from the above, the grand legislative decisions taken at the highest political level and identified as antecedent conditions for the policy-making on RE, some additional antecedent conditions in their influence on the shape of RE legislation were found as well. By contrast to the former type of antecedents, the latter type is not owed to single historical decisions at the EU-level and is path-dependent in character; i.e., this type of antecedent condition stemmed from long-term developments on the market (of the EU) and thus displays increasing returns of economic nature (– a possibility acknowledged in my theoretical framework). These are increasing returns on the technology, technical standard or product well established on the market, which result in growing costs in the case of switching to new technology, technical standards, or products.

More specifically, the impact of antecedent conditions was particularly pronounced in relation to the promotion of biofuels, both in the case of the 2003 and 2009 Directives. Thus, in both cases, the adoption of the same numerical target by all member states (and not a dissimilar distribution of the overall EU target, as in the case of renewable electricity) was justified by the Commission and accepted by member states against the background that dissimilar biofuels targets would lead to different fuel blends in member states, which would contradict to the existing technical standard of same fuel blends all over EU. A change to this standard would have an impinging effect on the mobility of EU citizens, who were used to the same fuel blends all over the EU (e.g. increasing return of learning effects related to the habits and the expectation by consumers).

In the case of the same two Directives (of 2003 and 2009), the decision was made to reach the targets in biofuels by means of blending of biofuels with conventional fuels (and not by means of promoting cars run on pure biofuels). More specifically, this decision was made during the drafting of the 2003 Directive by the Commission and remained unchallenged in the negotiations of the 2009 Directive. The decision of promoting blending was based on the consideration by the Commission that it does not result in any changes to the existing infrastructure of road transport (such as infrastructure of repair services and fuelling stations) because biofuels blend can be used in the car fleet dominating the roads of the EU. Thus, any adaptation cost of new legislation could be avoided, or in other words, the increasing returns from continues use of the established technology prohibited a more radical change in technology to reach the goals of the legislation in question. These increasing returns stemmed from *inter alia* the investments made in the EU transport infrastructure (enormous set-up costs) and from the accumulated knowledge and practice of driving and maintaining a conventional car models by EU citizens (learning effects). Thus, a path-dependent process can also be identified in relation to the policy issue of the type of fuel, as promoted by the two biofuels Directives – a process that makes an institution (i.e., the EU) stay on the same path of technological development due to large costs of radically deviating from the path.

Legislative decisions based on technological path dependence were also made in the cases of the 2001 and 2009 Directives in relation to how the definitions of biofuels were formulated. First, it needs to be restated that the biofuels definition in the 2009 Directive became only slightly altered by comparison to the definition established by the 2001 Directive. In essence, the wording of both definitions was chosen to allow for counting electricity from non-separated waste incineration toward the targets in the EU legislation. (That is, the biodegradable fractions of non-separated waste were made qualified toward the target). This feature of the definitions is attributable to the influence of the Council in the policy-making process. Thereby, the overwhelming majority of member states prioritised such wording because of long-term established practices of burning non-separated waste to generate electricity. A change to such practices, incentivised by the EU level, would lead to considerable costs of switching to

new electricity technologies from waste. Implicitly, leaving such practices unchanged has allowed maintaining increasing returns from the set-up costs of existing technology.

Productive Conditions as Structural Pressures Shaping Processes at Critical Juncture

Another type of conditions - *productive conditions* - also operate within a critical juncture, but only in the presence of permissive conditions, i.e., they make a difference to policy outcomes within the possible space opened up by permissive conditions. Thereby, the discrepancy in the policy outcomes as produced by different critical junctures is understood as dependent on productive conditions.

When comparing the Directives of 2001 and 2003, it is crucial to restate that the modelling exercise commissioned by DG Energy facilitated a choice of the overall 12% target for renewable energy, while the underlying assumptions of this exercise allowed the Commission to divide the overall target into a target for renewable electricity and a target for renewable transport. Hence, the numerical values for the targets for both Directives, as projected by the Commission, offered a comparable starting point for the two ensuing legislative processes. By implication, as regards the targets of the two Directives, the only aspect that makes a difference between them, and hence can be compared, is the legal strength of the targets. In the cases of these two legislative processes, the Commission and the Parliament were in favour of binding targets, while the Council was in favour of non-binding ones. However, in the case of the 2003 Directive, the Council obtained much stronger leverage in the negotiating process because of the negotiations of the tax breaks Directive taking place at the same time. The requirement of unanimity in the Council for an agreement on the tax breaks provided the Council with a strong negotiating position.

Therefore, the variance in the legal strength of targets of the two Directives can only be explained as attributable to the Council's instrumentalisation of parallel negotiations on the tax breaks Directive (by agreeing on tax breaks for biofuels as conditional to indicative reference values for targets of the 2003 Directive). Hence, the same type of instrumentalisation by the Council did not take place in the negotiations of the 2001 directive, which made the targets more legally binding. Therewith, the coupling of the

tax breaks Directive with the 2003 Directive is interpreted as a productive condition that made a difference in the policy outcome on the legal strength of targets.

The difference between the negotiations of the 2001 and 2003 Directives, on the one hand, and the 2009 Directive, on the other, is related to the intense time pressure in the case of the latter Directive. This time pressure resulted from the decision, taken at the Spring Council of 2007, to finish the negotiations of the 2009 Directive (and the entire energy and climate package) prior to the Copenhagen conference so that the EU could re-ascertain its climate leader role and speak with a single voice in favour of an ambitious post-Kyoto global regime. The time pressure, in its turn, was of impact on *inter alia* the policy outcomes of targets' numerical values for single-member states because strong time constraints restricted member states in their ability to challenge the targets allocated to them by the Commission.

7.2 The Evolution of Law-Making in EU Renewable Energy Policy

There are two foremost drivers behind the evolution of law-making in EU renewable energy policy. The first driver responsible for the accretion of EU competence in this policy area emanated from the global level of negotiations toward a climate change regime within the framework of UNFCCC. The second driver resulted from the Community's commitment to guaranteeing medium to long-term economic competitiveness of the EU globally. Thereby, the second driver was substantially gaining in importance with growing oil prices (and with the parallel growing energy prices). In contrast, the liberalisation of the EU energy market constituted the persistent approach to the reduction of energy prices and the strengthening of the competitiveness of the EU. At the same time, the two main drivers behind the evolution of the EU RE policy were of different strengths at different points in time in the overall evolutionary process at hand and made an imprint on different legislative aspects, as discussed in the following.

The first phase in the assessment of the policy area at the EU level, which brought about the first two EU Directives on renewable energy, was significantly pre-shaped and prepared by the long-standing concern with EU competitiveness at the EU level as

dependent on oil prices, to which the ALTENER program was dedicated. That is, the ALTENER program was *inter alia* responsible for the financing of a range of studies on EU energy reliance and has also produced the TERES II study on the role of renewables in the EU security of energy supply. The TERES II study, in its turn, allowed the Commission to rely on scientific evidence regarding renewables potentials in the EU when composing a strategy for CO₂ reduction in line with prospective Kyoto Protocol obligations.

At the same time, the beginning of policy-making processes on the first two RE Directives was heralded by the Council's agreement to the above strategy by the Commission and by its resulting request of two Proposals for the first two renewables Directives. In so doing, the Council was under pressure stemming from the global-level negotiations of the Protocol. However, the availability of the scientific evidence obtained by the TERES II provided the Council with a precise numerical value for the overall RE target to be attained by the EU; thus, the endorsement of the target by the same institution laid the groundwork for the legal architecture of the first two renewables Directives.

While the above global- and EU-level drivers were responsible for the development of the EU renewable energy policy, the long-term dynamics of energy policies at the national level have, on the contrary, contributed to curtailing the ambitiousness of these two pieces of legislation. More specifically, while the Council was set to follow up on its negotiating mandate at the global level with pan-European legislation, when it came to the elaboration of details of this legislation, the Council was not ready to allow this EU legislation to make substantial changes to the national ways of renewables promotion and more generally to established national approaches to energy generation, even if sticking to national approaches stood in contradiction with the commitments at the global level. Thus, in the case of the 2001 Directive, the EU member states were not prepared to renege on the non-separated waste burning to generate energy, defining it as "renewable", in spite of emitting GHGs in doing so. Similarly, the diversity of national support schemes for renewables, and its potential impact on a definition of RE sources in the 2001 Directive, was left unchanged, as any alterations to national support schemes would result in substantial adjustment costs to member states. Besides, there was an even more pronounced influence of national approaches on the shape of the

2003 Directive. In the case of this piece of legislation, member states obtained the right to proceed with their national approaches to the promotion of biofuels. This allowed member states to make almost no effort as biofuel stimulation to comply with the Directive. That is, strong disunity among member states on whether and how to promote biofuels rendered the EU Directive on biofuels a somewhat symbolic piece of legislation.

The next phase of the implementation of the two Directives was *inter alia* impacted by the shape that this legislation obtained during the above phase of policy-making. That is, the shape of these two Directives, which they obtained in the policy-making process, influenced the success of the implementation of the Directives.

To begin with, the 2003 Directive has put much fewer binding obligations on member states; implicitly, it showed much poorer implementation outcomes. Because the targets of the 2003 Directive were reduced to mere reference values, member states were allowed to set themselves national targets that can diverge from the reference values in the Directive. Thereby, the majority of member states have made use of this legislative option and have set themselves targets much lower than the reference values. More specifically, “[t]he biofuels directive established a reference value of a 2% share for biofuels in petrol and diesel consumptions in 2005 and 5.75% in 2010” as compared to the share of 0.5% in 2003; however, the “indicative targets set by Member States for 2005 were less ambitious, equating to an EU share of 1.4%” (European Commission, 2006d, p. 7).

As a result, progress made on the implementation of the 2003 Directive was strongly disappointing. As already mentioned, the first indicative targets set by member states equated to an overall EU share of 1.4%; however, the “share achieved was even lower, at 1%” by 2005 (European Commission, 2006d, p. 7). Thereby, this result was unevenly distributed among member states “with only three Member States reaching a share of more than 1%” (European Commission, 2006d, p. 7). Furthermore, “taking into account the disparities between the targets that Member States announced for 2005 and the low shares that many achieved, the 2010 target ... [was judged as] unlikely to be achieved with present policies” (European Commission, 2006d, p. 7).

By contrast, the national targets, as set in accordance with the 2001 Directive, in sum amounted to 21% of overall electricity consumption in the EU by 2010, as planned by this piece of legislation (European Commission, 2006d, p. 6). Thus, “[o]nly in the electricity sector has considerable progress been made, on the basis of the Directive on renewable electricity adopted in 2001”, which allowed the Commission to predict that the targets set will almost be met by 2010 (European Commission, 2006d, p. 5). More specifically, at the time of the examination of implementation progress (in the Renewable Energy Road Map of 2006), the Commission estimated that “unless current trends change, the European Union will probably achieve a figure of 19% by 2010” (European Commission, 2006d, p. 6, p. 9). “However, progress has been uneven across the EU, with Member States with a stable regulatory framework performing best” (European Commission, 2006d, p. 9). Post the implementation period, the results of the promotion of renewable electricity were judged as substantial by the Commission, i.e., the Directive’s target was missed by only a tiny margin (Interview, Vessia).

When evaluating the implementation progress for the purpose of the drafting of the future 2009 Directive (in the Impact Assessment for the future legislation), the Commission drew explicit parallels between the differences in the directives for electricity and biofuels and the development of the sectors, the former being mirrored in the latter (European Commission, 2006d, p. 5). Specifically, the electricity Directive, which required “action commensurate with the targets, has induced rapid growth in renewable electricity”; by comparison, in the “biofuels Directive, neither target nor actions are mandatory, and whilst there has been some rapid growth in biofuels in a limited number of Member States, all but two have failed to take satisfactory measures to achieve their targets” (European Commission, 2006b, p. 25).

The developments during the implementation period outlined above had some, even though not very strong, influence on the next phase of the evolution of the policy area when the legal architecture of the future 2009 Directive was elaborated on. First of all, the targets for renewable electricity and for biofuels of the 2009 Directive became higher than the ones set by the 2001 and 2003 Directives, in so doing building on the progress of renewables promotion made with the help of these two pieces of legislation. In addition, the decision by the Commission to establish one single sectoral target for biofuels (and to leave member states with the freedom of subdividing the rest of the

overall target between renewable electricity, and heating and cooling) is at least partly owed to the fact that the 2003 Directive became a watered-down version of a piece of legislation planned by the Commission. That is, the shape that the 2003 biofuels Directive obtained under the influence of member states made it impossible for the Commission to launch infringement proceedings against member states in the instance of its poor implementation. Hence, only a small number of member states, interested in biofuels independently from the EU level, made some progress in biofuels consumption on their markets. This is why a potential EU-wide market for biofuels did not develop. In the absence of such a market for biofuels, the Commission saw it as necessary to set sectoral biofuels target of 10%, as a measure to provide more investor security to EU market players (which was not necessary in the cases of developed EU markets for renewable electricity, and heating and cooling). In other words, one could argue that a 2003 Directive of a considerably higher level of implementation requirement would have changed the situation toward the creation of a market for biofuels, which would make a sectoral target for biofuels unnecessary.

At the same time, the binding legal strength of the targets set by the 2009 Directive cannot be attributed to the implementation success of the first two renewables Directives (achieved between their enactment and the Commission's efforts at drafting a new renewable Directive). This is because independent from the strongly diverging implementation successes with the 2001 and 2003 Directives (with substantial growth in renewable electricity and only slight uptake in biofuels), targets for two types of renewable energy became binding in the Directive of 2009. More specifically, as shown in the chapter dealing with this Directive, the binding targets became tolerable to member states primarily because of the contemporary high oil prices and the perception that the times of low oil prices might be over, which shows once again that the concern with the EU global competitiveness, especially in connection with the competitiveness-threatening prices for oil served as the main reason for accepting specific numerical values of binding strength. An additional driver behind this acceptance stemmed from the opportunity of showcasing this ambitious legislation in the negotiations of a post-Kyoto regime and this way to restate the EU's role of a climate leader at the global level. This has put time pressure on the policy-making of the new Directive of 2009, with the result that no time was available to challenge the Commission's approach to

calculate those, and which made member states accept those targets, although they were higher than the ones preferred by member states.

The importance of high oil prices during the time of agreeing on the future 2009 Directive is further substantiated when taking into account that the targets up to 2030 became non-binding. As admitted by the Commission's representative, justifying such an ambitious policy measure was difficult in the context of low energy prices at the time of establishing targets by 2030 (see chapter six for more details).

As regards specifically the biofuels legislation, it is vital to keep in mind that independent from the member states' varying interests in those, the scientific underpinning behind the promotion of the type of energy was always much more superficial than that in the case of renewable electricity. Already the TERES II study was focused on forecasting scenarios on the EU electricity market, while the calculations of biofuels potentials were kept relatively simple. In the Impact Assessment for the 2009 Directive, the final choice of the biofuels share (of 10%) was not based on the precise scientific evaluation, but on a 'rule of thumb' with no scientific base for whether this target will contribute to the phenomena of land-use change and indirect land-use change. Consequently, with the advancement of modelling exercises on the phenomena, the target for biofuels became challengeable, and the role of first-generation biofuels in reaching the target was subsequently reduced by the 2015 Directive, even though not frozen at the levels of its contribution to the target during the negotiations of the 2015 Directive, mainly because of the investments into biofuels by member states, made in line with the 2009 Directive. However, the very fact that a piece of legislation (i.e. the 2009 Directive) is partly re-negotiated only a few years after being launched, has implications for the reliability of the EU biofuels legislation as regards its the investor security.

To conclude, this chapter allowed to revisit the applicability of my theoretical framework, with the focus on historical institutionalism, and to theoretically re-evaluate my empirical findings of the foregoing empirical chapters in a comparative manner, i.e., across chapters in connection with single conceptual foundations of my theoretical framework. Besides, this chapter has present these findings as a part of an overarching evolutionary development in the process of the development of the entire policy area of

renewable energy at the level of the EU. This implied paying attention to the period between the policy-making on the Directives of interest. Following this chapter, the next one concludes this thesis by primarily answering the questions raised in the introduction to this study.

Chapter 8: Conclusions

This final chapter seeks to provide a conclusion to the entire thesis. Thereby, the primary purpose of the chapter is to summarise the main empirical and analytical findings of the present study. To achieve this, this chapter will proceed as follows. The first section of this chapter will briefly restate the purpose of the present study and the questions asked by the study. Then, the section will answer these questions and approve or disprove the corresponding hypotheses of the study by synthesising the findings of the empirical chapters. In so doing, the chapter will begin with the evaluation of questions pertaining to structural pressures behind policy-making processes and then will turn to single policy issues. This section will conclude with some additional insights gained from undertaking this research. The second section of this chapter will reassess the conceptual validity and the research methods of this study, i.e. single theoretical and methodological concepts will be evaluated under the aspect of their explanatory leverage for this study. The last and concluding section of this chapter will, in turn, provide some additional reflections on the limitations of this study and on how they can be overcome by means of future research. Therewith, the section will provide some empirical and theoretical ideas for the potential future research avenues that can help advance our understanding of the processes of the EU renewable energy policy-making.

8.1 Answering the Questions and Testing Hypotheses of this Study

As elaborated upon in the introduction of this study, the study's purpose is to explain and describe how and why particular numerical values and definitions for RES-E and RES-T were agreed on in the policy-making processes on the Directives 2001/77/EC, 2003/30/EC and 2009/28/EC. Thereby, my main research question was formulated as:

what structural pressures and processes behind them determined the final legislative shape of the targets and definitions for RES-E and RES-T, as enacted by the Directives 2001/77/EC, 2003/30/EC and 2009/28/EC? (The empirical scope of this study was justified against the background of gaps in the literature on policy-making on these policy issues, especially in relation to the early stages in the policy cycle, i.e. the stage of policy formulation by means of conducting modelling exercises.)

The additional questions to the main question were formulated as follows:

- 1) What processes and structural pressures launched the policy-making, resulting in the Directives 2001/77/EC, 2003/30/EC and 2009/28/EC?
- 2) What accounts for the choices of policy formulation tools for the calculation of numerical values of the EU targets and their distribution among member states?
- 3) How can the choice of legal strength of targets for RES-E and RES-T be explained?
- 4) How was the scope of the definitions for RES-E and RES-T arrived at?

My main question is a generic one, determining the empirical scope of this thesis; hence it will be revisited toward the end of this chapter when the final conclusions are drawn. The more specified four questions are answered in the following, which also implies the evaluation of the hypotheses of this study; i.e. their acceptance or rejection is undertaken in connection with the empirical evidence summarised for the purpose of answering the research questions.

The Structural Conditions and Processes behind the Launch of the Policy-Making

The first specific research question concerns the structural pressures and processes behind them for the launch of the policy-making, resulting in the Directives 2001/77/EC, 2003/30/EC and 2009/28/EC. To identify the outset of the policy-making processes leading to the enactment of these Directives, the lens of historical institutionalism was applied with the aim of identifying an opening of a critical juncture to these processes. Thereby, two critical junctures were identified: one resulting in the

proposals of the first two renewable Directives (of 2001 and 2003) and the other leading to the proposal for the 2009 Directive.

In the case of the first critical juncture, one can identify a structural pressure in the form of the compliance with a strong mandate and corresponding commitments made under the UN Framework Convention on Climate Change by the EU. That is, the previously made commitment to global environmental leadership by the EU, on the one hand, and the lack of success in agreeing on the EU-level legislation contributing to emissions reduction, on the other, increasingly challenged the legitimacy of the commitment. As elaborated on in chapter 4, these two processes at the global and EU levels led to the accumulation of a structural pressure resulting in the initiation of the policy-making processes on renewable energy (RES-E and RES-T). Thereby, the deployment of RE by means of EU-level legislation was discovered as a response to this structural pressure in connection with the failure by the Council to unilaterally accept an alternative solution of CO₂ tax, and in the view of unavailability of many other technical solutions to emissions reduction at that time. This allows accepting my first hypothesis (H1), but only partly as regards its second proposition that the structural pressures of EU compliance with climate change regimes is responsible for the launch of the policy-making processes.

The opening of the second critical juncture was owed to the structural pressure stemming from the need to ensure the competitiveness of the EU, in particular against the background of growing oil and energy prices and the concomitantly growing energy dependency of the EU on supplier countries. These global processes in their impact on the EU competitiveness were first identified as a challenge for the EU at an informal meeting at the Hampton Court, which served as a platform for preliminary agreeing on the need for the competitiveness-stimulating strategy *inter alia* in the EU energy sector. The strategy, developed jointly by the Council and the Commission in the follow-up meetings, implied a renewed commitment to the promotion of an indigenous source of energy (i.e. RE), and resulted in the Proposal for the 2009 Directive. In sum, the process of growing oil prices and the process of finding a strategic response to this challenge explain the beginning of the policy-making processes on the 2009 Directive. This also approves my first hypothesis (H1), however, again only partly, i.e. its first proposition, in line with which the structural pressure of ensuring EU competitiveness is responsible for the launch.

The Choices of Policy Formulation Tools for the Calculation of the EU Targets and their Distribution among Member States

With my second question I inquired into the choices of policy formulation tools establishing the overall EU and individual member states' targets. As implied in the question, when discussing the PFTs, the distinction needs to be made between the justification of the overall EU target in RE and the calculating approaches for the distribution of this target among member states (which however did not apply to the target for biofuels as it was of the same numerical value for all member states).

The first modelling exercise, which yielded the 12% in RE and thus laid the scientific basis for the 2001 and 2003 Directives, was conducted by an external scientific community. That is, the consultancy ESD was commissioned by the DG Energy with a study, which became known as the TERES II study. This study was supposed to forecast different scenarios of the RE growth in the EU under a range of assumptions pertaining to different policy instruments. The TERES II study, being an updated version of the earlier TERES study, also needed to account for some more recent historical decision made at the EU level, which the predecessor study left out of the scope, i.e. the EU enlargement of 2004 and the liberalisation of the EU energy markets. At the same time, the only model able to develop scenarios on a liberalising market was the SAFIRE model. The model was developed by the UK-based ESD, being at that time the only epistemic community working with this model. Because the process of liberalisation of the EU energy markets was unfolding at the time when the study was commissioned, it was the only choice for the Commission to subcontract the ESD modellers so that the SAFIRE model could be applied. Thus, the process of liberalisation was responsible for the choice of the model, which answers the above question, and also allows validating the hypothesis that the past historic choices made at the EU level are responsible for the choice of the model (H2/2).

Besides, the task of the TERES II study was to explore policy options of the future RE promotion that would result in most economic benefits for the EU, while climate change benefits were not specified as of any substantial concern by the Commission in

connection with the study. This task of the TERES II study is less surprising when recalling that the study was not conducted to inform the Proposal drafting by the Commission, but was a part of research undertaken within the framework of the ALTENER programme (which was dedicated to the search for cost-effective alternatives to conventional fuels). Thereby, a particular concern by the Commission's representatives pertained to the future affordability of energy for the EU. Specifically, the growing oil prices at the time made the Commission enquire into what levels of RE promotion would be economically justifiable in the light of this dynamic. To address these concerns, the TERES II study worked with the assumptions from a baseline scenario from of an earlier study ('The European Energy by 2020'), which provided a projection on the future dynamics of oil prices. By building on this study, the TERES II developed its own scenarios, and in reliance on these the Commission chose the estimate of 12% in RE consumption in the EU. The specific tasks of the study, as specified by the Commission, validates the hypothesis (H3/1) according to which targets are calculated to adjust to the structural pressure of ensuring EU competitiveness; it also invalidates the hypothesis (H3/2) in line with which targets are calculated to adjust to the structural pressure of ensuring EU compliance with climate change regimes.

As regards the distribution of the overall target among member states, it was also undertaken by applying the SAFIRE model, i.e. the model used in the TERES II study. To calculate individual targets, the Commission run the SAFIRE model on a country by country basis, in so doing keeping the assumptions of the scenarios from the TERES II study. These were the scenarios on the basis of which the overall 12% in RE was established and the assumptions of which pertained to the global and EU levels in their influence on the energy markets of the EU. In addition, the calculation of the individual targets by the Commission attributed core importance to two national-level variables, that of technological and economic potentials in each member state respective the promotion of RE. Thus, the assumptions pertaining to the global and EU levels were the same as in the TERES II study, however augmented by economic data on single member states. This shows that the underlying rationale behind the Commission's approach to the calculation of individual targets was also to ensure competitiveness of the EU and by implication the competitiveness of single member states. Thus, the rationale behind the calculation by the Commission of the burden-sharing remained the

same as in the case of the calculation of the overall target; this answers the question of this sub-section, and also validates the third hypothesis (H3/1).

A small number of individual targets were subsequently lowered. That is, some member states managed to slightly reduce the overall target by 1.1% (from 22.1% to 21%). This became possible for these member states by means of challenging their national potentials for renewables as estimated by the Commission when calculating the targets. Thereby, the reduction in these targets was aimed at insuring a fair burden-sharing among member states and, implicitly, at eliminating the disproportionately high costs of policy implementation of the Directive on the part of the member states in question, as this would result in economic losses for these member states. This validates the hypothesis (H4/1).

In the case of the modelling exercises supporting the proposal for the 2009 Directives, the choice of the models (PRIMES and Green-X) was of much lesser importance for the calculation of the overall RE target. The overall 20% was not arrived at with the help of modelling exercise, but was pre-determined in the strategy developed jointly by the national representatives and the Commission in the follow-up meetings to the Hampton Court. The 15% by 2015, as suggested by the European Council of March 2006 in its Presidency Conclusions, thereby corresponded to the 20% by 2020, as found by the Commission. Thus, the overall target of 20% was taken as a starting point in the modelling exercise, while the task of the modelling exercise was to assess the most cost-efficient policy instruments for this target's achievement and the costs and benefits of this target. Therewith, the types of scenarios conducted were normative, i.e. aimed at assessing how to arrive at a pre-established policy goal and what means this would entail (and not exploratory, aimed at exploring possible policy options, as in the case of the TERES II study). It needs to be further mentioned that the final acceptance of the 20% by the Council was strongly dependent on the concurrently growing oil and energy prices – parameters fed into the modelling exercise with the result that a high RE target became relatively easily-defendable by the Commission in the negotiation with member states. More generally, the high oil prices and a possible energy crisis were identified as being primarily responsible for the target's acceptance, and hence more important in this respect than the choice of the models. Hence, to answer the question of this sub-section, the choice of the policy formulation tools (i.e. the models) to prepare the future

2009 Directive was made to fit the overall strategy, aimed at strengthening the EU competitiveness by means of reforms on the energy market, which also validates the first proposition of H2/1, that the choice of policy formulation tools is a response to the structural pressure of ensuring EU competitiveness. More specifically, H2/1 can be validated in relation to its first proposition, when taking into account that the structural pressure led in first place to an intra-institutional endorsement of a target of approximately 20% by 2020.

The scientific underpinning for this target (as regards *inter alia* its costs and benefits) delivered by the modelling exercise was a part of this reaction to the structural pressure and therefore served as an adjustment to this structural pressure of maintaining EU competitiveness globally. Thus, the efforts at finding an approximate target for RE were driven by the development of a competitiveness-strengthening strategy for the EU, which also allows validating H3/1

Besides, the choice of specifically the PRIMES and Green-X models can be additionally explained in the light of the following considerations. First, the co-application for these two models appears to be a pre-established approach to the evaluation of RE future growth by the Commission. That is, the Commission co-applied the models to forecast the future compliance with the 2003 Directive by member states in 2010, presented in the Biofuels Progress Report. Besides, these two models appear to have been suitable and up-to-date for the task at hand (i.e. the task of assessing the costs and benefits of the 20% target and the most cost-efficient policy instruments for its attainment). That is, the development of both models was co-sponsored by the Commission. Thus, the Green-X was developed within a project aimed at finding strategies for significant increase of the RE share on the EU market (in line with the aforementioned strategy, with its ambitious RE target), and only two years before being employed in the modelling exercise. The PRIMES, in turn, was a model widely used by the Commission; it was also regularly updated and peer-reviewed by the Commission. Besides, both models worked with the assumption of a liberalising energy market. In addition, the latter model was capable of incorporating the RE potentials of two accession states – Bulgaria and Romania. Hence, it can be concluded that the choice of policy formulation tools (in this case, the two models), similarly to the case of the modelling exercise pertaining to the 2001 and 2003 Directive, was made to simulate the impacts of past historic choices (e.g. market liberalisation and enlargement) on the future RE development, which validates H2/2.

It needs to be further noted that a 10% target in biofuels, as a single sectoral target set by the 2009 Directive, cannot be directly attributed to the modelling exercise discussed above. That is, the scenarios developed with the help of the two models have yielded two targets, 7% and 14% by 2020, of which the second target was of greater positive effects (as elaborated on in chapter 6). Thereby, the choice of 10% instead of 14% was not based on solid science. Specifically, the Commission considered the 10% as appropriate by applying a ‘rule of thumb’, i.e. an approximate evaluation of the interaction of a number of economic and technical parameters (i.e. availability of cropland, impact of biofuels growth on crop prices and concomitant benefits to farmers, as well as technical restriction related to the blending of biofuels with fossil fuels). Thus, the specific recommendations derived from this modelling exercise were disregarded in the case of the choice of a target for biofuels. At the same time, the concentration on the parameters pertaining to a smooth functioning of the market reveals that the numerical value for this target was selected so that it does not undermine the performance of the EU energy markets and therewith the EU competitiveness; this validates H3/1 and invalidates H3/2.

The breakdown of the overall EU target among member states was not undertaken with the help of the two models – PRIMES and Green-X – used for the scientific assessment of the target. These models were not used because the Commission expected that the data, and in particular the national RE potentials fed into such modelling exercise, would be easily challengeable by member states. Instead, the Commission has devised a ‘flat-rate approach’ to calculate the individual targets. It was presented by the Commission as a fair, objective, simple and transparent approach. All member states perceived their targets as too high, but could not find an alternative calculating approach because of the time pressure and the requirement that the new approach had to be acceptable to all member states. (The requirement was difficult to fulfil as each member state was primarily interested in reducing its own target, and an approach achieving this would be at the expense of the targets of other member states).

All in all, the burden-sharing approach and therewith the individual targets it has yielded became accepted because of the fairness and transparency of the distribution and because of the time pressure stemming from the need to finish the negotiations

before the Copenhagen conference. Therewith, the acceptance of the approach as a fair and transparent one by member states was based on the acceptance of the overall 20% target as a part of the competitiveness-stimulating strategy for the EU. While the acceptance of the time pressure, as a restricting factor to finding of an alternative approach, shows that member states were interested in presenting of the finished Directive at the Copenhagen conference as a prove of the EU's green leadership. This is why the approach chosen and, by implication, the targets it has calculated allow validating (H2/1) and (H2/2) as regards the choice of policy formulation tools, and (H3/1) and (H3/2) respective the numerical values assumed by the targets.

Only in one case did a member state, Latvia, manage to challenge the statistical data used by the Commission. Consequently, similarly to the case of the negotiations of the 2001 Directive, the overall target was reduced by a very small margin due to the lowering of the single individual target allocated to Latvia. This validates H4/1.

Each target assigned to a member state had in addition to be achieved in accordance with a particular implementation trajectory. The trajectory was devised by the Commission as a policy instrument to exercise control over the pace of deployment of renewables by member states. That is, in line with this instrument invented by the Commission, a member state needed to attain 25% of its target by 2012, 35% by 2014, with 45% and 65% by 2016 and 2018 respectively, to comply with the 2009 Directive in the interim. Thus, an individual target of a member state was subdivided into four interim sub-targets by means of the policy instrument of the trajectory.

The above linear trajectory was however challenged by the Council; the institution was in favour of a more relaxed trajectory in the first half of the implementation period. The argument presented by the Council was related to the cost of renewables promotion, which decrease after the initial phase of a development project. This is why the Council has proposed a trajectory with the first two interim targets of 20% and 30% by 2012 and 2014 respectively. This slower growth during the first half of the compliance period would be compensated during the second half of the period, but at a lower cost. Under the influence of the Council, the trajectory of the Directive became less steep, which validates H4/1 as its shows that the Council was preoccupied with the minimising of the economic losses from the implementation of the future 2009 Directive.

In addition, the Council positioned itself as opposed to the provision of re-submitting of the National Action Plans to the Commission in the case of a deviation from the trajectory, as initially drafted by the Commission in its Proposal. The Council disapproved of such a strong controlling instrument and managed to make this provision more relaxed. That is, in the instance of a minor deviation from the trajectory, the Commission obtained the right not to request a new NAP from a member state. The Council's impact on this legal provision additionally validates H4/1, because the provision gives member states some more freedom respective the speed of implementation, which might allow saving costs of implementation, and also allows saving administrative cost of formulating new NAPs.

The Choice of Legal Strength of Targets for RES-E and RES-T

This subsection turns to the question of the choice of legal strength of targets can be explained, that is, why the targets were set as either binding or indicative obligations by the pieces of legislation studied. In so doing, the sub-section treats this policy issue in a broader context of policy-making to the extent that it helps answering the question of the subsection.

To begin with, the policy issue of legal strength of targets, in the case of the 2001 Directive, was moulded by the Council. The position by the Council was informed by a number of considerations. First of all, the majority of member states perceived the numerical values of their individual targets as too high and hence demanding great effort of implementation. Moreover, six of the fifteen member states expressed their concern with their ability to meet their targets, which, according to them, depended on the factors such as the gross future energy consumption of their economies and weather conditions during the years of implementation. However, member states accepted their individual targets. The acceptance of high individual numerical values of targets stood in connection with the acceptance of the overall RE target of 12% (i.e. the target was accepted by the European Council of 1997 when it called for the Proposals for the future 2001 and 2003 Directives). In the same vein, the overall RES-E target, being one

of the two parts of the overall RE target, remained equally unchallenged by member states (as discussed above).

Thus, an earlier acceptance of the overall 12% target and the scientific evidence supporting the target made it, I argue, difficult for member states to challenge the numerical values of their individual targets, as this would undermine the effort of all the previous stages in the policy cycle aimed at the development of this piece of legislation. Instead, to make the national targets easier implementable, member states supported and put through the indicative legal strength of targets. This is because the indicative targets allowed more space for manoeuvre during the implementation period, permitting member states to account for changing national circumstances and this way to reduce the costs of compliance, which validates H4/1.

Similarly, indicative targets were strongly prioritised by the Council in the negotiations of the 2003 Directive. This policy preference stood in connection with the national-level approaches to the promotion of biofuels. Specifically, many member states were not prepared to devote any effort to biofuels promotion. Besides quite dissimilar approaches were taken to biofuels among the member states promoting this type of fuel nationally (some being interested in only second-generation biofuels, which however could not be expected to amount to 10% in transport fuels on the market by 2010). This lack of a common ground on a pan-European approach to biofuels among member states coincided with a favourable institutional context of the negotiations of the 2003 Directive. That is, the Council made the acceptance of indicative strength of targets on the part of the EP conditional to the approval of a tax breaks Directive on their part (which was negotiated at the same time and the approval of which required unanimity in the Council). Considering the tax breaks Directive even more important than the 2003 Directive for deployment of biofuels, the EP had to accept the position by the Council. Therewith, the preference formation by the Council is in line with the H4/1, as being informed by anticipation of the changes to their national approaches to biofuels in the case of their acceptance of binding targets, which would result in substantial costs of compliance with the Directive.

This strong institutional position by the Council in the negotiations of the 2003 Directive resulted in further watering down this piece of legislation (see chapter five for

more details). However, the Council did not veto the entire Directive because of the recognition of some gains accruing from this Directive at the EU level. Specifically, member states acknowledged that this Directive would help meeting the EU Kyoto Protocol obligations. This was however only a rather symbolic commitment to the protocol and to GHG reductions since the Directive, under the impact of the Council, became so light that member states would not face infringement proceedings in the instance of non-compliance with the Directive. Although it could not be established whether the anticipated gains from this EU Directive were of economic or electoral nature, a factual compliance with Kyoto Protocol with the help of the 2003 Directive was recognised by member states as a gain, which allows (tentatively) validating H4/1 and H4/2.

The targets of 20% in renewable energy and of 10% in biofuels have assumed the highest legal strength of binding targets in the Directive of 2009. This can be explained with the perception by the Council of costs and benefits associated with this legal measure. Starting with the benefits, or more specifically with economic gains, one can recognise a change in Council's position on the policy issue under the recognition of the danger of energy crisis and the need to prevent its negative consequences by means of the Commission's vision of creating a truly integrated Internal Energy Market and a matching legislative framework. An agreement with this vision was expressed in the Presidency Conclusions of the Spring Council. Thereby, such a far-reaching effort at more independence of the EU from energy supplier countries (which implied renewables promotion), required a fair effort distribution among member states, with no member state free-riding by means of underinvestment in RE. It appears that this, in turn, could be secured with binding targets. An interest in the medium to long-term economic gains from the reforms of the EU energy market, and the binding targets aimed at its realisation allow validating H4/1.

The Heads of State and Government have also decided during the Spring Council to prepare the future 2009 Directive prior to the commencement of the Copenhagen Conference, as they mandated the Commission with a fast action at proposal-drafting. Hence, it appears that the politicians were also interested in electoral gains from their contribution to the fight against climate change, since the Copenhagen Conference and

the EU legislation on RE were linked to a media hype at that time, which is in line with H4/2.

At the same time, the Heads of State and Government have clearly underestimated the economic burden that they have agreed to by agreeing to a binding overall target of 20% at the Spring Council. At first, member states representatives had concerns with the attainability of the binding target. This is why they have agreed to the binding 20% under a number of preconditions, (e.g. that the allocation of individual targets should take place under the full involvement a member state and should also take into account the renewables potentials of a member state). Besides, when agreeing to an overall binding target each member state expected a lower target than the one allocated to by the Commission after the Spring Council. In fact, when faced with the individual targets derived from subdividing of the 20%, all member states held the view that their targets were too high (as discussed in the previous sub-section). This once again validates H4/1, as it shows that the agreement on the binding 20% was possible due to an underestimation of the individual contributions to be target by member states and that member states such estimations were made.

In addition, some reservations on the part of member state representatives could be accounted for by the Commission in the preparation of the Spring Council by touring the capitals. That is, these bilateral informal meetings allowed the Commission to gather information on member states' preferences regarding the legal architecture of the future Directive and to address those. This allowed member states to keep a level of control over the economic effort at the implementation of the Directive, which also made the Directive more acceptable to member states, and which additionally allows validating H4/1.

The Scope of the Definitions for RES-E and RES-T

This sub-section deals with the policy issue of the scope of the definitions that entered the pieces of legislation studied. The scope of a definition for a particular type of energy, or how encompassing a definition is, in turn, determines as to what substances can be counted toward the achievement of the target for the same type of energy. In

other words, the sub-section is dedicated to the question about how and why the definitions of the Directives have assumed a particular scope.

The definition of biomass in the 2001 Directive was a highly contested policy issue. The points of contradiction pertained to the several aspects. The first aspect debated in the decision-making pertained to whether to separate waste and whether to count both biodegradable and non-biodegradable fractions of waste toward target of the Directive. At an early stage in the decision-making on this policy issue the Council was inclined to count both, biodegradable and non-biodegradable waste fractions toward the target, which also implied non-separation and non-recycling of waste. The Commission was categorically against such approach to the definition and was joined by the EP, after a renewable energy coalition helped the latter EU institution find an internal agreement on the policy issue. The two supranational institutions were in favour of waste separation and the eligibility of only biodegradable fractions toward the target. The inter-institutional agreement reached yielded a definition that did not require waste separation, but restricted the countable waste to the biodegradable part of it. Therewith, such a definition strongly reflected the interest by the Council in being able to cover the renewables target without the effort at waste separation for the purpose of energy generation. That is, the overwhelming practice in member states was to burn waste for the purpose of energy generation without separation. Being interested in preserving this practice, the Council made sure that the EU-level definition of biomass does not prejudice the domestic ones, many of which allowed counting waste in its entirety as renewable for the purpose of domestic legislation.

In addition, the Council made its mark on the definition by further expanding it toward the inclusion of animal fractions of waste into the definition, in addition to the vegetable ones. Besides, the Council changed the proposed definition by including both industrial waste and municipal waste toward the target. The Council's policy preference for such a broad definition of biomass can be explain as stemming from the rationale of meeting the EU-induced target with less economic effort; i.e. an encompassing definition would allow keeping national energy generation practices and to cover the EU target with a wide variety of substances that are included into the EU biomass definition, which validates H4/1.

The above biomass definition was reconsidered for the purpose of agreeing on the 2009 Directive. Once again single policy issues of the earlier negotiations (toward the 2001 Directive) were raised. Thus, DG Environment pleaded for a specification within the definition that waste should be of no economic value, because animal waste fractions are increasingly burned to generate energy despite being required by some industry (and hence increasingly substituted with palm oil). However, it failed to find support in the rest of the Commission. The ITRE Committee of the EP also raised the issue of waste separation, but without any success. The only change to the old definition resulted from its further expansion toward including additional types of biomass substances, which occurred under the influence of the Council. Thereby, the biomass definition of the 2009 Directive was slightly re-shaped in line with the policy preference by the Council, which largely remained the same as no change to national-level practice of waste incineration took place in the mean time. This allows validating H4/1.

The definition of hydropower, discussed as a part of the 2001 Directive, was also a controversial policy issue. However, by contrast to the previous cases, the disagreement among the EU institutions revolved not around whether to define different scales of hydropower as renewable. What caused controversy, was whether to exclude large hydropower from the definition (even though it would be eligible toward the target), but whether to grant it subsidies. The Commission and the EP were in favour of the restricting subsidies to small hydropower. The Council, on the contrary, wanted to retain the control over state aid for hydropower at the national level. The policy preference of the latter institution is thereby in line with its general position on definitions, outlined above, that is, to keep the implementation of the EU Directive as flexible as possible and this way to reduce the burden and the costs of compliance, which also validates H4/1.

As regards the 2003 Directive, one of its definitions, than of biomass, was copied from the 2001 Directive. Therewith, the only definition debated in the policy-making of the 2003 Directive was the definition of biofuels. The EP did not develop a strong position on the policy issue, largely accepting the definition by the Commission (that defined biofuels simply as liquid and gaseous fuel for transport from biomass). However, the proposed definition by the Commission was substantially altered only by the Council. First, the Council expanded the scope of the overall Directive; it became defined as the

promotion of biofuels and also other renewable fuels. Consequently, the substances listed as contributing to the attainment of the 10% target counted *inter alia* biohydrogen. In other words, under the impact of the Council, the definition of biofuels became a definition of renewable fuels. Besides, under the influence of the same institution, the list of renewable fuels was made illustrative, i.e. open to the inclusion of new technological developments. A longer list of fuels not confined to only biofuels, and open to technological development, allowed member states with an interest in renewable fuels to have a wider choice options for how to meet the target of the 2003 Directive, without the need of compromising on nationally-established approaches, thus saving the costs of implementation, which validates H4/1.

The definition of energy from renewable sources, included in the 2009 Directive, was much less controversial than the definitions above. That is, the EP's suggestion to make the definition suitable for the promotion of heating and cooling, embraced by the new renewables Directive of 2009, (by means of adding aerothermal and hydrothermal types of renewable energy) was readily accepted by the Council that further added "ocean energy" to the definition. Although the policy-making on this definition does not make a particularly strong case for the validation of the H4/1 as the Council made a lesser contribution to the scope of the definition than in the previous cases, it is nevertheless in line with the hypothesised rationales behind the formation its policy preferences.

Having dealt in this section with the research questions of this study, and having specified as to what hypotheses could be validated or invalidated with the help of the empirical evidence gathered to answer these research questions, this chapter now turns to the aspect of explanatory leverage of the theoretical and methodological frameworks applied in the present study. It begins with a reflection on the theoretical concepts building the theoretical framework of this study and proceeds with the methodological concepts of process tracing.

8.2 The Explanatory Leverage of Theoretical and Methodological Frameworks of this Study

The Conceptual Framework of Actor-Centred Historical Institutionalism

By building on the previous section, this section begins with the evaluation of the utility of the theoretical concepts pertaining to the ACHI. These concepts were used to specify the policy preference formation by the EU-level actors on legislation of interest, departing from the assumption that actors are rational maximisers of their utility.

In the case of the Commission it was hypothesised that the EU institution behaves as a supranational actor that is forming its policy preferences in line with its interest in the expansion of its supranational competence. In fact, in many cases the Commission was found to behave in a proactive way, thus trying to promote EU-level policy solutions instead of the national level ones (e.g. a EU-wide support scheme linked to the definition of hydropower in the 2001 Directive) or working toward an inter-institutional agreement on a piece of legislation (e.g. by ‘touring the capitals’ in order to facilitate an agreement on the 2009 Directive). However, none of the empirical evidence found proves that the Commission sought, in so doing, to increase its supranational competence instead of acting in the interest of the entire Community or on the behalf of member states. This is because all of the Commission’s policy suggestions related to the policy issue studies were adjusted to the policy course initially set by member states (e.g. provision of scientific evidence upon the request by the Council) or were otherwise technical in nature (e.g. lifting the limits on biofuels in conventional fuels to accompany the increase of the share of biofuels on the market).

The Parliament was equally not found to form its policy preferences to maximise its supranational competence. Despite the fact that the EP in its various Resolutions called for Proposals on renewable energy by the Commission, the justification for these calls were *inter alia* rational in character. That is, similarly to the policy preferences by the Commission, the EP interest in the EU legislation on renewable can be attributed to the aim of economic well-being of the entire EU. Besides, it was rather an exception in the policy area of renewables that the EP stood united behind a single policy position (as in the case of the 2003 Directive). Generally, because of a disunity within the institution the EP made little impact on the policy-making processes studied. That is, the positions by the rapporteurs were often not supported in its entirety by the Committee and the

Plenary. Besides, the MEPs were often divided along the lines of national affiliations which reflected national interests (e.g. on the policy issue of definitions in the 2001 Directive).

Thus, the position of the rapporteur could also entail a restriction of the supranational competence of the EP if perceived, for example, as contributing to higher environmental standards of the EU legislation (e.g. Turmes being against a target for biofuels because of non-availability of second-generation biofuels on a large-scale). As regards the Plenary, its final policy positions were often formed as a compromise between a variety of positions by MEPs, of which some would entail expansion and some curtailment of the supranational competence of the EP (as in the case of a split on whether to allow electric rail make a contribution to the 10% target of the 2009 Directive) with the common position in favour of leaving more competence at the national level and hence in favour of competence-curtailling legislation.

Respective private sector, it was hypothesised that the formation of its policy position is guided on by the rationale of obtaining more economic gains and leaving their competitors with less economic gains. The empirical evidence on policy-making on RE targets and definitions did not provide many instances of the private sector's involvement with the two policy issues of targets and definitions. However, it could be validated in once case that the policy preference of this actor was in line with the assumption, i.e. the RE industry tried to influence EU legislation toward a stronger promotion of renewable energy growth and implicitly more subsidies of the sector (in the case of the renewable industry lobbying of the EP regarding the biofuels definition of the 2001 Directive to make a smaller share of waste incineration countable toward the RES-E target).

The assumption that the Council aims at maximising its gains and minimise losses has been confirmed in many instances, as discussed in the previous section. To sum up these findings, one can add that in the case of the majority of policy issues studied, the interest by the Council pertained to the minimisation of economic losses which would arise from the need to alter national approaches to renewable energy of various types. In addition to this preference of the diluting of a Directive to restrict the EU-level influence on the national level, there was also a second type of approach to how minimise national economic losses from the EU level legislation in the making.

Specifically, in the cases of the 2009 Directive and the ILUC Directive, the Council became more disunited. That is, single member states became more concerned with their own economic losses relative to the losses of other member states. Hence, in the cases where the Council accepted higher and binding targets, and therewith generally more ambitious legislation, more effort was needed to find a common position on single policy issues within the institution. That is, the question of a fair burden-sharing became more prominent for member states. Hence, each single member state, when forming its policy positions, became concerned primarily with how to shape a policy issue so that it does not leave the member state with a higher implementation effort than the rest of the member states. (For example, the policy issues of electric rail in the 2009 Directive and the quadruple counting of some types of substances in the ILUC Directive were discussed in the Council under the aspect of whether they result in less economic effort of implementation for single member states). Moreover, the arguments related to a fair burden-sharing were accepted by the majority of member states and shaped the policy accordingly.

A concern of member states with their electoral gains and losses as connected to their policy preferences was established in just a couple of cases. Evidence of elections standing in the way of a timely policy preference formation in case of Germany could to be established in relation to the negotiations of the ILUC Directive. Besides, it appears that the acceptance of the relatively high and binding targets of the 2009 Directive became possible *inter alia* thanks to the anticipation of electoral gains on the part of member states.

In addition, it is interesting to point out that the calculation of gains and losses, either economic or electoral, by member states did not take place at the same time. More specifically, while member states were acting rationally, their rationality was bounded by short time horizons. The acceptance of a piece of legislation always implied an acceptance of a particular numerical value of an overall EU target. By accepting this target, member states however were usually underestimating the effort of implementation it would imply for every single member state. (In fact, the individual targets were perceived as higher than the anticipated ones, whenever the overall target had to be distributed.) Thus, at the stage of accepting the piece of legislation, the gains it brought were assessed from the perspective of the entire Community, i.e. a particular

structural pressure was recognised and acted upon by means of a new piece of EU legislation. However, at the later stage of decision-making, member states became more preoccupied with their own contributions to this overarching goal, by trying to challenge the individual targets as calculated by the Commission and by seeking to mould the definitions in accordance with their national interest. If the stakes were high, as in the case of the ILUC Directive (because of high investments in first-generation biofuels by many member states in expectation of demand for those, stimulated by earlier EU legislation), the intra-Council negotiations became long and tedious.

The Conceptual Framework of Historical Institutionalism

Turning to the conceptual validity of the conceptual framework of historical institutionalism, it was found that the specification of different types of conditions, on the one hand, and path-dependence, on the other, allows for a better understanding of the processes of the EU policy-making in the area of renewable energy. Specifically, the differentiation between permissive, antecedent and productive conditions carry a strong explanatory leverage particularly in this policy area. This is because the policy area is interlinked with related policy areas, such as transport, agriculture and climate change, as they have made an impact on how the RE policy area was developed. Being attentive to different stages in the opening and moulding of a critical juncture, as shaped by different types of conditions, has helped to avoid conflating different structural conditions in their impact on the single aspects of the policy development. Thus, for example, it was found that an impetus for the launch of policy-making processes in the policy area could be given by one type of structural condition (i.e. by permissive condition stemming from e.g. global commitment to climate change leadership), however the scientific evidence provided to set a particular target in this policy area was influenced by another type of structural condition (antecedent conditions such as the liberalisation of energy markets and the EU enlargement). This shows that of the rationales for opening of a critical juncture and for shaping of the policy aspects during a critical juncture can be different (e.g. closing the credibility gap between leadership aspirations and compliance versus ensuring economic benefits from the development of the policy area for the EU in the view of the dynamics of oil prices). Without making this differentiation, it could be easily assumed that the structural pressure responsible

for the launch of policy-making processes in a policy area is also responsible for the shaping of single policy issues during the policy-making.

To explain as to how the types of structural pressure have accumulated over time, the concept of path-dependence was found to be particularly useful. Importantly, the policy area of renewable energy, being highly technology-reliant, was found to be influenced by path-dependent processes as found not just in the discipline of politics but also in the discipline of economics. More specifically, the promotion of renewables involved making decisions on technological choices and standards, which necessitated attention to how these choices fit with the longer-term technological developments in the EU market (e.g. whether fuel blends containing a higher percentage of biofuels are compatible with the engines of dominant car fleet in the EU). Moreover, a change in the promotion of renewables was analysed not only under the aspect of how well it matched the contemporary technological standards found on the market, but also under the aspect of how these standards can be advanced to incorporate a change in policy on renewables. Thus, the policymakers, and foremost of the Commission, developed the renewable energy policy area so that it often involved co-advancement of technical standards in related policy areas. Therewith, a smooth functioning of related technologies and standards on the market implied changes to the EU legislation in the related policy areas and hence allowed to keep a smooth functioning of an institutional matrix, embracing renewable energy policy area and related policy areas. (For example, a larger share of biofuels to be put on the market by member states was paralleled by an update to the Fuel Quality Directive in order to relax the limits on biofuels in the mix with conventional fuels).

The Conceptual Framework of Dimensions of Power

The conceptualisation of different dimensions of power was also quite useful for the conduction of this research. In particular, the second dimension of power – the anticipated reaction – carried some explanatory leverage in this study. Specifically, it was established that the Commission is particularly attentive to the policy signals emanating from the Council, when faced with the making of decision of larger scale, i.e. primarily when drafting of policy proposals. More specifically, the Commission did not

react to the multiple calls by the EP in its Resolutions to initiate legislative processes on RE by proposing a policy; this was the case in the both instances of the opening of a critical juncture in the EU renewable energy policy. Instead, in the cases of the Directives studies the Commission waited for the corresponding request for proposals by the Council, and only then began with the preparation of scientific evidence and with the drafting of Proposals.

Some further evidence for the anticipatory behaviour by the Commission was established in connection with the choices made when drafting a policy Proposal. For example, the choice to exclude nuclear energy from the types of energy promoted at the EU level by means of the Directives studied was made under the consideration that there was no common attitude among member states toward this type of energy. To make its Proposals more acceptable to member states, the controversial topic of nuclear energy was avoided by the Commission. This allows to additionally confirm the predominant role of the Council in the decision-making on the RE policy area.

The Conceptual Framework of the Method of Process Tracing

The conceptual framework of process tracing, as developed by Blatter and Haverland (2014a; 2014b), made a valuable contribution to this study. Particularly in the policy area of renewable energy, which is officially justified on the grounds of various goals pursued by the EU (as explained in more detail in the introduction), it was important to acknowledge longer-term processes in their potential for opening of a critical juncture. That is, the attention to a sequence of events leading to a request for Proposals by the Council was instrumental for establishing what structural pressure was the Council reacting to when making a request. The sequences of events were, thereby, analysed with the help of the concept of causal chain, while the co-occurrences of events was conceptualised as causal conjunction. Thereby, it was helpful to distinguish between causal chains consisting of sufficient and necessary factors. Thus, for example, it could be found that a causal chain consisting of sufficient factors leads to a policy decision that is strongly influenced by the rationale behind the first factor in the chain (e.g. the formal follow-up meetings to the Hampton Court between the Commission and the Council were closed to any external influence; hence, the strategy developed in the meetings was an elaboration on the strategic direction laid at the Hampton Court).

The concept of causal conjunction was particularly instrumental when analysing the Directive of 2003. That is, it could be shown that an account of a conjunction of events during the decision-making process is important for understanding the policy outcomes. The concept of causal conjunction, thereby, explains an outcome as a result of an additive effect of a number of conditions. (Thus, for example, the outcomes of the decision-making on the 2003 Directive could be explained under the consideration of the concurrent negotiations of the tax breaks Directive. Thereby, the additive effect of linking of policy issues from two different pieces of legislation by the Council had a strong effect on the final shape of the 2003 Directive).

The method of process tracing was also well compatible with the differentiation between the stages in the application of policy formulation tools. Specifically, a zooming on the stages in the preparation and the running of the modelling exercises were helpful in reconstructing as to who shaped the definition of the problem addressed by a modelling exercise, and therewith determined the task behind a modelling exercise. Thereby, it was important to be aware of how these modelling stages were embedded into the overall process of policy-making on a Directive. For example, it was found that one of the modelling exercises lay outside of the policy-making process. In that case, a modelling exercise providing scientific evidence for a Directive was not conducted to scientifically inform a piece of legislation. (For example, the TERES II study was conducted within the framework of the ALTENER programme, being subsequently used for the purpose of the Proposal drafting by the Commission.) In such a case, the factors responsible the launch of policy-making on the Directive had no influence on the choices behind the modelling exercise. By comparison, a modelling exercise conducted for a specific Directive (as in the case of the modelling exercise for the 2009 Directive), was at the same time a response to a specific structural pressure responsible for the initiation of the policy-making processes.

In addition, the attention to the stage of evaluation of the findings by a modelling exercise can reveal whether the policy decisions made, were based on rigorous science, or alternatively on an approximate juxtaposition of parameters (as in the case of setting of the 10% target in biofuels in the 2009 Directive). An awareness of whether the science informing a policy decision is solid, could also help to cast light on how reliable

the policy is respective investor security. (Thus, it was found that the promotion of primarily first-generation biofuels, which was based on weak science due to underdeveloped policy formulation tools, needed to be partly reversed in connection with the evolution in modelling exercise on the phenomenon of indirect land use change through the ILUC Directive.)

8.3 Limitations of the Study and the Avenues for Future Research

This study has shown that the Council and the European Council were the most influential actors in the policy-making on the Directives studied. However, it was not possible to conduct interviews with the EU representatives of all member states, as initially planned. During the time spent in Brussels to undertake field research, as well as during the time period dedicated to the evaluation of interviews conducted, it was not possible to obtain a reply from some of the targeted interviewees. (For example, in one case, an interviewee declined his participation in an interview on the grounds that giving an interview went against his principles.) In addition to this shortcoming, it was not possible for me to work with the national-level legislation on renewable energy because of limited resources that would be needed to translate such documents.

To overcome the above limitations of this study, it is suggested to further investigate the processes of policy preference formations in member states as dependent on the national legislation and the established national practices of energy generation, both renewable and conventional. In my view, such an avenue for future research, with a focus on a number of member states or a single member states, could provide an additional dimension of understanding about how EU policy preferences are formed by the national representatives. The choice of member states to be further studied can, thereby, be made in reliance on this study, which allows identifying member states with most pronounced interest in single policy aspect covered by the EU Directives. Besides, also suggest applying the conceptual framework of bottom-up and top-down Europeanisation. This is because, this study also presents some evidence that an increase in an EU-level legislation in the policy area leads to more interdependence between the EU and the national levels. Thus, in the case of the ILUC Directive, which served as an outlook for this study, it was found that some national policy preferences were

formulated under the consideration of the foregoing national-level adjustments to the EU-level legislation. Hence, there appears to be a circular movement of the downloading of EU-level legislation and the subsequent uploading of national preferences to the EU-level, which can be captured by the conceptual framework of Europeanisation. Thereby, the knowledge of native languages spoken in the member states of scientific interest would be of an advantage.

In addition, this study has also illustrated that the choice of the modelling formulation tools applied by the Commission was *inter alia* influenced by the dynamics in the evolution of policy formulation tools. At the same time, the Commission was not only influenced by the availability of sophisticated policy formulation tools, but has also contributed to the development of such tools, applied in the policy area of renewable energy. Thereby, another limitation of this study was its inability to examine as to what extent the Commission was a taker and a shaper of the tools it made use of. Hence, a follow-up study with a focus on the evolution of policy formulation tools, and the role of the European Commission in this process, would help overcome this limitation.

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