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A Climate for Expertise?

JONAS DREGER

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A Climate for Expertise?

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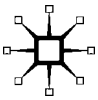

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For my wife, a divine representation of love and trust

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Series Editor's Preface

Concerns about the potential environmental, social and economic impacts of climate change have led to a major international debate over what could and should be done to reduce emissions of greenhouse gases. There is still a scientific debate over the likely scale of climate change, and the complex interactions between human activities and climate systems, but global average temperatures have risen and the cause is almost certainly the observed build-up of atmospheric greenhouse gases.

Whatever we now do, there will have to be a lot of social and economic adaptation to climate change – preparing for increased flooding and other climate-related problems. However, the more fundamental response is to try to reduce or avoid the human activities that are causing climate change. That means, primarily, trying to reduce or eliminate the emission of greenhouse gasses from the combustion of fossil fuels. Given that around 80 per cent of the energy used in the world at present comes from these sources, this will be a major technological, economic and political undertaking. It will involve reducing demand for energy (via lifestyle choice changes – and policies enabling such choices to be made), producing and using whatever energy we still need more efficiently (getting more from less), and supplying the reduced amount of energy from non-fossil sources (basically switching over to renewables and/or nuclear power).

Each of these options opens up a range of social, economic and environmental issues. Industrial society and modern consumer cultures have been based on the ever-expanding use of fossil fuels, so the changes required will inevitably be challenging. Perhaps, equally inevitable are disagreements and conflicts over the merits and demerits of the various options and in relation to strategies and policies for pursuing them. These conflicts and associated debates sometimes concern technical issues, but there are usually also underlying political and ideological commitments and agendas which shape, or at least color, the ostensibly technical debates. In particular, at times, technical assertions can be used to buttress specific policy frameworks in ways which subsequently prove to be flawed.

The aim of this series is to provide texts which lay out the technical, environmental and political issues relating to the various proposed

policies for responding to climate change. The focus is not primarily on the science of climate change, or on the technological detail, although there will be accounts of the state of the art to aid the assessment of the viability of the various options. However, the main focus is the policy conflicts over which strategy to pursue. The series adopts a critical approach and attempts to identify flaws in emerging policies, propositions and assertions. In particular, it seeks to illuminate counter-intuitive assessments, conclusions and new perspectives. The aim is not simply to map the debates but to explore their structure, their underlying assumptions and their limitations. The texts are incisive and authoritative sources of critical analysis and commentary, indicating clearly the divergent views that have emerged and also identifying the shortcomings of these views.

Conflicting views are certainly a common theme in the context of the policies and processes looked at in the present text. It explores the way in which the European Commission has made use of technical expertise to shape its climate and energy polices. The Commission combines unelected technocratic services with a highly politicized leadership structure, and there is plenty of room for disagreement about both the policies and the processes. This book focuses mainly on the latter, reviewing the way in which policies regarding emissions trading and renewable energy were developed, and looking at the role of experts and their specialist knowledge. As is argued in the text, in technocratic politics, knowledge is used strategically to justify positions in an allegedly depoliticized arena, but in practice there is also a strong bargaining element, with knowledge serving as an argumentative weapon that legitimizes the position, interest and preferences of political actors. Given that the Commission is part of, and linked to, the wider 'melting pot of national and supranational government systems', it is certainly helpful to try to disentangle and analyze the politics of knowledge within an institution that ultimately proposes policies in the European Union, and this book offers some fascinating political science insights into and analysis of the processes and their limitations.

Preface and Acknowledgments

Research is a collaborative venture, and some of the best insights develop in interactions with knowledgeable people. I am highly indebted to Prof. Michael Kreile (HU Berlin), Prof. Tanja Börzel (FU Berlin) and Prof. Adrienne Héritier (EUI Florence) for their patience, understanding, constructive criticism and companionship.

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Special thanks go to my interview partners. As Aberbach notes, elite interviews naturally take a lot of 'shoe leather, but they are immense fun. You'll meet some of the most interesting people in the country [. . .] If you like both politics and political science, it's one terrific way to spend your time' (Aberbach and Rockman 2002, p. 676). My interview partners offered me great insights and I am grateful for their cooperative

attitude, for the time they took to meet with me and for their willingness to share so openly.

This book reflects my academic thinking of recent years. Its pages do not show, however, those moments of joy and frustration that invariably accompany the research process. I was privileged to share these moments with an overwhelmingly supportive circle of friends and family. In particular, I would like to thank Chris, Thomas and Alex who were with me all the way. My family showed admirable, rock-solid support and absolute faith in my project – more than I ever had myself.

Finally, I would like to thank the woman who during the process of writing this book not only gave unwavering encouragement and created the environment for some of my most productive writing but also agreed to become my wife.

Abbreviations

ACF	Advocacy Coalition Framework
ALTENER	Actions for greater penetration of renewable energy resources
ATU	Athens Technical University
BAM	border adjustment measures
BEPA	Bureau of European Policy Advisers
BP	Beyond Petroleum (originally British Petroleum)
CCAP	Center for Clean Air Policy
CCS	carbon capture and storage
CDM	clean development mechanism
CEFIC	European Chemical Industry Council
CHP	combined heat and power
CO_2	carbon dioxide
CO_2-eq, also: CO_2e	CO_2 equivalent; concentration of CO_2 equivalent to the radiative forcing of a given greenhouse gas
CO_2ReMoVe	Research project on CO_2 research, monitoring, verification
COREPER	Committee of Permanent Representatives
DG	Directorate General
DG AGRI	Directorate General for Agriculture and Rural Development
DG COMP	DG for Competition
DG DEVCO	DG for Development and Cooperation
DG ECFIN	DG for Economic and Financial Affairs
DG EMPL	DG for Employment, Social Affairs and Inclusion
DG ENTR	DG for Enterprise and Industry
DG ENV	DG for the Environment
DG MARKT	DG for Internal Market and Services
DG RTD	Directorate-General for Research and Technological Development
DG TAXUD	DG for Taxation and Customs Union
DG TRADE	DG for Trade

DG TREN	DG for Transport and Energy
ECCP	European Climate Change Program
ECJ	European Court of Justice
ECN	Energy Research Centre of the Netherlands
EEA	European Environmental Agency
EIA Directive	Directive 85/337/EC on Environmental Impact Assessments
EIB	European Investment Bank
Energy Services Directive	Directive 2006/32/EC on energy end-use efficiency and energy services
Environmental Liability Directive	Directive 2004/35/EC on liability for environmental damage
EP	European Parliament
EPA	Environmental Protection Agency
ERM	Environmental Resources Management
ETS	Emissions Trading Scheme
ETS	Directive Directive 2003/87/EC establishing an Emissions Trading System
ETS II Directive	Directive 2009/29/EC revising Directive 2003/87/EC
EU	European Union
EU-15	Bloc of EU Member States: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the UK
EU-27	Bloc of EU Member States: EU-15 plus Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia
EURELECTRIC	The Union of Electricity Industry
FIELD	Foundation for International Environmental Law and Development
GAINS	Greenhouse Gas and Air Pollution Interactions and Synergies model, developed by IIASA
GEC	green electricity certificates
GEOCAPACITY	Research project on assessing European capacity for geological storage of carbon dioxide EU
GETS	Greenhouse Gas & Energy Trading Simulations
GHG	greenhouse gas

GO	guarantees of origin
Gt	gigatonnes
H_2S	hydrogen sulfide
Hebdo	meeting meeting of the Heads of Cabinets
HLG	high-level group
IAB	Impact Assessment Board
IEA	International Energy Agency
IEE	Intelligent Energy Europe
IIASA	International Institute for Applied Systems Analysis
IPCC	Intergovernmental Panel on Climate Change
IPPC	Integrated Pollution Prevention and Control
IPTS	Institute for Prospective Technological Studies
JRC	Joint Research Centre
Mt	megatonnes
NAP	National Allocation Plan
NGO	non-governmental organization
NO_x	nitrogen oxide air pollutants NO and NO_2
OECD	Organisation for Economic Co-operation and Development
OPTRES	Assessment and optimization of renewable support schemes in the European electricity market
PRIMES	energy market equilibrium engineering-economic model (E^3M Lab)
RECS	Renewable Energy Certificate Systems
Renewables	Directive Directive 2009/28/EC on promoting renewable energies
RES	renewable energies (originally: renewable energy sources)
SAT	Sulphur Allowance Trading Scheme in the USA
SAVE	Program Specific Actions for Vigorous Energy Efficiency
SET	European Strategic Energy Technology Plan
SG	Secretariat General
SO_x	sulfur oxide air pollutants SO and SO_2
Special chef	meeting of the members of Cabinet responsible for a file
SRU	Sachverständigenrat für Umweltfragen
TGC	tradable green certificates

TNO	Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek (Dutch Organization for Applied Natural Science Research)
TREC	tradable renewable electricity certificates
UNICE	Union of Industrial and Employers' Confederations of Europe
VAT	Value Added Tax
WTO	World Trade Organization
ZEP	Zero Emissions Platform
ZEW	Zentrum für Europäische Wirtschaftsforschung

1
Introduction: The Tension between Science and Politics

1.1 Introduction: The European Commission stretched between science and politics

When Woodrow Wilson was still Governor of New Jersey in 1912, he made a statement exposing his strong feelings about his responsibilities to democracy:

> What I fear, therefore, is a government of experts. God forbid that in a democratic country we should resign the task and give the government over to experts. What are we for if we are to be scientifically taken care of by a small number of gentlemen who are the only men who understand the job? Because if we don't understand the job, then we are not a free people. We ought to resign our free institutions and go to school to somebody and find out what it is we are about.
>
> (cited in Smith 1991, pp. 1–2)

A hundred years later, it seems impossible to 'find out what it is we are about' by simply educating politicians better. Politics has grown in complexity, risks are difficult to discern and problems are so interconnected and multidimensional that experts have become a constant supporting feature for government. Expert political advice is not a new phenomenon – it is, rather, its dimensions that are new. Nowadays, there is a legion of highly specialized experts instead of broadly well-educated outstanding figures. Government is also more dispersed, with numerous civil servants filtering the expert advice given. In fact, a 'key feature of [modern] democratic political systems is their ability to collect, generate and disseminate information and thereby to improve

policies and practices' (Gornitzka and Sverdrup May 2010, p. 1). Experts are often those who cut through the maze of interdependencies. Yet, with many simplifications come technical decisions that amount to being political in their entirety.

Classic examples of the contentiousness of scientific results in politics are manifold. The tobacco industry's attempt to influence political decision-making through studies proving the innocuousness of smoking, the lobby battle between industry and non-governmental organizations on the dangers of genetically modified organisms, or the discussion concerning the political bias of the results of the Intergovernmental Panel on Climate Change – they all have in common the fact that the interdependencies of science and politics led to prolonged political fights during which knowledge was used to defend interests and to inform stakeholders. This work will focus on the climate and energy nexus.

In times when access to and control over information equals power, we are left to wonder with Wilson who is actually ruling whom. This book aims to shed light on the relationship between knowledge and politics that lies at the heart of many questions about the democratic quality of our political systems. If experts are those who actually prepare and make political decisions, we need not only to understand who eventually calls the shots but also what kind of legitimacy the rulers of our societies have when they take their decisions. Yet, this book will not be a discussion of legitimacy. Instead, it will lay the groundwork for future assessments by attempting to better understand the processes of knowledge utilization in politics. In particular, it will look at the juxtaposition of two main knowledge-utilization strategies: Is the institution using knowledge as a form of instrumental, cognitive learning or for argumentative politicking? And it will link these strategies to institutional functions: Is the organization interested in maximizing its power or in delivering on its mandate?

Political science is not yet able to give an answer to some of the basic questions we need to be asking: When politics meets science, is it a fruitful exchange or a struggle for dominance? And just as importantly, what happens with knowledge in this process? In the natural sciences, we observe chemical reactions during which chemical bonds of, for instance, molecules change to build new substances. In physics, substances stay the same but change their state of matter – for instance, through vaporization or freezing. When politics uses knowledge, is the very core of science preserved (does it only change the state of matter) or is it changed into something else (does it transform into new matter)?

The European Commission is a perfect object of study for scholars interested in these questions. It is at the forefront of the European integration project and is responsible for drafting the policy proposals that are supposed to constitute the European Union's (EU's) essence. By studying it, we can observe 'extremely high levels of information, expertise and reason-giving [in the EU] – in large part precisely because discussions take place among competent experts in insulated forums' (Keohane et al. 2009, p. 19), many of them organized by the Commission. Yet we are still missing a full-fledged assessment and explanation of the invisible part of the decision-making process in the EU – meaning the internal dynamics of policy formulation and decision-making within the Commission.

For too long the literature has been focused on the dispersed transnational, supranational and intergovernmental dynamics in the interplay of the EU's legislative institutions. The official decision-making process as laid down in the treaties (Art. 251 etc.) is only the 'tip of the iceberg' (Guéguen and Rosberg 2004, p. 11). This is one of the core motivations for putting this study forward. Whereas many authors debate the role of the Commission as a monolith bloc in the legislative institutional triangle (European Parliament, Council of Ministers, European Commission), this book opens the black-box Commission to better understand the nature of the beast.

According to Gornitzka, we know that the Commission is drawing on the 'largest organized information system in the EU' in the form of 1,237 expert groups (January 2007) (Gornitzka and Sverdrup 2008, p. 733). One expert group per eight Commission officials is indeed a 'considerable supplementary administrative resource' (Gornitzka and Sverdrup 2010, p. 12). We also believe that the EU's political structure favors the representation of experts and interest groups over territorial representation (Andersen and Burns 1996). However, the jury is still out on whether these experts have a significant influence on the policies that the European Commission proposes, partly because we know relatively little about the knowledge that the Commission demands and the way in which this knowledge is used in the policy formulation of this institution.

In political science literature, an understanding of the relationship between science and politics prevails that nourishes an image of two cities,

> separated by some impassable chasm. One city [science] was heavenly and serene, with an almost monastic devotion to purity and

> truth; the other city [politics] was profane and passionate, heaving with vulgar life and all of its agonies. The earthly city needed its pure cousin's help, but that required some bridge across the chasm. Without bridges, or with too few, it was easy to conclude that the earthly city would be mired in its profanity.
>
> (Pal 1990, p. 143)

The European Commission has attempted to build bridges between these two cities for at least ten years. It has understood that without science, its proposals will not be sound, yet without politics, they will not be implementable. This has led to an internal differentiation in the Commission that ensures that citizens of both cities are heard. In fact, the current Commission has started to build as many bridges between science and politics that it is sometimes not easy to understand which is which anymore. Yet, the Commission is not one unified institution but many organizations in one. In fact, it is a Janus-faced institution that combines technocratic-bureaucratic and politicized elements (Christiansen 1997). Hence it constitutes a prime object for the study of learning at the interface of politics and technocracy.

The Commission combines unelected technocratic services with a highly politicized leadership structure. Its units are differentiated by function, sector and nationality (Wonka 2007, 2008), and it hosts units that are technocratic as well as units that are politicized. What constitutes appropriate behavior – in particular with regard to the utilization of knowledge – varies significantly among these units. Representatives of the politicized and technocratic units have profoundly different understandings of their task and different approaches to expertise. The first group claims that knowledge is used to 'make the right proposals [...] our raison d'être is to be successful when we propose [...] to propose legislation in such a way that it ensures the adoption' (Interview 31 May 2010). The second group, however, thinks that knowledge should 'assist the European Commission in undertaking preparatory work', 'where the exchange of opinions [...helps] clarify different concepts and [...generate] new ideas' to improve Commission proposals (Zapfel and Gardiner 2002, p. 14; Lefevere 2003, p. 176).

This book aims to tell and explain the tale of these two cities and their inhabitants in an analytic fashion. In doing so, the research tackled the question: Why and how is expert knowledge used in the policy formulation of the European Commission? It focused in particular on the question: 'Why is expert knowledge used at different moments in the policy formulation process in the commission?, It also asked: 'How

do causal mechanisms of interaction between politics and science determine the role of experts in the policy formulation of the European Commission?, An example of causal mechanisms of interaction would be if and how the institution's objectives of power maximization or mandate delivery cause distinct types of behavior of officials when dealing with expertise.

This work therefore seeks to contribute to the research program that Radaelli has outlined, namely analyzing 'when and how knowledge matters in the policy process' (Radaelli 1995, p. 160). In that sense, it fits into the research agenda of Adler and Haas of assessing who learns what, when, to whose benefit and why (Adler and Haas 1992, p. 370). In short, the process of knowledge utilization moves to the centre of attention. The argument has been made that the role of knowledge in politics is not only defined by knowledge actors and that experts are not as independent as they seem (Adler and Haas 1992; Bouwen 2002; Stone 2002; Sabatier and Weible 2007; Boswell 2008, 2009).

In assessing how the Commission learns, or rather utilizes, knowledge, this book assumes an institutional point of view. By departing from the focus of many past studies on agency, I hope to shed new light on an old topic. In particular, I aim to provide a better understanding of the way organizations affect learning architectures, of the modes of political and technocratic learning, and of the interactions between cognitive and argumentative utilizations of knowledge. In this book, a lot of work is dedicated to the discovery of potential causal mechanisms and links between experts and the Commission. The research contributes to further scholarly work on the definition of dependent and independent variables.

I believe it is high time: we know less about the emergence of preferences in the Commission than in any other European institution. Yet it is undoubtedly important to know why and how knowledge is used in the policy process, which produces legislation for nearly 500 million European citizens. Looking at policy formulation within the Commission will bring issues to the fore that have so far been ignored in the literature. Two possible examples are the role of the policy cycle and the role of hierarchy as factors of influence – elements that have been broadly overlooked by the literature on the knowledge–politics nexus.

For the purpose of this book, I assume with Bouwen that expertise constitutes a critical resource for political organizations (Bouwen 2002). Furthermore, I argue with Boswell that organizations fulfill different institutional functions (Boswell 2009), and consequently that the policy-formulation process within the Commission largely influences

the way in which it learns. Arguably, institutional functions determine what kind of resource is critical for an organization. This work hypothesizes that the institutional function that an organization fulfills determines its demand for expert knowledge. Organizations pursue broadly two differing institutional strategies and demand expertise for two reasons correlated to these strategies. The first strategy is based on an organization whose function is signified by delivering on a mandate. Such an organization would demand expertise in a rather technocratic and instrumental fashion, trying to increase its ability to deliver performance with enhanced expert insight into its tasks. Expertise, for such an organization, is understood as a critical resource because it enhances the cognitive ability of the organization to understand problems and policy options. The second strategy identified is employed by an organization, which is mainly concerned with maximizing its power. These kinds of organization have a critical resource of legitimacy and support. Expertise is then demanded to substantiate and justify positions, so it serves this organization as an argument.

The dependent variable in this context is the utilization of expert knowledge. Whereas expert knowledge can be used in various ways, this usage can essentially be categorized as either cognitive or argumentative. In cognitive utilization, expert knowledge serves actors to better understand an issue to make a choice. In argumentative utilization, expert knowledge serves actors to better justify a choice already made. This theoretical argument resonates with one discourse in European studies that goes back to the organizational studies literature as pursued by March and Olsen (March 1988; March and Olsen 1976; March and Simon 1958), and more recently other scholars (Boswell 2009; Egeberg 2006b; Brunsson 2002; Cini 2000a).

1.2 Experts and knowledge: Definitions and their boundedness

The knowledge used by the Commission does not appear out of nowhere: it has been produced and it has been conveyed to the institution. Therefore, a short discourse on experts as knowledge producers and mediators follows. To better understand the underlying dynamics of knowledge utilization, some basic definitions should be provided upfront. Definition exercises are, by their very nature, context-bound. An outstanding example was attributed to Jorge-Luis Borges by Goertz:

> On those remote pages [of an ancient Chinese encyclopedia] it is written that animals are divided into (1) those that belong to the

> emperor, (2) embalmed ones, (3) those that are trained, (4) suckling pigs, (5) mermaids, (6) fabulous ones, (7) stray dogs, (8) those that are included in this classification, (9) unnumerable ones, (10) those drawn with a very fine camel's hair brush, (11) others, (12), those that have just broken a flower vase, (13) those that resemble flies from a distance.
>
> (Goertz 2006, p. 27)

Literature does not provide a clear-cut and convincing definition of 'expert'. I would therefore ask the reader to bear with me when I add another definition of 'expert' to what seems to be one of the most challenging definitional exercises that political science has embarked upon. I am basing my definition on reflections of scholars investigating epistemic communities (Haas 1992, p. 3; Bulmer and Padgett 2004, p. 134; Sabatier and Weible 2007, pp. 194–195), think tanks and networks (Mayntz 1985, pp. 9–10; Jann 1994, p. 160; Gellner 1994, p. 176, 1998, p. 83; Stone 2000, pp. 45–46), lobbyists (Crombez 2002, p. 27) and expertise in politics at large (Weiss and Bucuvalas 1980; Radaelli 1995, p. 164, 2002, p. 206; Gornitzka and Sverdrup 2008, p. 727, May 2010, pp. 5–6).

At the outset, I believe it is important to point out that I do not necessarily support the view that experts play an independent role in politics that is widely advocated in the literature (Adler and Haas 1992; Stone 2002; Sabatier and Weible 2007). Rather, I believe that there is, at least, interdependence between the Commission and experts (Gornitzka and Sverdrup 2008, p. 727; see also Bouwen 2002; Boswell 2008, 2009). Bearing this interdependence in mind, I define experts as knowledge mediators between the worlds of science and politics. They speak with authority on an issue and base their claim to authority on their superior insights, typically on scientific grounds. Experts share a commitment to causal reasoning, a solid knowledge base and shared discursive practices. I distinguish two categories of expert, which differ mainly regarding interests that they are affiliated with.

The first category of experts is formed essentially by academics independent from stakeholder interests, yet subject to the organizational interest of their affiliated research institution and their personal interests. They derive their authority from scientific excellence, be it in the natural or social sciences. The second category of expert essentially comprises advocatic experts who share normative and principled beliefs as well as a common policy enterprise with their affiliated institution, be they think tanks or interest groups. They derive their authority additionally from an association with stakeholders which are affected by a policy

in the making (cf. also Linquist's concept of the 'third community': Linquist 1990, p. 31).

I do exclude, however, lobbyists who act without a scientifically informed background as outlined above. It is the claim to superior knowledge that distinguishes an expert. I acknowledge, though, that the convenient dichotomy that Gagnon described between science and politics is blurred: 'Science is motivated by a devotion to objective and open inquiry, reason, and truth. Politics, concerned with power and interests, is essentially vulgar as it does not respect the exacting and uncompromising canons of scientific rationality' (Gagnon and Alain-G. 1990, p. 3). In such a black-and-white world, words are, to quote Max Weber, either '*Pflugscharen zur Lockerung des Erdreiches des kontemplativen Denkens*' or '*Schwerter gegen die Gegner: Kampfmittel*' ('plowshares to loosen the soil of contemplative thought' or 'swords against the enemies: weapons') (Weber 2002, pp. 496–497).

However, as Mayntz has argued, the dual model of science and politics is merging in some countries, and with regard to the EU it seems that policy networks have certainly diminished the opposition of political and factual logic (Mayntz 1994, pp. 17, 24–27). Once experts take a mediating role – as a 'transmission belt' between science and politics (Haas 2004, p. 587) – they can take a stand and thereby fulfill a task that Lampinen describes as converting 'scientific findings to policy recommendations' (Lampinen 1992, p. 24). Experts offer knowledge in varying aggregate forms, from data to information, from ideas to arguments (Weiss and Bucuvalas 1980). Knowledge utilization, then, has to be defined as the 'conscious use of scientific research in policy formulation and decision-making' (Lampinen 1992, p. 29). One of the main thrusts of this work is to shed more light on the motivations and dynamics of exactly this consciousness underlying the utilization of knowledge in policy-making.

1.3 Climate and energy policy: Turning facts into policies

In short, this project aims to offer one of the first political science studies of the emergence of the proposals for the current climate and energy policy of the EU. It opens the black-box European Commission to disentangle and analyze the politics of knowledge within the institution that ultimately proposes policies in the EU. It offers a detailed look at the dynamics of policy-making within a hierarchically differentiated European Commission, including an analysis of its degree of

politicization and the first account of strategies of knowledge utilization with regard to EU climate policies. In particular, this work offers an in-depth analysis of the proposals for the emissions trading directive and its revision, as well as the renewable energy directive. The energy and climate package 2008 was more comprehensive and included proposals for a burden-sharing agreement, and a carbon-capture and -storage directive, and it has to be seen in the context of emerging policies for energy efficiency in buildings, limits on car emissions and so on. This book focuses on the cornerstones of this legislative agenda: the Emissions Trading Scheme (ETS) and renewables.

This book focuses on the emergence of a new policy field – climate policy – and on the development of previously unknown policy instruments in energy and climate policy. The topic is fascinating for a number of reasons. First, the EU seems to be responsible for up to 28 per cent of historical greenhouse-gas emissions (Dellink et al. 2008), it is a global player in the climate negotiations and accordingly it needs to implement credible policies at home (Jordan et al. 2010a, p. 8). According to the European Environmental Agency (EEA), the vast majority of around 80 per cent of these policies were initiated or supported by the EU (EEA 2008, p. 7). In the sense that the EU consists of countries with major differences in wealth levels, it serves as a 'social laboratory for the global future' (Wynne 1993, p. 128). At the same time, climate change is a challenge that is invisible to the eye (Bulkeley 2001) and policy-makers rely heavily on scientists to help them to make sense of the phenomenon. In the case studies at hand, these scientists were mostly economists, statisticians and engineers, or lawyers and social scientists. Natural science plays a crucial role in explaining the cause of climate change but it played only a role insofar that it established the need to act by establishing the phenomenon of climate change to be an accepted fact.

The Commission was among those institutions that took an entrepreneurial role in developing the new energy and climate policy instruments (Wettestad 2005; Skjærseth, Wettestad 2009, 2010b). These new instruments were heavily based on inputs received from experts. In that sense, climate policy is a goldmine for scholars in need of data to develop hypotheses on how the Commission uses knowledge. Accordingly, the three case studies revolve around the issue of climate and energy policy. In this way, this book contributes to existing efforts by scholars focusing on the use of knowledge in the areas of the single market, competitiveness and migration (Hartlapp et al. 2009; Boswell 2008, 2009).

There is an additional reason for focusing on environmental questions. While experts are an essential part of EU governance, they are present to different degrees in different policy fields and Directorate Generals (DGs) (Gornitzka and Sverdrup 2008, p. 725). Research has consistently shown that DG Environment (DG ENV) ranks very high in terms of expert group interaction and utilization. It belongs to the top five DGs creating extensive systems of insiders who are involved in working groups and consultative committees (Broscheid and Coen 2003, p. 168), yet it would rank much higher if trade unions and lobby organizations were excluded. A more recent calculation of expert groups in the Commission from 2007 features DG ENV in second and DG Transport and Energy (DG TREN) in fifth place of 22 DGs (Gornitzka and Sverdrup 2008, p. 735), with 127 and 94 expert groups, respectively (Gornitzka and Sverdrup 2008, p. 744). It is high time to focus on this policy field and to complement the gap in the literature concerning how experts and DG ENV interact with one another.

Even though climate policy is an area that is increasingly moving into the focus of our discipline (Zapfel and Vainio 2002; Woerdman 2004; Wettestad 2005; Dreger 2008; Skjærseth and Wettestad 2010b), there has not yet been a full-fledged political science book explaining the emergence of European energy and climate policy, despite several edited volumes and cursory introductory texts in the field (Oberthür and Pallemaerts 2010; Jordan et al. 2010b; Buchan 2009), as well as economic or legal assessments (Roggenkamp and Hammer 2010; Hodson et al. 2010; Ellerman 2007; Delbeke 2006c). Wettestad has published two very timely contributions on the emergence and revision of the ETS and other climate policy measures (Wettestad and Boasson 2013; Wettestad and Skjærseth 2008), which offer very helpful overviews of the entire legislative process of legislative adoption. Many of these books note the decisive role of the European Commission yet rarely explain the internal dynamics during its policy formulation, partly because the focus of these works is solely on the EU as an international actor or the interinstitutional negotiations.

Interinstitutional negotiations (or even comitology negotiations) after the proposals were published are consciously left out of the scope of this book. If we want to understand how the Commission works in developing its legislative proposals from scratch and with the help of experts, we have to be careful not to tap into interinstitutional dynamics that are in essence a 'melting pot of national and supranational government systems' like comitology (Egeberg et al. 2006, p. 66). The directives have all been developed with the same procedures within the Commission, and

they were adopted based on the same interinstitutional decision-making procedures (co-decision – Art. 294 of the Treaty of the Functioning of the European Union). They were developed and proposed for adoption by the College of Commissioners by lead DGs that are comparable: DG ENV and DG TREN. Therefore, the shadow of the interinstitutional decision-making procedure, the DG cultures (Cini 2000a) and organizational set-ups influencing the balance of decision-making dynamics (Trondal 2007, p. 159; Tholoniat 2007, pp. 35–36; Cini 2000b, p. 8), as well as the policy fields (Hall 1993, p. 291; Radaelli 1995, p. 178), are comparable. Additionally, many of those factors which Sabatier defines as influential for policy-learning are relatively stable (Sabatier and Jenkins-Smith 1999; Sabatier and Weible 2007, p. 193).

This book attempts to make a contribution to the explanation of the emergence of the climate and energy policy legislation of 2008. Therefore, three case studies focus on the development of the initial ETS directive in the early 2000s, its revision toward the end of the 2000s, and the renewable energy source (later renewable energies; RES) directive.

Chapter 2 on the initial ETS directive analyzes the policy-formulation process within the Commission that led to the establishment of the ETS, the EU's market-based mechanism to reduce CO_2. This case study presents a prime example of knowledge utilization in a complex, technical yet politically salient policy field. It is therefore possible to analyze in depth how different levels of hierarchy use knowledge under those conditions normally associated with bureaucratic and politicized learning alike (Radaelli 1995; Haas 1992, 2004). The chapter shows how desk officials in the Commission puzzled over the right approach to the ETS, and it traces back the intellectual history of all major ideas used – both to particular actors outside the Commission and to the international climate negotiations. The case study gives an insight into how Commission officials on a lower level consciously shaped the political discussions by controlling the output of stakeholder discussions. Furthermore, some previously unpublished incidences of cleavages between Commission services at working level and high technocratic levels are revealed that led to the expansion of Commission competencies in the field of the environment. Furthermore, Cabinets and Commissioners used knowledge to defend their interests, as well as the stakes of their lobby constituencies. Additionally, this chapter gives an overview of the organizational history of the climate units in DG ENV and how it built up knowledge strategically to gain a competitive advantage in internal discussions.

The ETS is a market that was worth €6.5 billion in its first year (2005) and already €37 billion two years later (Bekkhus and van Hecke 2008, p. 133). Nevertheless, there were improvements to be made for 2008. Chapter 3 on the revision of the ETS directive shows how desk officials solved those problems that had occurred with the implementation of the directive on the basis of extensive stakeholder consultations and studies. It is demonstrated how evidence-based policy-making can uncover political trade-offs. The chapter gives insights into the role of the Secretariat General (SG) in preventing political decision-making from being mixed with fact collection. Also, high-level Commission officials consciously framed the discussions on windfall profits and over-allocation to achieve their objectives. The role of high-level working groups and advisory bodies to the President and his Commissioners is assessed, as well as their dominating role in developing arguments to defend the interests of some Commissioners with regard to the energy-intensive industry. Additionally, it becomes apparent how a lack of arguments can harm the political cause of actors.

In Chapter 4 on the renewables directive, it is shown how desk officials found the right approach to integrating existing legislation and designed technical annexes on the basis of commissioned studies. Furthermore, it assesses how the highly contentious discussion about biofuels was controlled through the shaping of a sustainability discourse with the help of an international consulting body. Commission actors interfered with the target distribution of renewables by countries by changing the calculation methodology in favor of a politically more acceptable solution. Also, high-level political actors were arguing with desk officials about an idea to trade guarantees of origin for renewables. The utilization of knowledge in this regard from both parties is assessed. Finally, the way in which Cabinets and Commissioners used studies as well as the public reaction to scientific results to argue about biofuels is unraveled.

It has to be noted that the ETS II directive is obviously a development of the initial ETS I directive, whereas the ETS II directive and the RES directive were not only published and negotiated but also designed in a package. In this sense, the interaction between the three directives should not be underestimated. ETS II was developed while taking into account the lessons learnt from the negotiation and implementation of ETS I. ETS II and RES were subject to joint modeling exercises and proposed with a view to potential future package deals. These interactions are captured with a process-tracing approach throughout the chapters.

At the same time, while the process of developing the directives analyzed in this book was similar in many cases, they differ in some interesting aspects that warrant treating them as different cases. ETS I and II were prepared by DG ENV, whereas the renewables proposal was drafted by DG TREN. Different DGs were additionally associated and different stakeholders were involved to differing degrees. For ETS I and II, the manufacturing industry, chemical industry, energy enterprises and transport industry were involved. For renewables, energy business was negotiated – including biofuels, which is of interest for the agriculture and transport industries. In terms of political salience, ETS I and II were more contested than renewables. Interestingly, the different cases were based on different scientific or policy uncertainty. ETS I was the very first experience with pollution trading rights legislation ever for the EU. The impact assessments were politically highly contested. ETS II was based on extensive evaluation of ETS II and scientifically rather sound. The biofuels part of the renewables directive was developed on the basis of scientific evidence, which was uncontested in the beginning but was later contested once the policy-formulation process began. The renewables directive as such was scientifically highly contested and it was also unclear how reliable the economic calculations and the feasibility of the technology options were.

It is also interesting to note that the ETS I and II directives are market-based instruments moving from decentralized to centralized application, whereas the RES directive can be better termed as centralized 'EU engineering' or technology-development mechanism (Wettestad and Boasson 2013, pp. 156–157).

1.4 A few methodological remarks

This book employs a qualitative approach that combines the comparative and the case-study method in the field of European climate and energy policy. The hypotheses are applied to two different cases (the ETS and RES) for a within-case analysis. The ETS is treated as two subcases (ETS I, ETS II) due to its long timeline and some differing, interesting case properties when moving from ETS I to ETS II. The conclusion of this book then forms a summary, drawing cross-case conclusions in order to merge intensive and extensive research (Ebbinghaus 2005, p. 143). The book follows a process-tracing approach, which is used in a diverse case scenario in order to conduct hypothesis generation and -testing. Future research avenues are identified on the basis of this 'detective

work' (Gerring 2007, p. 174) for further development of causal links and mechanisms.

This work is deliberately limited to knowledge utilization within the European Commission. I therefore focus solely on the policy-formulation process and not on the interinstitutional negotiations. In this way an entire array of discussions about the nature of the EU, the Council of Ministers and the European Parliament are excluded. The reason for this is simply born out of the understanding that we know much less about the emergence of preferences in the Commission than in any other European institution. In comparison to interinstitutional research questions, intra-institutional research questions are the poor cousins of European studies. This project is thus interested in the most under-researched black box: the internal workings of the European Commission.

This research project can thus be understood as a heuristic exercise, as defined by George and Bennett: 'Heuristic case studies inductively identify new variables, hypotheses, causal mechanisms, and causal paths' (George and Bennett 2005, p. 75). We do not yet know enough about the 'whether' and 'how' of causal links between experts and institutions – or knowledge and politics, for that matter – and we have a lot of work to do to discover potential causal paths or mechanisms. I do not seek to test full-fledged theories; rather, I consider it to be necessary to contribute to building them. In this sense, my research design is clearly heterogeneity oriented. Furthermore, I pursue 'interaction-oriented policy research' – that is, I am interested in the interaction of policy actors, which attempt to solve a policy problem (Scharpf 1997, p. 11).

In writing this book, I have attempted to get as close to decision-making on the ground as possible. A wealth of primary and secondary literature has been consulted for the project, but it particularly benefited from access to official and internal documents. Furthermore, direct observation was coupled with the results of about 40 interviews conducted with Commission officials and other actors involved. These gave access to the 'bottleneck of political power' (Rathburn 2008, p. 690). The relevant actors were identified through a selection method that combined purposive and chain-referral sampling based on both positional and reputational sampling. The semistructured elite interviews cover (with the exception of Commissioners) the entire chain of actors responsible for the directives in question, up the hierarchical ladder from the desk officer to the Head of Unit, Director, Director General, Cabinet Members, and Head of Cabinets. Only 16.28 per cent of potential interview partners who were recommended at least twice in the chain referral

declined to meet or were not available for an interview. In order to not compromise the anonymity requested by some of the interview partners, it was necessary to anonymize the entire set of interviews. A list of interview partners can be made available upon request.

1.5 Theoretical approach: Institutional demand and knowledge

The literature on the role of knowledge in politics is vast. I propose a summary of the literature reviewed in Table 1.1, the form of which is inspired by Zito and Schout (2009, p. 1110). In general, there seem to be two predominant approaches to explaining knowledge in politics. The first is based on concepts of actors, whereas the second centers on concepts of structures. Agency-based literature tends to look at actors which base their input to politics on knowledge. This literature has found various names for similar actors: 'knowledge actors', such as think tanks or academia (Stone 2001, pp. 23–36); 'epistemic communities' (Haas 1992, p. 3); or 'advocacy coalitions' (Sabatier and Weible 2007). They are mostly concerned with an instrumental understanding of knowledge – that is, ideas or policy proposals that can inform, 'enlighten' or convince decision-makers. On the other hand, there is a structure-based reading of the role of knowledge in politics. This kind of literature emphasizes the role of societal structures (Gramscian readings, Cox 1993), of general learning processes of political systems (policy convergence) (Radaelli 2000; Dolowitz and Marsh 1996) or the role of organizational and institutional demands (Bouwen 2002; Boswell 2009). This book combines insights from both schools of thought, even though it might lean toward the structure-based reading.

The agency- and structure-based accounts of knowledge utilization normally do not inform each other and have not yet attempted to find a common denominator. However, they complement each other well if seen in the light of a unifying element – the role of hierarchy. Agency and structure are to some degree different expressions for demand and supply. Agency-based literature can explain the supply side, but its scholars are not quite able to operationalize the influence of the demand structure on the knowledge provision and success of knowledge. Structure-based accounts complement the necessary fundaments for an argument, without ever spelling them out in sufficient and differentiated detail. All of them are not following up on a lesson by the agency-based literature: institutions are not monolithic entities but are subject to different dynamics and interests. Institutional functions and

Table 1.1 Literature summary: Who uses what kind of knowledge to what effect under which condition

Literature thread	Who uses	What kind of knowledge	To what effect	Under which conditions
Garbage can – inspired agency-based accounts (Cohen et al. 1972; Kingdon 2003; Richardson 2006)	Policy entrepreneurs external to government	Mostly instrumental knowledge (ideas, policy proposals)	Knowledge supply with the aim of influencing insiders' policy decisions	Policy streams
Epistemic communities (Haas 1989, 1992, 2004) (Adler and Haas 1992)	Expert networks bound together by shared causal, normative and principled beliefs, consensual knowledge base and common policy enterprise	Instrumental knowledge (facts, ideas, interpretation) Late Haas: political knowledge (legitimacy, credibility)	Knowledge supply with the aim of policy-learning	(1) Uncertainty (2) Complexity (3) Structures such as actor embeddedness and policy stages Late Haas: (4) Quality of knowledge (criteria: legitimacy, credibility, salience)

Advocacy coalitions framework (Sabatier 1998; Sabatier and Jenkins-Smith 1999; Sabatier and Weible 2007; Schlager 2007)	Advocacy coalitions bound together by shared deep core and policy core beliefs	Instrumental knowledge (ideas, policy proposals)	Knowledge supply with the aim of policy-learning, and ultimately changes of belief systems	(1) Constitutional structure (2) Coalition opportunity structures (3) Attributes of problem (4) Sociocultural values and social structures (5) Changes in public opinion (6) Changes in socioeconomic conditions (7) Changes in government (8) Coalition resources (9) Influences from other policy subsystems
Think tanks (Mayntz 1985; Gellner 1994, 1998; Stone and Garnett 1998; Stone 2000; Wallace 1998)	Policy entrepreneurs in form of think tanks	Instrumental knowledge (ideas, policy proposals) and political knowledge (legitimacy)	Knowledge supply with the aim of policy transfer and policy-learning	(1) Uncertainty (2) Complexity (3) Access to policy-makers (4) Policy stages (5) Politicization of knowledge (agenda-setting, forum provision, elite networking) (6) Legitimacy provision
Structure-based accounts	Structures (governments, administrations, etc.)	Instrumental and political knowledge	Knowledge demand with the aim of strengthening structures	

Table 1.1 (Continued)

Literature thread	Who uses	What kind of knowledge	To what effect	Under which conditions
Historical-comparative (Foucault 1977; Gagnon and Alain-G. 1990; Pal 1990) (Cox 1993, 1996, 1999; Horn 2008)	Hegemonic blocs consisting of state structures and material forces – but note Foucault: 'co-production' of power and knowledge	Political knowledge (vision for and interpretation of a hegemonic project)	Knowledge demand to ensure stabilization of belief systems, power of a hegemonic project	(1) Co-production of power and knowledge (2) Existence of 'organic intellectuals' dependent (i.e. financially) on (counter-)hegemonic forces
Policy convergence/policy diffusion/policy-learning (DiMaggio and Powell 1991; Hall 1993; Dolowitz and Marsh 1996, 2000; Radaelli 2000; Bulmer and Padgett 2004)	States, administrative structures and its officials (as well as – in passing – interest groups, think tanks, policy entrepreneurs)	Instrumental knowledge (ideas, ideologies, policies, administrative arrangements) Political knowledge (credibility, legitimacy)	Knowledge (supply and) demand leading to: – change in policy instruments and goals – copying, emulation, hybridization – coercive, mimetic or normative institutional isomorphism	(1) External pressure, dependency (2) Uncertainty (3) Shared normative assumptions (4) Forms of policy formulation (5) Policy stages, hierarchy
Organizational theory (Levine and White 1961; Feldman and March 1981; Bouwen 2002; Boswell 2009; Mahoney 2004)	Institutions/ organizations	Instrumental knowledge (necessary for the legislative functions) and political knowledge (legitimacy)	Knowledge demand with an aim of strengthening the organization	(1) Resource dependency (2) Logic of appropriateness (3) Organizational character (4) Policy stages

hierarchy can bridge the gap between the rather elaborate explanations of how knowledge gets offered and used in policy formulation provided by agency- and structure-based readings.

Before setting out my understanding of institutional supply and demand theory of knowledge utilization, I would like to briefly point to the most helpful insights of the literature mentioned in Table 1.1.

Agency-based readings allow us to better understand the messy learning and bargaining dynamics, especially in situations of fluid, instable contexts of knowledge:

- The EU policy process is a case of bounded rationality (Richardson 2006, p. 25), in which an organization has ill-defined and incoherent preferences (Cohen et al. 1972, p. 1), which it further discovers and refines 'through action more than it acts on the basis of preferences' (Richardson 2006, p. 15).
- The process of policy formulation can be understood as independently flowing and interacting problem, policy and political 'streams' (Cohen et al. 1972, p. 26; Kingdon 2003). In a 'process of biological natural selection' and of constant evolutionary 'mutation and recombination' (Kingdon 2003, pp. 116, 124), ideas are developed, diffused and tested. Ideas survive the process of persuasion and bargaining, subject to certain criteria, such as technical feasibility, value acceptability, anticipated public acquiescence, and receptivity among elected decision-makers (Kingdon 2003, p. 131).
- The literature on epistemic communities (Haas 1989, 1992; Adler and Haas 1992) teaches us that experts gain access to power if uncertainty and complexity forces decision-makers to resort to them. The late Haas adds that legitimacy, credibility and salience are also conditioning factors (Haas 2004, p. 574). The impact of epistemic communities, however, 'remains conditioned and bounded by [...] structural realities' (Haas 1992, p. 7).
- The literature on the Advocacy Coalition Framework (ACF) has developed the thought of structural realities further and defines them as 'institutional learning arrangements [...which facilitate or hamper learning within] institutional learning constraints' (Busenberg 2001, p. 176). Sabatier in particular refers to long-term stable parameters (Sabatier and Weible 2007, pp. 193, 199–202), which can cause a 'decisional bias' in organizations (Schlager 2007, p. 307).

Structure-based accounts, on the other hand, spell out the demand side of the argument for institutional knowledge utilization. In particular, their heuristic insights are informative.

- Dolowitz identifies the objects of policy transfer and thereby describes the potential subjects of discussion in the commission as well: 'policy goals, structure and content; policy instruments or administrative techniques; ideology; ideas, attitudes and concepts; and negative lessons' (Dolowitz and Marsh 1996, pp. 349–350).
- Policy transfer can happen to different degrees. These degrees are copying, emulation, hybridization and inspiration, and they represent a continuum of adaptation from pure copying in every detail to creative problem-solving inspired by the solutions found elsewhere (Rose 1993, pp. 132–134; Dolowitz and Marsh 1996, p. 351). Hall helpfully differentiates between first-, second- and third-order degrees of change (Hall 1993, pp. 278–279).
- The lobbying literature points out that the Commission is the 'conductor of a large and pluralistic orchestra of European interest groups', a 'political entrepreneur and institutional engineer' (Mazey and Richardson 2006, p. 291). Mahoney has pointed out that the Commission exerts demand-side pressures by shaping patterns of interaction and participation (Mahoney 2004, p. 442).

The literature on ACF, epistemic communities, think tanks, organic intellectuals, policy-learning and transfer, as well as lobbying and demand-supply dynamics all have in common that they assume that policy change only happens when institutions accept it and the ideas or knowledge associated with it. We are turning to this structural influence now when diving deeper into the approach taken in this project to explain knowledge utilization. In this sense, we can follow an approach that Radaelli outlined when he applied Weiss' distinction of knowledge utilization between data, idea and argument (Weiss 1986) to policy modes. He argued that knowledge as data will be used in co-operative games in depoliticized arenas, whereas it will be used as arguments in zero-sum games and in particular post-decision (Radaelli 1995, p. 176). To develop an operationalization to the internal dynamics of one institution, such as the European Commission, we turn to organizational theory.

Scholars of organizational theory point to the role that the organizational character, needs and norms play in utilizing knowledge. Their work can also encompass most of the factors that other strands of literature have pointed us toward: uncertainty, complexity, salience, the role of hierarchy and policy modes, as well as institutional needs, such as legitimacy. In their eyes, expertise is used to strengthen the organization, in particular when the institution is resource dependent on

external input to deliver on its mandate or when it needs external support in terms of legitimacy. Organizational theory has taken major steps forward in being able to explain the utilization of knowledge by applying ideas about resource dependency (Pfeffer and Salancik 1978) and exchange models (Levine and White 1961) to lobbying (Bouwen 2002, p. 366).

It will be particularly interesting to look into resource dependency. Bouwen's theory of access[1] assumes that institutions are in need of a critical resource, which is required for their 'continued operation' (Bouwen 2002, p. 370). The criticality of a certain good, such as information, is dependent on the pursuit of its organizational aims. One of the most critical resources that the Commission needs is knowledge. In the case of the European Commission, we can understand the continued output of politically acceptable and technically sound legislative proposals as its operational bread and butter. It is in need of expertise to act successfully in such a way, simply because it is understaffed, resource-dependent and thus not self-contained.

Boswell adds a helpful argument that helps to define institutional aims. Bouwen only conceptualized information as an access good. Boswell's idea of institutional functions clarifies that information is not the only access good one could possibly think of. She resorts to Brunsson's distinction between an action organization and a political organization. An action organization derives its legitimacy from its performance and output, whereas a political organization derives its legitimacy from its structures and decisions (Brunsson 2002). She assumes that the utilization of expert knowledge is most likely when the organization works technocratically, meaning when it takes decision in modes of 'authoritative determination' (Boswell 2009, p. 77). She also recognizes that expert knowledge has several uses for an organization, ranging from instrumental to legitimizing to substantiating functions (Boswell 2008, 2009). Boswell believes that knowledge will be used to improve the legitimacy of either of the two types of organization when (1) the organizational capacity of reproduction is seen as endangered; (2) an organization is involved in bureaucratic competition; or (3) the organization's capacity of impacting its environment ('societal steering') seems to be decreased (Boswell 2009, pp. 52–53). Knowledge therefore serves to improve the output in an action organization (mandate delivery) and it serves as a symbol to substantiate a decision in a political organization (power maximization).

Boswell thereby linked policy modes and expert involvement. In this line of thinking, we can develop a theoretical framework where

functional organizational demands are the independent variables that determine the dependent variable of knowledge utilization. The organizational demands are directly derived from the institutional functions and its associated functional needs.

Unfortunately, both Bouwen and Boswell have a monolithic understanding of an institution. They both treat organizations like a doctor who is analyzing the patient by just looking at the skin, whereas the internal organs would tell the doctor so much more. The inner workings of an institution using knowledge remain under-researched. In particular, Bouwen, somehow oversimplistically, assumes that the critical resource is stable and remains the same throughout the functioning of an institution such as the Commission. He does not differentiate between the resource needed in the lead DG responsible for a policy draft and the resource needed in the college. Boswell applies her argument about legitimacy mostly to the Commission at large, rather than looking into the black-box institution. I would therefore like to complement their argument by opening up the black box. By departing from the notion of a coherent organization, it will be possible to differentiate different functions of different organizational units better (From 2002, p. 226) – and ultimately to account for the puzzle of how it can be that an organization seems to use knowledge in different ways.

Walking on the path of organizational studies literature (March and Simon 1958; March and Olsen 1976; March 1988; Dolowitz and Marsh 1996; but also Cini 2000a; Dunlop and James 2007), I argue that the Commission – like any other institution – serves two institutional functions: mandate delivery and power maximization. Organizations maximize their power (Pfeffer 1981) vis-à-vis other institutions, and its organizational units are constantly involved in bureaucratic politics (Downs 1967; Peters 1992), trying to expand their mandate, their resources and their influence in constantly ongoing turf wars. At the same time, however, organizations need to deliver on the objectives of their mandate (Weiss 1978). Contrary to what Boswell claims (Boswell 2008, p. 473), it is therefore rational for an organization to pursue both strategies. Often this is achieved by a functional differentiation of the organization over time. Several vertical and horizontal hierarchies emerge with intricate interaction patterns. More politicized units serve to maximize the power vis-à-vis other institutions, whereas more technocratic units ensure sound mandate delivery. They are therefore torn between bargaining and problem-solving dynamics. Bargaining can be characterized by the pursuit of individual actors' interests and relative advantages and a conflictual behavior, whereas problem-solving

would focus on common interests, pareto-optimal solutions and absolute advantages, and exhibit a cooperative behavior (Elgström and Jönsson 2000, p. 685).

How can we then characterize the internal dynamics of institutions? Politics and technocracy have a plethora of observable elements, such as logics of action (Feldman and March 1981) or characters of cooperation (Downs 1967; Peters 1992; Christiansen 1997); their modes of policy-making (Radaelli 1999) or modes of settlement (Smith 2004); the policy cycle (Tholoniat 2007) and the structure of organization (Egeberg 2006a); the source of legitimacy (Brunsson 2002; Boswell 2009); the boundedness of their processes (Christiansen 1997); the recruitment patterns (Balint et al. 2008; Döring 2007; Egeberg 2006a; Wonka 2007); as well as socialization dynamics (Scharpf 1997; Egeberg 2006b; Trondal et al. 2008). For an empirical assessment, these different elements can all be tested individually. However, for a theoretical argument, the elements have been reduced to and merged into three observable characteristics.

Whether an organization fulfills a mandate-delivery function or a power-maximizing function in essence depends on three factors:

1. The organizational decisional level – that is, the level of hierarchy at which a policy is formulated. Just as organizational parts differ in their behavior due to their specialization or portfolio (Trondal et al. 2008, p. 259), the functions of an organization in policy formulation are compartmentalized and differentiated according to different levels of hierarchy – from the desk official to the officials at the top of the organization. The higher up the hierarchical ladder, the more likely it is that the organizational function is power maximization; the lower down the ladder, the more likely it is to be mandate delivery.

2. The organizational nature – that is, the policy dynamic during the policy formulation. There are two different organizational characteristics: politicized and technocratic. The former organization is subject to bargaining dynamics, and the latter subject to problem-solving dynamics as defined by Elgström (Elgström and Jönsson 2000, pp. 685, 693–695). Politicized organizational units will focus on power maximization, whereas technocratic units will focus on mandate delivery.

3. The organizational task – that is, the task that the organization has to fulfill in formulating a policy. In different phases of the policy formulation, this task varies (Adler and Haas 1992). We can make use of policy stages: from problem-framing and policy design to decision-taking. In problem-framing, the units will be concerned with mandate

delivery, whereas in decision-taking they will more likely be occupied with power maximization.

These factors can be combined in eight different ways, leading to ideal types of functional differentiation. I call these differentiations 'organizational characters' which are defined by their nature, locus of decision and task. When the organizational character is technocratic, the resulting organizational function will be mandate delivery. When the character is political, the organizational function will be power maximization. Table 1.2 shows the argument in more detail. Mandate delivery and power maximization form the two values on the independent variable of the institutional demand function.

The functional differentiation of the organization in mandate delivery and power maximization defines the logic of appropriateness (Feldman and March 1981) for its staff. As understood by organizational theory, institutions are a 'collection of rules and practices' that provide 'structures of meaning that explain [, guide] and justify behavior' (March and Olsen 2006, p. 691). This study is underpinned by a view of the Commission as a multitude of arenas (Hooghe 2000, p. 101) with varying but distinct cognitive frames, which impose institutional affiliations on those working in them. These affiliations shape the rationality of its employees, and even their identities (Egeberg 2006b; Trondal et al. 2008). Some units would be designed to learn through interaction to establish the organization's utility, whereas other units would be designed to defend these preferences in order to maximize its utility.

Knowledge utilization is consequently my dependent variable. It manifests itself as either cognitive or instrumental utilizations of knowledge. Cognitive utilization is understood as gathering knowledge to epistemically better understand an issue, or to gather ideas, to increase understanding and seek out policy advice. Argumentative utilization, on the other hand, is defined as gathering knowledge to use it as an argumentative weapon in justifying a preferred choice.

In other words, preference attainment and preference pursuit can coexist. They happen in different but interacting phases. We have to work with the realization that both camps of behavioral assumptions are valid only at limited yet complementing points in time. These points are defined according to the organizational characteristics that encompass the individual actors. This has implications for my understanding of rationality that departs from Boswell's more rationalistic argument. In my eyes, rationality is bounded and depends on surrounding conditions. Following the garbage-can literature, I assume that preferences

Table 1.2 Organizational character and organizational function

Organizational character	Organizational nature	Organizational locus of decision	Organizational task	Resulting organizational function
Technocracy	Technocratic	Low level of hierarchy	Policy-framing	Mandate delivery
politicized Technocracy	Technocratic	Low level of hierarchy	Decision-taking	
bottom-up Technocracy	Politicized	Low level of hierarchy	Policy-framing	
top-down Technocracy	Technocratic	High level of hierarchy	Policy-framing	
Bottom-up politics	Politicized	Low level of hierarchy	Decision-taking	Power maximization
Top-down politics	Technocratic	High level of hierarchy	Decision-taking	
Technocratic politics	Politicized	High level of hierarchy	Policy-framing	
Politics	Politicized	High level of hierarchy	Decision-taking	

in one institution can at the same time be fluidly unstable and predetermined stable. Different logics of action will occur within one single institution, should this institution differentiate between various roles and attached logics of action. Even though this is a novel argument for the Commission, it is hardly surprising. March gives the example of a court: within a single institution, the judge, the prosecutor and the attorney all follow different logics and assume a certain perspective (including the presentation or ignorance of certain data or arguments) on a case by virtue of their role (March and Olsen 2006, p. 704). In this sense, I share the understanding of March, Olsen and others about the impact of institutions (March and Simon 1958; March and Olsen 1976; March 1988) on rationality.

According to the logic of appropriateness (March and Olsen 1989, 1998), advocated by Onuf (1989), Wendt (1992), Finnemore and Sikkink (1998), among others, preferences are in flux. Consequently, it can explain learning where actors attain their preferences through interaction and are able to change them. The logic of consequentialism or 'instrumental rationality' explains best 'interactions in which agents participate [...] to maximize or optimize one's own interests and preferences' (Risse 2000, p. 3). Proponents of this behavioral camp in international relations theory include Keohane (1984), Oye (1986), Ostrom (1998) and Scharpf (1997). Whereas it might be perfectly rational to increase the knowledge base and to embark on a learning process in one environment, it might not be rational to do so in another. Likewise, in another context it might be perfectly rational to ignore potential learning effects and to push ahead on a limited knowledge base, which is in accordance with fixed preferences.

We have to distinguish between learning for innovation, learning for adaptation and institutional feedback. Whereas learning for innovation and for adaptation would find their place in knowledge utilization focused on mandate delivery, institutional feedback would have elements of power maximization. It is even conceivable that learning processes are institutionally foreseen in predetermined structures that allow for, or prevent, certain learning.

In conclusion, I argue that we have to disentangle institutions and look at their differentiated logic of action in order to understand knowledge utilization. The independent variable is defined as the functional need of a given institution. This functional need can take two values: mandate delivery or power maximization. The function of mandate delivery is characterized by technocratic units at lower levels of hierarchy that engage in problem-solving to improve the organization's

Table 1.3 Independent and dependent variable: Institutional function and knowledge-utilization strategy

Independent variable		**Dependent variable**	
Institutional function	Mandate delivery	Knowledge-utilization strategy	Instrumental and cognitive to improve performance
	Power maximization		Argumentative to defend legitimacy and substantiate position

performance. The function of power maximization is found in politicized units at higher levels of hierarchy that engage in bargaining. When officials pursue the critical resource necessary to fulfill their function, the appropriate logic of action is defined by their institutional environment. It signals appropriate behavior in conformity with the organizational role.

In both situations, knowledge is or can become a 'critical resource' in Bouwen's sense. We therefore treat the utilization of knowledge as the dependent variable. It can take on two values as well: cognitive or argumentative utilization of expert knowledge. In cognitive utilization, expert knowledge serves actors to better understand an issue to make a choice. Knowledge is used instrumentally to improve the cognitive epistemic ability of part of an institution when delivering on the mandate of producing sound policy proposals. In argumentative utilization, expert knowledge serves actors to better justify a choice already made. Knowledge is used symbolically to improve the argument and increase the legitimacy of a decision when maximizing power in institutional battles. The independent and dependent variable and their values are summarized in Table 1.3.

2

The Commission's Strategies for Designing an Emissions Trading Scheme for the European Union

2.1 Introduction: Innovating environmental policy through markets

This case study is the first of three that all aim to provide theory-grounded, empirically rich contributions to an issue that has been haunting our discipline for decades: the role of knowledge in policy. The mechanisms of learning in a functionally differentiated Commission are addressed by identifying conditions under which learning takes place in different modes (politicized and technocratic). We argue that the organizational function of either mandate delivery or power maximization determines whether knowledge is used cognitively or instrumentally. The analysis of the policy-formulation process of the ETS – the EU's market-based mechanism to reduce CO_2[1] – will allow us to identify several strategies of knowledge utilization under these two different conditions.

The ETS case study presents a prime example of learning in a complex and technical yet politically salient policy field. It is therefore possible to analyze in depth how learning took place under those conditions normally associated with bureaucratic and politicized learning alike (Radaelli 1995; Haas 1992, 2004), and it enables a study that looks at the way in which institutional hierarchies and cultures influence the mode of learning. It also enriches our knowledge of the making of climate policy, an area that is increasingly moving into the focus of our discipline (Zapfel and Vainio 2002; Woerdman 2004; Dreger 2008; Skjærseth and Wettestad 2010b; Wettestad and Boasson 2013).

This first case study concerns itself with a legal innovation of major influence on the EU. The establishment of an ETS has turned the reduction of greenhouse gases (GHGs) into a veritable economic factor and has created a market with an annual value of at least €22–44

billion (Zapfel 2007, p. 28), nowadays covering 27 EU Member States plus Norway, Liechtenstein and Iceland. Due to the ETS, emitting CO_2 now has a price tag in the form of direct or opportunity costs that lead to the internalization (MacKenzie 2007, 2009) of the externality that environmental pollution traditionally constitutes (Braun 2009, pp. 470–471).

When the European Commission started drafting its proposal for a European ETS, nearly all Member States and European institutions were completely unaccustomed to the ideas underpinning the new policy instrument ETS. The idea as such was developed by Dales (1968). His proposal to establish a market for trading pollution rights was 30 years old but had never been tested at such a scale in the EU. All political actors where therefore in desperate need for expertise. The timing of the proposal additionally fell into the beginnings of a more structured approach to (economic) impact assessments for EU environmental legislation and an increased role of science in climate policy (Delbeke 2006a, p. vii). The ETS directive therefore constitutes a crucial case study on knowledge utilization strategies of the European Commission. This case study will shed light on the decision-making process that led to the different design elements.

The ETS directive regulates the method of creating a scarcity of entitlement to emit CO_2, the way emission permits are issued and monitored, the approach to sanctioning non-compliance with the emission limit, and the manner in which the allowances are traded. It established that, in the first more experimental period of its application from 2005 to 2007, CO_2 was the only GHG addressed, and that sectors as diverse as power and heat generation, iron and steel, pulp and paper, building materials and oil refining would be subjected to the policy. A phase-in of more stringent measures and expansion of the ETS in terms of the coverage of sectors and gases was foreseen in five-year periods from 2008 onwards.

At the heart of the ETS is a trading mechanism. The emission of CO_2 is regulated by creating a price signal to market participants that represents a newly introduced scarcity: 'At the heart of emissions trading, therefore, is the ending of an unlimited entitlement to pollute. Similar things have happened [in] other areas of life. When all open land had been fenced off and appropriated by someone, the free acquisition of land ended, and land became scarce' (Vis 2006, p. 41). The market has entered climate policy by the following trading mechanism. Each one of the participating 11,500 industrial installations receives emissions permits. In order to emit CO_2, they need to hold a corresponding number

of allowances for each ton of CO_2 that they produce. If a market participant does not hold the allowance, they need to purchase such an allowance at the CO_2 market. If they hold more than they need, they can sell these surplus allowances. The decision to buy or sell will be based on the marginal abatement costs of an industrial installation and will ensure the most economically efficient distribution of costs across sources with higher or lower abatement costs than average (Lefevere 2003, p. 151). Any potential buyer can choose to either reduce their emissions by investments in more environmentally friendly technology or by purchasing allowances for excess emissions from a seller who can cut emissions at lower costs per ton of CO_2. As this allows all market participants to realize emission reductions at the lowest cost possible, both buyers and sellers benefit from trading their emissions (Zapfel and Vainio 2002, p. 14).

At the beginning of the decision-making process for an ETS, the Commission was implementing climate policy in an environment that was distinctly different from that of today. The Kyoto Protocol was not yet ratified, and most EU climate policies were not yet in place. The EU was well aware that its emissions trajectory would not lead to the emissions that the EU had committed to achieve in Kyoto, but the Commission's previous preferred strategy – an energy tax – was doomed to eternal deadlock in the Energy Council. After unsuccessfully tabling three initiatives and two proposals for carbon or energy taxation within ten years, the Commission grew increasingly frustrated with the toxic combination of a lack of intellectually convincing policy alternatives (Delbeke 2006a, p. viii) and the politically unfeasible taxation agenda that could not overcome the 'unsurmountable stumbling block' of unanimity in the Council (Zapfel and Gardiner 2002, p. 14).

Subsequently, when the ETS was proposed, policy-makers were rather receptive to the alternative to taxation: the general idea of market-based approaches in environmental policies (Delbeke 2006a, p. viii). Despite the lack of expertise in the Commission, an ETS as advocated by the USA in the context of the Kyoto negotiations increasingly seemed to be a promising avenue to take because of the possibility of adopting such a measure as the EU's flagship policy with a qualified majority in the Council. As early as March 1997 an internal, unpublished document for the Commissioner for the Environment Bjerregaard recommended consideration of an ETS as a new policy (Interview 7 February 2011) and led to a Commission Communication on 3 June 1998 (European Commission 3 June 1998) that officially announced the Commission's intention to pursue the establishment of an ETS.

2.2 Technocratic knowledge-utilization strategies in designing ETS I

2.2.1 Understanding ETS options: Technocracy and knowledge

At the beginning of the policy cycle, we find a desk officer at a low organizational decisional level whose task it is to frame policy options and attach advantages and disadvantages to them, thus preparing the decision in units higher in the organizational hierarchy. The role that the desk officer is expected to play is one of preparing decisions in a technocratic, problem-solving fashion, as well as executing decisions in the form of shaping a policy principle into a legal phrasing. We call policy-framing as an organizational task in a situation characterized by technocratic organizational units at a low level of hierarchy pure 'technocracy'. We would expect that the logic of appropriateness for such a role in the organization would be one of mandate delivery and consequently that a desk officer seeks knowledge to cognitively grasp a problem and identify policy options.

The causal mechanisms of such a technocratic mandate delivery looked as follows in this case study. The unit tasked with developing the ETS architecture employed three strategies to deliver on its mandate of providing technically sound and politically creative solutions: (1) ad hoc meetings with selected experts; (2) the commissioning of economic and legal studies; and (3) consulting stakeholders in a formal consultation process in a Green Paper (European Commission) and in a stakeholder working group. All of this was done on the understanding that it was appropriate behavior to collect knowledge as widely as possible in the most neutral way possible in the pursuit of establishing a good knowledge base on which to base later decisions.

> I was just the desk officer and I was taking orders, essentially. I don't take credit for inventing emissions trading, far from it. I was the executioner. I was the executioner who [...] once we understood the concept, because I was learning, I tended to be the one who wrote it down in a narrative form, [...] That was my job. The ETS was an iterative process where [...we] learned about the instrument as we studied it. We were learning as we went along. The uncertainty surrounding the ETS was huge. We entered unchartered territory, both technically and politically.
>
> (Interviews 7 February 2011, 18 April 2008a, 8 April 2008)

In the beginning of the ETS, the Commission faced the same problem as all other policy actors: the ETS was an instrument that was poorly understood, complex and with little precedent in EU legislation. Knowledge about emissions trading was scarce in these days and restricted to small circles of (in the majority) academics and business representatives (Zapfel and Vainio 2002, p. 1; Christiansen and Wettestad 2003; Skjærseth 2010, pp. 302–303). DG ENV as the lead DG for the ETS proposal had to build up its own expertise. Ger Klaassen (Klaassen 1996), who was the Commission expert on the only existing large trading scheme to this point, the US SO_2 trading scheme, left the Commission in 1998 (Braun 2009, pp. 477–478). The unit dealing with climate change was subsequently newly staffed in 1998 with officials coming from a background of economist units in the Commission, such as Peter Vis, and with new officials like Peter Zapfel, who studied emissions trading at Harvard University before joining the Commission.

As to the first strategy, Commission officials had frequent meetings with experts who had experience with the trading of pollution permits. First, emission trading enthusiasts from the USA made up for the strategic mistake of their government of not properly explaining the instrument that they were pushing for in Kyoto (Zapfel and Vainio 2002, pp. 6–7). Representatives of the NGOs Environmental Defense and Center for Clean Air Policy, US civil servants such as Brian McLean from the Environmental Protection Agency (EPA), academics such as Denny Ellerman (Massachusetts Institute of Technology), and staff from the Chicago Climate Exchange engaged in a vivid dialogue with Commission officials (Zapfel and Vainio 2002, pp. 6–7; Braun 2009, p. 479). The experts from Environmental Defense and EPA in particular were instrumental in clarifying basic design choices due to their experience with the EPA sulfur allowance trading scheme that they had developed together, as well as the North-Eastern state-level NO_x schemes and the Californian RECLAIM program: 'We learned a lot conceptually from the best practitioners of the world' (Interview 17 February 2011). This is where learning took place, or as Wettestad prefers to call it 'institutionalisation' (Wettestad and Boasson 2013, p.25).

Two of the main design choices concerned the alternative between cap-and-trade or baseline schemes and between absolute or relative targets. The difference between a cap-and-trade scheme and a baseline scheme is that the latter sets emission targets for each participating industrial installation, whereas a cap-and-trade scheme sets an overarching cap for the entire emission permit market. In discussions with US experts, the Commission quickly understood that a cap-and-trade

scheme that is based on an overall target for the entire market is simple to administer, ensures the environmental outcome and delivers certainty to the markets as to the required efforts to reduce emissions (Vis 2006, p. 50). It was pointed out to them that, in contrast, the baseline scheme method is more complex to administer, in particular concerning the definition of the baselines and the sharing of commercially sensitive data, the environmental outcome is less certain, and it implies a potential loss of efficiency and liquidity for the market that does not know how many entitlements will become available for trade (Vis 2006, pp. 51–53).

However, the Commission also realized in its discussions that cap-and-trade regimes normally require absolute targets (i.e. a defined absolute quantity of emissions), whereas a baseline scheme requires relative targets (meaning a standard of emission efficiency in relation to productivity) (Lefevere 2003, pp. 159–160). The Kyoto Protocol worked on the assumption of an absolute target (Lefevere 2003, p. 160) but, while in dialogue with US experts, the Commission was taught that industry under normal circumstances will push hard for relative targets to avoid being measured on their efficiency and not on their output. Interestingly, defining efficiency is ultimately harder and involves more distributional choices (Vis 2006, p. 52) than defining a total cap of emissions that can be set freely.

The unit concerned thereafter laid out the two different options in a so-called Green Paper and invited a widespread public discussion. Even though the Commission had already formed a preference on the basis of the input that it had received, it refrained from making the decision right away. The desk officer restricted himself and did not make decisions on his own – clearly because his task was to inform a decision-maker rather than make the decision alone. Knowledge, in this case, was therefore used to identify options and better understand their characteristics. In the policy debate that followed the Green Paper, European industry did protest vehemently against the policy option of a cap-and-trade regime with absolute targets, just as predicted by US experts, coining it as a 'cap on growth' (Zapfel and Vainio 2002, pp. 19–20) and as contrary to many negotiated agreements in the Member States that work on the basis of relative targets (Lefevere 2003, p. 160).

As to the second strategy of commissioning studies, the Commission was encouraged by the experience of British Petroleum (BP, today Beyond Petroleum) (and to some extent Shell) in setting-up a company-internal CO_2 trading scheme, as announced by its Chief Executive Officer John Browne during a speech at Stanford University in May

1997 when he broke out of the climate-skeptic industry alliance. The BP experience gave rise to the understanding that a mandatory scheme with absolute targets is efficient: BP created $650 million in value and achieved its 10 per cent reduction goal (Victor and House 2006, p. 2100), rather than losing money due to emissions trading (Vis 2006, p. 54; Braun 2009, p. 480). The Commission subsequently commissioned studies to assess the economic impacts of an ETS in the EU. Two studies provided 'crucial' knowledge of the economic effects of the ETS policy option (Braun 2009, p. 478): one conducted by the Institute for Prospective Technological Studies (IPTS) (IPTS 2000) and another by scholars from the Athens Technical University (ATU) (Capros and Mantzos 2000). The IPTS study on the basis of the Prospective Outlook on Long-Term Energy Systems (POLES) model concluded that an ETS would reduce the cost burden of implementing Kyoto by 25 per cent (IPTS 2000, p. 4), whereas ATU calculated on the basis of the Price-driven Equilibrium Model of the Energy System and Markets for Europe (PRIMES) model gains in total compliance costs of between 20.7 and 34 per cent relative to their reference case (Capros and Mantzos 2000, p. 15). Considering that the costs of complying with Kyoto were estimated to be €9 billion annually (1999 prices) until 2010 (Capros et al. 2002, p. 37), this constitutes a convincing argument for an ETS.

In particular, Capros and Mantzos from the ATU were highly informative for the policy officers. Their analysis was based on assumptions that came close to the final policy proposal, such as a focus on direct emissions and a downstream system model (Capros et al. 2002, pp. 28–30), and it already covered the main sectors that were later to be included in the ETS: power and steam generation, energy-intensive industries such as iron, steel, paper, pulp and building materials, as well as other sectors that were planned to be included at a later stage, such as chemicals and transport (Capros et al. 2002, p. 31). One might argue that the study design set a path-dependent process in motion.

In any case, they informed the Commission about two major inherent features of the ETS that clearly outlined political choices to be made. First, the fewer sectors or countries are involved, the lower the gains of introducing an ETS, starting from a truly international scheme (48.6 per cent cost reduction) to a EU-wide scheme (34 per cent cost reduction) to a regional scheme between few EU Member States (Capros et al. 2002, pp. 31, 37). The same is true for sectors: an ETS covering only power producers would bring about a cost reduction of only about 20 per cent (Capros et al. 2002, p. 27). Second, any policy creates winners and losers, particularly when the industrial base creates very

different starting points for emission-reduction efforts.[2] In the case of the ETS, the net sellers in an intra-EU trading scheme were projected to be Austria, Germany, France, Spain and the UK (Capros et al. 2002, p. 37). Thus, it is safe to assume that the modeling done for the Commission not only made a strong case for the policy measure ETS as such but also informed the Commission about the distributional consequences of design choices, as well as about efficiency gains or losses associated with politically available compromise solutions. Again, this featured in the Commission-internal debate. Collecting and analyzing the data was carried out or supervised by a team of modelers in the Commission, among them Peter Zapfel. Knowledge was not collected at this stage to defend a proposal but simply to collect the facts and to understand the policy options better.

A second major contributor of external knowledge in the form of studies was needed for a legal assessment of options to implement an ETS. From this point onwards, the 'debate was increasingly Europeanized. In view of the different institutional, cultural, legal, and administrative nature of EU Member States the value of the contributions by US experts declined steadily' (Zapfel and Vainio 2002, pp. 8–9). The desk officer Peter Vis faced the challenge of embedding a policy instrument that was relatively alien to the existing acquis into European environmental law. The only existing similar concepts – quotas and tradable permits such as catch quotas in fisheries policy, milk quotas in agricultural policy and eco-points in transport policy (Zapfel and Gardiner 2002, p. 15) – were of limited value and could not easily be applied to GHG. However, the concept of permits for pollution (though not tradable) already existed as defined by the Integrated Pollution Prevention and Control (IPPC) directive and the Large Combustion Plant Directive, with the IPPC directive even covering GHG. In order to not to undermine the still ongoing implementation of the IPPC directive (Lefevere 2003, p. 184), it was necessary to identify design options for a new directive (instead of a major overhaul of the IPPC directive) that would fit into the existing body of law.

The Commission published a call for organizations to bid for a legal study, helping the unit to build up knowledge about the legal challenges ahead. The way in which the final contractor was chosen tells us a lot about the logic of appropriateness that the policy officers were following: the Commission could choose between big names of all major consulting firms like Deloitte, as well as a renowned expert from the US Climate Exchange; and the unknown Foundation for International Environmental Law and Development (FIELD). Eventually, the

desk officer chose FIELD as a consultant on purely technocratic grounds. There was no desire to justify the thinking of the Commission with a credible widely known name, but a raw need for expertise in three fields: EU environmental legislation, the international aspect of emissions trading and an economist's understanding of existing trading schemes – for instance, with the sulphur-trading scheme in the USA. FIELD combined a deep understanding of all three issues of importance to a greater degree than any other bidder and left the impression that it 'knew more than we did' (Interview 23 April 2008).

The process of developing the first study for the Green Paper and the second study for the draft proposal (Center for Clean Air Policy (CCAP) 1999; FIELD 2000, 2001) was pursued in a 'very fluid' working structure (Interview 9 February 2011b). The Commission team and the consultants from FIELD, notably Farhana Yamin and Jürgen Lefevere, met at least once a month in Brussels for sessions that consisted of 'brainstorming, just brainstorming, trying to work the thing from scratch' (Interview 9 February 2011b). FIELD wrote a total of 10–15 one-page discussion papers about all main design options that clarified and narrowed down policy options. This process was designed to 'sit down, float around ideas, and develop ideas' (Interview 9 February 2011b) between the Commission officials and FIELD experts. In particular, the 1999 study that FIELD conducted together with the CCAP, Washington, for the Green Paper in 2000 was a scoping study. The Commission gave very few parameters apart from the stipulation that the ETS should be 'simple, workable, feasible, implementable' (Interview 9 February 2011b). The FIELD experts simply 'sat down and fished everything remotely emissions trading related from the Internet' (Interview 9 February 2011b) to look at the existing options. All participants felt that they were working 'completely in the dark', 'trying to build something from nowhere' on a 'blank sheet' in designing 'a grand experiment' (Interview 9 February 2011b).

One of the main outcomes of this approach was focusing the choices on a few design options such as: (1) an upstream or downstream scheme focusing on either emitters or fuel suppliers and producers; and (2) a method of allocating the allowances either through auctioning or through grandfathering – that is, free allocation. From textbook economics, it was clear that there are two main ways of issuing allowances to the participants in an ETS. Making the choice between these two alternatives was one of the three most important decisions to be made in establishing the ETS (Lefevere 2003, p. 159) and the Commissioners made the call at their level.

The work done by the policy officers was therefore work of framing, using knowledge to point out advantages and disadvantages of the different options. The Commission could either propose that allocation would be free of charge on the basis of past emission trajectories of each company (so-called grandfathering) or be organized via an auctioning system, where companies have to purchase their allowances on a market. BP advised the climate change unit that, from its experience, grandfathering had proved to have major disadvantages (Braun 2009, p. 481). Auctioning was considered to be economically more efficient, less complex administratively, based on the information about the markets by market participants and not the government, and to create additional revenue for the economy. However, McLean, Director at the US EPA, pointed out to the Commission that allocation is 'often the most controversial part of a trading regime – it distributes valuable assets among economic operators [...] It is because of this, that discussions on allocation often tend to take up the largest part of the negotiating time needed to establish a trading regime' (Lefevere 2003, p. 162). In this context, industry prefers grandfathering because it does not imply additional costs but rather the distribution of a valuable asset to be free (Lefevere 2003, pp. 162–163).

As Lefevere argues (Lefevere 2003, p. 163), the problem with the grandfathering principle was threefold: it is the most complicated method to administer, it may constitute state aid and it involves governments in a major distributional conflict where each participant tries to maximize its allowances irrespective of the actual need. Auctioning, on the other hand, is the easiest and most efficient to allocate emission allowances. FIELD also argued that, in principle, auctioning would be beneficial, yet all participants realized quickly that the most efficient solution (auctioning) would be met with strong rejection by industry, DG Enterprise (DG ENTR) and many Member States (Interview 7 February 2011) and support only by NGOs (Interview 18 April 2008b).

The European Climate Change Programme (ECCP) working group confirmed this impression. Some industry representatives even argued that auctioning would imply taking from industry the 'right to pollute' and should therefore be financially compensated (Lefevere 2003, p. 163). FIELD subsequently proposed for reasons of political feasibility to follow the principle of grandfathering. It seemed politically impossible to get an approval of the auctioning option for the first ETS period. At that time it was argued that not the method of allocation but the overall number of allowances are the crucial determinant for the environmental integrity of the ETS (Interview 17 February 2011). DG ENV

gathered all of those insights and made them available to Environment Commissioner Wallström for a decision.

With respect to the third strategy of building up a better understanding of the issue at hand, the Commission pursued a strategy of stakeholder consultation. The Green Paper that was published for consultation in March 2000 was the result of two years of internal work. Since 1998, the Commission had, together with experts such as FIELD, invested heavily in identifying policy options. The Green Paper was in many ways a summary of this work, and was heavily influenced by the first FIELD study on design options for a GHG ETS, as well as the economic analysis mentioned above (Braun 2009, p. 478). The Green Paper tackled all of the main design questions and in particular pointed out a few areas where the Commission itself was not yet sure about the best solution. For instance, the Commission felt 'less certain' (Zapfel and Gardiner 2002, p. 16) about the choice between a top-down or a bottom-up approach, meaning a scheme that is established by Member States and linked via the EU, or a scheme that is established centrally from the outset. The same goes for opt-in or opt-out schemes – that is, whether a top-down scheme should include every Member State from the beginning or not. The Green Paper triggered the first European-wide public debate (Braun 2009, p. 477). It was met with a lot of interest and the Commission subsequently received 90 submissions with opinions from Member States, industry and NGO representatives, experts and citizens.

More important in terms of Commission internal capacity-building is a stakeholder consultation that was held by means of personal meetings between July 2000 and 2001, while the work on the legislative draft progressed in parallel. Commissioner Wallström had insisted on the involvement of stakeholders (Interview 25 March 2011a) and initiated the ECCP with its working groups, out of which one was devoted to flexible mechanisms – that is, the ETS. The ETS working group addressed the defining topics of the general debate: the method of allocation, voluntary or obligatory participation, up- or downstream and so forth. The working group consisted of 19 handpicked main participants representing 17 organizations, out of which 5 represented industry, 5 represented Member States, 5 represented NGOs and 4 came from different DGs, all of which had a substantial interest or expertise in the topic (European Commission 2000; Skjærseth and Wettestad 2010b, p. 318).

It is crucial to note that this working group's procedures were designed in such a way that learning could indeed take place among the participants: members were not supposed to rotate, leading to a 'situation in

which the same representatives met almost every month for almost a year [ten times in total . . . This situation] served to promote strong interpersonal relationships based on mutual confidence and understanding' (Skjærseth and Wettestad 2010b, p. 319). Commission officials representing different levels of hierarchy describe the task of the working group differently. Yet, those at lower levels of hierarchy, such as policy officers, primarily associate learning with the ECCP process:

'The main philosophy of the ECCP is to establish a multi-stakeholder consultative process in order to assist the European Commission in undertaking preparatory work, which can become the basis and input for future Commission policy proposals in the field of climate' (Zapfel and Gardiner 2002, p. 14). It was perceived as a 'very constructive' process that happened 'in a very nice, cozy room', enabling 'targeted debates that were interesting, I learned a lot' (Interview 9 February 2011b); as 'a capacity building exercise, where the exchange of opinions between the various participants helped clarify different concepts and approaches, and generated new ideas' (Lefevere 2003, p. 176). It is noted that it was a 'very informative process, some members were more expert than I was' (Interview 7 February 2011), and that there was the possibility 'to think freely' in 'a pioneering spirit' (Interview 24 February 2011a). 'For DG Environment the meetings of the ECCP proved to be important for "capacity-building" in the Commission, enabling ideas to be tried out and further developed. By going through the process of the ECCP DG Environment's staffs' thoughts and understanding improved a lot ([Interviews with] Vis 2005, 2008)' (Braun 2009, p. 480).

Analyzing pure technocracy in the case of the design of the ETS, it can be concluded that when a unit is located at a low decisional level, engages in problem-solving and is focused on policy formulation, then the logic of appropriateness does seem to lead to a cognitive utilization of knowledge on behalf of this unit. The unit responsible for economic instruments in DG ENV employed three main strategies in building up its knowledge base: it engaged in focused ad hoc meetings with selected experts, commissioned targeted studies of legal and economic aspects of the proposal, and established a broad stakeholder consultation process, supported by a year of intense consultation in a selected group that enabled collective learning.

2.2.2 Puzzling toward a feasible ETS: Politicized technocracy and knowledge

In a politicized technocracy, technocratic and politicized elements interact. The independent variable takes a technocratic value in two out of

three elements of the variable (organizational decisional level, organizational nature, organizational task). Concretely, a low decisional level is concerned with problem-solving and, in this process, takes a decision. We expect that, in such a case, the utilization of knowledge will predominantly be for cognitive purposes, even though some elements of argumentative utilization are likely to shine through. Let us briefly look at them in turn.

In this case of a politicized technocracy, we observe lower levels of hierarchy, namely policy officers such as Peter Vis and Peter Zapfel, working with their direct superior, the Head of Unit Jos Delbeke, in a problem-solving mode. This team has been characterized as an epistemic community (Skjærseth and Wettestad 2010b, pp. 319–320) and as an issue-specific policy network (Braun 2009, p. 469). Indeed, they shared beliefs and backgrounds. Vis, a historian by training, had worked on preparing the Single Market in 1992 and on the reform of the sixth VAT directive (Vis 2006, p. 60), whereas Delbeke came from the unit that had proposed the energy tax. Zapfel was initially a student of the ETS 'out of intellectual curiosity' (Interview 17 February 2011) and they all believed in the potential benefit of a market-based approach to environmental legislation. According to interviews, they 'had a sense of mission, we all knew that we were working on something big, we had that motivation to succeed', 'we wanted it, motivation carried us a long way' (Interview 23 April 2008). The atmosphere of working together is described as non-hierarchical, friendly and fact-based.

The team could work relatively freely, because their director had little interest in the topic and the Commissioner had huge trust in Delbeke and his team in making the right decisions about what they considered to be technical (Interview 25 March 2011a). The politicized technocracy used knowledge to take decisions in the following three ways: (1) by understanding linkages between different legal measures; (2) by reducing the complexity and uncertainty of technical subjects; and (3) by empirically assessing the feasibility and likelihood of the measures' success. It is noteworthy that decisions taken on these grounds might be taken in order to achieve technically and legally sound, feasible and working results – but they also are political in essence.

As for the first strategy of knowledge utilization, the decision was made to build on existing legislation like the IPPC Directive instead of revoking and reforming it completely because neither the regulated sectors nor the regulator saw a sense in doing so (Lefevere 2003, p. 153). After this decision was made at the higher levels in the Commission, the door stood wide open for a number of technical decisions to be taken.

As described above, the core team in the Commission had regular discussion meetings with Farhana Yamin and Jürgen Lefevere, their experts from FIELD. In April 2001, Vis asked FIELD to propose a first draft of the proposal.

The experts took the IPPC directive as a starting point, kept the relevant provisions (IPPC arts 2, 3, 6, 9 and Annex III Lefevere 2003, pp. 185–186), deleted the irrelevant provisions and inserted new ETS provisions. The draft then discussed with the Commission was considered to be a 'perfect' starting point (Interview 9 February 2011b). As a result, there is an overlap in the ETS and IPPC provisions on the coverage of installations, on the coverage of GHG and close mirroring of the permitting procedures (Lefevere 2003, p. 185), thus enabling Member States to introduce one single permit procedure for both IPPC and ETS permits. In addition, the ETS draft proposes an exclusion of emission limit values for GHG covered in the new directive from the IPPC permit (Lefevere 2003, p. 186). According to my interviews, these decisions were taken in a problem-solving mode in close consultation with FIELD experts, aiming to reduce administrative complexity to ensure smooth implementation and to preserve the environmental acquis. In short, knowledge was used to better understand the linkages with other policy measures and was subsequently acted upon.

Second, the decision on which greenhouse gases (GHG) should be covered by the scope of the directive was also made in problem-solving mode at a low level of hierarchy. This is in itself noteworthy because the question of coverage is often seen as one of the three most important design issues for an ETS (Lefevere 2003, p. 159). The decision was made on the basis of the FIELD recommendation related to a similar solution in the IPPC directive. It was widely supported by other expert opinions: BP had reported to the Commission that it had encountered difficulties with monitoring methane in its own trading scheme (Braun 2009, p. 481), and both of the trading schemes in Denmark and the UK focused on CO_2 only. All interviews confirm the view that the original ETS focused only on CO_2 for one single and simple reason: uncertainties of measurement of other gases and the relative ease with which CO_2 can be measured and monitored. CO_2 measurability at that time had an uncertainty of 10 per cent attached to it, whereas CH_4 had an uncertainty of 100 per cent and N_2O of 200 per cent (Lefevere 2003, p. 164). Just as the UK regime has an opt-in clause for those who are able to measure other gases (Lefevere 2003, p. 164), so has the EU ETS since 2008 (Vis 2006, p. 45). Knowledge, in this context, was used to identify the solution that allowed the ETS to start without major implementation

problems in this area. In other words, it was used to reduce complexity and uncertainty.

Just as it is decisive what GHGs are covered by the ETS, so it is of crucial importance to determine the sectors that are covered. For the Commission staff, inspiration was found in both the IPPC directive and in the experience of other experts. FIELD proposed focusing the coverage of the directive on those installations that are listed in Annex I of the IPPC directive to achieve a 'critical mass' (Interview 17 February 2011) of participants in trading that was necessary to establish a functioning market. Such an approach was to cover about 4,000–5,000 installations and approximately 46 per cent of the EU's CO_2 emissions in 2010 (Lefevere 2003, p. 178). The sectors covered by the IPPC directive had already proved that they could integrate the change into their business model (Zapfel and Gardiner 2002, p. 15) and that they could deal with the monitoring requirements of the IPPC directive. The sectors concerned were power and heat producers, refineries, pulp and paper mills, chemicals, iron and steel producers, and cement manufacturers. It was presented to the Commission that such an approach focusing on the largest emitters would spare the smaller emissions sources an instrument that is not as suitable for them as a simple tax (Vis 2006, p. 48).

However, there is a major difference from the option pursued in the IPPC directive which defines the threshold for covered sources to be combustion installations from at least 50 MW. In the end, the climate change unit proposed a 20 MW threshold. This move was inspired by the 25 MW threshold in the sulfur trading scheme in the USA, which was proved to be manageable as well (Interview 17 February 2011). The final decision to propose 20 MW is then nothing but a negotiation chip that was never used and thus remained in the directive until adoption. The decision to investigate the option of covering large industrial installations was made by Delbeke, and so was the decision to go along the lines outlined above (Interview 7 February 2011).

Politically it would have been desirable for the unit to increase the coverage of the scheme in terms of GHG and sectors. The fact that DG ENV did not do so – with the exception of lowering the threshold to 20 MW – is a clear indication that it prioritized feasibility over a potential political gain. In doing so, it followed expert advice from its consultants, business and Member States. The knowledge was indeed used to better understand the problem and the solutions available, and to subsequently make an informed decision about a technical design element. The fact that Member State regimes followed a certain path can be understood as a more political fact than the measurability of CO_2. Just like the 20 MW decision, this feeds back to the argument made above

that in a politicized technocratic environment, politically charged input will contribute to the decision.

Third, with the choice of a mandatory or a voluntary scheme came the choice of a strong and fixed environmental outcome or not. In discussions with experts, it became clear fairly quickly that while a voluntary scheme can only resort to name-and-shame mechanisms, a mandatory scheme could be designed in such a way that it actually ensured the realization of a given commitment. What is more, it became apparent that there was no 'doubt that emissions trading without any sanction will not work. The more severe the sanction, the more likely it is that a pre-determined environmental outcome will be reached' (Vis 2006, p. 46) for one simple reason: without a sanction, there is no incentive to actually reduce emissions or to buy allowances to cover the emissions incurred to meet a commitment. Without a penalty regime, a mandatory ETS would be a paper tiger. This is an empirical lesson learned from US experts who had proved that a high penalty for excess emissions not covered by an allowance are absolutely necessary to ensure the success of a trading scheme (Lefevere 2003, p. 189).

The final draft proposal is consequently pushing 'the prescription of enforcement measures to the limits of what Member States usually find acceptable in an environmental directive' (Lefevere 2003, p. 188). For the first trial period, 2005–2008, the penalty regime is laxer than for the first 'real' trading period from 2008 onwards: in the first, non-compliance is punished with a minimum penalty rate of €50 or twice the average of the market price (whichever is higher), and for the second period, the minimum penalty rate is increased to €100 per ton of CO_2 that is not covered by an allowance.

What all of these decisions have in common is that they were made on the basis of the best available knowledge and in order to ensure the delivery of the objectives of the directive. The desk officers reduced complexity and increased the feasibility and compliance likelihood with their decisions. This was to be expected: a politicized technocracy aims to fulfill its organizational function of delivering on its mandate of producing a technically feasible and sound legislative proposal. In this sense the decisions made were – albeit at least partly political – made according to the logic of appropriateness of a technocracy.

2.2.3 The technocratized debate, the taught consensus: Bottom-up technocracy and knowledge in ETS I

Bottom-up technocracy is a form of politicized technocracy, where a low decisional level is engaged in bargaining and pursues a policy-framing activity while doing so. In order to analyze this conceptual

possibility, we have to look at both the policy officers and the Head of Unit as technocratically oriented staff. At the time of the ETS work, the unit was intellectually rather cohesive after several changes had taken place in 1998. Next to the examples given above, the Head of Unit of the climate change unit, Jørgen Henningsen, was replaced by Jos Delbeke. Henningsen favored command-and-control approaches to environmental legislation (Skjærseth and Wettestad 2010b, p. 318), whereas Delbeke was a burned child after his experience with the failed carbon and energy tax proposals of the Commission. When the USA withdrew from Kyoto, the climate change unit saw a window of opportunity opening up (Skjærseth and Wettestad 2009, p. 112) to push for market-based mechanisms like an ETS. Some authors even claim that the Commission attempted to become the 'fashion queen' of international climate politics (Wettestad and Boasson 2013, p.180; Boasson 2011).

It consequently engaged in what Skjærseth calls 'epistemic leadership' (Skjærseth and Wettestad 2010b, p. 320), a concept that fits well into the case of politicized technocracy that we analyze in the following paragraphs. There are a few instances that we can observe where the climate change unit used knowledge to frame the debate that they initiated. Shaping preferences with the help of expertise thereby forms a rather subtle, yet proven successful, approach to bargaining. Knowledge-utilization strategies in this context are policy-framing in the sense of teaching, though potentially subject to potential epistemic biases. Second, they consist of purposively building consensus among knowledge-carriers and multipliers. Knowledge is co-produced and can change convictions, especially if it spreads thereupon. Third, providing a space for the exchange of expertise can determine the course of a debate and not only educate and inform stakeholder preferences. Thus the knowledge strategy employed by the Commission was a technocratization of the debate.

With regard to the internal framing of the ETS debate, Delbeke and his team had to convince the Commissioner of the benefits of a new approach to climate change. The Commissioner at that time was Ritt Bjerregaard. In the first half of 1998, she was convinced of her team's new approach due to a particular framing of the policy options. The same process was repeated when Commissioner Wallström, who from her own experiences in Sweden was favorable to market-based instruments, took over the portfolio. Using the textbook view on ETS, the climate change unit quickly framed the decision for the Commissioner in such a way that she was willing to experiment with an ETS. The

following frame was set up: taxation does not stop pollution, but simply puts a price on it, whereas an ETS puts a price on carbon and additionally reduces the emissions due to a scarcity of allowances. An ETS therefore provides environmental certainty (Lefevere 2003, p. 167). Taxes are a burden on companies by reducing their competitiveness, whereas an ETS can produce an 'additional revenue stream' and can be designed as 'revenue neutral' for governments (Vis 2006, p. 48).

The climate change unit thus briefed the Commissioner according to its best understanding of the knowledge at hand, effectively introducing her to their cognitive frame of the choice between ETS and taxation. This approach to using knowledge is another form of teaching, with a decidedly strategic element to it – yet it is so clearly in complete accordance with the knowledge that the climate change unit had gathered and was in the process of gathering, that a different presentation of the choices would have been unthinkable for the unit. The real strategic move here is therefore not so much the briefing of the Commissioner by the unit, but the new composition of staff in the unit by the Director General for Environment, Catherine Day, who felt that a new proposal 'would never work if it was not economically rational and sound' (Interview 15 February 2011). The unit itself was still doing nothing but framing policy alternatives, teaching them to their superiors, and associating advantages and disadvantages with them. Arguably, however, they carried a certain epistemic bias with them.

This instance of a technocracy using knowledge brings us back to the ECCP, the stakeholder consultation group mentioned earlier. I have commented above that different interview partners have a different perception of the ECCP, depending on their position in the hierarchy. Just as the policy officers from the DG perceived the ECCP to be mainly a forum for mutual learning, Commission staff from different DGs and the Head of the climate change unit, while emphasizing the learning, seem to understand the ECCP predominantly in another way: 'that was the common platform that we were constructing one meeting after another' (Interview 25 March 2011a). This is in accordance with our expectations about the logic of appropriateness: both the Head of Unit and the staff from other DGs are, due to their function and role, very sensitive to the upcoming bargaining between different parts of the institution. The ECCP, from their perspective, was about building consensus. Knowledge-gathering is an important task, yet in their logic of appropriateness and due to their experience in the other fora that they attend within the Commission, they are well aware that knowledge will soon turn into argumentative weapons.

The ECCP became a place where the Commission had discussions with stakeholders, but at the same time it was a vehicle for capacity-building not only for the Commission but in particular for the stakeholders. The participants were expected to learn at the meetings and, as multipliers and catalyzers, to feed the newly gained knowledge back into their associations (Interview 25 March 2011a). This is true as much for the NGOs that were skeptical and needed to be assured that an ETS would deliver environmental certainty as for business that needed to understand that an ETS creates business opportunities. The Commission was thus not only learning from its experts but also (and some, depending on the hierarchy, might argue even more importantly) the experts were educated by the Commission. The Commission's superior access and control over knowledge thereby 'contributed to change and form the positions and strategies of [most] state and non-state actors' (Skjærseth and Wettestad 2010b, p. 319). In this way the Commission contributed to a consensus that would help to steer the proposal through the decision-making process.

Skjærseth argues that the ECCP participants were composed 'with a view to crafting consensus rather than ensuring broad participation and legitimacy' (Skjærseth 2010, p. 299), and there is good evidence for this. For once, the NGOs present were all in favor of an ETS (one of them was even the Commission consultant itself (FIELD)) and they were chosen so that they would 'disseminate the information in the community' (Interview 23 April 2008). In addition to BP and Shell, who were present and active in all major business coordination efforts and who could prove that a trading scheme is economically beneficial to the ECCP participants (Interview 23 April 2008), Eurelectric contributed with its own simulations based on the scenario-based model Gas Emissions Trading Simulations (GETS). The first two runs of GETS proved that trading was a simple matter, thus addressing the fears of many companies (Braun 2009, p. 481). The fact that Eurelectric and eventually also the Union of Industrial and Employers' Confederations of Europe (UNICE) and the German business association BDI were in favor of ETS also convinced DG TREN (Interview 23 April 2008). In the end, only the chemical industry was still vehemently fighting the proposal (Braun 2009, p. 480). Delbeke and Vis were chairing the debates and made sure to frame the consensus of ETS being both economically efficient and environmentally effective, thus being an instrument that was acceptable to both business and environment interest groups (Skjærseth and Wettestad 2010b, p. 319).

In conclusion, the establishment of the ECCP helped the Commission to gather support for the ETS and its main design principles. It was

also a way to address stakeholders' concerns – just as was witnessed in September 2001, when the Commissioner invited the stakeholders once more, months after the ECCP was officially concluded, for a last consultation on, among other issues, allocation methods. Commission staff felt that this was necessary also because ETS had entered 'the center-stage [of public debate] without any real preparation' of the stakeholders (Zapfel and Vainio 2002, p. 1), and various misconceptions about the ETS needed to be addressed – these are eloquently summarized by Zapfel and Vainio (2002).

Most interestingly, the ECCP served another purpose as well: it contributed to 'rationalizing the debate' (Interview 25 March 2011a) – in other words, disciplining the policy community. The Commission insisted on a factual debate devoid of emotions on the basis of figures and facts. This is a strategy that provides two distinct benefits for the Commission. First, it allows for information-gathering as unbiased as it can possibly be, because the different stakeholders – in particular NGOs and business – balance their biases out. Second, it paves the way for bargaining in later stages, when the Commission can insist on continuing the disciplined, factual debate that it had before. The Commission knew well that it was the central gathering point of information and subsequently had a strategic advantage from knowing the best and the most. This was a strategy that was very purposively adopted: 'That was the game we were playing for ten, 12 years' (Interview 25 March 2011a). Taking these strategies together, the Commission used the ECCP not only to learn but also to educate its counterparts, to inform preferences, build consensus (and thereby alliances), spread knowledge into the policy community and discipline the debate. In other words, the Commission technocratized the debate through the interaction with and education of experts. This is a way of using knowledge that is profoundly epistemic. It focuses on improving the cognitive understanding of a problem and the options for its solutions. Nevertheless, as argued at the beginning, politicization casts its cloud on the utilization of knowledge in the form of strategic decisions that prepare future bargaining rounds.

2.2.4 The sleeping giant: About the absence of top-down technocracy in knowledge strategies during ETS I

In a top-down technocracy, higher decisional levels are concerned with problem-solving and policy-framing. This is a theoretical possibility that requires individual high-level officials to depart from their own particular logic of appropriateness in which they are normally embedded. In rare instances, this happens indeed when directors are appointed in a personal capacity to deliver on a task that is additional to their

normal obligations. One example is the way in which directors formed a modeling group to prepare the review of the ETS directive. Another example is the impact assessment board that is composed of directors and assesses impact assessments. In these instances, knowledge is in fact used epistemically in a puzzling exercise where the directors attempt to find a means to shape the options for a policy proposal in such a way that they can respond to the political realities of the day. Knowledge is used in cognitive ways, though at times thinking is restricted by political constraints.

However, in this particular case, the impact assessment board was established in 2003 and therefore does not play a role in the ETS case, and the director responsible for climate change issued only vague instructions that the emissions trading should be politically feasible and implementable. The Director General felt that 'if you have a team that is competent, you have to let them do it. There is no point in having a dog barking at yourself' (Interview 15 February 2011). He defined the job as convincing other DGs, not as interfering with the work of the team. Commissioner Wallström and her Cabinet only required the development of 'some kind of a trading system' (Interview 8 March 2011) from the DG. She did not get involved much in the design choices, but rather in communicating the proposal and negotiating it with the European Parliament and the Council of Ministers. This can at most be understood as agenda-setting, though not as policy-framing in terms of content, and there are no indications that knowledge was used in policy-framing or problem-solving activities at the high level of hierarchy of the Commission's technocracy.

2.3 Politicized knowledge-utilization strategies in designing ETS I

Just as for the technocratic forms of knowledge utilization, politicized forms of knowledge utilization are dependent on three elements: the organizational nature, the organizational locus of decision and the organizational task. We expect that they converge in such a way that the resulting organizational function is that of power maximization. Consequently, the logic of consequentiality would apply to officials in a politicized environment and they would use knowledge argumentatively in order to increase the influence of their organization – be it their unit or the entire Commission.

When two elements are combined with a third in such a way that two of them are politicized, whereas one is still technocratic, we still

expect a politicized environment. In all three cases, analogous to the cases of politicized technocracy, we assume that the politicized environment will outweigh the technocratic element, thus creating logic of consequentiality and argumentative knowledge utilization. We turn to those instances now for an in-depth analysis before moving on to pure politics.

2.3.1 Fact-based negotiation dynamics: Bottom-up politics and knowledge in ETS I

Bottom-up politics is understood as a low decisional level taking decisions in a bargaining mode. Probably the best example of bottom-up politics in the Commission is what is commonly called the interservice consultation. Interservice consultations are discussions, not unlike negotiations, between different DGs of the Commission. The decisional level involved in this exercise is normally policy officers from all DGs concerned with a given policy proposal. They mirror negotiations at higher decisional levels but, as they are preparing the decisions by Cabinets and Commissioners, they are focused on technical aspects and on separating those issues that are political and have to be solved later from those that can be agreed upon more quickly. This division of labor can be compared to the division of labor in the Council of Ministers between COREPER and the Ministers, though in the Commission it is not national interests that are bargained over but sectoral interests, according to the sectoral differentiation of the Commission into DGs. In this environment, we can expect the policy officers to follow an organizational logic that prescribes them to represent their DGs, yet potentially in a more factually driven debate compared with the negotiations between Cabinets. Knowledge will be used accordingly in an argumentative fashion, though it might be possible for persuasive processes to take place that resemble learning processes. The argumentative utilization of knowledge tends to be increased the shorter the consultation period is. Interservice consultations typically last between two and four weeks and are held four to six weeks before the proposal for a directive is adopted by the College of Commissioners. Whenever this period is reduced, 'political time' is shortened. This is normally a sign for politicization.

The information presented in the following about the different DGs' positions has been gained by interviewing Brussels insiders. The interservice consultation for an ETS was initially launched in mid-May 2001, directly after the ECCP concluded its work. Not only were the other DGs surprised about the speed of DG ENV (Interview 18 April

2008b) but so were interest groups. After the interservice consultation draft was widely leaked to interest groups and the media, heavy lobbying ensued. The interservice consultations that followed were characterized by the dominance of DG ENV, which was able to make use of its 'superior knowledge' (Braun 2009, p. 483) due to the head start that the policy officers had gained during their preparations and discussions with experts.

Once the consultation began, most DGs supported the ETS because of the studies that DG ENV had presented on the economic efficiency of its proposal (Braun 2009, p. 473). DG ENTR, DG Competition (DG COMP), DG TREN, DG Economic and Financial Affairs (DG ECFIN), and DG Internal Market and Services (DG MARKT) nevertheless expressed reservations about parts of the proposal (Braun 2009, p. 483). DG TREN was very skeptical about the proposal, partly because of a different regulatory approach, partly because of an ongoing fight over competencies on the climate agenda and partly on grounds of substance (i.e. disagreement over the interpretation of the IPPC directive). However, it did not believe in Russia ratifying the Kyoto Protocol, and did not put as much effort into the negotiations as possibly would have been necessary. DG ECFIN was busy preparing the introduction of the Euro, but was generally arguing in favor of an economic instrument. DG Taxation was concerned whether its own proposal on the taxation of energy products would be hampered by this proposal, but it eventually fell in line.

The toughest debates were thus held with DG ENTR, which initially had even demanded co-responsibility for the file (Interview 18 April 2008b), and in part with DG TREN. Whereas DG ENV adopted a fact-based strategy, DG ENTR used a political and procedural strategy. Both strategies used knowledge in an argumentative way, albeit in very different forms. The logic of consequentiality therefore played itself out.

DG ENTR was convinced that ETS would, in theory, be a cost-efficient way to implement the Kyoto commitments, yet it was very concerned about the impacts on the competitiveness of European industry. It negotiated all of those procedural demands that could potentially water down the proposal but acquired no substantial concessions: from a change of legal basis that would require unanimity in the Council of Ministers (supported by DG TREN), a longer transition regime, trial periods, to an earlier review. In order to make the case for these procedural demands, DG ENTR needed factual arguments. The problem that DG ENTR encountered in the bargaining with DG ENV was that DG ENV

strategically left it to DG ENTR to find the numbers to substantiate its claims that the ETS could undermine Europe's competitiveness. DG ENV forced it to debate the proposal on the basis of numbers and figures. However, DG ENTR had access only to studies by business that were not to be totally trusted and had to rely on estimates.

In this context, together with the SG, DG TREN, DG MARKT and DG TAXUD, it successfully pushed for an agreement for more studies on the economic consequences of the proposal (which ultimately led to the carbon-leakage argument during the revision of the ETS in 2008). DG ENTR argued that, in particular, the paper and pulp, steel and chemicals industries are exposed to international competition. The competitiveness argument, supported by DG TREN and DG TAXUD, was eventually strong enough to carry demands for a phase-in of the penalty and sanctions regime. Here the argument that stood the test was a reference to the financial risks inherent in the uncertainty of the markets in the first experimental period. The competitiveness argument also allowed DG ENTR to secure a special provision for early movers. Resorting to the argument made in DG ENV studies that a global ETS is even more cost-efficient than a Europe-wide ETS, DG ENTR also managed, together with DG Trade (DG TRADE), to insert a modest link to other trading mechanisms, such as Kyoto's clean development mechanism (leading to the so-called Linking Directive, 2004). Equally, DG ENTR made the argument that cost-efficiency can be improved if the rules both for allocating allowances and for monitoring and reporting are harmonized. DG COMP supported this view with a reference to competition law. Eventually, the Commission adopted corresponding guidelines for the monitoring and harmonized the allocation method for allowances (Lefevere 2003, p. 182).

DG ENTR had a few priorities on which it essentially lost the debate because it could not counter the arguments of DG ENV: the inclusion of more GHG, removing links to the IPPC directive (supported by DG TREN) and making the ETS a voluntary instead of an obligatory scheme. On all of these issues, DG ENV had had the opportunity to test its arguments over the course of two or three years in the ECCP and with its experts. By the time of the interservice consultation, its arguments were watertight. In that sense, the knowledge-utilization strategy had been to use test runs for arguments in the form of stakeholder consultations. The only concession made was that once a GHG can be monitored sufficiently it can become part of the ETS. In conclusion, DG ENTR as possibly the most impactful non-lead DG in the interservice consultations successfully pushed for about a third of its demands, and it

was successful only in those cases where it had arguments that could be substantiated by numbers and corresponded to the argumentative frame established by DG ENV. DG ENV had managed to define the logic of appropriateness for the bargaining in which it was expected by all participants to argue on the basis of facts and figures – a logic that obviously benefited those who were best prepared: the lead DG. DG ENV had strategically built up knowledge in the past to be able to argue its case during the decision-making process. This is why, as Braun observes somewhat provocatively, the directive 'moved essentially unchanged' through the interservice consultation (Braun 2009, p. 483).

2.3.2 When arguments drive choices: Top-down politics and knowledge in ETS I

Top-down politics is found in a case where a high decisional level takes a decision while engaging in problem-solving. This is a typical instance of a Commissioner, Cabinet, Director General or Director interfering with the work of the policy unit. As such, this is a case that is deplored by policy officers who feel that 'the proposal is screened to early with regard to it being politically opportune or not' and that the shadow of the political bargaining 'is anticipated prematurely, thus rendering proper technical work impossible' (Interview 18 April 2008b). We expect that in such a situation the behavioral logics of the different officials will clash. A high-level official will focus on power maximization (logic of consequentiality), whereas a low-level official will focus on mandate delivery (logic of appropriateness). As the high-level official has the power of decision-taking, he will ultimately get his way. Knowledge, in these cases, is used as an argument.

The best example of this might be the discussion about the allocation method between the higher and lower levels of the Commission. DG ENV officials had presented the options of auctioning or grandfathering (as described above) to Commissioner Wallström. She, as the DG's 'sounding board' (Interview 25 March 2011a), also listened to the concerns of Member States. In essence, she tasked DG ENV to find an argument and a solution 'that possibly is not perfect, but can' convince Member States. The same goes for the Director General who had consulted with other DGs. DG ECFIN and its Cabinet were against grandfathering as a defined method of allocation for 2005–2008, and DG TAXUD was, in principle, also favoring auctioning. DG TREN, on the other hand, argued with DG ENTR and Industry and their Cabinets that auctioning would impose high costs on industry and should therefore not be considered.

The Commission knew from the experience of the US sulfur-trading scheme that overallocation can render the entire trading system ineffective. In the USA, policy-makers had issued the allowances for a period of 30 years upfront in a manner which turned out to be too generous. DG ENV therefore proposed periodic issuance of an allowance every five years to reduce the distributional stakes and be able to flexibly react to the market situation over the course of the ETS (Zapfel 2007, p. 36). DG ENV also pointed out that decentral allocation by the grandfathering principle implied the risk of overallocation (Interview 25 March 2011a). This argument could not survive political considerations: auctioning was considered by the Cabinet as economically a 'very good thing, but we knew that it would never never work. You could never adopt such a thing' (Interview 8 March 2011). From the experience in the USA, DG ENV experts had signaled that industry would be much more likely to accept the ETS if it was presented as a flexible mechanism that incurs no more costs than absolutely necessary. The concession on the allocation method constituted a guarantee that the ETS would not be a disguised energy tax taking away money from companies (Interview 25 March 2011a). 'We had to go for grandfathering, it was absolutely necessary. Otherwise we would have had endless discussions on what this would cost and who would pay what' (Interview 8 March 2011).

Eventually, the decision was made by Commissioner Wallström who, in discussion with her officials, decided to make auctioning the major bargaining chip vis-à-vis the energy-intensive industries and concerned Member States. She asked DG ENV to make a strategic move away from auctioning for the period between 2005 and 2008 to increase the political chances of the proposal. The periodic allocation enabled the Commission to introduce auctioning as a method of allocation at a later point if the political climate was more beneficial. This move shifted the complex and technical task of establishing emissions targets for the installations that might have overstretched the capacities of the Commission to the Member States (Interview 17 February 2011). In what seems to have been an attempt to depoliticize the debate, the Commission furthermore proposed to establish a harmonized allocation method for the period from 2008 onwards through comitology after adoption. The same applies to the revision of allocation criteria (Annex III) and the review of national allocation plans. The sheer size of this task became apparent only after the proposal was adopted and put the Commission in a position where it could influence the Member States in many ways (see, for instance, the studies that it published and the guidance

that it issued on national allocation plans: Harrison and Radov 2002; PriceWaterhouseCoopers and ECN 2003; European Commission April 2003, January 2004).

This episode shows that both the input of external experts from the USA and the increased lobbying from Member States and interest groups tipped the balance in favor of a choice that increases the chances of passing the legislation but weakens the proposal's environmental effectiveness. An argumentative knowledge-utilization strategy can explain here why a technically suboptimal solution was chosen: first the most convincing argument was identified, and then design choices were made that would reflect this argument. In the words of an interview partner, the policy officers 'bring the arguments to the table' but the Head of Unit has 'to walk up the hierarchy to sell the project. You needed good arguments' and the role of the Head of Unit, together with the Cabinets, was to make those decisions that could be argued best politically (Interview 25 March 2011a) and were still acceptable in terms of impact. Knowledge in this context served only as a hook and as selected expertise to realize a politically advantageous solution.

As a side note, it is interesting to observe that the DGs opposing auctioning had put their concerns forward in the form of arguments that concealed their ideological preferences. The design choices made by DG ENV addressed these arguments, without solving the more fundamental concerns that were not expressed. Entrapped in political rhetoric, the other DGs had to accept a solution that they actually did not want.

2.3.3 Depoliticizing political narratives: Technocratic politics and knowledge in ETS I

Lastly, before turning to pure politics, we will briefly discuss the variant of the independent variable of logic of appropriateness, where a high decisional level frames policy while engaging in bargaining. This applies in particular to Directors and Director Generals, as well as Cabinets and Commissioners who are facing their counterparts and are trying to frame the policy proposal in such a way that it is beneficial to their interests. The logic of consequentiality focuses here on power maximization. Other than for technocratic layers of the Commission, knowledge is being used not to deliver on the mandate of a technically sound proposal but to defend, justify and legitimize the choices made.

A good example of this behavior is the interview that Catherine Day, Director General of the Environment until 2005, gave to euractiv in 2003 (euractiv.com 2003). It is a summary of the frame that she and others set up at the beginning of the bargaining process within the

Commission. The strategy consisted mainly of five elements: emphasizing the inevitability of meeting Kyoto targets, pointing to scientific results that prove climate change, referring to the cost-efficiency of the ETS instrument, drawing attention to the widespread support by stakeholders and appealing to the need for EU leadership to achieve a strong result in the international negotiations. Out of those five, two or three invited particular reference to expertise. ETS was presented as a market-based instrument that turns a burden into a business opportunity. Day and others repeatedly referred to studies done by DG ENV (notably the ones mentioned above by ATU) proving that economic development and environmental protection reinforce one another (euractiv.com 2003). They also referred to the Intergovernmental Panel on Climate Change and its reports not only to emphasize that climate change is real and dangerous but to assess the magnitude of investment needed. With the ETS, they argued, these investments are affordable, and they compared them with the costs for non-action (euractiv.com 2003). While doing so, they presented the ETS as a measure that was thought through and based on rational economic calculations. The success of this way of framing the policy debate can only be understood when realizing two particularities of the climate debate at this time.

First, climate change as such was still scientifically contested, and the Commission was among the first to attach numbers to the costs and benefits of policy action. The Stern Report was not to be published for a few years (Stern 30 October 2006). Second, by making an economic case for the ETS, it forced its opponents to counter its arguments with its own studies and numbers that were, over all, not yet reliable or commissioned. This is even more noteworthy because the Commission's approach to impact assessments was still in its infancy. Whereas no full-fledged impact assessment in today's understanding was produced for the ETS directive, the quantitative assessments constituted one of the very first instances of the Commission defending its policies with models, numbers and studies in a structured way (Interview 3 February 2011a). In 2003, there were only eight directives in total that had impact assessments attached to them, of which the ETS was one. We can therefore observe the same strategy that was also employed at the interservice level of depoliticizing the debate as much as possible and additionally justifying one's claims with economic calculations.

2.3.4 Legitimizing the force of argumentative weapons: Politics and knowledge in ETS I

In the case of pure politics, high levels of hierarchy engage in bargaining to take a decision. This is typically the case when members of Cabinets

meet in so-called special chef meetings, when heads of Cabinets meet in so-called hebdo meetings or when the Commissioners meet in their College meetings. In all of those instances, we expect the logic of consequentiality to be at work, which requires officials to maximize the power of the parts of the organizations that they represent. Knowledge in such a context will be used solely for argumentative purposes.

The main negotiations on the ETS happened at an interservice level, but the Cabinets were still engaged in very intensive debates before the meeting of the Commissioners (Interview 8 April 2008). Among other issues, such as the allocation method question, there were strong efforts to change the sectors that were covered by the ETS. Whereas the power sector welcomed being part of the ETS as it foresaw a profit (Wettestad 2009, pp. 309–310; Skjærseth and Wettestad 2010b, p. 319), steel, cement and chemicals were trying hard not to be covered by the ETS. In the end, chemicals won the day due to direct intervention in favor of their exclusion by one Commissioner (Interview 18 April 2008a). The main reasons for the successful exclusion were the powerful opposition by the European Chemical Industry Council (CEFIC), the European chemical association, and a tactical consideration that excluding the chemicals from the directive would undermine the internal opposition to an ETS in Germany (Skjærseth and Wettestad 2010b, p. 319).

It is unlikely that much expert knowledge was used in making the case for chemicals or other energy-intensive industries because the distributive effects such as carbon leakage and windfall profits were not yet addressed in the original ETS directive (Wettestad 2009, p. 312) and because energy-intensive industry had, during the ECCP discussions, 'slept in class' (Wettestad 2009, p. 315). DG ENV based its case on the argument that the costs for complying with Kyoto for the industries and for general society would be even higher if the energy-intensive industry was not covered by the ETS (Vis 2006, pp. 56–57), but to no avail. At this point, interests had a stronger influence than scientific arguments, and the argument of industry that emissions trading represented a 'cap on growth', especially in the absence of international action, was – though wrong (Zapfel and Vainio 2002, p. 18) – strong enough to give legitimacy to the exclusion of the chemical sector.

Before the meeting of Commissioners, Wallström was in close contact with some Member States, among them Germany. Germany had underestimated the speed of the Commission's decision-making process in this case and the momentum behind the proposal. Germany was concerned about the competitiveness of its industry, and the German Commissioner, Verheugen, at this time responsible for Enlargement,

supported the German Minister for the Environment, Trittin, in his efforts to water down the directive in a few instances. Germany wanted to have a provision that would allow companies to pool their efforts, and another one that would enable them to opt-out of the scheme. This proposal had initially been included in the leaked draft from summer 2001, but Commissioner Wallström, in an astute move of political wit, took the proposal out, thus forcing Germany to spend the next ten months negotiating it in again, thereby diverting the country's attention from bigger design choices (Interviews 8 April 2008, 23 April 2008, 17 February 2011). Whether recourse to expert knowledge was taken in this instance could not be reconstructed.

The College of Commissioners discussed the ETS at two consecutive meetings on 17 and 23 October (European Commission 2001a, 2001b). Present at this meeting was, apart from the Commissioners and their advisers, staff of the SG, the legal service and the communication team, Jos Delbeke as Head of Unit of climate change. The discussion about the level of Cabinets and Commissioners was at times heated, though it is assessed to have been relatively smooth overall. The 'flagship measure' (Delbeke 2006b, p. 7) ETS was of political importance to Commission President Prodi, who was delivered by Commissioner Wallström and wanted to signal EU leadership. He was never interested in the details of the proposal (Interview 15 February 2011) but he understood the political importance of it.

At the meeting of Commissioners, Wallström reiterated the main political and economic arguments in favor of the proposal, in particular pointing toward the need for the EU to take leadership in implementing Kyoto. It was hoped that a 'single market in emissions permits among 15 Member States' would eventually secure a buy-in by non-EU states (Zapfel and Gardiner 2002, p. 16). Well prepared by Delbeke and her Cabinet, she used scientific arguments in particular to back up her position on the competitiveness aspects of the ETS, pointing out that covering about 46 per cent of the CO_2 emissions with 4,000–50,000 installations would cost only a maximum of 0.3 per cent of the EU's GDP. Commissioners for Enterprise Liikanen and Commissioner for Internal Market and Services Bolkestein took a skeptical stance toward the instrument and spoke against it in the meeting. While there was not a formal vote, it is clear that had there been one, they would have belonged to the minority of Commissioners in the College voting against the ETS (Interview 24 February 2011a). The German opposition, on the other hand, manifested itself in the Commission but balanced itself out: whereas Verheugen as Commissioner for Enlargement spoke

out in favor of derogations for German industry, Schleyer, the second German Commissioner and a Green politician, spoke in favor of the proposal.

The main issue of contention, the allocation method, had already been solved before and so, in the end, the discussion was rather short because 'we could show that ETS was absolutely the most efficient and cheapest measure for industry in comparison with taxes or quotas' (Interview 8 March 2011) – DG Environment had found the perfect legitimization for its position. Wallström fought back attempts to temporarily exclude certain sectors from the ETS during the trial period 2005–2008 by pointing out that this would endanger the stability and efficiency of the market and complicate the administration of the system – arguments that were prepared and tested by DG Environment in the discussions that they had conducted with experts and in the ECCP. One element that might have helped her in the discussion was that even though the Commissioners for Enterprise and for Internal Market were skeptical about certain provisions, they could not determine what exactly 'they meant to the industry' (Interview 8 March 2011). The fact that DG Environment and its Commissioner had by far the best understanding of the proposal crucially helped them in defending it. Knowledge, in this context, becomes an argumentative weapon that needs to be matched by arguments with equal force to win the debate.

2.4 Conclusion: Climate policy between learning and strategic entrepreneurship

ETS I leaves us with a rather well-differentiated understanding of different parts of the Commission. The empirical study of the emergence of the Commission proposal for an ETS has shown that knowledge was used differently at distinct stages of the policy formulation. This case study argued that the organizational function as defined by the organizational character determines the demand for knowledge. Whenever the organization focuses on mandate delivery, the logic of appropriateness inherent in this organizational strategy defines the behavior of its officials as one where they aim to improve the delivery of the mandate through cognitive knowledge utilization. In turn, whenever the organization focuses on power maximization, the logic of consequentiality will demand from its officials that they use knowledge to argumentatively support preferences already that have already been formed. This case

study made a modest first attempt to chart this territory and identified several knowledge-utilization strategies linked to and caused by the logic of appropriateness or consequentiality inherent in different organizational strategies. First, those variants calling for a mandate delivery focus.

In a technocracy, epistemic learning is of utmost importance. The units collect knowledge as widely as possible, consult with experts in formal and informal settings, and commission studies with the aim of identifying policy options and understanding their advantages and disadvantages. Next to the consultation on a Green Paper, one of the main tools that served this purpose was the ECCP. Additionally, legal consultants were contracted to compensate for the lack of legal expertise in the services. They provided the first draft of the proposal. Experts from the USA were able to provide additional input on the practical implications of an ETS. The last important element of technocratic knowledge utilization in this case was the formation of a team of economic modelers. They provided in-house expertise on the distributional consequences of different policy options.

In a politicized technocracy, knowledge is used to inform technical decisions and to understand linkages between policy measures. Legal advice from FIELD was instrumental in identifying the links and gaps between different directives and to integrate the new directive into the logics of the existing acquis. It could be observed that decisions were taken whenever the choice between two options was merely technical. One example is the low 20 MW threshold that was set in ETS I. It was also interesting to note that advice can be disregarded. One example of this behavior is the rejection of the FIELD proposal for banking allowances in ETS I. This is an instance where a Commission official purposefully reduced the possibility of politicized decisions interfering with the carbon market.

In a bottom-up technocracy, knowledge is used to persuade. Preferences are shaped, consensus is built and debates are informed with the help of knowledge capacity-building or, in other words, teaching. This case study shows some instances of 'epistemic leadership' (Skjærseth and Wettestad 2010b, p. 320). This knowledge-utilization strategy seems to have two components: competitive knowledge advantage (see below) and favorable policy-framing. The climate change unit used the knowledge that it had amassed to frame the debate that it initiated. Shaping preferences with the help of expertise thereby forms a rather subtle yet proved-to-be-successful approach to bargaining. Once all stakeholders

agree to the same cognitive frames, it will be difficult to argue outside of it. Learning processes that clearly took place in the ECCP groups thereby contribute to reducing political contentiousness.

It has been assumed that knowledge is used to inform decisions within political constraints in a top-down technocracy. However, in this case study, it was not possible to investigate this claim. The Impact Assessment Board had not yet been founded and other instances of top-down technocracy were also not observable.

Second, we are now turning to those four variants that have a power-maximization focus.

In bottom-up politics, knowledge is used to substantiate claims and decisions that have already been taken. Arguments that were tested before in various policy fora are used in factual debates that in reality are bargaining situations. In fact, DG ENV adopted a knowledge-utilization strategy that was based on exploiting its knowledge advantage. By doing so, it literally outsmarted other DGs, which had to counter the level of its expertise.

In top-down politics, knowledge is used – analogous to top-down technocracy – to inform decisions. However, in this case, knowledge is used to realize political advantages and to design politically feasible solutions that have strong argumentative hooks attached to them. The most interesting example from this case study is the way in which Commissioner Wallström used the allocation method as a bargaining chip. She based her decision for this move on expertise gained from abroad, namely the USA. In fact, the entire decision-making process on allocation methods followed logics that were not conducive to expert advice: first, the most convincing argument was chosen, and then design choices were made that would reflect this argument.

In technocratic politics, knowledge is used strategically to justify one's position in a depoliticized debate that has strong bargaining elements. One of the most evident lessons is that political story-telling has a major role to play. The cost-effectiveness of ETS made for a perfect justification. Market-based policy instruments carried strong political legitimacy in this period. The same applies to politics, where knowledge serves as an argumentative weapon that legitimizes the position, interest and preference that an actor has. Commissioner Wallström used the abovementioned political narrative extensively.

In this case study, we have identified some first strategies of knowledge utilization in the environments of technocracy and politics. The organizational function of either mandate delivery or power maximization seems to play a significant role in determining whether knowledge

is used cognitively or instrumentally. In the following, we will assess the review of the ETS Directive in late 2000 and how the Commission continued to use knowledge in the same field. It will be interesting to see how far the Commission played a long game, enabled learning processes or used knowledge already gained to defend existing preferences from the experience of ETS I. New knowledge-utilization strategies will emerge and existing ones will be further refined.

3

The Commission's Puzzling and Powering over the Revision of the Emissions Trading Scheme

3.1 Introduction: Correcting the shortcomings of the past

The revision of the ETS was foreseen for 2008. The Commission's work to publish its proposal is a perfect example of a purposeful adjustment of existing policies. It therefore combines instances of learning and – rather than learning for adaptation – of planned 'instrument sequencing', where a more interventionist option follows an unsuccessful softer policy option (Gunningham et al. 1998, p. 35). In the introductory paragraphs of this chapter, I will introduce the reform pressure that the Commission had to react to.

In the following, we will then turn to different instances of knowledge utilization in the revision of the ETS. In doing so, we will assume that some parts of the Commission are more likely to resort to problem-solving, whereas others tend to bargain. First, we will look into more technocratic arenas within the Commission (defined as pure technocracy, politicized technocracy, bottom-up technocracy and top-down technocracy). In these arenas, I argue that the logic of appropriateness rules the behavior of the officials. They would consequently use knowledge predominantly to epistemically master a problem in order to deliver on the Commission's mandate to produce scientifically sound and feasible policy proposals. Second, we will look into more politicized arenas within the Commission (defined as bottom-up politics, top-down politics, technocratic politics and pure politics). Here, the behavior of officials is ruled by the logic of consequentiality. They use knowledge mostly argumentatively to justify existing preferences and to maximize their power.

When DG ENV set about revising the ETS, it had just digested the excruciating process of ensuring that the Member States implemented the initial ETS in such a way that the carbon market could indeed

function. Not surprisingly, establishing a new market from scratch had resulted in numerous minor and major hurdles to overcome. The decentral implementation of the European ETS market in the Member States was challenging for the Commission, to say the least.

When the first implementation round started, the Member States were asked to devise so-called National Allocation Plans (NAPs). Differences in interpreting and transposing the directive's provisions became very visible (Betz and Sato 2006, p. 351; Betz et al. 2006, pp. 387–394). As a result, the Internal Market was distorted due to a lack of harmonization in the scope of the directive (Zapfel 2007, p. 16), differing levels of ambitions on national caps on emissions and the associated allocation rules (Zapfel 2007, p. 16). We will turn to this problem later, but it led to windfall profits and significant market distortions. On top of that, after cuts by the Commission, the Member States still allocated allowances for 60 Mt of CO_2 in excess per year (EEA) (27 November 2007), equaling an overallocation of a staggering 3 per cent and an allowance surplus in 19 Member States (Bekkhus and van Hecke 2008, p. 128). The environmental benefits of the ETS were therefore called into question, next to the negative business impacts.

In the space of several years, the Commission struggled to impose harmonization on the different national versions of the ETS. To ensure timely delivery of the envisaged targets, it proactively intervened. It offered an externally drafted overview study of allocation rule policy options (Harrison, JR. and Radov 2002), and further guidance from a study commissioned from a major consultancy firm (PriceWaterhouseCoopers and ECN 2003). Additionally, in 2003 and 2004, the Commission published a rather pragmatic non-paper on the steps necessary to draw up a NAP (European Commission 1 April 2003), and an allocation guidance paper (European Commission January 2004), including a 'hierarchy of and linkages between mandatory and optional criteria' (Zapfel 2007, p. 21).

In this way, the Commission established itself as a neutral 'arbiter between conflicting interests' (Zapfel 2007, p. 22), and as the ultimate manager of European-wide technical expertise. It was also a way to pursue its 'tortoise ("slow and steady wins the race") entrepreneurship' (Wettestad and Boasson 2013, p. 54). By establishing themselves as 'faithful servants to member states', the Commission officials could 'set in motion a dynamic that could lead up to the system they themselves preferred' in the long term (Wettestad and Boasson 2013, p. 77).

Notwithstanding Commission assistance, Member States and the Commission encountered various implementation problems. In the first

round of NAPs, the Commission had to request 14 Member States to lower their proposed national caps in order to reduce a surplus of 290 million allowances in the system (Zapfel 2007, p. 25), equaling 4 per cent of the allowances in the market (Massai 2010, p. 5). Free-riding and moral hazards were common during the cap-setting exercises, with Member States attempting to give their industry a competitive advantage from generous allowance allocation (Zapfel 2007, p. 30). In the second round of NAPs, the Commission's dissatisfaction went so far that it decided to take eight Member States, among them Austria, Italy and Spain, to court for infringement proceedings (Massai 2010, p. 5). Devastatingly, seven Member States in turn challenged the Commission's decision to reject their NAPs in court (Bekkhus and van Hecke 2008, p. 130). Massai even claims that this was done 'systematically' (Massai 2010, p. 15). In the case of Estonia and Poland, the Commission required that its PRIMES model should be used for the calculation of the overall cap. In rulings that embarrassed the Commission, the court decided in 2007 that the Commission had no power to do so and annulled the decisions (Vedder 2010, p. 61). One of the outcomes of additional privately filed complaints (Bekkhus and van Hecke 2008, p. 130) was that the court factually invited private companies to challenge the Commission on the grounds of allowing inadmissible state aid in relation to the NAPs (Vedder 2010, pp. 63–64).

In academia, the consensus is strong that the first ETS years were a failure (Grubb and Neuhoff 2006b; Sachverständigenrat für Umweltfragen (SRU) April 2006; Egenhofer 2007; Convery et al. June 2008; Hey 20–21 June 2008, pp. 8–9; for a particularly excruciating criticism, see Open Europe August 2007). Facing internal market distortions, insufficient implementation measures by the Member States, environmentally ineffective ambition levels in cap-setting, increased administrative costs and – on top of that – painful legal defeats at European judicial instances, the Commission clearly felt a need to react.

The Commission considers the first years as a learning period and the challenges that it encountered as 'teething problems' (Egenhofer 2007, p. 455) – in fact, it never expected a fully functional market by 2004 or 2005. The ETS had been purposefully designed for review after the first two trading periods. The Commission had foreseen that the prices on the ETS market would be volatile, but possibly did not expect the decentral NAP process to lead to such drastic distortions as in the case of Italy, which proposed a national cap in the first NAP that exceeded the Italian emissions by the total amount of emissions in Sweden (Grubb et al. 2005, p. 128). Subsequently, the Commission started to advocate for a

centrally set European cap on emissions, as well as for putting an end to the NAP submission process (Massai 2010, p. 15). This chapter therefore tells a story of how the Commission turned a failure into a learning experience and used politically induced design flaws to strengthen the ETS to transform more clearly into a 'Single European Market type of instrument' (Wettestad and Boasson 2013, p. 56). The complexity of the review process was comparable to the effort of drawing up the original directive (Interview 24 February 2011a). Focusing on the role of knowledge in this exercise should allow for illuminating insights.

3.2 Technocratic knowledge-utilization strategies in revising the ETS

3.2.1 Cutting paths into the maze of interests: Technocracy and knowledge in ETS II

As a first step to understanding the Commission's ETS II proposal, it makes sense to look at what I call the technocratic arena of the Commission's policy-making. This level is found at the beginning of the policy cycle, where a desk officer at a low organizational decisional level fulfils their tasks of framing policy options and attaching advantages and disadvantages to them, thus preparing the decision in units higher in the organizational hierarchy. The role that the desk officer is expected to play is one of preparing decisions in a technocratic, problem-solving fashion, as well as executing decisions in the form of shaping a policy principle into a legal phrasing. We would expect that the logic of appropriateness for such a role in the organization is one of mandate delivery and consequently that a desk officer seeks knowledge to cognitively grasp a problem and identify policy options. In the ETS II case, the main decisions for the scope of the directive, as well as the understanding of carbon leakage and available allocation mechanisms were shaped at the technocratic level. The policy officers had to make sense of the existing debates, structure and weigh the different claims to truth against one another in order to make policy proposals.

First, we look into the deliberations over the potential scope of the revised ETS directive. The scope had become a pressing issue because the Commission had been drawn into legal battles over the legitimacy of the limited scope of the ETS by those companies that were subject to the ETS and felt at a disadvantage when competing with companies that were not within scope (European Court of Justice (ECJ), Court of First Instance, of 10 April 2008; ECJ, Court of First Instance, of 16 December 2008). Until late 2008, the ECJ had ruled favorably for the Commission,

but the legal risk persisted in the moment of drafting. The policy officers used three strategies to better understand the lineages of the debate: studies, a consultation forum and interservice discussions.

An informal taskforce of several DGs accompanied the drafting work. It was formed at the insistence of the SG and emerged out of the group of people that had led the NAP assessment. It consisted of representatives of DG ENV, DG ENTR, DG TREN, DG ECFIN, the SG and the Legal Service. This unofficial taskforce was 'very active' (Interview 16 February 2011b) and delivered 'crucial' help in preparing a draft (Interview 16 February 2011b). As one participant observes, 'we are rarely able [...] to look at a project looking beyond the silos of our DG. [...] Creating synergies is incredibly difficult to this degree' (Interview 24 February 2011a). Consequently, the work of this informal taskforce as a second sounding board among experts needs an appraisal as well as a forum for in-depth content discussions. One could potentially call it an in-house consultation mechanism. It is interesting that the SG was one of the driving forces of this coordination to ensure coherence across the services. To the extent that this informal taskforce served as an arena for interservice consultations, it is addressed under bottom-up politics.

The discussion about the scope with regard to the potential inclusion of new sectors or GHGs was clearly shaped by the ECCP, the Commission's stakeholder forum (Interview 22 February 2011). As a procedural repetition in comparison to ETS I, the legislative drafting was preceded by another version of the ECCP, just as announced in a 2005 communication (European Commission 2005b). ECCP II had six working streams, among them one working group on the ETS review (WG ETS ECCP II). Its four meetings from early 2007 focused on (1) the directive's scope; (2) compliance and enforcement mechanisms; (3) harmonization and predictability; and (4) linking the ETS with third-country schemes. Stefaan Vergoote and Jürgen Lefevere (DG ENV) chaired the working group ETS ECCP II. Policy officers from DG ENTR, DG TREN and DG ECFIN also took part. The ECCP came to the conclusion that the inclusion of coalmine methane and similar gases would be too cumbersome to manage, whereas other gases could be safely included. My interviews testify that 'evidence played a substantial role' in this debate (Interview 24 February 2011b). In these discussions, the Commission officials benefited greatly from the set-up of the ECCP process:

> I think [...] it was really a way to get people together around something [...] Having all the people together in a meeting room is

> different than reading a lot of official papers which have been posted on a website, in terms of interaction it is a better tool. It also allows for [...] all these technical things [to be discussed in-depth and in person].
>
> (Interview 24 February 2011b)

It was also helpful for the Commission to understand in the ECCP consultations that its preferences were in sync with the preferences of the stakeholders. The aluminum sector, for instance, stepped forward and asked to be included to counter the increase of their indirect energy costs and to evade further climate and energy policies. Here, the argument was accepted that even 'sectors with high marginal abatement costs are included [...because] it is cheaper for them to contribute through this [system, i.e. ETS] than through their own reductions. That was a philosophy agreed in the ECCP meetings that carried through' (Interview 22 February 2011). The same applied to the petrochemicals and ammonia sectors.

In addition to the ECCP, studies were commissioned, for instance on N_2O, 'to prepare the ground on technical elements and invited technical consultants in to get objective insights' (Interview 16 February 2011b). The ensuing and concluding impact assessment clearly showed that 'it made sense' to include some new gases (Interview 16 February 2011b). The following recommendation eventually led to an expansion of the scope regarding gases by 6–7 per cent (Massai 2010, p. 19). With the extension of the scope toward more gases and more sectors, the Commission increased the ETS coverage by 140–150 Mt CO_2 (Bekkhus and van Hecke 2008, pp. 142–143). The Commission officials therefore used stakeholder consultations and studies to understand the consequences of a potential scope extension and to map the preferences of stakeholders in the debate. Where consensus prevailed, decisions were considered to be technical and made at a low level of hierarchy.

Second, we are turning to the concept of 'carbon leakage', which won a certain prominence and thus merits in-depth discussion throughout the ETS II chapter. It is a very interesting concept because it spoke directly to the minds of the trained economists in DG ENV who drove the climate agenda. The business community introduced the concept of carbon leakage (much to the dismay of the NGO community which has not found an appropriate counter-argument until today (Interview 28 March 2008)). Carbon leakage 'refers to the relocation of production capacity and thus export of GHG emissions to non-Member States as a result of higher costs imposed within the EU's jurisdiction' (Vedder

2010, p. 47). In fact, the ETS has similar consequences as a tax on carbon or an import tariff (Vedder 2010, p. 47, fn. 42).

The basic underlying idea of carbon leakage is the claim that an ETS increases the price on carbon. Grubb calculated that the annual emission allowance value was up to €66 billion and thus had the potential to 'affect the costs of key industrial sectors more than any previous environmental policy – perhaps more than all the others put together' (Grubb and Neuhoff 2006a, pp. 9–10). The price increase could lead to companies relocating their activities outside the EU to remain competitive. Emissions, however, would not be reduced but simply shifted to another country – CO_2 'leaks' out of EU territory. (For a more elaborate explanation, see Clò (2010) or the special issue of Climate Policy (Grubb and Neuhoff 2006a, p. 7).) In short, the carbon leakage point of view is a catch-all argument in the eyes of the industry that effectively makes a mockery of the entire ETS endeavor – unless mechanisms are found to compensate them.

On a technocratic level, the ECCP played an important role in illustrating the existing different arguments and interests on carbon leakage. Whereas Commission officials involved in the ECCP II consultations associated ECCP processes with 'a long-standing principle of cooperation and involvement. [...it] is usually quite convivial [...], the atmosphere is quite good' (Interview 24 February 2011b). The dynamics had also changed in comparison with ECCP I: 'short-termism trapped back into the debate to some extent. People were basically batting on their own, as you say in cricket, for their own interest a bit more' (Interview 25 March 2011b). In essence, all of my interviews and academic literature converge in a description of a rather politicized stakeholder dialogue: 'minds were less free, less open than in 2000' (Interviews 9 February 2011b, 24 February 2011a).

The literature claims that there are several reasons for this new dynamic: a larger number and diversity of participants in comparison with ECCP I (Skjærseth 2010, p. 301) participated with a greater level of understanding of the political and economic interests at stake. Additionally, stakeholders such as the energy-intensive industry were better organized and acted in alliances (Wettestad 2009, p. 316). The participants in ECCP II were also more politicized, and industry in particular had an interest in 'straightening some things out again' (Interview 17 February 2011). The energy-intensive industry had finally 'woken up' (Wettestad 2009, p. 317). In the ECCP II, energy-intensive industry was represented by ten different federations and took close to a third of the available speaking time (Wettestad 2009, p. 315). Accordingly,

discussions were 'much more concrete than we ever were in the ECCP I discussions' (Interview 9 February 2011b) in discussing particular individual interests.

ECCP II was therefore a perfect forum for Commission officials to map and understand the debate among stakeholders. The Commission took careful notes on the areas of both agreement and disagreement in the ECCP. They considered both the discussions between the stakeholders and experts, and the expertise gained, to be 'very useful' (Interview 24 February 2011b). Faced with the carbon leakage argument, it was the task of the desk officers to establish what part of the argument was factually correct and what part could be discarded as political rhetoric. DG ENV could rely on a number of studies that were already under way. Its conclusions were threefold:

- Most sectors are either not affected or not as strongly hit as previously argued (Ratnayake 1998; Oberndorfer and Rennings 2007).
- Some industries, notably energy-intensive industries such as cement, aluminum, steel, pulp and paper, as well as refining, would in fact be seriously affected (McKinsey & Company and Ecofys 2005; Demailly and Quirion 2005; Ecofys December 2006; Demailly and Quirion 2006; Smale et al. 2006; Bleischwitz et al. September 2007; van Asselt and Biermann 2007; Hourcade et al. 31 December 2007, p. 6; Quirion 2009, p. 580), and the particularly recommended Hourcade et al. study (31 December 2007, p. 6).
- Energy-intensive industries have higher 'dual costs' (Skodvin et al. 2010, p. 860) due to the introduced carbon price, and their limited ability to pass on the rising electricity prices to their consumers (Reinaud 2003, 2005, 2008).

It is interesting to note that one of the most successful lobbying strategies in getting the message of carbon leakage across was a science-based approach taken by the pulp and paper industry. The pulp and paper industry performed an impact assessment together with DG ENV and two consultancies (McKinsey and Poyry 2007), which eventually led to an appraisal by the Commission for the constructive engagement of this part of the industry (Nilsson et al. 2008, p. 16). Against the backdrop of a multitude of studies confirming the potentially negative effect of the ETS on competitiveness and environmental aspects (Egenhofer 2007, p. 458), DG ENV eventually concluded in its impact assessment that achieving the 20 per cent emission-reduction target without solving the carbon leakage problem 'could lead to a rise in emissions beyond

business as usual in other world regions equal to 2.5 per cent of EU27 emissions' (European Commission 23 January 2008a, p. 17). It thereby acknowledged the existence and real consequences of carbon leakage and thus turned it into a political problem that had to be addressed at higher levels in the Commission.

However, the top of the hierarchy in DG ENV as well as the Cabinet remained unconvinced about the carbon leakage argument and preferred to leave the data-gathering to other DGs, even if DG ENV would have been able to produce the necessary numbers (Interview 25 March 2011b). The working level of DG ENV was more convinced of the existence of the leakage problem. However, it was not allowed to follow through on evidence-gathering. Consequently, DG ENV took its time to come to its final conclusions about the severity of the carbon leakage problem. DG ENV published its final analysis in a non-paper for the negotiations between the Council of Ministers and the European Parliament only in November 2008, ten months after publishing its proposal. This non-paper concluded that fewer than 50 per cent of European sectors are exposed to international trade at all, and only 10 per cent would face an additional financial burden (European Commission 21 November 2008).

The timing suggests that DG ENV needed yet another year to establish reliable and politically acceptable conclusions. There are several reasons for this bad timing. First, data availability on real exposure to carbon leakage was scarce due to the relative novelty of the concept of carbon leakage. Second, the technicality of the problem was challenging. One official involved said that,

> especially if you look at a broad range of industries, it can be extremely, extremely technical. And then, actually, in the next phase in the implementation, with the benchmarks, you need expertise again, you need input from the sectors themselves and some good assessment whether what the sectors told us is correct or not.
>
> (Interview 24 February 2011b)

Third, this is an instance where the conscious creation of an absence of knowledge is used to gain political advantage. We will turn to this element of the discussion later on in the assessment of politicized knowledge utilization.

For now, we conclude the carbon leakage problem at a technocratic level with a discussion of associated policy options. Even though at this point in time the extent of the carbon leakage problem was disputed, it

was apparent that a solution for those sectors actually exposed to carbon leakage was needed. It is the responsibility of policy officers to offer such policy options. The general process of developing the options was summarized as follows by one official involved:

> as part of the impact assessment we have looked into the options, we have seen that these and these options are technically not feasible. Then there are these options, which are technically feasible but would be extremely costly, so we have decided to exclude all these options. Whereas for some other sectors we have found that there are technically feasible and cost-effective options, so we will take them into further consideration.
>
> (Interview 24 February 2011b)

We therefore witness a fact-based approach to developing solutions based on clear criteria of effectiveness and efficiency.

As a result of this puzzling about the working level, several options became available for discussion. A general broadening of the scope could go hand in hand with targeted temporary or permanent exemptions from auctioning for those sectors that are subject to carbon leakage. An economic assessment proved that the sectors concerned could indeed be compensated for the additional burden by grandfathering, and their competitiveness would not be endangered. On the other hand, as argued, for instance, by Kallbekken, 'sectoral differentiation comes at a relatively high welfare cost – almost doubling the cost of implementing the Kyoto Protocol' (Kallbekken 2005, p. 47). Grandfathering also tends to lead to some windfall profits (Hourcade et al. 31 December 2007, p. 5; Grubb et al. 03 August 2009, p. 4) and increase the complexity of the system. A grandfathering system also requires a permit allocation on the basis of some kind of objective grounds. The two options available were basing the allocation volumes on historic needs or on emission benchmarks – preferably established in a central way to avoid the problems of earlier NAPs. DG ENV believed that an approach based on historic emissions would be associated with moral hazard problems, whereas benchmarking would allow for the establishment of ambitious technical standards (Interview 3 March 2011) at the expense of dramatically increased administrative and transaction costs (Quirion 2009, p. 587). The Director General also introduced a third policy option of border-adjustment measures.

Yet the working level could do little more than gather the evidence and point to the advantages and disadvantages of each approach. The

working level was already challenged by providing the required data to underpin the policy options (Interview 15 February 2011). Jos Delbeke, the chief architect of ETS I, mostly made the important design decisions himself in his new position as Director. This decision-making process will be dealt with under top-down politics. For now, it is enough to say that a first proposal was made that included no exception for energy-intensive industries exposed to carbon leakage. The interservice consultations and the activity of DG ENTR and its Commissioner, as well as of more than 160 lobby groups in favor of free allocation (Skjærseth and Wettestad 2010c, p. 81), did later on exert a significant influence in reintroducing this thought into the proposal.

In conclusion, it seems that technocracy served the policy-making process for the ETS revision in the following way. First, the policy officers gathered expertise because the Commission 'definitely needs the kind of expertise the sectors have. But you have to be able to verify whatever they have to tell you. There is definitely no expertise which would be available within Commission services over such a broad range of sectors and technical specificities' (Interview 24 February 2011b). Second, the policy officers had to cut through the maze of interests and determine the facts underpinning the different expressions of stakes. Their task was to make sense of and structure the debate. The ECCP II process and consultations were used to identify political standpoints and to structure them. A survey among stakeholders that the Commission outsourced to Ecofys and McKinsey fed back additional interesting results (McKinsey & Company and Ecofys 2005). ECCP II served as a sounding board and as a preparatory expert body in breaking ground for the necessary analytical work. In that sense, DG ENV organized and administered a dialogue. Such a forum was necessary to develop the amount 'of analytical work [that] still need[ed] to be undertaken before the Commission will be able to submit a well prepared proposal to Council and Parliament' (Delbeke 2006b, pp. 12–13).

The policy officers then weighed the contrasting claims to truth against each other in an effort to deliver on the Commission mandate of producing sound policy proposals. Studies were used to further develop the scientific base for decision-making. The desk officers finally distilled policy options out of the inputs that they received. The information package of factual arguments, policy options and stakeholder preferences was then presented to the Head of Unit, whose task can be defined as 'making your decision because you have to walk up to the hierarchy to sell your project. So you needed good arguments. [Such a] role was to have those decisions made that I could argue best politically' (Interview

25 March 2011a). These decisions are, however, not purely technocratic anymore and will be dealt with in the following sections.

3.2.2 Correcting history, toward an effective ETS II: Politicized technocracy and knowledge

When now turning to politicized technocracy, we face a fuzzier picture. In politicized technocracy, a low decisional level is concerned with problem-solving and thereby takes a decision. We thus face Commission officials at technocratic hierarchical levels involved in a technocratic function (problem-solving) that enter the messy (and politicized) world of decision-making. Despite the politicized element, we still expect a focus on mandate delivery instead of power maximization. Knowledge, in this context, would therefore be used cognitively. In the ETS II case, we witness such a constellation with regard to the decisions on central or decentral cap-setting, the allocation mechanism and the size of installations covered.

The officials in charge of the ETS revision were mostly ETS veterans. Haas would possibly even call this group of ETS advocates an epistemic community. Some authors even have a name for this group: BEST – 'Bureaucrats for Emissions Trading' (Wettestad and Boasson 2013). At the time of the revision, they had already gathered years of experience of coping with the complexities of the ETS market and its dynamics. Therefore, their need to consult external experts was significantly less than at the time of devising the initial ETS (Interview 03 March 2011). The political priorities were also rather well defined due to the strong continuity of officials staying on since ETS I. Approaching the revision of ETS, DG ENV officials were dissatisfied with the results until that moment in time. In many ways, ETS II was a possibility for the ETS veterans to get some things right that went wrong in the first place. Through their economic mindset, they perceived the existing climate policy as failed. In the words of one of the main architects of ETS,

> The critical test [for climate policy] from an economic point of view is, [. . . whether . . .] climate policies would have won the public debate and had been undertaken solely for climate policy reasons. A key economic criterion for judging the quality of a policy is the implicit or explicit carbon value.
>
> (Zapfel 2005, p. 163)

With regard to the CO_2 price, the ETS at that point in time had to be considered a policy of low quality according to Zapfel's yardstick. The

ETS was an attempt to establish a new market for emission allowances in order to overcome the market's failure to price climate change into industrial product costs. This new market did not work satisfactorily either. Accordingly, the work plan for the DG was neatly defined for years as already ensuring the functioning of the carbon market. One document exhibiting this ambition is the progress report of 2006 on the ETS (European Commission). It needs to be pointed out, though, that the Commission argued back in 2005 that the 'key rationale of the EU ETS is the recognition that the economic textbook scheme cannot be achieved in one step but serves rather as a medium-term goal in an evolutionary process' (Zapfel 2005, p. 164). Failure was factored in and foreseen. It knew that the decentral allocation of emission allowances and the decentral setting of the caps had invited the Member States to systematically overallocate in an attempt to solve the inherent distributional choices, but considered it as part of the learning process: 'Allocation plans done nationally? Game theory suggested it is difficult' (Interview 22 February 2011).

At the time of the ETS revision, it was now time to correct history. The policy officers in charge proposed to upgrade cap-setting to be a European competence. Their reasoning was based on economic and management arguments, as well as political windows of opportunity. In the following, academic articles will be cited extensively – not as sources of Commission insights but as easily available representations of the debate.

One of the strongest arguments for central cap-setting was the moral hazard problem. The Commission officials had noted very carefully that the price of an emission allowance was €0.02 by the end of the first ETS period and rose to €25 once the Commission put the screws on the NAPs (Bekkhus and van Hecke 2008, p. 134). Academia termed the overallocation dynamic a 'race to the bottom' in terms of environmental stringency (Grubb et al. 2005, p. 134; Hey 20–21 June 2008, pp. 8–9), whereas it could as well have been coined a 'race to the top' in terms of economic advantages. For an excellent differentiated overview by sectors and nations of the overallocation, see Kettner et al. (2008).

One of the divides in terms of ambition was between new and old Member States of the EU, ranging from a reduction in emissions by on average 11.1 per cent for the EU-15, but an increase in emissions by 31.1 per cent for the new Member States (Betz et al. 2006, p. 361). The regulatory competition among Member States went so far that the UK even adjusted its national cap upwards when it realized that it had been less generous than other Member States in allocating allowances (Wurzel

October 2008; Hey 20–21 June 2008, pp. 8–9). By readjusting its cap, the UK ensured that the 'wealth transfer mechanism' inherent in allocation differences across nations would not play out even stronger, thus avoiding effectively subsidizing 'polluters in states which were making little effort by taxing states with more stringent allocations' (Open Europe August 2007, p. 5).

Due to moral hazard, the decentral allocation mechanism led to a loss of welfare. An overallocation of allowances due to decentral cap-setting is problematic as long as the EU is subject to the Kyoto Protocol. The underlying logic here is that non-ETS sectors pay an ETS premium when those sectors covered by the ETS do not reduce their emissions (Betz et al. 2006, p. 381; Woerdman et al. 2008, p. 142). The Internal Market suffered competition distortions, not to mention a lack of environmental effectiveness. It became clear to the Commission that, as Vedder observed, the regulatory competition present in the allocation of allowances could not be solved by stricter supervision alone (Weishaar 2008, pp. 157, 159; Vedder 2010, pp. 60–61).

Even if the Member States had not fallen prey to moral hazard, they probably would have misallocated the permits. They calculated the caps based on a weak data base (Grubb and Ferrario 2006, p. 496) suffering from unreliable, not verified and too general data points (Bekkhus and van Hecke 2008, p. 128). The emission forecasts were often based on business-as-usual scenarios (Cosmann 2006, p. 31) that overestimated the CO_2 trajectory. Additionally, industry had economic incentives to overestimate their needs for allowances (Grubb et al. 2005, pp. 129–130) and to lobby aggressively for loopholes or exemptions (Anger et al. 2008; Hey 20–21 June 2008, p. 10; Kuik and Oosterhuis 2008, p. 218). Not only did some sectors escape strong abatement requirements but also they lowered 'the abatement burden of the EU ETS as a whole at the expense of overall economic efficiency' (Anger et al. 2008, p. 17). Other observers even liken this situation to direct subsidies and money-printing to the benefit of selected sectors (Grubb et al. 2005, p. 132). (For a different opinion, see Woerdman et al. 2008, pp. 132–133, 135.)

The main learning point[1] of Phase I of the ETS was 'how much market design matters to its operation and signaling. Unlike normal markets, emissions trading schemes are designed markets, where the demand and supply are dependent on government decisions. The volume of allowance allocation determines scarcity levels and thus the effectiveness of the scheme' (Betz and Sato 2006, p. 351). Problems of purposeful overallocation persisted. No guidelines and no stringency could ever reverse the strong political and economic incentive to overallocate.

(For a different opinion, see Rodi 2005, p. 183.) The Commission knew full well that lenient caps on emissions would lead to low carbon prices and thus render the entire ETS exercise useless.

The policy officers chose to focus on solving the problem of overallocation through a change to allocation methods. DG ENV commissioned a study from Ecofys to establish the advantages and disadvantages of different allocation methods. After assessing different levels of harmonization, Ecofys recommended to the Commission to harmonize both the cap-setting and the allocation methodology centrally at the EU level (Ecofys October 2006). The policy officers reacted to the negative learning experience with national caps. Consistently with their ETS I preferences, they started advocating a European cap-setting approach.

Their arguments were mostly oriented toward solving their problem: the reduction of administrative redundancies and transaction costs, abolishing Internal Market distortions, combating free riding and moral hazard problems. The Commission's reasoning was that a European cap could guarantee target delivery of the envisaged emissions reductions, would be more cost-effective and more predictable than national caps, and would increase investment security (De Cendra De Larragán 2008b, p. 72). DG ENV also justified its proposal with reference to a lack of reliable data, diverging implementations in Member States, as well as with transposition difficulties. It is worth noting that De Cendra De Larragán (2008b, p. 83) presents a scathing criticism of the Commission's reasoning. However, the Commission tended to present an argument along the lines of del Río González (2006, p. 465), who mentions the most potent argument in favor of centralized allocation: control. DG ENV argued that 'top-down decisions on allocation [...] would tend to lead to a less generous allocation [...and thus] a higher level of [...] environmental integrity of the scheme' (del Río González 2006, p. 465).

In short, the evidence in favor of central cap-setting had mounted in the implementation years. Arguments advanced by the Commission in ETS I had proved to be correct and were now an answer to the pressing problem of a lack of environmental effectiveness and economic efficiency. Other than during ETS I, there was now a political window of opportunity to push the European cap-setting past the Member States. Some Member States started expressing a preference for central cap-setting and auctioning in ECCP II. This shift in preferences was mainly driven by their negative experiences with the NAPs, as well as by the hope for profits from auction revenues and by Member States' discontent with free-riders and windfall profits (Skjærseth 2010, p. 303; Skjærseth and Wettestad 2010a, p. 109). It had become increasingly clear

that the lack of harmonization allowed for 'the prevailing regulatory mindset of the authorities and among stakeholders' (Zapfel 2007, p. 35) to sneak back through the regulatory backdoor. 'Everyone decided that there must be a better approach [than decentral allocation] and that approach was in revising legislation to harmonize allocation' (Interview 22 February 2011). Additionally, it was an important 'watershed development' that not only environmental NGOs supported auctioning but that also part of the industry, such as the power producers, came out as supporters (Skjærseth and Wettestad 2010c, p. 81). Industry had started to see the advantages of a regulatory level playing field.

In summary, the Commission had persuasive arguments for a central cap-setting mechanism. These were mostly fact-based. The implementation period had allowed for learning, and central cap-setting was deemed to be a problem-solving solution. In this sense, knowledge was used cognitively to understand a problem (in terms of economic dynamics and management challenges) and to devise a solution. However, the policy officers also gauged the reaction of stakeholders to this preference at the ECCP II and had observed very carefully that resistance, especially among Member States, was surprisingly low (Skjærseth and Wettestad 2010a, p. 109). Central cap-setting had additional benefits, among them a gain in competence for the Commission, which is in accordance with the institution's organizational preference. Thus, economic and political benefits converged neatly and allowed the policy officers to take the decision to push for central cap-setting.

Eventually the Commission's proposal suggested in Art. 1(5) was to establish a total emission cap for the entire EU that was to decrease by 1.74 per cent per annum according to a linear trajectory from 1974 Mt of CO_2 in 2013 to 1720 Mt of CO_2 in 2020 (European Commission 23 January 2008e). This cap was set on the basis of a quantified formula that the Commission had developed for the assessment of the trading period 2008–2012 on the basis of formerly vague qualitative criteria (Bekkhus and van Hecke 2008, p. 139). This central cap and emission reduction target is thus remarkably technocratic in its calculation.

In a second step, we shall now assess the way in which the central cap was supposed to be allocated to different economic actors. The ETS covered between 45 per cent and 60 per cent of the Member States' emissions (Hey 20–21 June 2008, p. 12). In ETS I, Member States were therefore given the liberty to decide on the allocation method themselves, so as to reduce the sovereignty intrusion that is inherent in regulating climate policy at the European level. The decision to move toward a centralized approach reduced some opportunities for

window-shopping. Now it was necessary to decide whether emission rights should be allocated free of charge (so-called grandfathering) or whether the allowances should be auctioned Europe-wide. The paradox here is that 'economists almost unanimously recommend more auctioning [. . . while] business tends to oppose it' (Hepburn et al. 2006, p. 137). In ETS I, the maximum share of auctioned allowances was only reached by one Member State – Denmark – and whenever the Commission demanded a reduction in the overall cap, the share of auctioning was accordingly reduced in the respective state (Egenhofer 2007, pp. 457–458).

For the ETS revision, the policy officers had to gather the arguments for and against auctioning and grandfathering again. However, its preference was clear. DG ENV had clearly preferred auctioning over grandfathering for years, as evidenced in all interviews: 'We always foresaw transition to full-auctioning' (Interview 22 February 2011). It felt that auctioning was the superior option not only because grandfathering had weaknesses but also because auctioning had so many strengths. First, overallocation tends to arise when grandfathering is chosen, but not in the case of auctioning provided that the overall cap is set properly and centrally. Second, the overallocation led to high windfall profits and prevented a real achievement in emission reductions. Third, as one of the chief architects of ETS I argued, grandfathering is 'unfair, as it results in the allocation of more allowances to less carbon-efficient installations and fewer allowances to better-performing installations' (Zapfel 2007, p. 31). Some academics even call this a violation of the polluter-pays principle (Nash 2000; Woerdman et al. 2008, p. 135). For an extensive summary of the disadvantages of grandfathering, consult De Cendra De Larragán (2008b, pp. 70–71).

Auctioning, on the other hand, had a natural appeal to the economists in DG ENV. Its advantages had been crystal clear to the policy officers for years. They have been summarized neatly in their entity in an article by Hepburn: environmental effectiveness, macroeconomic efficiency, reduction of discretionary bias in the allocation, dynamic incentives, lower transaction costs, compatibility with state aid and World Trade Organization (WTO) provisions, a level playing field across Europe, and auctioning providing 'a hedge against projection uncertainties, reduce[s] price volatility, and increase[s] investor stability' (Hepburn et al. 2006, pp. 138–144, 155). According to the Commission proposal, auctioning additionally 'ensures transparency and simplicity [. . .] and rewards early action to reduce emissions' (European Commission 23 January 2008b, p. 7).

For an in-depth analysis of how DG ENV came to believe in auctioning as the best allocation method, I refer back to Chapter 2 (on ETS I). Due to the personal continuity in the climate units, this belief had persisted over the years since the publication of the 2000 Green Paper advocating auctioning (European Commission). They were reinforced by the results of studies commissioned, such as (Ecofys October 2006), which argued that auctioning would reduce uncertainties. The allocation method was looked upon as the Achilles' heel of the entire system (Grubb and Ferrario 2006, p. 496). In the eyes of DG ENV, it was now time to introduce auctioning to as many sectors as possible, and to do it in a binding way: 'full auctioning of allowances scores best in increasing the efficiency of the system and taking away undesirable distributional effects [. . . and it] entirely solves efficiency problems' (European Commission 23 January 2008a, pp. 106, 163).

The policy officers made a preliminary decision that they forwarded to the Head of Unit and Jos Delbeke. This was based in particular on the modeling results of the unit responsible for the economic assessment of climate policies. Vergoote and his team had used the GEM-E3 model to provide additional analysis of the difference between grandfathering and auctioning, next to the more general results from the PRIMES model on the total costs and distributional impacts of the package (Capros et al. 2011, p. 1479). These results confirmed conclusions from academia that auctioning would increase the cost-effectiveness of the system and lead to an overall welfare gain compared with grandfathering (Schwarze and Zapfel 2000, p. 292; Keats Martinez and Neuhoff 2005, p. 78; Kallbekken 2005, p. 47). In the eyes of Commission officials, the advantages of auctioning over grandfathering were overwhelming. In such a situation, decisions are easy to take. It should also be noted that they knew that unless they proposed otherwise, auctioning would be chosen. Given their knowledge of the preference of their superior, taking into account their political preferences and their matching epistemic beliefs, the option to take was easy to identify.

3.2.3 Impact assessing the ETS revision: Bottom-up technocracy and knowledge

In this form of politicized technocracy, a low decisional level is engaged in bargaining and pursues a policy-framing activity while doing so. We expect that knowledge is used cognitively in an arena defined as above. However, some elements of argumentative knowledge utilization are likely to creep in when policy officers have to bargain. In ETS II, this was observed in the process of preparing the impact assessment.

The members of DG ENV's team were Tom van Ierland, Peter Zapfel, Stefaan Vergote, Damien Meadows and Gert Klaasen. Vergote led the impact assessment unit and Meadows was the leading desk officer – both of them veterans of ETS I. Most of my interview partners noted that, with Delbeke rising through the ranks, so did his people (such as Zapfel) 'like a web being moved upwards' (Interview 11 February 2011). With the diffusion of key personnel from the initial ETS I team into DG ENV's organizational structure, the importance of knowledge underpinning a policy had become an organizational norm. The DG ENV team came from an organizational environment that relied heavily on quantitative assessments in developing a policy proposal. As one of my interview partners from DG ENV put it, there was

> a habit in DG Environment to [... continuously have] a strong focus to try to prove your policies with a quantitative assessment [across several units ...] because it was grown naturally, you had a number of internal experts in DG Environment that were familiar with using models, trying to run scenarios and use scenarios to describe that policy and formulate the policy proposal [... They are] all people who are economists or engineers. They know how numbers work, what you can get out of them, and they all know the policy because they have grown up with it.
>
> (Interview 3 February 2011a)

It worked on the basis of economic models such as PRIMES, which had been developed for DG ENV to deliver a comparable but disaggregated view of energy policy measures in all EU Member States. The models used were the PRIMES and Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS) models with the distinct advantage of having a truly European scope, which 'very limited amounts of models in the EU can do' (Interview 3 February 2011a). Both models are contracted solutions, the former being maintained by scholars from ATU and the latter being run by the International Institute for Applied Systems Analysis (IIASA). The GAINS model was an 'inherited' solution, which had already been used 'for a long time in air pollution policies' and was a recognized 'centre of excellence' (Interview 3 February 2011a). It was now the task of the policy officers to factor policy decisions into the models and to assess their consequences.

According to Capros, approximately 150 scenarios were computed, corresponding to differing inputs regarding costs and necessary efforts (Capros et al. 2011, pp. 1478–1479). In these models, each move toward

stronger regulatory provisions for renewables reduced the price incentive for carbon reduction and some carbon price interventions rendered RES requirements uneconomic (Capros et al. 2011, p. 1480). This trade-off had consequences for the regulatory preferences of different DGs. DG ENV officials held regulatory assumptions that underpinned their belief that a price on carbon would be most efficient. DG TREN officials disagreed with DG ENV's philosophy of relying on market-based instruments. They felt that only regulatory interventions such as requirements for renewables would deliver the results. What is more, those scenarios that allowed a cost-effective achievement of both policy objectives (more RES, less CO_2) had politically toxic distributional consequences (Capros et al. 2011, p. 1482). In short, the technical arguments about models such as PRIMES had uncovered a political undercurrent.

In the initial period of preparation 'there was silence for a while in the services', after which DG ENV approached the SG to complain that 'we are working in silos' (Interview 11 February 2011) because it realized that DG TREN was working on similar issues to prepare its directive on RES. Once the services started the discussion, the clash of regulatory traditions between DG ENV and DG TREN became visible. 'Everybody was accusing one another' (Interview 11 February 2011). In addition, DG ECFIN had a 'very proactive modeling team' (Interview 25 March 2011a). It quickly became impossible to write an impact assessment in a way that would resemble the envisaged process as a 'joint, collective work [...] to put evidence together and create a logical puzzle' (Interview 11 February 2011). Policy officers from other DGs complained that DG ENV did not organize a 'neutral process' but rather restricted the input to those whom they trusted (Interview 24 February 2011b). In other words, the ETS epistemic community started using knowledge strategically.

The problem-solving arena of desk officials had changed into a negotiation arena. In order to ensure a technocratic, rational, depoliticized writing process, a mediator in the form of the SG was found and involved to ensure that the factual level remained robust. The SG, whose function it is to ensure coherence between DGs, tasked one of its staff members, Elena Visnar-Malinovská, to write a draft for an impact assessment paper that integrated the targets and the contributions of the different measures thought about in the two different DGs. DG ENV and DG TREN were asked to jointly write the impact assessment for the energy and climate package. A team of officials from the respective units dealing with impact assessments was formed. On the basis of the SG paper, the DGs started discussions. While the paper was challenged

on the numbers, it enabled discussions about the measures and how to integrate them (Interview 11 February 2011).

In order to be able to deliver a good compromise paper for the discussions between DG TREN and DG ENV, Visnar-Malinovská had to 'find out how good, solid and well-established' their respective evidence was (Interview 11 February 2011). Some years before, such a task would have been daunting for the SG. However, Secretary General Day had brought a 'new demand for expertise into the SG, and a focus on details' (Interview 11 February 2011). Day was pivotal in building the new SG approach to expertise and in developing a capacity of the SG to be, if need be, 'the major brain of the Commission' (Interview 11 February 2011). This ability to process and shape information served the SG well. It was eventually also tasked with preparing the chapeau communication for the entire climate and energy package, as well as with drafting the secret and sensitive fiches for the negotiations with Member States about the distribution of the burden of emission reductions.

The instance of the common impact assessment exercise is an interesting example of a bottom-up technocracy dealing with politicization. The analytical works on the basis of knowledge in the form of models brought political choices to the fore as soon as trade-offs were identified. The distinction between technocracy and politics started to blur as soon as the regulatory school of thought of DG ENV clashed with the regulatory philosophy of DG TREN. The policy officers needed discipline to continue puzzling rather than starting to negotiate. This is the role of the SG. SG officials have the task of horizontally coordinating the services. Their role is, by definition, more politicized, albeit still with a technocratic focus. Thus, SG officials bridge the conceptual differentiation between bottom-up technocracy and top-down technocracy. They wander between the worlds of politics and technocracy and have to, at times, satisfy both organizational expectations toward knowledge utilization. Visnar-Malinovská, for instance, not only had to find compromises for political trade-offs but also had to impose technocratic discipline and immerse in fact-based communication with the DG's policy officers. Eventually, a solid impact assessment was written that would inform the politicians of political choices, and associated costs and benefits.

3.2.4 Solving the politics in modeling: Top-down technocracy and knowledge in ETS II

In the third form of politicized technocracy, higher decisional levels concern themselves with problem-solving and engage in policy-framing.

Normally, we would expect high-level officials to follow the logic of consequentiality in their everyday work. In rare instances, though, the lower ranks signal to their superiors that the solution to cognitive disagreements could cause political choices to be made one way or another. In these cases, we would expect high-ranking officials to use knowledge cognitively – even if at times their thinking might be restricted by political constraints. In ETS II, we see two instances: a modeling group of Directors (as a high-level parallel to the impact assessment taskforce) and the Impact Assessment Board. In both cases, knowledge was used epistemically in a puzzling exercise where the Directors attempted to find a way to shape the options for a policy proposal in such a way that they could respond to the political realities of the day.

The first instance relates to a group of Directors that is analyzed in more detail in Chapter 4 (on the RES Directive). Directors from DG ECFIN, DG ENTR, DG COMP, DG ENV, DG TREN and SG (and on biofuels also DG Agriculture and Rural Development (DG AGRI) and DG TRADE) (Interview 11 February 2011) met monthly in 2007 to guide the process of coordinating the energy and climate package. Michel Servoz, Director in SG, led this group and was under the 'direct instruction' of Catherine Day (Interview 11 February 2011). Minutes of their meetings have been 'cleaned up' to avoid unwanted revelations in case of later public disclosure (Interview 11 February 2011), but we know that the rationale for this joint effort was to reduce the politicking surrounding the package: 'we were producing the papers but all the people around us were talking and making coalitions [...] Rationalizing the debate, figures, arguments, facts, figures' was the necessity of the hour (Interview 25 March 2011a). The Directors met in particular to establish a common understanding of the necessary modeling assumptions for the academic groundwork of the proposal. The role of the Directors was to take decisions about modeling assumptions that had political implications, because these were 'a bit too much for ordinary policy officers' to decide upon (Interview 25 March 2011b). In short, the group of Directors ensured that DG TREN and DG ENV engaged in a joint modeling exercise to produce a consistent and coherent forecast. It was clear to everyone that only if the modeling results were consensual would the Commission's argument carry.

A second instance of a high hierarchical level being involved in scientific work in a policy-shaping fashion is the impact assessment board (IAB). This ensures that the policy options compared in the impact assessment are credible and underpinned by sufficient data. The IAB at that time consisted of Alexander Italiano, Kertian Klaasen, Xavier

Prats Monné, Timo Maekele, Jan Smits, Gert-Jan Koopman and Jakub Koniecki for the SG. Some of them had already been part of the group of Directors mentioned above. The identity of an IAB member seems to be based on a strong *esprit de corps* of objectivity, following the different organizational logics and behavioral expectations: 'obviously from a policy point of view I had certain interests, but in the board I was there as a professional economist [...] I believe that I truly separated the perspectives [...] With one or two exceptions we managed to avoid the bias of our home DG' (Interview 25 March 2011b).

Usually the IAB receives a final impact assessment, assesses it and, if necessary, demands changes. However, in the case of the energy and climate package, time pressure and the complexity of the file demanded a different approach. The IAB allowed DG TREN and DG ENV to hand in a first draft to receive feedback as to whether the impact assessment work was heading in the right direction (Interview 24 February 2011d): 'probably the impact assessment would not have been of that quality had you not had this process because a lot of work, a lot of the debate and assessment in the run up had a big effect on the shape of this impact assessment' (Interview 25 March 2011b). The draft was handed in and discussed on 28 November 2007, a time pressure lamented by the IAB (European Commission 18 January 2008, p. 4). The IAB in particular asked DG ENV and DG TREN to put more emphasis on the employment effects, the competition law perspective, administrative burdens and the distributional impacts of the solutions found for the energy-intensive sectors (European Commission 18 January 2008, p. 4).

All interviewed participants in this process confirm that the feedback by the Directors to the policy officers preparing the impact assessment was helpful and justified (Interview 3 February 2011a). As the impact assessment for the energy and climate package was evaluated together, more information can be found in the RES chapter. For now, it is enough to note that also in the ETS II case the IAB helped to shape a sound and well-structured presentation of the evidence that could be of use for decision-makers (Interview 24 February 2011d). The IAB was in particular appreciative of the approach of combining efficiency and equity aspects in the analysis (European Commission 18 January 2008, p. 3). Many officials still claim today that this impact assessment 'was a landmark impact assessment in terms of breadth, scope, depth and quality' (Interview 25 March 2011b).

As a word of caution, the politicization of the impact assessment needs to be considered. The impact assessment was finalized only shortly before the College adopted the proposals on 18 January 2008,

and its results are as much a justification as they informed the Commission's work. In conclusion, one needs to treat the impact assessment as a general summary of arguments exchanged within the Commission while developing the policy proposal. One of the objectives of an impact assessment is to

> facilitate the policy process post Commission, so the work of the legislator. Like in this particular case, a good impact assessment looks at different options, different modalities, things that also come up during the policy process. And it is useful for the Commission to refer to that and to refute unfounded arguments by looking at an impact assessment. It also helps, it facilitates clarity, it helps the adoption of policy proposals in Council and Parliament, and it also implicitly imposes discipline on the debate because it is difficult to make outrageous claims as a Member State or as an MEP if you have an impact assessment refuting it.
>
> (Interview 25 March 2011b)

3.3 Politicized knowledge-utilization strategies in revising the ETS

We are now turning to those institutional constellations of task, level and character of an organization that invite politicized use of knowledge. We assume that Commission officials who are focused on maximizing the power of their unit in their daily work – such as high-ranking officials, Cabinet members and Commissioners – will use knowledge predominantly in an argumentative fashion to justify and legitimize their preferences. As a rule, their logic of consequentiality will not invite a cognitive use of knowledge that changes their preferences.

3.3.1 Knowledge advantages in interservice consultation: Bottom-up politics and knowledge in ETS II

As a first instance, we are turning to the only case of a low decisional level being concerned mostly with power maximization rather than mandate delivery: the interservice consultation. In this arena, low decisional levels in the Commission take decisions in a bargaining mode. The actors are normally policy officers from all DGs concerned with a given policy proposal. Interservice consultations typically mirror negotiations at higher decisional levels, but – as they are preparing the decisions by Cabinets and Commissioners – they are focused on technical aspects and on separating those issues that are political and have

to be solved later from those that can be agreed upon more quickly. They bargain over sectoral interests, according to the sectoral differentiation of the Commission into DGs. In this environment, we can expect that the policy officers follow an organizational logic that prescribes them to represent their DGs, yet potentially in a more factually driven debate comparedwith the negotiations between Cabinets. Knowledge will be used accordingly in an argumentative fashion, though it might be possible that persuasive processes take place that resemble learning processes.

DG ENV put its proposal to the other DGs in January 2008. The other services had not seen a draft before, yet many had been included in the NAP working group and been consulted informally and via the ECCP II working group (Interview 16 February 2011b). They, too, felt that the ETS in the first phase 'did not decrease emissions, but [...] increased costs' (Interview 18 April 2008b). Consequently, the proposal was met, in large parts, with a lot of approval. Particularly DG TREN looked upon the proposal very favorably. The scope extension as well as the shift toward central allocation can be understood as examples of persuasive processes in the logic of appropriateness, whereas the question of auctioning or free allocation of emission permits produced strong battles within the logic of consequentiality.

The scope extension was treated by most DGs as a technical issue. In particular, DG TREN and DG ENTR as the most vocal DGs in the interservice consultation accepted the economic efficiency framing of DG ENV. The inclusion of new gases 'is a question of abatement potential at a reasonable price, [...and if industry does have] that kind of abatement potential, they are actually better off being in than being out' (Interview 24 February 2011b). Regarding the inclusion of most sectors, DG ENV received appraisal by other DGs for their decision to expand the system. The more controversial sectors, such as aviation, were mostly dealt with outside the remit of the ETS review. The power sector was included with the support of DG TREN. Given the problems that had occurred with 'their' power producers and windfall profits, they wholeheartedly agreed with the harmonized central cap-setting process and the shift to auctioning for the power sector: 'We were all aware we needed to get rid of that and make sure the right signal went to the right producers' (Interview 24 February 2011b). With the inclusion of the remaining different sectors, most DGs felt that a lot 'depends on feasibility, cost-effectiveness and so on and either there were strong arguments for that or not [...and DG ENV] had a sound analysis' (Interview 24 February 2011b). Other parts of the directive were equally

accepted. In particular, the shift toward central allocation was agreed upon. DG ENTR, for instance, felt that past efforts of assessing the NAPs had been 'lunatic' and that the lack of harmonization brought about competitiveness concerns (Interview 24 February 2011a).

However, one aspect of the proposal nearly exploded in the face of DG ENV. With the backing of Commissioner Dimas, DG ENV forwarded a proposal to the other DGs that foresaw auctioning for all sectors. It shared the assessment of DG TREN that 'it was pure economics that auctioning was the most efficient system' and would allow eliminating windfall profits (Interview 24 February 2011b). DG ENV suggested auctioning for the energy-intensive industry as for other sectors, even though Commissioner Verheugen was known as a long-standing and staunch opponent of this idea (Interview 9 February 2011a) – willing to fight even in the College meeting until an exemption for the energy-intensive industry was inserted (Interview 9 February 2011a).

The issue was of such importance that Cabinet Verheugen got involved directly when the interservice consultation started and engaged in negotiation in parallel with the consultations. It felt that the proposal was 'not acceptable' and immediately escalated the issue by talking to the presidential Cabinet and President Barroso himself (Interview 9 February 2011a). Policy officers from other DGs also went up their hierarchy, including the Director Generals and Cabinets. The Cabinet leaked the proposal to industry ('the Commissioner's constituency' Interview 9 February 2011a), which intensified its lobbying activities to ensure that DG ENTR's position would not remain a purely internal opinion. Business Europe and an alliance of energy-intensive industry were particularly active in this regard. Meanwhile, the working level defended grandfathering as an allocation method, screaming blue murder about the costs to be expected with auctioning: 'In comparison to the costs of auctioning of allowances, the problems of carbon leakage are peanuts!' (Interview 24 February 2011a).

In the face of this development, DG ENV adopted a very smart approach in discussions with other DGs that forced them into a technocratic discourse about the basis of scientific facts and expertise. DG ENV under Vergoote had done 'an awful lot of modeling' (Interview 22 February 2011) and it challenged other DGs to measure up to its level of sophistication: 'if you want to have changes, then come with numbers and convince us' (Interview 25 March 2011b). This approach caught three flies at once. First, it gave DG ENV a knowledge advantage over every other DG that did not have the same modeling capacities and expertise pooled within its service. Second, it made it difficult for

DGs to come forward with unsubstantiated commonplace arguments such as that industry's competitiveness would be endangered. Third, it countered the increasing politicized pressures from above by forcing the discussion down to debates of a technocratic nature.

As a practical consequence, DG ENTR's ability to weigh in heavily on the ETS revision was severely hampered. DG ENTR had to build up the knowledge capacities, commission the studies and organize surveys of the industry at a time when DG ENV was already pushing for the adoption of its proposal. In short, DG ENTR lagged behind in developing its expertise. DG ENTR officials saw the strategic disadvantage; however, they also observed the positive effects of DG ENV's approach: 'DG Environment has to be complemented for the in-depth empirical work they did. [...I also] tried to be as empirical as possible [...and] used to tell the industry you are making these unspecified claims, you have to demonstrate it. [...It] imposed some discipline on that debate' (Interview 25 March 2011b).

Eventually, DG ENTR had to accept that it could not counter DG ENV's sheer amount of data. It gathered data from the public domain and used a model developed with the Zentrum für Europäische Wirtschaftsforschung (ZEW). DG ENTR consequently contributed to the interservice consultation with a negative opinion and asked for an exemption for energy-intensive industries. The proposal had to be revised after interservice consultation accordingly, so that it would better balance both mandate delivery and political feasibility and get to the abovementioned point. This point was reached with the compromise proposal of using benchmarks for the new grandfathering allocation rounds, as well as identifying criteria to establish exposure to global competition.

After the proposal was published, DG ENTR still invested heavily to catch up with DG ENV and to collect data at a much more disaggregated level of analysis. DG ENTR sent out a questionnaire to industry that was inspired by a preparatory study by DG ECFIN on carbon leakage. Thus, DG ENV's negotiation approach led to further knowledge-gathering. Ironically, DG ENTR later on came to a similar conclusion as DG ENV, namely that the numbers of affected sectors is very limited (Interview 25 March 2011b). In this particular case, DG ENV would have achieved an environmentally more stringent proposal had it not tried to profit from its knowledge advantage. According to my interviews, however, its general equilibrium model was slightly flawed and predicted that more sectors would be affected by carbon leakage than the number that DG ENTR eventually concluded to be realistically affected. An academic

study on carbon leakage in the UK confirms this assessment: of the 159 manufacturing sectors examined, only 23 sectors face added indirect or cumulative costs of more than 2 per cent due to the ETS (Hourcade et al. 31 December 2007, p. 6).

We can therefore conclude that in bottom-up politics, policy officers defend their departments' interests with arguments. At this stage, smart knowledge utilization can still reduce the toxicity of a politically motivated argument or high-level political intervention. Knowledge advantages still pose negotiation advantages in bargaining processes that at least pretend to be interested in fact-based problem-solving. Political influence nevertheless limits the effectiveness of such a strategy. Suboptimal results in terms of efficiency that are politically more desirable or feasible may be the result.

3.3.2 Instrument sequencing from ETS I to ETS II: Top-down politics and knowledge

Top-down politics is constituted in a case where a high decisional level takes a decision while engaging in problem-solving. This is a typical instance of a Commissioner, Cabinet, Director General or Director interfering with the work of the policy unit. As such, this is a case that is deplored by policy officers who feel that 'the proposal is screened too early with regard to it being politically opportune or not' and that the shadow of the political bargaining 'is anticipated prematurely, thus rendering proper technical work impossible' (Interview #3). We expect that in such a situation the logics of appropriateness and consequentiality, as followed by the different officials, clash. A high-level official will focus on power maximization, whereas a low-level official will focus on mandate delivery. As the high-level official has the power of decision-taking, he will ultimately get his way. Knowledge, in these cases, is used as an argument. We witness this behavior in the strategic decisions taken by Jos Delbeke in his function as Director in DG ENV.

Delbeke, at heart still the economist who drew up the rules for the ETS I market, had to make tough strategic decisions dealing with political realities. The ETS revision was the perfect place to get some political preferences right in a second attempt. And in fact, in many areas, what the revision eventually proposed 'was largely the position taken back in the Green Paper' of 2000 (Skjærseth and Wettestad 2010a, p. 113). Delbeke and his team had not forgotten their 'major defeat' (Interview 25 March 2011) during ETS I. For two sectors, battles could now be fought again: allocation of emission allowances to the power production and the energy-intensive industries. Delbeke wanted to subject as

many sectors as possible to allowance auctioning. His sentiments were shared at the highest levels in the Commission – for instance, by Secretary General Catherine Day. As one of my high-level interview partners put it,

> There are times when you want to curse and swear because we have lost years, but at the same time you have to accept that if the political reality is you cannot get it now, you have to make a calculation [...] We made the calculation it is enough [...] We got things started, it didn't frighten people off. We [...] always felt that we would be able to come back to this later.
>
> (Interview 15 February 2011)

Put in conceptual terms, the Commission followed through on a strategy of 'instrument sequencing', where a more interventionist option follows an unsuccessful softer policy option (Gunningham et al. 1998, p. 35).

With regard to introducing auctioning of allowances for power production, Delbeke and his team chose to use the debate about windfall profits to their advantage. As Sijm and others argued back in 2005/2006, the power producers had benefited greatly from earlier free allocation (Sijm et al. 2005, 2006). They had been able to generate windfall profits through price increases of up to €19/MWh, adding up to a total of €19 billion annually (Keppler and Cruciani 2010, p. 4280) (but see also Point Carbon, 8 March 2008, p. 2). His desk officials had pointed out to him that windfall profits are 'environmentally counter-productive, because they delay changes in companies' behavior' (Buchan 2009, p. 121). In addition, windfall profits constitute net losses to the economy (Quirion 2009, p. 581). Most importantly, the fact that power producers were able to pass their emission allowance costs through to customers and make a profit was easy to exploit: 'this debate served us very well' (Interview 25 March 2011a). According to my interviews, Delbeke argued that 'if you can calculate the price through, you should have full auctioning. That is how we won that argumentation on the power sector' (Interview 25 March 2011a.) In short, the windfall profit argument was strong and was used to justify the choice for auctioning in the power production sector, even though the proponents in DG ENV knew that the argument had its limits.

Together with the Cabinet, Delbeke eventually opted to impose the transition to full auctioning onto the power sector. The decision to introduce auctioning for the power producers was based on the

unexpectedly positive response during the ECCP meetings (Interview 22 February 2011), which was partly based on the results of their own studies (GETS 1, 2 and 3), as well as the knowledge that the power sector would not oppose heavily the strong argument that DG ENV had about windfall profits. Delbeke also knew from the Ecofys/McKinsey survey that the Member States were now more open to the idea of auctioning in some sectors (McKinsey & Company and Ecofys 2005).

Delbeke strongly shaped the strategic approach to knowledge utilization in DG ENV with regard to the energy and climate package, and in particular carbon leakage. We have already pointed to the fact that DG ENV consciously left knowledge gaps open to weaken the argumentative conduct of opposing DGs, such as DG ENTR. As a high-level official observed,

> carbon leakage is a good concept [...] but to put figures on it is extremely difficult. And frankly that was the game: 'If there is a problem, prove it.' People were very surprised by that. That was the first time that industry was asked to deliver figures. And a lot of these figures were simply [...] ideology, not real figures [...] We always took a line: [...] bring your evidence on the table, let's talk facts, not ideology, not rhetoric, facts.
>
> (Interview 25 March 2011a)

Interestingly, Delbeke sided with his Cabinet on the approach to the carbon-leakage argument. The Cabinet and policy officers in DG ENV had their politically most controversial discussions about the extent of carbon leakage as a real problem. Delbeke chose his service not to develop reliable data in order not to undermine the approach taken by the Cabinet – a truly politicized approach to knowledge utilization that speaks volumes about the organizational proximity of the Director to both the technocratic and the politicized levels of the Commission.

In an attempt to include not only the power sector but also its clients – the energy-intensive industry – DG ENV introduced a proposal to the interservice consultation that foresaw auctioning across the board. Commissioner Dimas included the energy-intensive industry to lay bait in order to have a strong bargaining chip (Interview 17 February 2011). And, indeed, whereas the abovementioned windfall argument could be used successfully to include the power producers, the energy-intensive industry lobbied 'ferociously' for grandfathering with references to carbon leakage (Skjærseth and Wettestad 2010c, p. 81). DG ENV had 'very tough' meetings with the industry (Interview 25 March

2011a). It knew that it 'could only believe half of what they were saying, but half may be close to the truth. It was heroic, it was not always easy' to distinguish interests from facts (Interview 25 March 2011a). After vetting the facts, some input could simply not be ignored factually. In particular, those 'threats to shut down or relocate activity [which] were perceived to be relevant, severe and credible' constrained 'the spectrum of politically feasible policy options' (Skodvin et al. 2010, p. 855).

Eventually, exemptions for the energy-intensive industry seem to have been granted as part of a cold-blooded calculation between what was desired and what was achievable politically, bearing in mind the evidence that limits the carbon-leakage problem to a few selected sectors. Delbeke recommended Commissioner Dimas to choose his fights. He knew that if Dimas would take on the energy-intensive industry, the time plan for the adoption of the entire energy and climate package in the first reading before the next international climate conference would be endangered. He was also aware what DG ENV could lose if the timing fell apart: the proposal foresaw several policy design changes that were only politically feasible because of the rare combination of time pressure, favorable public opinion and high-level engagement. Among the potential wins were broadening of the scope and gas coverage, and the introduction of (phased-in) auctioning in more sectors. Additionally, by starting with a maximum demand for auctioning, it was easier to achieve the minimum of a move toward benchmarks as the basis for those sectors that would continue to get grandfathered allocation (Interview 24 February 2011b). With the final proposal, the Commission estimated that in comparison with ETS I, the rate of auctioning in ETS II would rise by 45 percentage points until 2013 and to 60–70 per cent by 2020 from only 5 per cent (Buchan 2009, pp. 120–121) – a notable success.

It has to be concluded that Delbeke opted for a less ambitious mandate delivery to maximize the Commission's political delivery: combining benchmarking and grandfathering safeguarded the interests of the carbon-intensive industries at the expense of overall welfare (Quirion 2009, pp. 578, 581). Delbeke knew, in terms of knowledge utilization, which arguments could win the day for which sector, and which ones would not: the increase in allowance prices in 2005 'both weakened the argumentative force of power producers and strengthened the case of energy-intensive industries' (Wettestad 2009, p. 318). One might therefore summarize that politicization trumpeted facts and led to less ambitious proposals than experts had suggested in the interest

of power maximization. At the same time, the decisions taken still had a technocratic element and they were based on available knowledge. Delbeke also had to see that, according to the impact assessment, a loss of economic competitiveness could go hand in hand with a carbon leak of up to 2.5 per cent of the EU's total emissions (Buchan 2009, p. 129). Knowledge was used in this context for two functions: first to 'anticipate where you will have problems' with lobbying by political stakeholders, and second to 'deal with the problems intelligently' (Interview 15 February 2011).

3.3.3 Using high-level experts in technocratic politics

Lastly, before turning to pure politics, we will briefly discuss the variant of the independent variable, where a high decisional level frames policy while engaging in bargaining. This applies in particular to Directors and Director Generals, as well as Cabinets and Commissioners who are facing their counterparts and are trying to frame the policy proposal in such a way that it is beneficial to their interests. The logic of consequentiality focuses here on power maximization. Other than for technocratic layers of the Commission, knowledge is being used not to deliver on the mandate of a technically sound proposal but to defend, justify and legitimize the choices made. With regard to this case study, there are three instances that deserve special attention: (1) bargaining between the Director General and his service with regard to border-adjustment measures; (2) the high-level group used by Commissioner Verheugen; and (3) the expert group used by President Barroso to frame the policy agendas.

In the discussion about carbon leakage, DG ENV tried to avoid a race to the bottom in terms of environmental protection after the failure of free allocation as a solution. As Vedder points out, two other options present themselves: protectionism and compensation (Vedder 2010, p. 54). The former solution is difficult in an interdependent economic world, whereas the latter can take many different forms, such as financial compensation (e.g. Art. 10a, ETS II) or compensation at the EU's borders for different levels of internalized environmental costs. Such compensation can be designed as border adjustment measures (BAM) – that is, tariffs on imports (or tariff reductions on exports) that correct the cost disadvantage by imposing additional costs on imported goods (or allowing for a reimbursement for exported goods). Mogens Peter Carl, DG ENV Director General at the time, was the agenda-setter and strongest supporter of this option within DG ENV (Interview 8 February 2011b). As a Danish graduate of the French elite university

INSEAD, the idea resonated with him as much as it did with the French government.

Although Carl was 'very keen' (Interview 22 February 2011) on BAM, DG TREN, DG TRADE, DG Development and Cooperation (DG DEVCO) and DG ENTR quickly positioned themselves against it. Some DGs pointed to the uncertainty of whether BAM would be compatible with the most-favored nation rule and the national treatment principle in WTO law (Sindico 2008, pp. 337–339). DG ENTR was also afraid of potential retaliation measures. It argued that not even industry wanted BAM: 'It is a measure to protect the European industry, but if the industry is against this [. . . including BusinessEurope], how would you implement it?' (Interview 24 February 2011b). Other DGs felt that BAM could either not be operationalized or not be an economically efficient solution. The BAM idea met such concerted resistance on the grounds of both expertise (e.g. legal opinions) and DG's interests that Carl's own policy officers remained unconvinced. Despite widespread opposition, Carl overruled them and insisted on a vague phrasing to be kept in the proposal (Recital 20, Art. 10b). It is interesting to see that in the absence of widespread support on the basis of either interests or of factual appeal, even a Director General cannot achieve more. BAM is thus an attempt to frame policy options during bargaining that failed.

We now turn to two high-level (expert) groups (HLGs) that were used to frame policy in a bargaining situation. The first had been established in early 2006 following an initiative from the UK (Wettestad 2009, p. 314) and was pushed for strongly by Verheugen (Interview 9 February 2011a). It comprised leading 21 CEOs and NGO representatives, as well as Commissioners (Dimas, Verheugen, Kroes, Piebalgs), 4 MEPs and 4 government ministers. The group met six times during 2006 and 2007 to discuss, among other things, competitiveness, energy-intensive industries and the ETS (Interview 9 February 2011a). In fact, some (but not all) of my interview partners believed that for ETS II 'the crucial phase was not ECCP but the Commissioners Group on Competitiveness, Energy and Environment' (Interview 25 March 2011a). The initial idea had been to create a forum for discussions to shape a broad consensus among stakeholders (Interview 25 March 2011b), yet the group quickly turned out to be a highly politicized bargaining arena.

Observers point to the 'stormy relationship' between Verheugen and Dimas (Interview 25 March 2011a) that might have been one of the main factors in the politicization of the HLG, next to the high-level character of the group. Verheugen treated the group as an 'instrument for improving the ETS' according to industry interests (Wettestad 2009,

p. 315; Interview 25 March 2011a). Among the members were representatives of the coal-, gas- and oil-based industries which were about to lose around €2 billion, €5 billion and €15 billion, respectively, from the introduction of auctioning to their sectors (Keppler and Cruciani 2010, pp. 4288–4289). The energy-intensive industry had a very unified position (McKinsey & Company and Ecofys 2005) and expressed it clearly in position papers, letters and in the HLG (Skodvin et al. 2010, p. 862). DG ENV felt pushed into a bargaining situation where the integrity of the ETS had to be won in a battle in 'stormy debates, in public with stakeholders all along, there we had to fight our corner. [...] The attack from industry, [...] they had the predominant number of seats, they were protected by Verheugen, the environment side was protected by Dimas' (Interview 25 March 2011a).

Verheugen had created a HLG that could back his interests. DG ENV had to get engaged to pull industry out of their 'scaremongering ritual of claiming the end of the world' (Interview 25 March 2011b) by pointing them again and again to their numbers and facts (Interview 25 March 2011a). Eventually the result was twofold. On the one hand, industry did become more constructive and sought solutions to their concerns. On the other hand, and due to the design of the HLG, its de facto chairmanship by Verheugen and due to the insistence by industry, the work of the HLG was concluded with a report that closely mirrored the agenda of business representatives, such as the necessity of a global governance framework to establish a global level playing field for industry or on auctioning; and dedicated a substantial amount of time to the discussion of sectoral approaches and benchmarking (European Commission 2006c, 2007a, 2007c). The results of this HLG gave Verheugen the clout and support to legitimately speak about the problems of the energy-intensive industries later on in the College meeting.

Third, and lastly, it is worth looking at yet another knowledge-utilization strategy. The President of the Commission used his own HLG over the course of two years to prepare him for negotiations and increase his understanding of the issues at stake. The group even discussed the science of climate change – much to the dismay of some of the experts present. Its function was to serve as a presidential boot camp or tutorial and it contributed decisively to Barroso's 'highly effective science based communication strategy' (Hey 20–21 June 2008, p. 19). Originally proposed by one of his advisors, Alexander Ellis, and managed by Pierre Dechamps, the expert group comprised 12 eminent scholars and representatives of international organizations with expertise in climate-change matters. The geographical representation and overall balance

point to a politicized selection process. Whereas its main focus was on climate change, it did help Barroso to develop and refine a narrative that encompassed the RES Directive as well (see Chapter 4 on the RES Directive). The topic of the discussion was the overall design but not details.

Barroso had understood that – starting with the Exeter Conference 2005 and continuing with the Stern Report in 2006 and the 4th IPCC Report in 2007 – 'new and highly authoritative scientific evidence' was leading to a 'reframing of the environment discourse [...] into an economic debate on the cost of inaction and the economic benefit' of action (Hey 20–21 June 2008, p. 18). Grubb notes that the new debate was no more focused on risk and the precautionary principle but rather on the more economic-rational debate around costs and benefits (Grubb 2006, pp. 506–507). Be it the German Presidency's discourse about ecological industrial revolution (Federal Ministry for the Environment 2007) or the Stern Report, competitiveness and environmental protection were elevated out of their traditional discursive trade-off (Hey 20–21 June 2008, p. 20). Barroso used a political narrative along the following lines:

> I am not saying action to fight climate change is free. It has costs [...] What I am saying is that the cost of action, of taking out a collective insurance policy, is small compared to the risks we face. [...] the longer we wait the higher the price we will have to pay.
>
> (European President Says Climate Change EU's Top Priority 25 May 2007)

Barroso additionally linked the climate agenda to the strategically important 'security of energy supply and the future competitiveness of the EU' (European Commission 23 January 2008b, p. 16). The 'low-carbon society' was a positive spin that brought political advantages.

Among the members of the group were Claudia Kemfert and Sir Nicholas Stern, who are experts in calculating the costs of action and inaction regarding climate-change-related issues (Kemfert et al. 2006). The usefulness of their results was reinforced by a study of the EEA (EEA) 2007) despite criticism vis-à-vis an alleged 'significant [...], enormous sensitivity' of Stern's cost estimates of –84 per cent to +900 per cent (Tol and Yohe 2009, p. 1032). Stern's work enabled Barroso to pursue the climate agenda on the basis of an economic argument. He laid the groundwork for politicians to 'reinterpret [science] in order to deliver the right balance between urgency and optimism' (Hey 20–21 June

2008, p. 19). Experts such as Stern served as principal witnesses for Barroso's argumentation. The public support for the climate and energy package and the provision of advocacy arguments generated the necessary objective third-party endorsement that can signal legitimacy and lend credibility to costly policies.

3.3.4 Arguments clothing interests: Politics and knowledge in ETS II

In the case of pure politics, high levels of hierarchy engage in bargaining to take a decision. This is typically the case when members of Cabinets meet in so-called special chef meetings, when heads of Cabinets meet in so-called hebdo meetings or when the Commissioners meet in their College meetings. In all of those instances, we expect the logic of consequentiality to be at work, which requires officials to maximize the power of the parts of the organizations they represent. Knowledge in such a context was used solely for argumentative purposes at the meetings of Cabinets and Commissioners, as well as in prenegotiations with Member States. We turn to the latter first.

Parallel to the approach taken for the renewables directive, the presidential Cabinet, together with DG ENV and the SG, visited a majority of Member States in autumn 2007 before the official adoption of the ETS II proposal by the College of Commissioners in January 2008. My interview partners are very clear as to the purpose of these visits: 'There was a pre-check [...] with the Member States. During a touring of capitals, the main architecture was pre-negotiated' (Interview 8 February 2011b). Although such an approach was at that time 'extremely atypical' and should not be used to 'draw hard and fast rules about the typical ways decisions are made in the Commission' (Interview 9 February 2011c), it is interesting for two reasons. First, 'it might be the way decisions will be made in the future' (Interview 9 February 2011c), and, second, – be it atypical or not – it is a strong sign for the politicization of the climate and energy package that the presidential Cabinet prenegotiated the directives before they were even adopted by the College. The power-maximization tendencies at the Cabinet level were so strong that they departed from official procedures that are supposed to guard the independence of the Commission and the legitimacy of its proposals.

In terms of knowledge utilization, it is clear that the Commission representatives had little interest in learning from the Member States during their visits – rather, they wanted to ensure political buy-in. These visits 'gave us the opportunity to test the proposal before we even made it. I think this [...] helped for later because [...] the co-decision procedure

took a record time' (Interview 24 February 2011e). In particular, the presidential Cabinet wanted to achieve acceptance of the foreseen targets. This strategy might be a lesson learnt from 2005, when DG TREN had proposed national targets for the first time and national ministers 'reacted fiercely. Some were actually frothing! [...] One went totally red' (Wettestad and Boasson 2013, p. 88).

The very confidentially handled negotiation fiches that were drawn up for the Member States visits included information about the foreseen RES targets for 2005, 2007 and 2020, as well as non-ETS targets and the EU-ETS cap for 2020 compared with 2005. They did not include ETS numbers. The fiches also included information about the GDP assumptions that were made to calculate the targets for the individual Member States.

The Commission had no intention of discussing the numbers or distribution of targets themselves but only the methodology. It argued that it was only important to find a fair and reliable way to determine the targets, not to agree on them right away. Just as for the RES Directive, the Commission's knowledge advantage over the Member States was used to defend the envisaged proposal. In particular, the arguments collected in the impact assessment were helpful 'expertise [that] was significant in delivering the arguments the Commissioners needed to explain and defend this flagship proposal at home in the Member States' (Interview 8 February 2011b). It was successful: Member States generally welcomed the approach taken by the Commission but already started to discuss potential earmarking of funds for new Member States (Interview 11 February 2011).

The final phase of the discussions within the Commission was rather short and was already informed by the results of the visits to Member States. Several of my interview partners noted that the entire process from interservice consultation to adoption in the College 'was launched and completed in one month [...] This was extremely fast [...on] a very tight schedule' (Interview 3 February 2011b). Lower levels of the hierarchy even felt that the discussion 'went too fast in the latest stages' (Interview 11 February 2011). The interservice level had informed the Cabinet level twice (November 2007 and 8 January 2008) before it began its deliberations on 18 January 2008 – only ten days after the interservice consultation had officially started, and two days after the impact assessment was concluded.

The decision to push the entire package through within just three weeks was taken by the Cabinet of the President (Interview 8 February 2011b). We can witness a clear strategy of reducing political time

(Tholoniat 2007) in order to minimize debate. The reduction of political time favors those scientific results in the political discussions which are the best timed, the most certain and the least contested (Müller 1994, p. 49) – it therefore favored DG ENV. The strategy of reduced time also led to an unusually strong coordination between the service level and the Cabinets. Information meetings for Cabinets during interservice are, for instance, 'quite an unorthodox procedure. Usually, [...] Cabinets do not meddle. It's the technical assessment of the proposal' (Interview 3 February 2011b). The presidential Cabinet benefited and was able to draw the debates closer. The 'political wheeling and dealing' (Interview 24 February 2011b) could begin earlier and was steered with an unusual drive from the presidential Cabinet in a short-circuited system at the expense of the influence of Dimas' Cabinet.

The members of all of the different Cabinets met as usual in the so-called 'Special Chef Meeting' to find agreements to the outstanding conflicts over the proposal. Due to the complexity, technicality and number of issues, the meeting lasted until long after midnight. In fact it is remembered by the participants as 'the longest of all times', with an overall duration of nine-and-a-half hours (Interview 8 February 2011b). One of the defining debates was on energy-intensive industries and price uncertainties: 'There were calculations and models, but nobody knew what impact the ETS would have in reality. Now, some people are worried that the price is too low because there are so many allowances around [...] while some other times the price was really high' (Interview 8 March 2011). Cabinet Dimas was interested in keeping a system that would be politically acceptable, fair, predictable and rigorous, which meant preserving the environmental integrity of the proposal (Interview 3 March 2011).

Cabinet Verheugen remained particularly concerned about energy-intensive industry and negotiated hard with regard to the criteria of defining a list of sectors exposed to carbon leakage, to decide the number of allowances and the timeline for introducing other allocation mechanisms (Interview 9 February 2011a). Cabinet Verheugen found allies in the Cabinets of the Italian and French Commissioners (Fratini – Justice, Barrot – Transport) due to converging interests regarding their national energy-intensive industries, as well as with other economic Cabinets: Commissioners Kroes (Competition), Almunia (Economic and Financial Affairs) and Mandelson (Trade). In particular, Kroes, Almunia and Mandelson also questioned the principles of full trading as proposed by the environmental Cabinet Dimas (Interview 3 February 2011b). This alliance had helped to convince the President and his Cabinet to play

a strong role (Interview 9 February 2011a) in protecting the competitiveness of the energy-intensive industries (Interview 8 February 2011b). In addition, the Cabinets Michel, Kallas and Figel were seeking to obtain more lenient provisions for a transition period and further clarification regarding the cancellation and authorization provisions (Interview 3 February 2011b).

In this case and other outstanding issues such as BAM, decisions were made on political grounds, not by technical reasoning. The knowledge-utilization strategy that was employed was argumentative in the pursuit of sectoral or national interests (see also below regarding the identical Commissioners' knowledge-utilization strategies). By way of example, Cabinet Verheugen sought its services purposefully to obtain data that matched its argumentative needs because it 'was relatively clear early on that you need to rationally justify the exceptions you demand' with concrete numbers, preferably from your own DG (Interview 9 February 2011a). These numbers were then used as weapons against the proposals on the table.

The hebdo meeting between the heads of Cabinets took place on 21 January 2008, two days before the Commissioners adopted the proposals in their college meeting. The hebdo meeting was 'absolutely closed' in terms of participants (Interview 11 February 2011), and it is equally difficult to get access to information about what was discussed there and in what way, even from participants at the meeting. The limited information that is obtainable reveals that hebdo was the first meeting during which the numbers with distributional impacts (non-ETS burden-sharing agreement, RES targets) were shared. These figures had been left undisclosed by the SG even to Cabinet members to avoid a break-out of distributional conflicts among Cabinets according to their Commissioner's nationality (Interview 11 February 2011).

Additionally, the heads of Cabinets discussed the phasing-in of ETS auctioning for the power sector within a timeframe of up to three years, the definition of sectors exposed to carbon leakage or of criteria to determine sectors, the allocation rules for industries previously not subject to auctioning, additional free allowances for industry if there was no international agreement, competition law issues (closure and entry rules, benchmarks, BAM), as well as earmarking of revenues, CDM and administrative burdens (Interview 3 February 2011b). The presidential head of Cabinet was in particular concerned with the issues of BAM, benchmarking and the prevention of a definition of sectors exposed to carbon leakage (Interview 3 February 2011b). In addition, a few 'pet topics' of some Commissioners were discussed. Unfortunately, the data are not

sufficient to make a statement about the knowledge-utilization strategies at this level. We can only assume that the way in which the heads of Cabinets used their knowledge must have been similar to the approaches employed by Cabinet members and Commissioners.

Finally, we will assess the dynamics at the level of Commissioners. Barroso made it his task to drive the package through the legislative process. The climate and energy package was 'his project' (Interview 9 February 2011c). He initially even envisaged it as being 'his legacy' and named after him (Interview 18 April 2008a). It was a project of his liking: the issue had been 'upgraded from a sectoral policy to a strategic policy under direct control of heads of government' (Hey 20–21 June 2008, p. 25). It offered him a rare opportunity to be perceived as non-partisan by balancing 'social interests, green interests and business interests' (Interview 11 February 2011). He felt strongly about the market-based nature of the package and the possibility of bringing 'hard economics [...] into a fluffy area' (Interview 9 February 2011c). Climate change had 'entered the political mainstream' (Jordan et al. 2010a, p. 4) and allowed Barroso to play with the 'boys' (Buchan 2009, p. 114), among them the French, German, British and EU presidencies. Climate change was perceived by Barroso as a political opportunity to offer citizens a success story of European political involvement, but more importantly to increase the Commission's influence internationally, and to expand Commission competence vis-à-vis the Member States (Hey 20–21 June 2008, pp. 21–22; Jordan et al. 2010a, p. 11). The ETS revision was therefore clearly a chance to maximize the power of the Commission.

Barroso used knowledge accordingly as a hook to justify his preferences. In the College, he made special reference to the contribution that the legislative package would make to 'achieve the goals of prosperity, solidarity and security [...] of energy supply and the future competitiveness of the EU' (European Commission 23 January 2008b, p. 17). He then went on to present the policy proposals as objective, fair and based on sound science: Barroso underlined that the package would be feasible, affordable and cost-effective. With the help of the impact assessment, he showed that the implementation costs of the proposals would average at only 0.45 per cent of the EU's GDP and could be distributed fairly across the Member States in a reasonable and achievable way (European Commission 23 January 2008b, p. 17). Differences in the burden could be explained by 'objective differences in [...] economic circumstances, energy situations and other factors' (European Commission 23 January 2008b, p. 17). Barroso therefore used studies and data to justify his preference vis-à-vis the College.

Environment Commissioner Dimas went on in a similar fashion, legitimizing his proposals as objectively justified. In particular, Dimas mentioned that available studies could prove that the costs of inaction were much higher than the cost of implementing his proposal (European Commission 23 January 2008b, p. 18). By focusing on competitiveness, job creation and economic growth, Dimas continued his argument in the same frame that Barroso and Lord Stern had developed theirs to defend climate legislation. Dimas went on to substantiate his proposals with claims of scientific research that had proved that not only would GHGs be reduced with ETS II, but air quality would be improved, public health would benefit, treasuries would gain up to €75 billion annually, and employment and GDP growth would rise (European Commission 23 January 2008b, p. 18; European Commission 23 January 2008a, pp. 10–11, 62). By doing so, Dimas relied on a dynamic that was described as follows by one of the participants at the meeting:

> With good arguments, either they [other Commissioners] have counter-arguments to say what you say is not true, otherwise they have to accept it [...] preparation is key. If you [...] prepare it well, you have a decent analysis that you can show to people so that they are convinced, [...] it is easier to get it through College.
>
> (Interview 24 February 2011e)

The other Commissioners saw the historic importance of the package but doubted that the proposals would be welcomed enthusiastically. Several Commissioners pointed to the 'need for good public presentation of the package, of the costs of implementing it and of the considerable benefits to be gained by the EU' (European Commission 23 January 2008b, p. 20). Knowledge in form of studies and experts was clearly considered to be a helpful instrument in convincing the public. In addition to these general uses of knowledge in the College, a few more specific points of contention saw deliberate knowledge utilization for bargaining purposes.

First, Commissioner Verheugen showed concern about the impact of ETS on rising electricity prices and the consequences for the energy-intensive industries, such as ferrous and non-ferrous metal industries, pulp and paper, and mineral-based industries. His strategy was to refer to the legitimacy bestowed upon his claims by his HLG that he had used as a vehicle to push his agenda politically and to gather arguments for

his preferences. Dimas used a knowledge strategy of bringing discredit to Verheugen's demands for compensation or exemption measures by pointing out the shaky scientific grounds of the claims made by industry. Verheugen's facts, he claimed, were 'circumstantial, but not of the quality that we needed to make a decision' (Interview 3 March 2011). Dimas, Catherine Day and other Commissioners were even far from convinced that carbon leakage was taking place in any substantial amount. Dimas had prepared meticulously to have the arguments ready – he was not willing to move an inch by giving a 'specific accommodation [for special interests . . . unless it was] based on very thorough scientific, economic facts' (Interview 3 March 2011). Dimas had the arguments on his side: the shortcomings of ETS I (Bekkhus and van Hecke 2008, p. 136), a doubtful correlation of carbon prices and net trade flows (Kuik and Oosterhuis 2008, p. 219), and the influence of other more important factors, such as labor costs on international competitiveness (Grubb et al. 3 August 2009, p. 4). Even worse, some studies showcased the welfare losses to be expected from exempting energy-intensive industry from the ETS (Kallbekken 2005, p. 58). Dimas was thus happy to be able to resort to the knowledge gap to prevent more exemptions.

Against this backdrop, the only concession that Verheugen could achieve was to include a paragraph in the package that the sectoral concerns would be 'addressed, once duly substantiated' (European Commission 23 January 2008b, pp. 22–24) on the grounds that the existing data on carbon leakage was neither detailed nor comprehensive but rather sketchy. Some Commissioners had hoped to define a list of sectors affected by carbon leakage. The only change that Verheugen could negotiate in the document was a new phrase in a paragraph of the chapeau communication, adding 'for example steel, aluminum, cement' (Interview 22 February 2011). However, time pressure was mounting and there was wide consensus among Commissioners such as Rehn, Ferrero-Waldner, Barrot, Reding, Frattini, Piebalgs, Dimas and Verheugen himself about the need for the package as such. The carbon-leakage discussion was not to prevent the publication of the proposal. Dimas therefore managed to delegate the decision regarding the carbon-leakage list and on the allocation methods into comitology, meaning a committee after the legislative process. This smooth political move enabled the DG ENV to circumvent a lengthy political discussion. The final result was to estimate the exposure to carbon leakage on the basis of simple criteria (instead of on the basis of models such as the Commission-financed GEM-E3) (Clò 2010, p. 2424). These criteria

were later on changed by the European Council and elaborated through Commission guidelines.

Second, Commissioners pointed out that the ETS would have strong effects on their home countries' economies. For instance, Nordic Commissioners (Sweden, Finland) insisted on a force majeure clause regarding their forests (Interview 8 February 2011b). Meanwhile, the Commissioners from the newer EU Member States emphasized the negative impact of the package on their economies. Their interventions prompted a reminder about collegiality and the need to 'comply with professional ethics' of not representing Member States (Interview 3 February 2011b). These Commissioners also had to acknowledge that it was too late for major changes to the proposal and negotiated a Trojan horse into the proposal, in a very similar move as the business-oriented Commissioners. Their 'request that available data be taken into account in order to assess the effects of the proposals on the Member States, and the need to carry out detailed impact assessments for certain aspects of the package' (European Commission 23 January 2008b, p. 21) could be used as an avenue to later on introduce flexibility measures, transition periods and exemptions for the new Member States through the back door.

Additionally, they succeeded in adding a new recital, pointing out the responsibility of the richer Member States to contribute to the financial burden of the package on less developed Member States (European Commission 23 January 2008b, p. 24). These changes allowed the European Council to later on compensate the new Member States (with the means of the allocation rules) for not being part of the initial burden-sharing agreement from 2002 (De Cendra De Larragán 2008a, p. 203).

In these two examples, it is evident that the claim to inconclusive scientific evidence can serve to undermine arguments, as an excuse to postpone a decision or as a back channel for later revisions of momentarily fixed inconveniences. By pushing some of the most politically contentious topics out of the political limelight of high-level discussions, Dimas attempted to solve the issues in a more technocratic, less politicized environment. Indeed, this is what happened: the way auctioning was to be regulated, the way sectors exposed to carbon leakage were identified, the way benchmarks for free allocation were set, the way new entrants were defined, as well as tricky issues related to the international clean development mechanism (CDM) were all postponed, to be dealt with in comitology (Massai 2010, p. 24). Referring those issues that had been among the most controversial in the discussions on ETS I back to a technocratic problem-solving

body of committees for the ETS revision was Dimas' way of preventing politics from destroying the environmental integrity of his proposal.

Essentially, Dimas used the absence of preparation and knowledge as an excuse to refer the discussions back into the hands of experts. The requirements that were to be fulfilled by the comitology decisions were set in such a way that they bound the hands of the experts and forced them to decide favorably regarding DG ENV's preferences. Unfortunately for Dimas, many of these topics were like the spirits that the sorcerer's apprentice called. Eventually it was impossible to contain the political debate and even the European Council concerned itself with carbon leakage – in highly unusual detail and against the intentions of the treaty (Vedder 2010, p. 47).

3.4 Conclusion: Using knowledge to make the ETS market work

Here, I would like to focus on two elements: first to briefly describe the fate of the proposal for a revised ETS in the interinstitutional negotiations, and second to quickly revisit the main findings of this chapter.

The ETS revision aimed to increase the effectiveness of the ETS, and it did so by focusing on the ETS cap level and the allocation rule (Clò 2010, p. 2420). These changes significantly altered the impact of the initial ETS directive. In particular the move to a central cap-setting system has been likened to a 'revolution' (Skjærseth and Wettestad 2010c, p. 73). Despite the far-reaching changes, the proposal was pushed through the institutions within just a year. The French presidency of the Council considered the energy and climate package to be the political priority. In a push for an adoption within 2008 to send a strong signal to the international climate negotiators, the French 'elevate[d] decision-making from the Council of Ministers to the European Council' (Skjærseth 2010, p. 302). ETS II had become the business of heads of states and the European Parliament was under considerable pressure to accept their compromise in first reading.

As a consequence, many provisions in the directive were never challenged, even though they amounted to significant changes – among them the central cap. The political buy-in from the Heads of States ensured that the directive was there to stay. The following breakthroughs were achieved and had the placet by government leaders: EU-wide cap, a harmonized allocation method (auctioning), extension

of the scope to new sectors, an earmarking of at least 20 per cent of the auctioning revenue and harmonized monitoring rules (Massai 2010, p. 9). Other parts of the directive became subject to heavy horse-trading among the Member States and the European Parliament.

The French announcement to adopt the proposal with unanimity politicized the discussion even more. Scholars believe that this politicization led to less auctioning than initially proposed and to 'more lenient criteria for industries at risk of carbon leakage' (Skjærseth 2010, p. 302). On the one hand, the European Parliament – on the basis of its own study (European Parliament Policy Department Economic and Scientific Policy July 2008, pp. 1–68) – insisted on identifying sectors exposed to carbon leakage only once an international treaty was signed. The Member States, on the other hand, desperately sought opportunities to establish loopholes for its countries' respective industries. Consequently, France made a proposal to phase in the auctioning of emission allowances until 2016 for the Baltic Member States, the Czech Republic, Greece and Poland (Massai 2010, pp. 10–11).

The final solution for carbon leakage is to measure exposure to international competition by one threshold on production costs and market share and by one threshold on cost increases or import–export dependencies. Clò shows in his work that the combination of the two partly overlapping approaches enables the Member States to exempt 140 sectors out of 257 instead of only six (Clò 2010, p. 2426). In particular, 134 sectors can be included by adding the first criterion to the second. Clò concludes that the solution found 'is not sufficiently economically grounded. It looks more like the final result of a political compromise aimed at limiting the impact of the European regulation.' (Clò 2010, p. 2428). Other scholars even talk about a list of 164 sectors and subsectors, which 'account for [...] nearly 80 per cent of the total emissions from manufacturing industry in the ETS' (Skjærseth and Wettestad 2010a, p. 106), as well as 80 per cent of the non-electricity sector (Vedder 2010, p. 69).

In short, the political negotiations changed the proposed criteria of the Commission into a much more lenient regulation. Commission officials have consequently expressed their dissatisfaction in the interviews: 'If there is one big thing I could have back, it is driving it through leaders' (Interview 9 February 2011c). They felt that the politicization significantly weakened the progress that the Commission had hoped to achieve. Additionally, Commission officials often regard the political bargaining over their proposal as excrescent: 'We propose things and then it gets more and more complicated and then in the end you have

created something which can become quite costly indeed' (Interview 24 February 2011b).

It should be noted, however, that this result was only possible because the Commission did not offer its own numbers regarding carbon-leakage exposure. Had DG ENV or DG ENTR been willing or able to produce data, this outcome is very unlikely to have been achieved. In this particular case, consciously leaving knowledge gaps open let politics fill the void with a solution that suited its preferences best. The problem-solving happened on the highest level when the European Council stepped in, brushing aside the competent national ministers.

We now turn to a short summary of the findings of this chapter. I argued that the organizational function as defined by the organizational character determines the demand for knowledge. Whenever the organization focuses on mandate delivery, the logic of appropriateness inherent in this organizational strategy defines the behavior of its officials as one where they aim to improve the delivery on the mandate through cognitive knowledge utilization. In turn, whenever the organization focuses on power maximization, the logic of consequentiality will demand from its officials that they use knowledge to argumentatively support preferences that have already been formed. This case study has identified several knowledge-utilization strategies that seem to be linked to and caused by the logic of appropriateness or consequentiality inherent in different organizational strategies. First are those variants calling for a mandate delivery focus.

In a technocracy, epistemic learning is of utmost importance. The units collect knowledge as widely as possible, consult with experts in formal and informal settings, and commission studies with the aim of identifying policy options and understanding their advantages and disadvantages. The extension of the ETS scope is one example where the Commission followed advice from commissioned studies. Further studies were used to clarify and verify the claims to truth of different stakeholders. ECCP II also served this purpose. Policy officers administered the ECCP II dialogue. ECCP II helped them to structure and make sense of the debate. It delivered sectoral information that is not normally available to the Commission. Just like ECCP I, ECCP II can be understood as a sounding board and as a preparatory expert body preparing the necessary analytical work. In the case of ETS II, widespread expert consultation was replaced by in-house consultation.

In a politicized technocracy, mandate delivery can be defined in a rather narrow way. For ETS II, this meant target delivery of a policy instrument that was about to fail. The policy officers had learnt

during the implementation of ETS I that the allocation method was the Achilles' heel of the ETS. Using a study by Ecofys, results of several econometric models such as PRIMES, and their insights from previous experiences, DG ENV officials came to the conclusion that as an allocation method, auctioning was more cost-effective than grandfathering. Consistent with the preferences of its DG, the economic mindset of their unit and their epistemic beliefs, the unit then proposed auctioning.

In a bottom-up technocracy, knowledge is used to persuade. Preferences are shaped, consensus is built and debates are informed with the help of knowledge capacity-building, or, in other words, teaching. DG ENV continuously attempted to 'rationalize the debate'. Its insistence on discussions devoid of emotions and based on facts is in essence a technocratic *modus vivendi*. Additionally, it pulls political actors toward those grounds where the Commission has a home field advantage: factual expertise. The Commission technocratized the debate through the interaction with and education of experts. Nevertheless, politicization casts its cloud on the utilization of knowledge in the form of strategic decisions that prepare future bargaining rounds. We will see later on that the framing of climate policy as a cost-efficient reaction to environmental pollution had consequences on other policy instruments, too.

In top-down technocracy, knowledge is used to inform decisions within political constraints. We can witness this dynamic in the case of the informal taskforce at the Directors' level, which ensured that the political choices in the joint modeling exercise with DG TREN were rationalized. The Directors stepped in to depoliticize an otherwise technical debate. Furthermore, knowledge is needed to determine and puzzle upon policy options that can fulfill political criteria. The ETS II case, together with the RES case study, witnessed the involvement of a group of Directors in the IAB. The IAB ensured that the impact assessment was accessible to high-level policy-makers.

Second, we now turn to the four variants that have a power-maximization focus.

In bottom-up politics, knowledge is used to substantiate claims and decisions that have already been taken. Arguments that were tested before in various policy forums are used in bargaining situations that pretend to be fact-based conversations. DG ENV adopted a knowledge-utilization strategy that was based on exploiting its knowledge advantage. By doing so it literally outsmarted other DGs, which had to counter the level of its expertise. Additionally, this strategy allowed DG ENV to slightly alleviate the pressure from the Cabinets.

In top-down politics, knowledge is used – analogous to top-down technocracy – to inform decisions. However, in this case, knowledge is used to realize political advantages, to design politically feasible solutions that have strong argumentative hooks attached to them. The prime example from this case study is the debate around carbon leakage. Delbeke made sure that the policy options chosen would resonate well with the media attention that the concept of windfall profits had attracted. Additionally, we have witnessed an interesting case where knowledge about sectors exposed to carbon leakage was consciously not produced. This move made it more difficult for the opposing side to argue its case.

In politics, knowledge serves as an argumentative weapon that legitimizes the position, interest and preference that an actor has. One prime example would be the expert group on climate change that advised Barroso directly. It provided legitimacy and third-party endorsement of a political agenda. Additionally, the impact assessment served the Cabinets well. They toured the capitals in order to ensure political buy-in. In doing so, the modeling that had been conducted in the service proved to have high value for legitimacy. Commissioner Dimas similarly used studies to substantiate his political standpoint.

We have seen that a plethora of knowledge-utilization strategies exist within the Commission, some of them catering toward the organizational function of mandate delivery, whereas others aim to maximize power. It seems that in more technocratic arenas within the Commission (defined as pure technocracy, politicized technocracy, bottom-up technocracy and top-down technocracy), the logic of appropriateness rules the behavior of the officials. In these fora, they use knowledge more cognitively. In more politicized arenas within the Commission (defined as bottom-up politics, top-down politics, technocratic politics and pure politics), the behavior of officials is ruled by the logic of consequentiality. Officials in these situations use knowledge mostly argumentatively to justify existing preferences and to maximize their power.

After having looked at two market-based directives (ETS I and ETS II), we are now turning to the renewables directives, which involved more of a technological steer. It will be interesting to see how the knowledge-utilization strategies of DG ENV and DG TREN differ from one another and how they are interlinked. Again, the purposeful utilization of knowledge will play a crucial role.

4
The Commission's Approach to Devising the Renewables Directive

4.1 Introduction: A foot in the door toward a European energy policy

In March 2007, the European Council 'surprised many, including perhaps themselves' (Buchan 2009, p. 137) by giving the go-ahead for the European Commission to develop a new directive promoting renewable energy in Europe. The resulting directive, which was adopted in 2008, pulls together parts of formerly independent legislation on subissues in the field of energy.

In this case study, we will assess how knowledge was used in devising the proposal for a directive on renewable energy. We have observed that some parts of the Commission are more likely to resort to problem-solving, whereas others tend to bargain. In this interplay of more technocratic arenas (defined as pure technocracy, politicized technocracy, bottom-up technocracy and top-down technocracy) and more politicized arenas (defined as bottom-up politics, top-down politics, technocratic politics and pure politics), the legislative proposal was conceived. I argue that the two arenas govern the behavior of their respective Commission officials and cause them to follow the logic of either appropriateness or of consequentiality. In the former, they would use knowledge cognitively to deliver on their mandate of devising technically sound proposals. In the latter, officials would use knowledge argumentatively to maximize the power of their organizational unit. These knowledge-utilization strategies are the focal areas of interest in this case study on the directive for the promotion of renewable energy.

Energy production from RES, as understood by the Commission, equally encompasses 'dark green' energy produced by using wind and solar, and 'light green' energy produced from hydropower (water)

installations and waste, as well as combined heat and power (CHP) and energy from biomass (Rowlands 2005, p. 968). The prime fascination in the 2000s with RES stems from the simple promise of limitless supply with a small impact on the environment. Renewables might or might not be the answer to the Club of Rome's daunting scenario of the limits of growth. Yet, they certainly are new technological avenues to circumvent the problems of resource scarcity of coal, oil and the like. RES were also seen as the politician's favorite silver bullet to the trade-offs inherent in the energy triangle (energy security, competitiveness, environment) as it defined in the 1995 White Paper on Energy (COM(95)682 (European Commission 13 December 1995)) (Hildingsson et al. 2010, p. 108).

Since the late 1990s, no other energy source has received the 'special treatment' on the European level that RES have benefited from (Buchan 2009, p. 137). The Russian-Ukrainian gas crisis in 2006 only underscored the importance of developing domestic energy sources, such as RES, to guarantee energy supply. The European Council's 20–20–20 agreement from spring 2007 closely links the climate and the energy policy agenda. It paved the way to the proposal of a new RES Directive by mandating the Commission to take steps so that the EU can achieve a share of 20 per cent renewables in the European energy mix by 2020 compared with 1990. This is a daunting task, particularly when bearing in mind that the long-term goal was a complete decarbonization of the European energy sector by 2050. In other words, the European Council envisaged a complete shift to renewables (and potentially nuclear energy) in the energy mix in the four decades until 2050. In an attempt to express the historical challenge, the Commission President even called this change process a 'post-industrial revolution' (Jordan and Rayner 2010, p. 73).

The proposal for a directive was conceived in the context of a legacy of underperformance and institutional deadlock. In fact, the history of legislative failure on energy matters in the 1990s (see Collier 1997; Jordan and Rayner 2010, pp. 52–55; Howes 2010, p. 122) is comparable to the failure of climate policy before the 2000s (see Wettestad 2000, p. 35). By 2007, the Member States already had a track record of at least ten years of failing to achieve renewable energy targets. The non-binding Commission proposal from 1997 to achieve a 12 per cent share by 2010 (starting from 6 per cent in 1997) had led to an increase to only 8 per cent by 2010 and fell flat in delivering the annual increase necessary to reach the long-term goals (Henningsen 2008, p. 144). Additionally, the Commission's competence had always been limited in the field of energy – until the Lisbon Treaty introduced an energy chapter. By the

end of the 1990s, the Commission was deeply frustrated by the limited progress that it had achieved on energy-policy harmonization. The carbon and energy tax had been repeatedly killed by a broad coalition of countries (Collier 1997, pp. 54–55), the funding programs (THERMIE, JOULE, SAVE and ALTENER) had been watered down (Collier 1997; Wettestad 2000) and the Commission had had its nose bloodied whenever it tried to endow its RES promotion efforts with significant funding (Wettestad 2000, p. 32).

However, as time passed, harmonization pressures mounted with the development of nationally diverging energy policies between 1988 and the early 2000s (Hildingsson et al. 2010, p. 106). The favorable political circumstances with a rising interest in climate change allowed the Commission to put forward several directives with increasing ambition over the course of ten years. Next to the ETS Directive 2003, which had an indirect effect on the renewables share, the Commission proposed a directive on the promotion of electricity from RES (2001/77/EC, European Commission 27 September 2001), a directive on the energy performance of buildings (2002/91/EC, European Commission 16 December2002), a directive on the promotion of transport biofuels (2003/30/EC, European Commission 8 May 2003) and a directive on the promotion of CHP (2004/8/EC, European Commission 11 February 2004). These directives were estimated to deliver a combined CO_2-reduction potential of 235–277 Mt of CO_2e in the EU-15 by 2010 (Delbeke 2006b, p. 6).

Nevertheless, the Commission saw a need for a stronger legislative framework to show a way forward. The proposals for a new RES Directive emerged directly from the Commission's Renewables Roadmap from 2006 and its communication 'An Energy Policy for Europe' from early 2007 (European Commission 7 December 2005; European Commission 8 March 2006; European Commission 10 January 2007). The roadmap established that RES policy should be pursued in addition to climate policy and 'concluded that a 20 per cent goal for renewable energy for the EU by 2020 was ambitious, demanding, but feasible' (Howes 2010, p. 124). Howes points out that this roadmap already contained the main thinking about the targets: it proposes an overall target instead of sectoral targets and it recommends binding instead of indicative targets (Howes 2010, pp. 124–125). The 2007 communication then suggested targets for renewable energy and biofuels, as well as energy efficiency and carbon capture and storage (CCS).

As soon as the Council accepted the thinking in these two documents, the Commission's reaction was to fully exploit the political leeway it had

in drafting a legally binding response to the Council's politically binding agreement (Henningsen 2008, p. 143). At the core of the Commission's approach is the merger of the existing renewables directive (2001/77/EC) and the biofuels directive (2003/30/EC) into a broader legislative framework to achieve the targets agreed upon. The consolidation of previously weak legislation into a new, strong framework was supposed to ensure that RES would be deployed not only as a 'result of the efforts of a few committed Member States' (European Commission 08 March 2006, p. 5) and would overcome the perverse distribution of renewables across Europe that followed 'a bizarre ratio reflecting subsidy rather than sunshine' (Buchan 2009, p. 138). Furthermore, heating and cooling became part of the target-delivery mechanisms, biofuels were made subject to sustainability criteria and guarantees of origin (GO) were harmonized (Nilsson et al. 2008, p. 1).

It is noteworthy that the Commission did not choose to pursue the new RES Directive as a part of its climate policy but rather as an industrial or technology policy. Whereas there was general agreement within the Commission about the level of ambition, the choice of policy instruments was less consensual. Other than the climate policy zeitgeist suggested, DG TREN believed in the need for a regulatory instrument that is not entirely reliant on market-based instruments. Its belief in the existence of market barriers such as knowledge barriers, capital and finance obstacles, as well as legal and administrative hindrances (Collier and Löfstedt 1997, p. 23), eventually trumped DG ENV's belief in the power of markets. This chapter will therefore provide some interesting insights into the role of (ideological) beliefs in knowledge-processing and utilization.

4.2 Technocratic knowledge-utilization strategies in developing the RES Directive

4.2.1 Underpinning policy options with expertise: Technocracy and knowledge in RES

First, we will look at the genesis of the RES directive in the so-called technocratic arena of the Commission. This is a situation at the beginning of the policy cycle, where – typically – a desk officer at a low organizational decisional level frames policy options. They will attach advantages and disadvantages to these options in order to inform the decision in units higher in the organizational hierarchy. The role that the desk officer is expected to play is one of preparing decisions in a technocratic, problem-solving fashion, as well as executing decisions in

the form of shaping a policy principle into a legal phrasing. We would expect the logic of appropriateness for such a role in the organization to be one of mandate delivery and consequently that a desk officer seeks knowledge to cognitively grasp a problem and identify policy options.

The RES Directive was prepared and drafted by a team of five under the supervision of the Head of Unit, Hans van Steen. Paul Hodson led the drafting team. It comprised Tom Howes, Andrea Hersuth, Amy Cothuis and Eva Dewa. Howes led the impact assessment work, particularly with a view to the distribution of the RES targets (Art. 3–4, Annex I). Hersuth was responsible for the definitions (Art. 2), the regulation of access to the electricity grid (Art. 14) and the provisions, which regulate how the RES share in the energy mix shall will be calculated (art. 5 and 11, Annex II–III). Cothuis drafted the articles on administrative barriers (Art. 12), as well as on training and information (Art. 13, Annex IV). Dewa led the work on biofuels at the service level (arts 15–20, Annex V–VII). The work on guarantees of origin (RES trading, arts 6–10) was led by Hodson himself, who was promoted to Deputy Head of Unit during the drafting process. The articles on scope (Art. 1), addressees (Art. 25), entry into force (Art. 24), transposition (Art. 23), amendments (Art. 22) and the implementation committee (Art. 21) are simply rewritten versions of those in Directive 2001/77/EC on electricity (Interview 8 February 2011a).

The drafting team could draw on a number of public consultation exercises and a myriad of studies but did not have a dedicated stakeholder consultation group in the ECCP Program, as the ETS revision had. With regard to consultations, the Commission offered the opportunity to take a stand to Member States, stakeholders from the industry, consumer and NGO sides, as well as the public. The Commission counts the consultation exercise from March to September 2006 on the Energy Green Paper (European Commission 8 March 2006) as the first consultation linked to the RES Directive (European Commission 23 January 2008c, p. 5). Other consultations covered heating and cooling (August–October 2006), administrative barriers to RES deployment (March–April 2007) and biofuels (April–July 2006, April–June 2007).

The drafting team was responsible for pulling all input together and for making the first proposals on this basis. In order not to start from scratch, they used the last directive on electricity (2001/77/EC) as a starting point, 'although there is not much left of this in the final version' (Interview 8 February 2011a) apart from the standard articles mentioned above and the definitions in Article 2. On the rest of the directive,

the drafting team was mostly occupied with identifying different policy options and their disadvantages and advantages.

The national targets for renewables in the energy mix (arts 3 and 4, Annex I) have been a rather peculiar case, where the desk officials faced a large amount of interference by the Cabinet and the Director General. This is therefore an instance that is dealt with in a later section (top-down politics) in detail. However, the decisions had to be prepared. This process happened at this low level of hierarchy. In short, the desk officials used two econometric models – PRIMES and Green-X – to calculate the economically most efficient option for the national breakdown of the European overall target of 20 per cent renewables in the energy mix. PRIMES was the main model used and had been commissioned for more general purposes. Manfred Decker (DG TREN) managed the RES for PRIMES (DG TREN). Green-X was a model that had been developed under the auspices of Beatriz Yordi (DG TREN). It was helpful because it shed a more differentiated light on RES deployment scenarios (Interview 8 February 2011a) – for instance, through the 2005 FORRES report 'Analysis of the EU Renewable Energy Sources' Evolution up to 2020' (Ragwitz 2005) commissioned from Fraunhofer, the Vienna University of Technology, Ecofys and others.

As soon as it became clear that this distribution was politically not acceptable, higher levels of the hierarchy, including Commissioner Piebalgs himself, became involved in policy-shaping and asked the desk officers to tweak the calculation methods according to their guidance until the politics came out right, with regard to both the overall distribution and the indicative trajectory for achieving the targets over the years until 2020. This process was a continuous interaction: 'we wrote them, re-wrote them, thought about them and negotiated them' (Interview 8 February 2011a). Knowledge that had been commissioned earlier for the entire climate and energy package in the form of the econometric models thus became a function of politics and was accordingly reshaped until it fit. We will dive into this aspect later.

Due to thinking in the Cabinet of Commissioner Piebalgs, an element of the original directive (2001/77/EC) was supposed to gain significant influence in the 2008 directive and was accordingly expanded (Interview 8 February 2011a): guarantees of origin (or RES trading). In short, this is a form of trading obligation to achieve a certain RES share in the national mix. In terms of identifying policy options, the service level was mostly overridden by higher levels in the hierarchy. It was, however, responsible for working with consultancies and universities in laying the intellectual groundwork. One example of its work can be

found in the impressive foundations laid by the E-TRACK project. Here, a number of contract partners such as the Öko-Institut, the Austrian Energy Agency and the Lithuanian Energy Institute came together to define design options for a Europe-wide system of tracking energy flows according to their energy sources (Timpe 2007b, 2007a).

It is interesting to note that, just as in the case of all other commissioned studies, the contract partners geographically cover the entire EU. The reason is that 'the most crucial element for the Commission in a policy proposal is to have 27 Member States representation, because we have little message in telling that the Benelux have to do something' (Interview 3 February 2011a). In other words the Commission's legislative outcome needs to be relevant to the entire EU, and subsequently it demands expertise accordingly. The E-TRACK work fed directly into the thinking on guarantees of origin and proposed a way to account for flows of RES in the electricity market. However, the service level as such had to work very closely with the Cabinet – in the person of Peter Vis – on shaping basically all design issues. This aspect is therefore dealt with later as well (Section 4.3.2).

The main task for the desk officials in this context was not to present policy options but to make them possible. At the same time, the service level was much more skeptical about the effectiveness of RES trading. It made sure that its superiors had information on their desks that also represented the other side of the argument to the Cabinet. One example is the OPTRES 2007 report (Ragwitz 2007), which proved that feed-in tariffs work better than RES trading in achieving RES targets (Interview 8 February 2011a). More about RES trading can be found in Section 4.3.2, but it is worth stating that presenting a balanced case for and against trading to the superiors prompted the unit to task the service level to figure out a way to limit RES trading. Delivering this outcome challenged the unit because this wish is legally tricky in a common internal market: 'The original text was subject to a lot of effort by us, involved close coordination with the legal service [...] that was quite complicated' (Interview 8 February 2011a). Ironically, the RES trading articles (arts 6–10) were – despite the extensive political screening processes in the Cabinet and the involvement of both Commissioner and Director General – changed dramatically by Poland, Germany and the UK in the Council. The reaction of one of the desk officials is interestingly technocratic in this regard: 'they tidied up after us [...], all the beautiful work was lost, I mean whether that is a good or bad thing is not the question but it was good work [in terms of craftsmanship]' (Interview 8 February 2011a).

In conclusion, we see that technocratic arenas require policy officers to puzzle over epistemic challenges. They organize the generation and analysis of knowledge, and they shape policies by making options available and identifying their costs and benefits. In case of a closely integrated political and technocratic process, the policy officers would underpin political preferences with the delivery of scientifically sound and technically feasible solutions.

4.2.2 Solving RES and biofuels target-setting problems: Politicized technocracy and knowledge

When now turning to politicized technocracy, we witness low hierarchical levels using knowledge in a predominantly epistemic way. They do so while solving problems and taking decisions at the same time. They did so in three instances during the preparation of the RES directive. First, the way the achievement of the RES target is counted, second the way administrative and infrastructural barriers to RES deployment are overcome and most importantly, third, the main design issues regarding biofuels.

European and national targets for the share of renewables in the energy mix need not only to be set but also to be measured. Accounting rules (arts 5 and 11, annexes II–III) were necessary. Five main decisions were taken regarding the calculation. (1) The target indicator was changed from primary energy to a 'share of renewables in gross final energy consumption' following Eurostat's input and definitions (Capros et al. 2011, p. 1477). The reasons that are given for the switch are technical. According to Howes, the new approach abolishes the accounting disadvantage that RES encountered in earlier legislation, it increases legislative consistency with other existing directives that focused on final energy consumption, and it is in line with Eurostat measurement conventions (Howes 2010, p. 127). While the decision may be technical, it has the political implication of making achieving the target easier. Fossil fuels have greater transformation inefficiencies from primary to final energy than RES (Toke 2008, p. 3004; Howes 2010, p. 127). A switch to final energy consumption as measurement for target achievement therefore favors RES. (2) Eurostat offered a normalization rule for the accounting of hydro energy, which was then extended to the other energy forms. (3) The energy value of transport fuels in Annex III was calculated on the basis of physical constants and later streamlined with calculations in other Community legislation. (4) Some mistakes in the previous biofuels directive were corrected regarding the calculation of values of two gasoline additives, ETBE and

MTBE. (5) A small technical addition to the calculation escaped the view of most of the political actors but is highly relevant for the promotion of biofuels through legislative incentives: the contribution of biomass to the target is artificially inflated by a factor of 2.4 (Toke 2008, p. 3004).

Most of these changes were made following suggestions from experts at Eurostat or from within the Commission. Unfortunately, the circumstances of the decision about biofuels accounting cannot be traced back with the available data. Regarding the other decisions, we know that the drafting team consulted Eurostat: 'a lot of thinking on our part [. . .] already existed [. . . but this issue] drew us in quite a lot of debate with Eurostat, which are certainly experts in this context [. . .] And I haven't really understood it properly, but it was Eurostat's [input]' (Interview 8 February 2011a). Eurostat input was taken at face value as it was too technical to be challenged. These five decisions have been made to ensure legal consistency and a streamlining of accounting approaches, and sometimes disregarded the potentially political impact. Expertise in this context set the agenda and provided the solution. In the first and fifth instances, the technical change suited the political agenda of promoting RES and most likely this was a very welcome side-effect, but there is little indication that the decisions were politically motivated. DG TREN buried the political implications with its technocratic decision-taking approach.

We now turn to the second complex that was discussed: the 'administrative, regulatory and information failures [which . . .] distort the market' (Howes 2010, p. 136). In the language of the Commission, these are 'barriers' to the widespread deployment of RES. The drafting team based its work on the 2006 OPTRES report on barriers for the development of RES electricity generation (Coenraads 2006). This study examines the administrative, infrastructural, financial and social barriers to RES deployment on the basis of a stakeholder consultation covering 251 organizations that was held from March to June 2005. The OPTRES report showed that all RES industries prioritize long lead times and cumbersome processes with many authorities as barriers, and that hydropower and onshore wind projects suffered the most from administrative hurdles (Coenraads 2006, p. 3). The social and financial barriers were perceived as differently severe by the sectors of the RES industry (Coenraads 2006, pp. 6–8). The OPTRES report was a helpful thought starter for the Commission, yet too aggregated. Further studies (European Commission 2007b) underlined the stakeholder input and differentiated policy design options (MVV Consulting 15 June 2007).

They formed the basis for articles 12–14 on authorization procedures, training and RES access to the electricity grid.

The Article 12 provision addresses the costs and uncertainties related to authorization and licensing procedures, which were judged to be 'intolerably high' (Howes 2010, pp. 136–137). Article 12 regulated that procedures have to take into account the special needs of the renewables industry and that Member States shall impose minimum requirements on energy efficiency in buildings and on conversion efficiency for different RES. This is a provision that had been recommended in the MVV study (MVV Consulting 15 June 2007, p. 71). Article 13 on training and information and its related Annex IV was based on work regarding the training necessary to install equipment in houses that was funded under the Intelligent Energy Europe (IEE) program (Interview 8 February 2011a). Article 14 regulates how market participants have to ensure the access of RES to the electricity grid and closely mirrors provisions that already existed in Directive 2001/77/EC. The new article in particular requires that the grid operators ensure priority access for RES to their grids, guarantee that their grids can cope with the RES electricity, and that they make their costs transparent and use objective criteria in offering access to their grid.

For articles 12–14, the drafting team considered the new proposals as 'just a logical strengthening' or 'logical extension' of already existing provisions in Directive 2001/77/EC based on the results of studies (Interview 8 February 2011a). The perspective of the drafting team on articles 12–14 as a logical strengthening of existing regimes is remarkably technocratic. The way it went about defining the new articles was to consult stakeholders about the problems, assess whether the existing articles solve the problems, and strengthen the provisions when necessary to close the gap between expectation and delivery. The studies that it commissioned and the stakeholder consultation provided the additional insight needed to proceed. Political considerations seem to have had minor importance. However, the results of these efforts are politically contentious: minimum efficiency criteria, cost transparency, and harmonization of education and planning standards are likely to meet resistance in industry or among Member States. It seems that the unit was driven by the need to close the gap between expectation and delivery in the RES field. Knowledge was used to better gauge the problem of RES deployment lagging behind, and consultations were used to identify those solutions most likely to address the existing barriers. The Head of Unit backed the solutions that were identified and this seems to have reduced the political contentiousness in the eyes of the unit.

Accordingly, they were willing to make decisions on the basis of politically convenient knowledge – and it cannot be excluded that additional expertise was not sought on purpose.

One might say that the issue of biofuels was shaped by the most politicized technocracy in the entire cross-case study at hand. Rather, I would claim that we simply witness a technocratic policy officer dealing with political and scientific uncertainty. Hodson and his team had received clear guidance from the Council conclusions in March 2007. First, biofuels were to, 'in principle, account for at least 10 per cent of all transport fuel in all 27 states in the Union by 2020' (Buchan 2009, p. 152). Second, the measures to achieve the target were supposed to be cost-efficient. Third, the 'binding character of this target is appropriate subject to production being sustainable, and second-generation biofuels being commercially available' (Buchan 2009, pp. 153–154). Paul Hodson and his team devised the approach of DG TREN. Whereas his Head of Unit signed off on it, it can generally be said that Hans van Steen as the Head of Unit gave Paul Hodson as the head of the drafting team plenty of space to develop the proposal (Interview 24 February 2011c). Three issues were addressed in particular: the binding nature of the target, and the criteria for sustainability and for calculating greenhouse gas impacts of biofuels. We turn to the latter two first.

With regard to the biofuels section in general, Hodson and his team implemented two consultations and had numerous conversations with external experts. DG TREN's officials were dissatisfied with the results and felt that they were not comprehensive enough: the experts 'weren't able to give us what we wanted as a whole. There are no real experts [...] Nobody had ever done anything like this before in terms of putting this sort of stuff in legislation. We really did it ourselves, we became the experts [...]' (Interview 08 February 2011a). One example is the discussion of sustainability criteria for biofuels. It became clear relatively quickly that not all biofuels are positive due to unintended side-effects, such as environmental damage or detrimental impacts on biodiversity. DG TREN was therefore attempting to collect best practices for sustainability criteria to avoid promoting harmful biofuels. However, the representatives of stakeholders with voluntary schemes were not able to offer criteria that would guarantee a certain environmental outcome. The social criteria that they proposed brought about problems with WTO law compatibility.

Eventually the Head of Unit, Hans van Steen, identified three pillars for the sustainability criteria: conversion rates of high carbon stock land, biodiversity and GHG performance (Interview 24 February 2011c).

These criteria were then specified, in particular to prescribe biofuels having to save a minimum of 35 per cent of CO_2 emissions over their lifetime (Howes 2010, p. 141) – a rather generous requirement (Buchan 2009, pp. 160–161). Interestingly enough, the sustainability criteria do not attempt to solve the potential trade-off in particular for first-generation biofuels between food supply and fuel supply. The lack of attention of DG TREN toward food price impacts can be explained by its organizational epistemic bias. DG TREN perceived biofuels as a solution to a transport-related policy problem – not as a problem related to the environment, agriculture or development domain. I posit that the drafting team did follow a technocratic approach to its decision-making, yet the way it processed information was heavily impacted by its organizational focus on transport.

Another issue that can serve as an example of how DG TREN coped with uncertainties and expert disagreement is the calculation of the GHG impacts of biofuels. This methodology is important in order to establish the sustainability of biofuels in comparison with other fuels. At first the Joint Research Centre (JRC) provided data on GHG emissions from biofuels and a calculation methodology. However, both the results and the methodology were challenged by industry. DG TREN then decided to invite the opposing sides into the same room, and set up a meeting to confront the different views. This confrontation developed into a series of at least eight meetings in a working group on methodological questions.

Hodson and his team were very careful in inviting stakeholders and to compare their differing expert input. They believed that exposing stakeholders and experts to one another helps to clarify who has the most credible claims to truth: we 'confront experts with each other [. . . to] benefit from the fact that because they don't agree with each other, they are arguing. And the truth is revealed by the strength of the arguments [. . .] You see, it is not a compromise process' (Interview 8 February 2011a). The meetings were perceived as 'incredibly productive', but even though JRC showed 'quite a lot of flexibility' (and NGOs were not even present due to a lack of experts), the industry representatives were unable to agree on a workable methodology for the calculation (Interview 8 February 2011a). Hodson then consulted the three Member States that had already gathered experience with a calculation methodology and found that the UK, the German and the Dutch approaches were also not compatible (Interview 8 February 2011a). In the absence of converging expert opinions, it was eventually DG TREN that decided by itself about the rules about attributing GHG emissions to biofuels

(Annex V). In a move that distinguished DG TREN's approach from the thinking of the JRC experts, Hodson decided that the rules should be based on an average-based, consistently attributional approach to calculation. This decision eventually favored the Dutch method over the different methodologies proposed by other representatives.

In this case, the absence of a solid fundament of converging expert opinions opened an avenue for technocratic desk officials to make a decision according to what they believed was best. Consulting all knowledgeable experts enabled DG TREN officials to become experts themselves (Interview 8 February 2011a). In such a situation, they were free to choose between the different options and had gained a competitive knowledge advantage in the consultation period over every other actor in the political process. This knowledge advantage was used extensively later on in the interservice consultations.

We now address the way in which DG TREN chose to make the biofuels target binding. My observation is that they had a mindset focused on delivering the 10 per cent target. PRIMES modeling had shown that the target could not be achieved without additional support policies, such as a binding target (Capros et al. 2011, p. 1480). DG TREN had noticed that the voluntary non-binding biofuels target of a 2 per cent share by 2005 (Directive 2003/30/EC) was not achieved even though 16 Member States offered tax incentives for biofuels (Buchan 2009, pp. 154–155). The aim of 5.75 per cent by 2010 was also out of sight (Dehousse and Zgajewski 2008), although biofuels had the potential to supply nearly 50 per cent of the road transport's fuel needs by 2030 (European Commission 2006b). Second, the drafting team had legal reservations about the uncertainty related to making a target conditional on 'something happening to have commercial availability of a particular kind of biofuels at some point in the future!' (Interview 24 February 2011c). This perspective also points toward the importance of security of investments, which had been emphasized by the industrial stakeholders of DG TREN.

Sharman argues that biofuels were not subject to evidence-based policy-making but to policy-based evidence-making (Sharman and Holmes 2010, p. 313), and that the Commission did not adhere to its own guidelines regarding the use of expertise, nor its guiding principles such as the precautionary principle (Sharman and Holmes 2010, p. 309). I believe this to be too strong an accusation. We cannot clearly witness power maximization knowledge-utilization strategies at work. Sharman argues that Hodson's team ignored several studies claiming that biofuels were neither commercially viable nor particularly

sustainable, namely by the EEA, the World Bank and the Organisation for Economic Co-operation and Development (OECD) (Mitchell 2008; Doornbusch and Steenblik 2007; EEA 8 June 2006), as cited in (Sharman and Holmes 2010, pp. 315–316). Jordan (Jordan and Rayner 2010, p. 75) claims the same about a study by the Royal Society that questioned the contribution of biofuels to emission reductions (Royal Society 2008).

However, these claims are not fully balanced: the World Bank and Royal Society studies were published only after the Commission proposal came out. Sharman misrepresents the EEA study, which was actually not skeptical about the 10 per cent target but argued that its assumptions were conservative and that even a 16 per cent target is possible to achieve in a sustainable way (EEA 8 June 2006, pp. 6–7). The EEA study is a good case in point, though. As Romero noticed, the EEA's advisory body publicly renounced its optimistic statement later in 2008 after the proposal was published (EEA 10 April 2008; 2008). The assessments cited in this paragraph profit from the benefit of hindsight that the Commission could not have had. It seems that Hodson, in a scientifically uncertain environment, simply believed biofuels to be a policy solution to a policy problem, not to a political problem.

He was not a maverick in concluding so. DG TREN had a history of adopting action plans, strategies, studies and directives that confirmed or advocated the potential of biofuels to be a solution: the Biomass Action Plan (2005), the Commission's strategy for biofuels (2006), the directives 2001/77/EC and 2003/30/EC, and several progress reports (European Commission 27 September 2001; European Commission 8 May 2003; European Commission 2005a; European Commission 2006a). In the face of an increasing number of skeptical studies, Paul Hodson knew about the expectations of his own organizational environment and made a judgment call to the effect that he trusted the evidence supporting biofuels as a solution to the sustainability problems of the transport sector. As he became the expert in the process of drafting the proposal, he felt that he was in a position to make this call. It might have been a welcome side-effect that his decision also happened to further the interests of his department, but there is little indication that this was the defining factor in making the decision. Today, many officials regret or have reconsidered their position in the meantime. As Howes observes, 'the discussion on biofuels in transport has gone from a discussion of a panacea, to that of a possibly beneficial alternative energy, to an energy source that has negative climate, environmental, agricultural, biodiversity and social impacts' (Howes 2010, pp. 129–130). As evidence was shifting dramatically quickly from pro

to contra biofuels in the months after the proposal was published, the actors learned and revisited their positions in the light of new evidence.

In summary, I believe biofuels target-setting was addressed with a predominantly technocratic approach to knowledge. The low levels of DG TREN recognized that the biofuels target was implemented poorly. In solving this problem, it followed a logical, legal and economic thinking process. For a technocratic mind, a binding target is the solution to Member States failing a non-binding target. Hodson consequently made the proposal to increase the legal requirements and reduce economic uncertainties. In the mindset of solving a policy problem, it might have underestimated the political dimension of its proposed solution. Naturally, we have to factor these organizational and political reasons in, too. A binding target increases the Commission's influence at the expense of Member State flexibility. And for DG TREN as the representative of the organizational logics of the energy and transport policy issue areas, a binding target for the transport sector was seen as a perfect precursor to achieving the organizational mandate of ensuring sustainable mobility and security of fuel supply (Interview 24 February 2011c).

The majority of issues covered regarding politicized technocracy in this section have been approached by policy officers with a focus on mandate delivery. They attempted to find instruments to make policy objectives feasible and shaped the directive accordingly. In order to do so, they drew upon expert stakeholders, in-house or affiliated consultants such as the JRC or Eurostat, and used meetings with them to increase their own knowledge base. At times their organizational epistemic bias tilted their results, but it seems that their knowledge-utilization strategy was predominantly technocratic.

4.2.3 Depoliticizing ideological interpretations of facts: Bottom-up technocracy and knowledge in RES

In this form of politicized technocracy, a low decisional level is engaged in bargaining and pursues a policy-framing activity while doing so. In order to analyze this conceptual possibility, we have to look at the level of policy officers from different services in their interactions with one another. We focus in particular on the way in which knowledge was used to set up the impact assessment for the RES directive. The impact assessment was developed in a process that was an unusual exercise at the time but that has come to be the new standard for impact assessments for cross-cutting policy proposals (Interview 3 February 2011a). Nowadays, one lead DG writes an impact assessment and regularly involves an interservice group with other DGs regarding its progress.

Since the RES Directive and the ETS II Directive and their regulatory interactions were at the core of the climate and energy package, it had been decided that the impact assessment should cover both directives at the same time. Consequently, desk officers from DG ENV and DG TREN formed an impact assessment steering group. This group of econometric modelers was tasked to find common ground on the factual underpinnings of their proposals (Interview 11 February 2011). According to Commission standard procedure for impact assessment steering groups, other interested DGs were invited to join (Interview 16 February 2011a). DG TREN chaired the meetings, which were convened at least twice a month in the period before the proposal was adopted. Commission officials generally regard impact assessments as a 'joint, collective work platform to put evidence together and create a logical puzzle' (Interview 11 February 2011).

Despite, or rather because of, the potential trade-offs between the objectives and approaches of DG TREN and DG ENV, the Directors' level struck an agreement that the interaction effects of the envisaged policies needed to be accounted for. In order to do so, the desk officials resorted to the PRIMES model that the E^3M Lab from ATU had developed. The advantage of PRIMES is that it allows simulations of microeconomic energy decisions for all European countries in a very complex system model including technology vintages, investment derivations, different policy options, and supply and demand functions (Capros et al. 2011, p. 1478). Its complexity was so high that some calculations overstretched the available computing power (Capros et al. 2011, p. 1478). In total, about 150 different energy scenarios for 2005–2030 were computed for the desk officials to identify those scenarios in which the envisaged 20 per cent targets were achieved (Capros et al. 2011, pp. 1478–1479). Compliance costs and cost efficiencies for 2020 were calculated for five different scenarios, including and excluding RES trading. The results of the modeling showed that meeting the CO_2 reduction target and the renewables target together would create cost savings of €17.3 billion (Capros et al. 2011, p. 1482).

The modeling also showed that both the CO_2 reduction target and the RES target were mutually reinforcing but needed separate pushes to be achieved completely (Capros et al. 2011, p. 1480). DG TREN and DG ENV put the policy options of their choice on the table and realized that their regulatory approaches involved a trade-off that turned out to be of a defining nature for the rest of the internal Commission process. The Commission was facing the following trade-off: 'once the EU ETS becomes operational, the effectiveness of all other policies to

reduce CO_2 emissions of the participating sectors becomes zero [including the promotion of renewables].' (Sijm 2005, p. 79). At this moment, the problem-solving arena of desk officials changed into a negotiation arena. The reason is twofold: clashing regulatory schools of thought and a new frame of reference for DG TREN.

First, DG ENV had believed in a market-based approach for years, just as DG TREN officials championed the advantages of regulatory interventions. In such a situation where officials from different regulatory schools of thought puzzle over the costs and benefits of policy options, they will naturally come to different conclusions. Their socialization and beliefs were formed out of a mélange of organizational norms and expectations, their own expert insights, experiences with legislative experiments and (ideological and factual) influences from their most frequent stakeholder contacts. The desk officers' thinking was so guided by their frames of reference that their conclusions from looking at the same data had to differ. DG ENV believed that any regulatory intervention into a market-based policy approach is a market distortion that reduces the economic efficiency. DG ENV officials feared that enforcing the renewables and the CO_2 reduction target in parallel would deflate the carbon price in the ETS by €10 per ton (Buchan 2009, p. 140). DG TREN officials, on the other hand, did not believe in the strength of market-based policies and clearly preferred a more interventionist, regulatory approach. They believed that success could only be guaranteed with clear rules, and that fuzzy price signals would not deliver the desired result.

Second, DG TREN officials struggled with the new framing of their policies. Due to the contextualization of the RES Directive into the climate change frame, the regulatory approach favored by DG TREN lost its justifications. DG ENV had effectively made its case through the results of PRIMES and according to textbook economics: any regulatory intervention would undermine the effectiveness of the ETS and would make its implementation more expensive. This argument was hard to challenge because when 'the carbon benefits have already been accounted for by the costs of the EU ETS, the costs of complementary policies have to be justified by other, non-carbon benefits' (Sijm 2005, p. 93). Therefore DG TREN was forced to depart from one of its core justifications – clean energy – to argue for the RES Directive provisions. DG TREN officials started to justify their preferences through other objectives, such as energy security or correcting market failures of the ETS (see Sijm 2005, p. 84). By diversifying the arguments and entering a win–lose situation, DG TREN and DG ENV started to lose common ground.

At this moment, stalemate occurred and 'everybody was accusing one another' (Interview 11 February 2011). DG ENV called for the SG to intervene (Interview 11 February 2011). The SG defines its role as 'a neutral observer and a neutral participant in the process [...] we have to ensure that everyone [...] gets a fair hearing' (Interview 16 February 2011a). The SG was convinced that without intervention, results would never be achieved (Interview 11 February 2011). Elena Visnar-Malinovská, a policy officer at the SG, was tasked to write a first draft for an impact assessment for the DGs. This included an integration of the targets and the contributions of the different measures thought about in the different DGs. On this basis, the DGs started discussions. While the paper was challenged on the numbers, it enabled discussions about the measures, how to integrate them and generally to achieve compromises (Interview 11 February 2011). Consequently, the desk officials were forced to simply put forward those policy ideas that they believed in most in a controlled environment, run them through the model, evaluate the results and propose corresponding policy options for their superiors whenever they could not agree.

One example is the issue of financial support schemes for renewable energies. DG TREN favored a policy approach through which the Member States would achieve the RES targets domestically instead of harmonizing the support schemes. DG ENV with its market-based thinking proposed evaluating a policy option where Member States can trade (statistically) their achievements in renewables shares. PRIMES modeling confirmed that RES trading would allow for a more cost-effective compliance with the RES targets (Capros et al. 2011, p. 1480). DG TREN, however, argued that while it might be more cost-effective to introduce trading, it would destroy the effectiveness of national support schemes. This was a political consequence that the desk officials were at no liberty to decide upon. The two policy options were sketched out and handed over to the higher levels of hierarchy.

This section exhibits a situation in which knowledge-based discussions become politicized due to clashing interpretations of differently socialized low-hierarchy policy officers. Higher levels of the hierarchy intervened to ensure good cooperation in preparing the policy options that they intended to decide upon. This subcase develops the interesting twilight zone in which technocratic knowledge utilization transforms almost involuntarily into politicized knowledge utilization. The SG stopped the developing bargaining situation because it perceived that the inherent danger in this dynamic is a loss of depth and preparedness of expertise. It stepped in to ensure that diversity

of knowledge outcomes leads to well-developed policy options instead of a technocratic preselection for the political decision-making levels. In other words, the SG prevented decisions, which were perceived to be politically important, to be taken in a bottom-up fashion. It thereby ensured that the objective of mandate delivery was adhered to and not swept aside at the expense of the logic of power maximization.

4.2.4 The giant awakes to puzzle: Top-down technocracy and knowledge in RES

In a third form of politicized technocracy, higher decisional levels concern themselves with problem-solving and engage in policy-framing. In what I call 'top-down technocracy', individual high-level officials depart from their own particular logic of consequentiality in which they are normally embedded. Instead, they follow the logic of appropriateness and use knowledge in an epistemic way. One example is the way in which Directors formed a modeling group to prepare the review of the ETS directive. Another example is the IAB that is composed of Directors and assesses impact assessments. In these instances, knowledge is in fact used epistemically in a puzzling exercise where the Directors attempt to find a way to shape the options for a policy proposal in such a way that they can respond to the political realities of the day. Knowledge, in this case, is used in cognitive ways, though at times thinking is restricted by political constraints.

Once it became clear that the RES Directive would be part of a larger package, the Director level made a conscious attempt to coordinate the work on the entire legislative package between the DGs. It felt that such an effort required a 'more direct political steer from a group which was chaired at a higher level' (Interview 16 February 2011a). The steering group consisted of Directors from DG ENV, DG TREN, DG ECFIN, DG ENTR and, according to coordination needs, other DGs. It met once every one to two weeks and was chaired by Michel Servoz, a Director at the SG. In this group, guiding parameters were set for the services. The SG's role in this group was coordination and preparation. Michel Servoz had desk officers who would help him to prepare short discussion papers for each meeting, often with attached questionnaires for the services to answer before the Directors' meeting. The group did not enter 'into the nitty gritty details of the files, but [it] preferred to keep things more general [. . . and] to cut through the technical stuff and really get down to the important political issues' (Interview 16 February 2011a). The meeting addressed all major design questions, among them the RES target calculation, the accounting rules and the biofuels elements of the directive.

However, with respect to the question of knowledge utilization in policy-making, the role of the Directors in steering the modeling work is of most interest. In order to prevent the clashes between DGs over trade-offs, the Directors decided that the entire energy and climate package should be prepared on the basis of the same modeling results. The group of Directors served a function of mediating between technocracy and politics. Often it intervened to solve technical disagreements that had political undercurrents. The common modeling work in particular required agreements about validity, assumptions and results: 'Questions about the scientific base became increasingly important the more time we spent on preparing the proposal and the impact assessment' – 'it can be a never ending process' (Interview 16 February 2011a).

The DGs around the table were experts: DG TREN was the initial contractor of the PRIMES model and introduced the Green-X model; DG ENV had used the PRIMES model extensively and had additional experience with GAINS and GETS models; whereas DG ECFIN also had a proactive modeling team. It was therefore very helpful to have a group of Directors that was composed mostly of professional economists 'basically sharing the same mindset' (Interview 25 March 2011b) with the authority to solve these disagreements. Directors such as Jos Delbeke (DG ENV) and Gert-Jan Koopman (DG ENTR), who were both econometric modelers by training, felt that the interactions between the policy targets needed to be looked at in 'an integrated way' (Interview 25 March 2011b). For instance, the envisaged energy efficiency target impacts energy consumption, which in turn changes the price for carbon in the ETS.

These interactions at first escaped the desk officers in DG TREN – 'this was a bit too much for ordinary policy officers' (Interview 25 March 2011b). Subsequently, the Directors invested to shape the debate, clarify some concepts and get 'the basic point of departure right [...], forging consensus [...], an analytical framework' (Interview 25 March 2011b). It is interesting to see that the Directors engaged in a 'very iterative process' (Interview 25 March 2011b), which transcended the normal barriers of hierarchy, integrated opposing departmental logics and also involved policy officers in open-ended meetings. The involvement of the Directors went, at times, so far that they felt reminded of their time as policy officers. Thus, the Directors involved clearly exhibited policy-shaping problem-solving behavior. The Directors adapted their behavior once they realized that common ground could best be found by agreeing on scientific or economic assumptions.

A second instance of a rather high hierarchical level being involved in scientific work in a policy-shaping fashion is the IAB. Its role is to

ensure that the impact assessments that are presented to the College for its decision-making have been conducted in accordance with the impact assessment guidelines (European Commission 15 June 2005). All opinions of the IAB are published online. In short, the IAB is a body for quality control. It consists of five Directors who are appointed in a personal capacity according to their expertise. Normally it consists of Directors who can intellectually grasp the environmental, social and economic impacts of a proposal, which means that DG ENV, DG Employment, Social Affairs and Inclusion (DG EMPL) and DG ECFIN normally send a representative. A Director from the SG chairs the IAB's work to ensure that the Directors do not represent the interests of their own DGs. In fact, my interviews indicate that Directors who see a conflict of interest do not participate in discussions on a particular impact assessment (Interview 24 February 2011d). In this instance, the members of the IAB were Kertian Klaasen, Timo Maekele, Jan Smits, Gert-Jan Koopman and Jakub Koniecki.

In the case of the energy and climate package, the IAB assessed a first draft of the impact assessment by DG TREN and DG ENV early on to receive feedback whether the impact assessment work was heading in the right direction (Interview 24 February 2011d). Just as in the ETS II case, all interviewed participants in this process confirm that the feedback by the Directors was helpful. More on this process can be found in Chapter 3 (on the ETS revision). Here, it suffices to note that in the RES case, too, the IAB helped the desk officers to formulate an impact assessment that was useful for the decision-makers – namely the Commissioners – by helping them to understand the policy options and defend them later on. The IAB knew the value of a sound and well-structured presentation of the evidence. The IAB insisted, for instance, on a visualization of the RES target distribution across Member States along an equality line to make the options understandable. Policy officers really appreciated the steer on outlining distributional impacts and cost-efficiency ratios (Interview 24 February 2011d): 'figures that you can sell [and that are reliable are of paramount importance . . . .] One of the big successes was not that the desk officer arrived at figures for the Member States, but that it put a logical framework to the discussion' (Interview 24 February 2011d). Eventually, some felt that this impact assessment was 'possibly the most influential' in 'shaping the final results in the negotiations that I recall from my time' (Interview 25 March 2011b).

In conclusion, Directors got involved in the shaping of the impact assessment and the underlying modeling work. Their approach to

knowledge was epistemic, with an eye to improving the quality of the final result and its structured presentation. Directors guided the actual modeling work toward the shaping of policy options, and Directors assessed the impact assessment's quality. The policy officers receiving feedback did not complain about politicized influence but rather praised the high-quality result in terms of technical feasibility and political acceptability (Interview 3 February 2011a). After all, a robust analysis helps 'in stabilizing the debate' when there is 'so much smoke-screen, mystification, scaremongering' in the inter-institutional negotiations (Interview 25 March 2011b).

4.3 Politicized knowledge-utilization strategies in developing the RES Directive

4.3.1 Speed and arguments in interservice consultation on RES: Bottom-up politics and knowledge

We now turn to politicized knowledge-utilization strategies. We expect officials to adopt these strategies in environments that expect behavior according to the logic of consequentiality. Bargaining and negotiation situations require actors to defend their preferences rather than to learn. Accordingly, they will use knowledge argumentatively as weapons and justification, rather than as information which can influence their interests. The first arena in which the logic of consequentiality determines knowledge utilization is what I call 'bottom-up politics'. In bottom-up politics, low decisional levels in the Commission take decisions in a bargaining mode. This applies in particular to interservice consultations.

Interservice consultations typically last between two and four weeks and are held four to six weeks before the proposal for a directive is adopted by the College of Commissioners. The decisional level involved in this exercise is normally policy officers from all DGs concerned with a given policy proposal. They mirror negotiations on higher decisional levels, but, as they are preparing the decisions by Cabinets and Commissioners, they are focused on technical aspects and on separating those issues that are political and have to be solved later from those that can be agreed upon more quickly. This division of labor can be compared to the division of labor in the Council of Ministers between COREPER (Committee of Permanent Representatives) and the Ministers. Note, however, that the Commission mostly bargains over sectoral interests according to the sectoral differentiation of the Commission into DGs instead of national representations. In this environment, we can expect the policy officers to follow an organizational logic that prescribes

them to represent their DGs, yet potentially in a more factually driven debate compared with the negotiations between Cabinets. Knowledge will be used accordingly in an argumentative fashion, though it might be possible that persuasive processes take place that resemble learning processes.

The interservice consultations for the RES Directive were launched on 3 January 2008 and lasted for only a week (Interview 3 February 2011b). Procedurally, two elements merit notice. First, the impact assessment was not yet concluded when the interservice consultations started. This indicates that the evidence that was later presented was still up for debate and was used as ammunition in the debates between the services. Second, the interservice consultations saw the unorthodox insertion of an information meeting for the Cabinets on 8 January 2008. It allowed the different Cabinets to sway in with their more political standpoints and influence the final result of the consultations between technocratically oriented policy officers. The tight schedule itself was imposed on the services by the presidential Cabinet (Interview 8 February 2011b). In an attempt to reduce the political time (Tholoniat 2009) and to prevent leaks, it significantly speeded up the decision-making process. The consequence of such interference is clearly the politicization of technical proceedings: 'Usually, what happens in the Commission is that the lead service consults the other services only at services level – Cabinets do not meddle. It's the technical assessment of the proposal. But here [. . .], when you finalize the interservice consultation, you already have a sort of political awareness' (Interview 3 February 2011b).

The interservice consultation as such was based on a draft text by DG TREN, which had been finished only shortly before Christmas 2007. Hodson, as the head of the drafting team, collected the comments of his colleagues from the other DGs and consolidated them. He then retreated for a 48-hour weekend with his drafting team to establish its view on the changes (Interview 8 February 2011a). Finally, the Head of Unit, van Steen, discussed and signed off on the DG TREN standpoint. We will now focus in particular on RES trading and biofuels as points of contention in the interservice consultations.

DG COMP argued against national support schemes for renewables and therefore favored RES trading. It argued that preferential access for renewables would not create market incentives (Nilsson et al. 2008, p. 10). DG ENV sided with DG COMP and argued that a working RES trading system would be beneficial for the environment. Whereas DG COMP emphasized the need for an efficient internal market, DG ENTR expressed worries about the cost and price impacts of RES trading on the

competitiveness of energy-intensive industries. It feared that an internal electricity market for renewables could lead to higher electricity prices (Interview 24 February 2011a). DG ENTR even established a stakeholder taskforce with energy-intensive industries to obtain figures in support of its argument (Interview 9 February 2011a). DG TREN officials found themselves between two camps. Knowing full well that their superiors were in favor of RES trading, they nevertheless had slight concerns because they foresaw a lack of predictability: 'In the end we are talking about [. . . whether citizens] have a different willingness to pay for a domestic windmill or one in Scotland [. . .] From an economic perspective sure there are losses in efficiency, but from a political science perspective you need to consider this' (Nilsson et al. 2008, p. 10).

It is interesting to note that the arguments and their justifications in the interservice consultation are consistent with those advanced at higher levels of the hierarchy. There seem to be two organizational reasons for this. First, a technocratic perspective on a certain issue is obviously colored by the organizational affiliation of the policy officer. Therefore, an officer in DG COMP will develop their expertise on disturbances to the internal market, whereas a DG ENTR official will find it easiest to detect expert input related to impacts on industry and DG ENV will be most knowledgeable in arguments for environmental protection. Second, the arguments that were advanced in the interservice consultation were also tainted by the strong vertical upward coordination with the Cabinets. This may explain the relative lack of strong reference to technical and scientific arguments, as well as the willingness of DG ENTR to form a taskforce coalition with energy-intensive industry to generate arguments. Due to the involvement of the Cabinets, the interservice consultations became more politicized in their knowledge utilization than usual. It was simply expected from the officials in the services to defend the political turf of the Cabinets.

The second case of high contention is biofuels. The interservice consultations on biofuels saw a heated debate, comparable to the emotions that the topic of biofuels stirred up during all politicized processes of developing this directive. DG TREN supported biofuels as a sustainable solution to transport emissions because biofuels were, without a mandatory target, not (yet) competitive. They were supported by DG AGRI, which was fighting for biofuels in an attempt to create a 'subsidized market for farmers' for ethanol sugar that could compensate them for the reform of the sugar regime (Sharman and Holmes 2010, p. 314). DG ENTR, on the other hand, was representing the interests of the chemical industry, the packaging and construction sectors, which were all

industrial users of biomass (Buchan 2009, pp. 158–159). Meanwhile, DG TRADE wanted to ensure that the emerging schemes would not be used as a protectionist measure against other biofuels producers globally (Vedder 2010, pp. 55–56). The DGs responsible for external relations, such as DG Development and Cooperation (DG DEVCO), were very concerned about the impact of biofuels on world food prices. They argued their case with studies similar to the 2008 World Bank report, which established a strong link between rising food prices and biofuel production (Buchan 2009, p. 158). DG DEVCO was also arguing that more biofuel production would not necessarily cut emissions if it led to a further destruction of land, tropical forests and biodiversity in the developing world (Buchan 2009, p. 158; see also EEA 10 April 2008). In this point they were supported by DG ENTR, which was afraid of a lack of a level-playing field that could result in a loss of competitiveness (Interview 9 February 2011a).

The issue was, on the one hand, 'extremely technical' while, on the other hand, it was 'probably the part of the directive where there are most different views between the services' (Interview 24 February 2011c). Interviews with officials from the SG reveal that the coordinating units felt 'really trapped' between the conflicting standpoints (Interview 11 February 2011). When an interservice consultation is stuck, the SG has the task to intervene and mediate. However, in this particular case, the SG felt that all DGs argued with their own studies and that it was difficult to establish whose evidence was 'good, solid and well-established' (Interview 11 February 2011). Consequently, the SG made sure to also consult further studies that it considered to be more impartial. It is no wonder that – when even the coordinating units get lost in the myriad of studies – the discussions are remembered by all of the officials involved as 'very painful' (Interview 9 February 2011c).

Surprisingly, DG TREN was able to save most parts of the proposal despite the heated debates. One of the main reasons for this success has been identified as Paul Hodson and his ability to use knowledge argumentatively in a very effective way. He had gained significant insights and expertise about biofuels in the drafting process (Interview 8 February 2011a). In other words, he had a competitive knowledge advantage. As the person who drafted the proposal and who was responsible for incorporating the changes demanded by other DGs, he was always ahead of the knowledge curve. In an encompassing study, Sharman (Sharman and Holmes 2010) describes the action of 'one policy entrepreneur' who pursued the interests of the transport and biofuels sector in a 'dogmatic way' even though he 'probably still had the best

intentions' (Sharman and Holmes 2010, p. 316). She prefers not to give up his identity, but even if it was not Hodson himself, her description would fit also his actions: He acted as 'information gatekeeper, reducing the level of scientific controversy' by presenting data selectively (Sharman and Holmes 2010, p. 317). He managed to be 'framed as the technical expert to which decision-makers in the political realm would defer' and was acknowledged to have 'exceptional talent to harness that information', giving him a 'very high degree of influence' (Sharman and Holmes 2010, p. 317). He can also be perceived as an entrepreneur in the definition of Wettestad as an actor that engages 'with extraordinary intensity and political skill' (Wettestad and Boasson 2013, p. 16). We will see later at the Cabinet level that only the publication of a critical JRC study could break his spell and enable his opponents to counter his knowledge advantage effectively.

4.3.2 Toward politically acceptable solutions: Top-down politics and knowledge in RES

We will now assess the instances of top-down politics in the RES case. I define top-down politics as a high decisional level taking a decision while engaging in problem-solving. This is a typical instance of a Commissioner, Cabinet, Director General or Director interfering with the work of the policy unit. As such, this is a case that is deplored by policy officers who feel that 'the proposal is screened too early with regard to it being politically opportune or not' and that the shadow of the political bargaining 'is anticipated prematurely, thus rendering proper technical work impossible' (Interview 09 February 2011f). The high-level officials follow the logic of consequentiality that clashes with the logic of appropriateness on the technocratic level. The high-level officials focus on power maximization, whereas the low-level officials focus on mandate delivery. As the high-level official has the power of decision-taking, he will ultimately get his way. Knowledge, in these cases, is used as an argument.

Desk officials had developed a cost-efficiency scenario for renewables support on the basis of PRIMES (Capros et al. 2011) and with external experts. The scenario simply optimized an equation between marginal emission reduction costs, marginal renewables costs and the existing constraints. However, as the technical experts noted, a 'scenario that optimizes compliance cost across the EU is not necessarily acceptable from the perspective of distributional effects among the Member States' (Capros et al. 2011, p. 1479). In fact, it ignored the distributional consequences in the modeling. The per capita CO_2 emissions per country in

2007 varied between 5.4t (Portugal) and more than 12.1t of CO_2 (Czech Republic), with one notable exception (Luxembourg, 22.6t) (World Bank 2011). The huge gap was caused by differences in, among others, 'industrial structure [...], stage of economic development, proportion of non-fossil sources in energy requirements, efficiency variations [...], climatic differences', transport infrastructure and the energy mix (Collier 1997, pp. 44–46).

As a consequence, it is significantly more difficult for some Member States to achieve a renewables target than for others. The desk officers and their experts, such as Capros, the leading author of the PRIMES model, were tasked to identify the magnitude of the distributional differences. They came to the conclusion that without changes to the calculation and distribution of the RES targets, countries with comparably low GDP would need to account for 45 per cent of the implementation costs (Capros et al. 2011, p. 1482). At this point the DGs started to experiment with their numbers, wondering whether they could achieve a politically less contagious distribution. One of the leading officials in the upper hierarchy puts it this way:

> we had to have a proposal in the process, which was politically achievable [...] We quickly saw that the key difficulty would be how to allocate the burden [...] we came relatively soon to the conclusion that it would be difficult to do it on the basis of economic modeling and overall least-cost for the EU because there would be a lot of debate about the data on which such modeling would be based.
>
> (Interview 24 February 2011c)

Or, in the words of an official interviewed by Buchan, 'Member States will always try to out-model us, or quibble with our assumptions if they don't like the result' (Buchan 2009, pp. 142–143). Speaking in plainer terms, the Commission modified the numbers and tweaked the models until they were politically 'right' according to their criteria of fairness. Then it ran the economic model to confirm that its approach made economic sense and achieved a fair distribution. Capros calls this approach 'the reverse methodology' (Capros et al. 2011, p. 1479).

It seems that there was a division of labor between the lower levels of hierarchy and the higher levels of hierarchy. The higher levels did the creative thinking and decided on an approach including a rough formula. The lower levels were then left to implement it and to make minor adoptions until the formula worked best. My interviews suggest that the most influential players in this regard were very high-level players

(Interview 24 February 2011c). The head of Cabinet of Energy Commissioner Piebalgs, Peter Vis, and his deputy, Christopher Jones, were deeply involved in the discussions and showed a high level of mastery. Additionally, Commissioner Piebalgs and Director General Ruete were deeply involved and even the Cabinet of the President and the Secretary General stepped in.

Whereas the desk officials would have preferred to 'simply very precisely calculate what each Member State can do, and use this as a basis' (Interview 25 March 2011c) for a cost-efficiency calculation, the PRIMES results indicated that this would not produce equitable solutions and would not necessarily correspond 'to where the potential for renewable energy is' (Interview 24 February 2011c). Eventually the Director General himself ruled out the solution preferred by his officials because he felt that such an approach would never lead to political agreement. The scientifically informed, technocratic approach by the desk officials failed to convince the political levels of the Commission. Mandate-delivery thinking clashed with power-maximization thinking and did not prevail.

Other methods to address the 'mismatch between the resource potential of several Member States and their ability to exploit such potential' (Howes 2010, p. 128) were considered. Options such as setting targets for companies instead of governments (Buchan 2009, p. 143), demanding from each Member State to increase their RES share by 11.5 per cent (Buchan 2009, pp. 142–143) were weighed and refuted for political reasons. Finally, a selected group of high-level officials and political staff met in the office of Director General Ruete and decided to push a solution forward that he had developed with his staff and tested at an event of the Portuguese Presidency of the EU in Lisbon (Interview 25 March 2011c). At this seminar, the renewable energy industry gave up its negative opinion toward the plan to apply a burden-sharing distribution that rests on 50 per cent of the effort to be simply spread in equal terms to all Member States and the other half the effort to be distributed according to GDP and renewable energy potential.

The idea to take the Member States' GDP into account has been accredited to Commissioner Piebalgs himself by my interview partners (Interview 28 February 2011). Neuhoff shows that the outcome of this political tinkering puts a greater burden to achieve RES targets on richer Member States (Neuhoff et al. 11 April 2008, p. 2). Consequently, prenegotiations with governments fed back into the development of the modeling and the target distribution. The Commission sold this approach as a method based on 'objective facts like GDP per capita

and efforts already made during a particular period [. . . and as] a formula where there is no modeling or economic forecasting involved' (Interview 24 February 2011c).

Expert input in this regard was needed only to make political compromises work. The initial recommendations by external experts and technocratic officials to simply calculate the most cost-efficient option for distributing targets with a very powerful and detailed econometric model (PRIMES) was discarded in favor of a more political approach. Expertise was useful along the way to assess the consequences of different options but never came to dictate a solution – quite the opposite: it was rather used only when it was seen fit. As two of the main actors at the high levels of the Commission put it, 'the modeling more became like a control factor' (Interview 24 February 2011c), and 'I think it was legitimate, we would have never gotten agreement without that, so [. . .] we adjusted [. . . the models] until the politics came out right [. . .] We had all the models and we were able to constantly re-run them until they generated the numbers we needed' (Interview 15 February 2011). In short, this is an instance of policy-based evidence-making. Economic inefficiencies were accepted to secure a solution that promised political agreement in the Council. Nevertheless, it would be wrong to state that expertise had no role to play. The Commission needed the modeling 'to keep good math to see what it would mean if we shifted [targets] from one Member State to another' (Interview 15 February 2011).

We now turn to the second element of the directive that was shaped in a comparable way: RES trading constituted a main point of contention within the DG and between the DGs. The idea of introducing a trading mechanism into renewables policies was not new. Indirectly, it had been implemented via the ETS in 2003 and had further been experimented with in the Energy Services Directives' White Certificate schemes for energy efficiency (European Commission 5 April 2006; Nilsson et al. 2008, p. 20). In the 2008 debate, several academic terms refer to the same or similar concepts: tradable green certificates (TGC), trading of GO, green electricity certificates (GEC) and tradable renewable electricity certificates (TREC). The basic idea underlying all of these concepts is simple: producers of renewable energy 'receive tradable certificates corresponding to the amount of "green" electricity they supply to the grid [. . . and] some type of obligated actor [. . . is] legally required to buy a certain amount of certificates over a certain period of time' (Jacobsson et al. 2009, p. 2144). This trade can be coupled with quotas or targets, similar to the overall cap in the ETS.

The Commission, however, was a burned child with regard to RES trading mechanisms. (For the entire legislative and political history of this issue, consult the insightful Hildingsson et al. (2010); see also Nilsson et al. (2008), Lauber (2007), Rowlands (2005), Lauber (2002)). Given the existing deadlock in the Council between supporters of feed-in tariffs and supporters of RES trading, the strong political opposition against any binding measures in energy policy and the Commission's past experiences with GO trading, it is only logical that DG TREN as such had grown to be rather skeptical. Initially giving 'virtually unfettered' support for trading (Rowlands 2005, pp. 971–972), DG TREN changed its preferences when it learned in the early 2000s that it was politically unachievable. According to an interview partner from industry, the 'mainstream view in the energy department (DG TREN) is [...] that they would allow a little bit of trading' but its real preference would be to leave it to Member States (Toke 2008, p. 3003).

Yet the view of the Energy Commissioner's Cabinet was dominated by two outstanding figures – Peter Vis and Christopher Jones. These two Britons were strongly in favor of a Europe-wide GO certificate-trading scheme. The deputy head of Cabinet, Christopher Jones, looked back on his experience with Commissioner Papoutsis who had also favored a trading system. Peter Vis came from DG ENV, where he had been instrumental in setting up the ETS. These two individuals had strong internal and external support. The UK government had 'actively lobbied [...the Commission in summer 2007] to favor trade in RES, also by buying certificates from projects outside the EU' out of fear of rising energy prices (Fouquet 2007; Toke 2008, p. 3003). Toke coined the push for GO trading the 'British disease' (Toke 2008, p. 3003), yet the internal high-level support for GO trading extended to the Irish Secretary General Catherine Day and the Belgian chief architect of the ETS, Director Jos Delbeke from DG ENV. This highly influential set of people were called 'anti feed-in hardliners' by a representative of the renewable energy industry (Fouquet 2007) and 'ETS Taliban' by some of my interview partners, and they are assessed as strong supporters of market-based instruments across the board. Their support for GO trading was as much based on economic neoliberal theory as it could be called ideological. Together they swayed Commissioner Piebalgs in favor of GO trading.

In the internal discussions, DG ENV argued together with DG COMP and DG ENTR in favor of a trading mechanism (Jacobsson et al. 2009, p. 2146). Supported by their superiors such as Jos Delbeke, DG ENV desk officials worked out the main argument on the basis of the PRIMES model. Starting from the suggested simple methodology that distributes

the RES targets dependent on relative wealth (measured in GDP) and capacity, they made an economic argument for RES trading. It was argued that RES trading is an equitable and cost-effective way to implement the distribution of targets. To support this standpoint, DG ENV and the scholars from the Technical University Athens developed the notion of an 'equality line' (Capros et al. 2011, p. 1482) that signifies the relative economic strength (as measured by GDP per capita) of each Member State. With the help of this economic model, Delbeke and Piebalgs' Cabinet could argue that in terms of distributional fairness, this entails that poorer countries have to contribute relatively too much to achieve the renewables targets. To improve the equity balance, they proposed a 'safety valve [...] whereby a Member State could achieve its target through developing renewable energy in another Member State and count it towards that target' (Interview 24 February 2011c). The equality line showed how RES trading reduced the inequalities and moved the cumulative cost distribution curve nearly onto the cumulative GDP distribution curve. The arguments of Vis and others were based on economic textbook theory insofar as RES trading would 'build up economies of scale', drive investments and make target delivery possible (Buchan 2009, p. 145). Wettestad advances the notion of 'bargained interaction' as an 'interaction initiated by entrepreneurs who seek to increase their structural power in one policy area by linking it to another' (Wettestad and Boasson 2013, p. 173). This seems to have happened here through 'persuasion interaction', defined as 'seeking to create normative and cognitive shifts in one issue-area by linking it to another area [...], arguing that the other policy has superior qualities' (Wettestad and Boasson 2013, p. 173).

It comes as no surprise that such a visual argument based on econometric modeling is a strong tool in negotiations. With the support of the Energy Commissioner, the Cabinet started to rein in the policy-framing of DG TREN. However, once political levels take hold of policy-framing, the influence by outside lobbying often outranks the influence of scientific or economic expertise. The results of economic modeling, which are extremely powerful on a technocratic level, cease to be the strongest arguments. Piebalgs in particular used his encounters with stakeholders to look 'not only at the surface of proposals, but [...to dive] into the RES file' (Interview 28 February 2011). He enjoyed the dialogue with the stakeholders and considered the RES Directive as 'one of his babies' (Interview 28 February 2011). Yet, as the rest of this section will show, he was eventually convinced not by hard facts but by political opposition.

Opposition was strong. The lobbying was fierce and directed toward the top, Piebalgs himself. The up-and-coming renewables industry favored the security inherent in the long-term contracts provided by feed-in systems over the volatile market price implied by a market-based system (Toke 2008, pp. 3001–3002; Hildingsson et al. 2010, p. 117). It was supported by the environmental NGOs, such as Greenpeace and the European Environmental Bureau (Nilsson et al. 2008, p. 18). The established power industry, Eurelectric and BusinessEurope pushed back, partly because they welcomed volatile energy prices inherent in RES trading to squeeze the renewable energy industry out of the market or could profit otherwise (Toke 2008, pp. 3006–3007; Nilsson et al. 2008, pp. 11, 15–16; Jacobsson et al. 2009, p. 2146). They found their strongest supporter in DG COMP (Nilsson et al. 2008, p. 16). Member States were also divided, with 18 governments using some sort of support mechanism that could be classified as a feed-in tariff (Buchan 2009, p. 144) and seven states that used obligations and green certificates (Howes 2010, pp. 120–121). TREN was visited by 'virtually all Member States', which made their respective cases (Nilsson et al. 2008, p. 11).

Studies were used by all actors in the debate on RES trading – for instance, in the influential HLG on Competitiveness, Energy and the Environment. However, learning did not take place, but rather a fierce and protracted battle over interests. Studies were used as weapons, chosen not for their validity but for their fit with existing preferences (Toke 2008, p. 3005), be it by Eurelectric (de Jager 2007) or by the Commission (Klessman et al. 2007). Ironically, both camps found support in the Commission's expertise according to Nilsson (Nilsson et al. 2008, p. 8): in 2005 and 2008 (European Commission 7 December 2005; European Commission 23 January 2008d), it had argued that feed-in tariffs could be most efficient, whereas it also argued in favor of the macroeconomic efficiency of RES trading (European Commission 23 January 2008a).

In the course of the year, the tide was turning in favor of those more skeptical about RES trading. Nilsson observes that earlier 'unofficial drafts of the proposal contained discussions surrounding a more potent and obligatory GO trading scheme than what ended up in the final proposal in January 2008' (Nilsson et al. 2008, pp. 10–11). According to my interviews, in particular the higher political levels of DG TREN changed their mind. Next to his Cabinet members, Piebalgs himself had been 'very favorable' to the idea of tradable quotas (Interview 28 February 2011). However, opposition was strong: one Commission official noted that 'I have never seen so many letters, all the way up to Barroso, Dimas, and Verheugen' (Nilsson et al. 2008, p. 15). In January 2008 the

Slovenian Presidency transmitted a letter which argued strongly against certain trading provisions (Toke 2008, p. 3003) and in favor of an opt-out clause (Nilsson et al. 2008, p. 11). Once Piebalgs felt the continuous cold wind of resistance in his face, he searched for shelter in politically less contagious provisions.

It is worth noting that Piebalgs and his Cabinet did not change their position because of the arguments coming from their own DG. Their rather economic arguments (compare with Jacobsson et al. 2009, p. 2145 for the same line of thinking) did not resonate as strongly as the political opposition. The Commissioner did not want to face 'a protracted war of attrition with the renewable lobby backed by the two EU states with the biggest renewable developments programs', Germany and Spain (Toke 2008, p. 3004). As one official notes, 'you have to decide where you need to fight and where you don't need to fight' (Interview 15 February 2011). Violating national sovereignty is a strong accusation in Brussels that almost always results in lengthy and heated discussions. The high political levels within the Commission realized that such an irrational, ideological discussion with Member States and stakeholders would have made the objective unfeasible to orchestrate the timelines of adoption for the RES Directive and the rest of the energy and climate package (Toke 2008, p. 3004). They were well aware that the RES Directive only had a chance of being adopted without being shredded to pieces if it were part of the package (Interview 24 February 2011c).

Hence 'a "hesitant" trading proposal' was put forward (Nilsson et al. 2008, p. 9) and provisions that would have established a strict system fell. The December version was redrafted to allow RES trading only between those countries that were on track to achieving their targets and to include a provision (Art. 9, 2) that allows an opt-out on the basis of the EU treaties which ensure that Member States have authority over their own energy mix and supply security. The Commission felt that such a 'safeguard to limit this tradability' might help to convince Member States (Interview 24 February 2011c). The downside of this solution is that each RES trading opt-out of a Member State makes the implementation of the RES targets more costly (De Cendra De Larragán 2008a, p. 205). The decision to move away from a quasi-automatic imposition of RES trade was justified with the results of case studies conducted for the Commission (European Commission 23 January 2008a). Considering the late decision on a high-level within the Commission, it has to be concluded that this argument on the basis of scientific case studies was either especially developed for the political decision or came in handy as a hook to justify already existing political preferences. In any

case, it was the political lobbying and not the expert opinions that made the Commission's political leaders change their minds: 'it was clear that we would have to go with that. [...] Member States were clearly very nervous about [trading]. That was that' (Interview 24 February 2011c).

Knowledge, in this part of the development of the directive was used to model solutions to political problems that would ensure that the Commission's proposal would pass. In other words, knowledge utilization was necessary to maximize the Commission's power.

4.3.3 The SG's role in defining a RES narrative: Technocratic politics and knowledge

Lastly, before turning to pure politics, we will briefly discuss the situation of technocratic politics. I define technocratic politics as an arena within the Commission that requires its high-level officials to frame policy while engaging in bargaining. I posit that such a situation causes behavior following the logic of consequentiality. Officials, such as Directors and Director Generals, as well as Cabinets and Commissioners, focus on power maximization. They use knowledge accordingly to frame the policy proposal in such a way that it is beneficial for their interests. Other than for technocratic layers of the Commission, knowledge is used not to deliver on the mandate of a technically sound proposal but to defend, justify and legitimize the choices made. This section will focus on a unit within the Commission that assumed a surprisingly strong role in the climate and energy package: the SG.

It seems that the increased prominence of the SG in the climate and energy package coordinations has to be seen in a more general transformative organizational trend within the Commission: the SG, in general, has undergone significant changes since its early days (O'Sullivan 2006). With Catherine Day it has come close to completing its shift in focus from a 'service at the service of the services' to a 'service at the service at the President'. The energy and climate package is a prime example of this shift and was possibly one of the most important test cases for the SG itself. Before Catherine Day was appointed, the SG has been 'procedural' (Interview 11 February 2011). Yet Day introduced the idea of an 'upstream co-ordination agenda', which can be defined as a 'conscious attempt to influence proposals at earlier stages [...] before the discussion reaches the Cabinets' (Interview 11 February 2011) – that is, while the proposal is developed in the services. On high-profile priorities, this gives the SG – and through the SG, the President of the Commission – the opportunity to decisively influence the political agenda and outcome of the Commission. Day is credited unanimously as the originator

and pivotal political entrepreneur in building the new approach. She understood quickly that such an endeavor brings about a new requirement: the SG needs to 'do it intelligently, that is with arguments' instead of imposing political choices on the DGs through the power of authority (Interview 11 February 2011). Accordingly, Day 'brought a new demand for expertise into the SG, and a focus on details' (Interview 11 February 2011).

Two examples have been addressed elsewhere in this chapter. First, the SG ensured that its policy officers not only were part of the interservice steering group that prepared the energy and climate package but even prepared the first draft for the impact assessment. Second, the SG in the person of Michel Servoz chaired the meetings of Directors that steered the policy work top-down. High-level interviews in the Commission confirm that Servoz was under the direct instruction of Catherine Day.

A third example will be addressed in this section. Secretary General Day, by definition busy only with the most contentious and politically most important files in the Commission, involved herself deeply with the policy-framing. As a former Director General for the Environment, she became the 'engine behind the climate change agenda' (Interview 11 February 2011) and ensured that it stayed on top of the political agenda. With the help of the Stern Report on the economics of climate change, she positioned climate change and RES as a follow-up to the Lisbon Agenda. Day and her personal assistant and liaison officer to the Presidential Cabinet, William Sleath, are the ones who drafted the chapeau communication for the entire legislative package. The new focus on jobs and growth in a decarbonized economy was a perfect way to streamline the proposals into mainstream politics.

In particular, the last example points us to a knowledge-utilization strategy geared toward power maximization. By taking on the task of drawing the legislative proposals together into one main narrative, the SG ruled deeply into the details and the presentation of the package. By doing so, it relied heavily on a strategy of becoming the 'major brain of the Commission' (Interview 11 February 2011). The SG and its Secretary General had their finger on the pulse and access to knowledge floating around within and between the DGs. It became the interlocutor of knowledge, the coordinating space where knowledge was exchanged and debated. Even more so, on several issues, such as biofuels, the SG became the mediator between DGs fighting over their turf. It could choose which knowledge to use, which knowledge to pass on and which knowledge to refute as inadmissibly irrational or as 'good, solid and well-established evidence' (Interview 11 February 2011). On top of this,

the SG used the knowledge gained to draft the key elements of the legislative package: the chapeau communication. The chapeau communication in this context represents the narrative for the legislative proposals, whereas the impact assessment provides the justifications for its contents. In short, knowledge was used to establish, secure and continue the superior role of the SG over the DGs. Controlling the flow of information is part of this power. The SG was additionally empowered through the weight of the President of the Commission. It could intervene when it deemed it necessary and to present any of its proposals as endowed with the authority and backing of the President.

4.3.4 Expertise as a power resource in negotiations over RES: Politics and knowledge

Lastly, we analyze 'pure politics', meaning instances of high levels of hierarchy engaging in bargaining to take a decision. This is typically the case when Cabinet members, heads of Cabinets or Commissioners meet in their respective decision-making bodies. In all of those instances, we expect the logic of consequentiality to be at work, requiring officials to maximize the power of the parts of the organizations that they represent. Knowledge in such a context is used solely for argumentative purposes. The RES Directive is an interesting case insofar as it entails not only the usual bargaining between Cabinets and Commissioners but also bargaining activities between the Commission and the Member States even before the Commission published its proposal for a directive. After sketching out the role knowledge played in the negotiation process between the Commission and Member States, we will turn to the concluding element of in-house bargaining.

The presidential Cabinet, with strong backing of Commissioners Piebalgs and Dimas, decided to engage in 'a touring of capitals' in late 2007 and early 2008 (Interview 08 February 2011b). Prenegotiating the content of a proposal for a directive is formally not foreseen by the treaties. As much as this 'prechecking' (Interview 8 February 2011b) was an 'unusual' procedure at the time, it seems to have been a growing trend in recent years (Interview 9 February 2011c). The purpose was twofold: gauging the reaction of the Member States to the general architecture of the upcoming proposal, and, more importantly, avoiding 'horse trading' (Interview 24 February 2011c) in the institutional triangle over the envisaged RES target distribution across the Member States (Interview 8 February 2011b). The main objective was to achieve buy-in regarding the target distribution (Interview 24 February 2011c). The group responsible for the prenegotiations was coordinated by the

President's Cabinet and consisted of Commissioner Piebalgs and members of his Cabinet (Christopher Jones, Peter Vis), and Commissioner Dimas and members of his Cabinet. Director General of DG TREN Ruete, with his 'experience of dealing with tricky issues and need to find compromises' (Interview 24 February 2011c), as well as Sabine Weyand and Matthew Baldwin from the Cabinet of the President, played a crucial role. The head of the unit on the file, Hans van Steen, was also in the loop. Catherine Day as the Secretary General was most likely also involved in one way or another.

The representatives of the Commission used a sheet during their talks in the capitals that had been approved by a special chef meeting in November 2007 (Interview 8 February 2011b). Its main content were those numbers coming from DG ENV and DG TREN that later on ended up being in the impact assessment (Interview 16 February 2011a). In particular, it included the foreseen RES targets for the respective Member State for 2005, 2007 and 2020 and the GDP assumptions that had been made to calculate these targets (Interview 16 February 2011a). The fact that numbers had to be approved by a meeting of Cabinet members and not by the services (Interview 24 February 2011b) speaks volumes about the politicization of the underlying science. These numbers served well 'in justifying the distribution of overall costs of the package' (Interview 8 February 2011b). The Commission adopted a knowledge strategy that forced Member States that wished to see changes to counter the Commission proposal with their own data. Latvia is the publicly most visible successful example. Even though its success dates to after the Commission proposal was adopted, it shows the dynamic in place quite well: it was necessary that they 'managed to convince us [...] that there were some problems with the Eurostat data' (Interview 24 February 2011c).

The meetings with governments led to the process of distributing the targets. The new Member States in particular required incentives that needed the models to be adjusted 'until the politics came out right' (Interview 15 February 2011). As one official in the SG put it, 'It would be a bit stupid to have this super academic approach and say we know best, [...if you were] blocked in the Council immediately [...] It has to be technically sound and politically feasible.' Germany, Belgium, Luxembourg and Sweden had particularly intense discussions with the Commission because their proposed targets were particularly high (Interview 25 March 2011c). The results of the prenegotiations fed directly into the policy-making, thereby overruling technocratic preferences and more objective input.

We are now turning to the role that knowledge played in the high-level bargaining situations within the Commission, notably between the Cabinets, their heads and the Commissioners. On 18 January 2008, the special chef meeting on the entire climate and energy package took place, only eight days after the interservice consultation was concluded. The cabinets met on the basis of an 'informative' meeting with the services on 8 January (Interview 3 February 2011b, 8 February 2011b). The final special chef meeting turned out to be 'the longest of all times' (Interview 8 February 2011b). It took the Cabinet members nine-and-a-half hours to discuss the five legislative acts in the climate and energy package. The ETS revision took most of the time, but the RES Directive was not a piece of cake either. Here, the biggest issue to chew over was the RES target distribution. Until the special chef meetings, the targets had not been inserted into the text to avoid leaks (Interview 11 February 2011). Now the national targets could be openly compared with one another, which made the burden 'very visible and consequences clear' (Interview 8 February 2011b). The special chef meeting turned into a repetition of national positions and arguments as known from the tour of the capitals. The most vocal Cabinet in the special chef meeting was Cabinet Verheugen (Interview 3 February 2011b). It was concerned that the RES Directive would impose additional costs on the industry and particularly the energy-intensive industry (Interview 9 February 2011a). It argued with a mélange of numbers that it had obtained from DG TREN, the Member States and industry (Interview 09 February 2011a). Yet it was no longer possible to achieve major changes, which shows that numbers in a bargaining situation are only influential weapons if a window of opportunity presents itself.

Next to the targets, biofuels were very prominent. The biofuels debates got a certain edge to it when a skeptical scientific report by the Commission's in-house research institute, the JRC, was circulated. The JRC report was directly circulated among Cabinets, thereby skipping the normal procedural step of asking the services for comments before. By choosing this approach, it was ensured that another view point could not find its way into the study. Had the report been shared earlier then it would have been part of the impact assessment. Rather, the timing and direct distribution ensured that the study was a potent weapon and justification aid for the political camp that argued against biofuels. The report was additionally leaked – supposedly by the Environment Cabinet (Interview 11 February 2011) – to the *Financial Times* (Bounds 17 January 2008), five days before the College of Commissioners was supposed to make a decision. The resulting article cast doubt on, first,

whether the biofuels target would save emissions; second, whether the costs of achieving the target would be outweighed by its benefits; and, third, whether the promised effect on employment would not be only 'wishful thinking' (Bounds 17 January 2008; Commission Scientists Blast EU Biofuels Policy 18 January 2008). DG TREN officials and the Energy Cabinet were furious: 'it was extremely destructively leaked [...] There is a million things wrong with this study [...] It was dirty that it was leaked intentionally to try to destroy what had been done. And it had a very damaging effect' (Interview 8 February 2011a).

This reaction illustrates several points. First, the Commission is well aware of the fact that the science that it publishes should not contradict the policies that it proposes. Second, contradicting leaked studies are dangerous when they do not represent collegiality but only the perspective of part of the Commission. Third, the JRC felt 'that their impartiality was being [...] impugned, that they were being instrumentalized' (Interview 15 February 2011). Seemingly, actors in a politicized environment consider it to be an available strategy to harm the legitimacy of their own expert institutions for quick political gain. The JRC's impartiality became collateral damage. Fourth, and most importantly, even on a high political level, knowledge can make a difference when it is turned into a power resource. As one interview partner at the Cabinet level witnessed, the JRC study came too late to change the preferences of the Cabinets (Interview 9 February 2011a), but it did equip one side with additional arguments to substantiate its standpoint.

With reference to the leaked report, Cabinet Dimas (ENV) and Cabinet Potočnik (Research and Technological Development (RTD)) argued in favor of a higher emissions saving threshold for biofuels (50 per cent). Environmental NGOs joined the chorus and lamented that 'even' Commission scientists were against the biofuel provisions (Phillips 18 January 2008). Their strongest point was that Cabinet Piebalgs (TREN) and Cabinet Fischer Boel (AGRI) were framed as having an ideological agenda. The study made it more difficult to argue their case in what was already a 'very strong' debate in a 'very painful and long process' (Interview 28 February 2011). Those Cabinets in favor resorted to a typical counter-strategy. They attempted to discredit the study as produced in a lackadaisical fashion. They challenged the reliability of the report as such, its scope, its assumptions and its methods (Interview 11 February 2011). Eventually the presidential Cabinet exerted its authority and insisted on the 35 per cent threshold that DG TREN had proposed (Interview 3 February 2011b). Its insistence was on the grounds of discredit that had been brought regarding the report

and relied on the lack of expertise on this issue among the Cabinet members.

The meeting of the Heads of Cabinets (hebdo) took place on 21 January 2008 and was equally political and long (Interview 3 February 2011b). It was 'absolutely closed' in terms of participants (Interview 11 February 2011). Some of the doubts that were on the table at that point included whether the overall renewable target was realistic at all, whether 2005 was really a good base year for the 2020 target and whether the decision on biofuels would get out of hand during the negotiations with the European Parliament and the Council (Interview 3 February 2011b). Additionally, the target distributions and the guarantees of origin were reserved in the special chef meeting for discussion in hebdo (Interview 3 February 2011b). In particular, a request by the Nordic Cabinets to introduce a force majeure clause was discussed. On biofuels, hebdo had to discuss the implications of a binding biofuels target, the methodology of accounting for biofuels, thresholds, the introduction of a revision clause, and the social and economic impact on developing countries (Interview 3 February 2011b). The JRC study, supported by Cabinet Dimas and Potočnik, even found its way into the hebdo, where it contributed to the decision to focus only on second-generation biofuels (Interview 8 February 2011b). With the help of this study, the Dimas Cabinet argued that it was getting more and more scientific data on the doubtful environmental impact of biofuels that should be discussed (Interview 3 March 2011). The knowledge strategy to place the bomb of a negative study, including the related publicity, seemingly helped to sway the opinion from 'negligent but skeptical' to 'skeptical and cautious'.

Before turning to the final adoption in the College of Commissioners, it is worth pointing toward one particular relationship between experts and the President of the Commission. Barroso was treating the RES Directive as a high-profile file that was likely to be a subject at the European Council (Interview 16 February 2011a). He wanted to be prepared accordingly. Barroso himself met regularly with a HLG on climate change for a period of two years. More information about this group of 12, its work and its function for Barroso can be found in Chapter 3 (on the ETS revision). Whereas its main focus was on climate change, it did help Barroso to develop and refine a narrative that encompassed the RES Directive as well. With the climate and energy package, energy policy had received an upgrade to a strategic priority policy (Hey 20–21 June 2008, p. 25) that was embedded in a more general political narrative. The notion of a 'low-carbon society' allowed Barroso to tap

into arguments of a very different nature, ranging from ensuring security of supply to creating new jobs (European Commission 23 January 2008a; Howes 2010, p. 117). Experts such as Stern and studies such as the EmployRES study by Fraunhofer (Ragwitz 2009) served as principal witnesses for this argumentation.

The meeting of the College of Commissioners took place on 23 January. Barroso opened the discussion among the Commissioners by stating that the proposal on the table was 'excellent' and underpinned by sound economic analysis that ensured 'feasible and affordable' proposals, and that 'no Member State would be faced with unreasonable or unachievable targets' (European Commission 23 January 2008b, p. 16). Piebalgs followed by briefly explaining the general thrust of the directive. In the discussion that ensued, some remaining points were raised (European Commission 23 January 2008b, pp. 20–23): the College discussed the distribution of targets once more, particularly with a view to the special needs of the Eastern European countries, as well as to forerunner countries that had already achieved a high RES share. Additionally, the consequences of RES trading on the markets and the impact of biofuels on developing countries and linked sustainability questions were addressed. A few last-minute changes were adopted (European Commission 23 January 2008b, pp. 23–24): the language in the chapeau communication was changed with regard to the RES target distribution and it was agreed that RES trading would be re-evaluated by the end of 2014 according to new data.

The most vocal Commissioners in this debate were Piebalgs as the sponsoring Commissioner, Verheugen for DG ENTR, Mandelson for DG TRADE and Fischer Boel for DG AGRI (Interview 9 February 2011c). Verheugen was particularly concerned about the impact of RES trading on energy-intensive industry, Mandelson was worried about RES trading with non-EU countries and Fischer Boel argued with Potočnik on the biofuels issue. Other Commissioners, such as Ferrero-Waldner, Barrot, Reding and Frattini, also had smaller concerns but in general supported the overall package (Interview 3 February 2011b). Additionally, some Commissioners, such as the Estonian Kallas and the Finn Rehn (who argued for a different base year for the targets and a force majeure clause), represented national concerns – to the extent that they had to be reminded to 'comply with professional ethics' and to not represent Member State interests (Interviews 3 February 2011b, 9 February 2011c, 9 February 2011a). Considering the confidentiality of the College meeting, neither the minutes nor my interview partners were at liberty to explicitly point to noteworthy utilizations of knowledge. The one

exception is Barroso's introductory words, were he praised the scientific underpinning of the legislative proposal, thereby increasing the legitimacy of the directive. Additionally, I have accounts of the preceding high-level discussions about the base year and RES trading, where numbers were used to substantiate the claims made. It is very likely that these arguments were simply repeated from the speaking points prepared by their Cabinets.

The biofuels discussion in the College has been characterized as 'particularly technical', 'extremely difficult' and rather ideological (Interview 24 February 2011e). Dimas, as a Commissioner who was well versed in the technicalities of the files and armed with the fresh results of the JRC study, was the leading skeptical Commissioner in this area. He was concerned about the environmental integrity of the energy and climate package, and about the potentially devastating consequences of allowing too many first generation biofuels (Greenpeace 17 January 2008). He strongly pushed for more sustainability criteria. Fischer Boel, who represented the interest of European farmers, resisted his hesitant view strongly. The situation became so complicated that Catherine Day, the President's right hand, and others even contemplated dropping the separate biofuels target in the light of the new evidence. However, as a high-level participant in the process observed,

> it was too late at a certain point in the process to take things out [...] we were very much in a state of flux. We had a great flash of enthusiasm for biofuels, then we got to realize it wasn't such a magic answer [...] there were too many people devoted to it, so it was impossible to drop it [...] You can't get rid of it, even though people privately agree with you, it is too late now, but it shouldn't be, logically it shouldn't be, but sometimes it is...
>
> (Interview 15 February 2011)

The example of the biofuels provisions in the RES Directive therefore comes close to smoking gun evidence of political path dependency trumpeting knowledge in a bargaining situation. Many of the results of the JRC study were confirmed in April 2008 by the EEA (EEA 10 April 2008; EEA 2008). However, mandate delivery as an objective has to bow to the pressure of power-maximization dynamics. In a problem-solving arena, this kind of behavior is unthinkable: when an actor is convinced by facts and expertise that a problem should be solved in a certain way, he agrees to this solution. In contrast, in a bargaining situation, saving face is more important than developing factually correct

legislation. As a result, the environment Cabinet could only influence the methodology of calculating biofuels GHG emissions and achieving a review clause, termed a 'safeguard clause' (Interview 11 February 2011), by insisting that the scientific basis of the proposal was inconclusive. Additionally, it achieved a focus on second-generation biofuels with the support of Cabinet Verheugen, who was concerned about the competitiveness of the food industry that shared a need for the same resources with (first-generation) biofuels (Interview 9 February 2011a).

4.4 Conclusion: Politicizing knowledge in the pursuit of European energy policy

This conclusion will tackle two aspects: first, the developments after the adoption of the Commission's proposal by the College of Commissioners, and, second, a summary of the insights gained in this chapter.

The proposal was published by the end of January 2008. In the ensuing political process, it remained a cornerstone of the energy and climate package. In a move to upgrade the policy proposals to a high political priority, the French Presidency of the European Council took some politically very clever steps. First, it reduced the political time available for adoption and imposed a high time pressure on the European Parliament by forging an agreement that the proposals should be adopted in 2008. Second, the energy and climate package was discussed and adopted not by the Council of Ministers but by the European Council. The politicization increased further when the French Presidency aimed for unanimous adoption. As a consequence, the package 'did not go through the full co-decision procedure' (Skjærseth and Wettestad 2010a, p. 116), and this might arguably have violated the treaties (Vedder 2010, p. 47).

By 17 December 2008, the RES Directive was adopted. The high politicization and rapid adoption procedure reduced the ability of the political actors to argue about the scientific underpinnings of the proposal. The Commission, as a gatekeeper to and master of the knowledge, prevailed with its view on many factual disagreements. The context of time constraints turned the Commission's strong knowledge base into bargaining influence and ultimately a maximization of power for the Commission. The RES and ETS II Directive 'considerably reduced the discretion for Member States or private actors', counter to the prevailing trend of weak or soft policy instruments in environmental policy (Hey 20–21 June 2008, p. 2).

With regard to knowledge-utilization strategies, this chapter showcases a number of interesting instances. Just as in the case of all

of the other case studies, the Commission commissioned a number of studies and implemented several consultations. However, different from the ETS and CCS cases, a standing expert group was not used. The lower degree of structuration of expert input went hand in hand with a higher degree of political influence from higher levels of the hierarchy. Overall, the technocratic levels were in closer interaction with the political levels than in the ETS I and CCS cases. This chapter therefore exhibits two knowledge-utilization strategies that had previously not been analyzed. First, in situations of technocracy, the desk officials did develop the economically most efficient way to calculate the distribution of RES targets among the Member States with the help of econometric models. However, they were also involved, upon demand of the Commissioner and Director General, to tweak the calculation methods and results until the politics came out right, too. In that sense the service not only developed policy options and the arguments attached to them but was also tasked with the development of a policy option that was based on politically acceptable methodology.

In the case of RES trading, we observed that the technocratic services laid the theoretical and intellectual fundaments, but that the politicized Cabinet, on these grounds, imposed its creative thinking about policy options on the service's work. In this context, the services felt forced to balance out the politically biased perspective of the Cabinet by providing counter-arguments and studies.

In politicized technocracy, we observed a number of decisions being taken in a technocratic fashion. The drafting team went so far that it adopted a few decisions on the basis of expert input without properly understanding it. This was the case in the decisions about the RES target indicators provided by Eurostat. Additionally, we have seen again in the case of accounting approaches that legal consistency and coherence is a sufficient argument for technocrats to make a decision. Possibly more interesting, however, is that a politicized technocracy, as in the case of the RES Directive, develops an own position after consultation with all relevant experts and stakeholders, and takes a decision that is in essence political while disregarding its political implications. This happened in several instances in the case study at hand: abolishing administrative barriers, energy efficiency requirements for buildings, training and access to grids. In all of these cases, the drafting team consulted widely and received studies that supported the general direction of the proposed articles. They then logically strengthened the provisions according to their own perception of their own expertise and what they believed was technically possible. In this context, knowledge was used to improve the intended delivery of the legislative proposal. The interviews

showed that such a step was taken to close the gap between expectation and delivery – despite the political contentiousness of the proposals. Such behavior implies that the desk officials relied on their superiors to screen their proposals again for political impossibilities.

Another fascinating instance of politicized technocracy taking decisions is the biofuels example. Here, Paul Hodson followed his organizational mandate for delivery to the letter, as defined by DG TREN to ensure sustainable mobility and security of fuel supply. Despite scientific disagreements, he and his team proposed, on the basis of the PRIMES model and past communications and strategies, to implement a binding biofuels target. In the process of doing so and of further specifying related articles, the officials in the services gathered an abundance of data. Their mindset was clearly influenced by the organizational logic and norms of their unit. Inconclusive expert input was complemented and interpreted by in-house expertise that was strongly tainted by DG TREN's perception of the problem. This explains the sustainability criteria that focus surprisingly little on the concerns of DG AGRI, DG ENV and DG DEVCO. At times, the DG also benefited from a lack of convergence in expert opinions, as evidenced in the case of the calculation of biofuels. When faced with diverging expert preferences, the DG chose the one approach that was closest to its organizational logic.

In bottom-up technocracy, we are lucky enough to witness a failed politicization of knowledge utilization. DG ENV and DG TREN faced the trade-offs between their organizational logics while working on writing the impact assessment. The thinking of the officials from different DGs was so guided by their frames of reference that their conclusions from looking at the same data differed widely. Influenced by their own perceptions of reality, the officials of the different DGs ended up bargaining over the most efficient and effective solutions. The problem-solving arena of desk officials changed into a negotiation arena. Data turned into arguments and a stalemate occurred. In an impact assessment, options are supposed to be named and costs and benefits are to be attached. What the DGs were about to do was to make politics with science. Eventually, the SG had to step in to ensure that the officials followed their technocratic job description of developing diversified policy options and not bargaining over them. In other words, the SG prevented decisions which were perceived to be politically important, to be taken in a bottom-up fashion. It thereby ensured that the objective of mandate delivery was adhered to and not swept aside at the expense of logic of power maximization.

In top-down technocracy, we can observe the rather rare case of Directors involving themselves in policy-framing. Regarding the modeling work, the Directors engaged in making those decisions that the service level was prevented from taking by the SG. They are the ones who resolved the political disagreements over scientific assumptions and modeling results. Often they interacted directly with the desk officers of DG ENV, DG TREN and DG ECFIN to do so. By doing so, they bridged departmental logics in a way that a normal desk officer never could. Interestingly enough, the Directors on the IAB then helped the desk officers to formulate an impact assessment that satisfied the double criteria of technical feasibility and political acceptability. Here, the process was more cooperative than we would normally expect. In short, the Directors level, combining technical expertise and political wit, acted as a catalyst to transform scientific knowledge into politically usable expert input.

In bottom-up politics, the services engaged in bargaining on a technocratic level. However, the Cabinets were involved more than usual through information meetings. This led to what one could term a proxy war between DGs on behalf of the Cabinets. The political, ideological perspective of Cabinets was combined with the organizational sectoral bias of the DGs. The consequence of this additional politicization was that the different DGs used studies and stakeholder input as weapons in a bitter fight over turf and influence. Paul Hodson, who had developed a competitive knowledge advantage over the course of the preparations, turned out to be the master of arguments in this context. In fact, according to one Commission official, there were only 'one or two guys in the entire Commission' who really understood the debate (Interview 28 February 2011). Being an expert in a politically charged yet highly technical discussion seems to be the best knowledge-utilization strategy.

The calculation methodology for the RES target distribution was developed in the area of top-down politics. Consequently, a 'reverse methodology' of dealing with scientific models such as PRIMES can be detected. Instead of following the recommendations of the desk officials, the Cabinet and Director General developed their own method that mended the numbers according to political priorities. It is interesting that, despite the opposition by desk officials, the outcome was effectively purely political. Mandate delivery as an organizational logic was redefined. Whereas the desk officials understood their task as finding an economically efficient solution, the political levels felt that the Commission could only deliver on the mandate if it would adapt the

targets and thus achieve the buy-in of the Member States. The economic modeling became a control factor only to ensure that the solution stayed in the range of politically defined acceptable inefficiency. Another interesting element of top-down politics is that the proposal for RES trading emanated from the energy Cabinet. The economically founded concerns of the services did not play a role. The initial Cabinet proposal was only stopped by Commissioner Piebalgs himself who realized that the political opposition to the initial plans was too strong. Here, scientific studies were either especially developed for the political decision or came in handy as a hook to justify already existing political preferences. Knowledge utilization became necessary to maximize the Commission's power and was used accordingly.

In technocratic politics, we witness the same knowledge-utilization strategy as in the case of ETS II. Catherine Day and her SG used their involvement in the technical parts of the discussions to expand their influence. The ability of the SG to master the nitty-gritty of the proposal allowed Day to take control over (1) the first impact assessment draft; (2) the Directors' group advising the impact assessment; and (3) the first draft of the communication. The chapeau communication in this context represents the narrative for the legislative proposals, whereas the impact assessment provides the justification for its contents. It was, however, no accident that the SG was able to master these topics. In fact, Day consciously built up capacities within the SG in order to be able to control and use knowledge to the advantage of a service in transition away from the 'service at the service of the services'. Knowledge was used to establish, secure and continue the superior role of the SG over the DGs as a service at the service of the President.

In politics, this chapter shows the usual utilization of knowledge as argumentative weapons. It is interesting insofar as the JRC study on biofuels was used not only internally but also to create news. The following uproar within the Commission teaches us, first, that the Commission always attempts to be seen as a politically neutral actor with evidence-based proposals and, second, that studies can be a significant source of power and influence. The JRC study changed the dynamics of the discussions – for instance, by affecting the perceived objectivity and thus credibility of some of the players. The JRC study was so potent that the only way to counter the argumentative force of the JRC was to discredit the study as unreliable in its assumptions and methods. Considering that the JRC study was part of a larger shift in the scientific literature toward a more skeptical view of biofuels, one might argue that politics willingly ignored evidence when adopting the biofuels

provisions. Power maximization in this case trumped the objective of mandate delivery.

Apart from the JRC study, a noteworthy utilization of knowledge occurred when the Cabinets did a tour of capitals to prenegotiate the RES targets. As a talking sheet, numbers were used that were derived from the PRIMES model and the calculation method that had been developed at the highest levels. This move imposed a discipline on the debates with the Member States, so that they were forced to argue with their own data. At that point in time, PRIMES was unrivalled and its assumptions uncontested. As early as 2011, this situation changed (euractiv.com 2011), but at that point in time the utilization of PRIMES constituted a competitive knowledge advantage.

In this last case study of the three, we have analyzed different instances of knowledge utilization in both technocratic and politicized environments. We have seen that problem-solving arenas create a logic of appropriateness that causes their officials to use knowledge cognitively to deliver on their mandate of developing sound legislation. We have equally witnessed that bargaining arenas create a logic of consequentiality that prompts Commission officials to use knowledge argumentatively to defend its preferences in the pursuit of power maximization. Interestingly, we have identified interactions between these arenas, which lead to a blurring of the borders between these two logics of interaction. In Chapter 5 the RES, the ETS I and ETS II examples are compared to allow for conclusions that invite further work. It will summarize the approach taken, the theory applied and the conclusions derived from these three case studies. It will conclude with an outlook in terms of future avenues for research and normative implications.

5
Conclusion: The Commission as a Catalyst between Knowledge and Politics

5.1 Introduction: An open black box

At the beginning of this work, I pointed to the existence of two different cities or worlds, as described with fine humor by Pal. Science was characterized as 'heavenly and serene, with [. . . a] devotion to purity and truth' and in opposition to politics, a 'profane and passionate [state], heaving with vulgar life' (Pal 1990, p. 143). At the end of this study, it has become clear that these two cities have long been merged. At the outskirts, these two different extreme descriptions might still be valid pictures, but the vast centre cannot be classified that purely. The European Commission has purposefully built bridges across the chasm. It has understood that without science, its proposals will not be sound, yet without politics, they will not be implementable.

This concluding chapter attempts to deliver four objectives. First, it will recap the main assumptions and theoretical expectations of this study. Second, it will match the different cases and draw a structured cross-case comparative conclusion. Third, it will reconnect with the existing literature, reflect on the validity of alternative explanations and point to future avenues for research. And fourth, it will offer an outlook of a normative character. This conclusion will not revisit the wealth of empirical data collected and will not point to the empirical discoveries of the individual cases. Those curious about the actual origins of the EU policies on the ETS, its revision and the EU's renewable policies will need to refer back to the case studies themselves.

This work has attempted to answer the following research question: Why and how is expert knowledge used in the policy formulation of the European Commission?' I therefore contribute to the research program that Radaelli has outlined, trying to establish 'when and how

knowledge matters in the policy process' (Radaelli 1995, p. 160). This project opened the black box of the European Commission to explain internal decision-making processes that so far have been curiously under-researched. The study points to previously overlooked dynamics and variables in the knowledge-utilization literature. Due to this new departure point, it also contributes with fresh insights to the debate between actor-based and institutionalist approaches. In order to do so, I have opted to use process-tracing in case studies, thus gaining a 'better understanding of the whole by focusing on a key part' (Gerring 2007, p. 1). The cases were selected with a diverse case strategy and assessed within case. I now offer a summarizing cross-case analysis to complement the picture. The analysis was based on a study of primary and secondary literature, as well as a wealth of newly generated data: the backbone of this study is a set of nearly 40 semistructured elite interviews that were used to obtain the information needed regarding key political decision-making. Among the interview partners were almost all relevant Commission actors, ranging from desk officials to the highest levels of Commission staff. For instance, the set includes three Director Generals and two Heads of Cabinets.

5.2 Recap: Assumptions and expectations of institutional demands and knowledge utilization

A study of knowledge utilization has to be based on assumptions about the origin, stability and influence of preferences and decisions. At the same time, it has to have a consistent understanding of the dynamics and nature of decision-making processes. This project was originally inspired by Kingdon's stream metaphor (Kingdon 2003) and it subscribes to the garbage-can literature's understanding of the policy-formulation process as a case of bounded rationality (Cohen et al. 1972, p. 1; Richardson 2006, p. 15). This study assumes that rationality is bounded by the environments within which the preferences of actors are formed and decisions are taken. Preferences and interests are shaped, defined and changed due to the impact that institutions have on an actor's rationality.

In this sense, this work can be seen in the tradition of organizational theory as initially developed by March, Olsen and others (March and Simon 1958; March and Olsen 1976; March 1988), and as empirically tested and further developed by Egeberg et al. (Egeberg et al. 2003; Egeberg 2006c, 2006b; Trondal et al. 2008; Wonka 2007, 2008). In this institutionalism with a focus on behavior, 'the basic units of analysis

of the new institutionalism are internalized rules and practices, identities and roles, normative and causal beliefs, and resources' (Olsen August 2007, p. 4). Other than the garbage-can literature, however, this institutionalist argument assigns prevalence to structural influences. It believes that knowledge utilization is conditioned by structures. Organizational theory has taken major steps forward in recent years in being able to explain the utilization of knowledge by applying ideas about resource dependency to lobbying (Bouwen 2002) and by applying ideas about policy modes to expert involvement (Boswell 2009). It is able to encompass most of the factors that other strands of literature have pointed us toward: uncertainty, complexity, salience, the role of hierarchy and policy modes, and institutional needs such as legitimacy.

Here, organizational structures are conceptualized as institutional learning arrangements, which facilitate or hinder learning due to their characteristics (Busenberg 2001, p. 176). Institutions are understood as a 'collection of rules and practices' endowed with action-enabling resources, providing 'structures of meaning that explain [, guide] and justify behavior' (March and Olsen 2006, p. 691). Actors in such a context are led by logics of appropriateness (Feldman and March 1981). They are fed by institutional expectations and socialization dynamics toward their employees, which define their role. Corresponding to the role, certain behavior will be considered 'natural, rightful, expected, and legitimate' (March and Olsen 2006, p. 689). In terms of knowledge utilization, this logic of appropriateness shapes discursive practices, in terms of both what arguments are appropriate to use and how to construct the factual information underlying those discursive elements. According to these norms of proper conduct, rationality and knowledge-processing, officials will use knowledge in particular ways (Boswell 2009, p. 77). What happens, however, when the institution has different expectations and norms for its employees?

Throughout this study, we have seen instances of differing institutional expectations. Even though this is a novel argument for the Commission, it is hardly surprising. March gives the example of a court: within one single institution, the judge, the prosecutor and the attorney all follow different logics, assume a certain perspective (including the presentation or ignorance of certain data or arguments) on a case by virtue of their role (March and Olsen 2006, p. 704). When an institution reconciles different external expectations toward it and translates these expectations into different role descriptions for varying groups of officials, this will have consequences for our understanding of rationality. This study assumes that preferences in one institution can at the

same time be fluidly unstable and predetermined stable. Such a claim is based on the assumption that within one organization there can be some units with different tasks. Some units would be designed to learn through interaction to establish the organization's utility, whereas other units would be designed to defend these preferences in order to maximize its utility. In other words, preference attainment and preference pursuit happen in different but interacting phases. By allowing for both behavioral camps to make valid assumptions, I open up the possibility for the presence of both cognitive and instrumental utilizations of knowledge. On the one hand, actors learn with increased knowledge, but on the other hand, actors are able to ignore knowledge and favor some information over another in order to advance their position. The logic of appropriateness and logic of consequentiality complement each other in this perspective.

This study is underpinned by a look at the Commission as a multitude of arenas (Hooghe 2000, p. 101) with varying but distinct cognitive frames, which impose institutional affiliations on those working in them (Egeberg 2006b; Trondal et al. 2008). Such a view does not make an assumption about whether officials of an institution act as technocrats or politicians per se. Rather, it subscribes to the idea that different logics of action will occur within one single institution, should this institution differentiate between various roles and attached logics of action. Following Radaelli (1999, p. 757), these arenas are either technocratic or political. In order to identify technocracy and politicization and their linked institutional functions, the literature offers a vast array of propositions. It includes observable elements such as logics of action (Feldman and March 1981) or characters of cooperation (Downs 1967; Peters 1992; Christiansen 1997); their modes of policy-making (Radaelli 1999) or modes of settlement (Smith 2004); the policy cycle (Tholoniat 2007) and the structure of organization (Egeberg 2006a); the source of legitimacy (Brunsson 2002; Boswell 2009); the boundedness of their processes (Christiansen 1997); the recruitment patterns (Balint et al. 2008; Döring 2007; Egeberg 2006a; Wonka 2007); and socialization dynamics (Scharpf 1997; Egeberg 2006b; Trondal et al. 2008). For an empirical assessment of the differentiation within the Commission, these different elements can each be tested. However, for a theoretical argument, the elements are merged into three observable characteristics: (1) the organizational decisional level – that is, the level of hierarchy at which a policy is formulated; (2) the organizational nature – that is, the policy dynamic during the policy formulation, ranging from technocratic to politicized organizational characteristics; and (3) the organizational

task – that is, the task that the organization has to fulfill in formulating a policy ranging from problem-framing to decision-taking.

This study assumes that the tasks that an organization fulfills in pursuit of its organizational aims determine 'functional needs'. Functional needs are those resources that are necessary to fulfill a certain organizational function. Following the tradition of organizational studies literature (March and Simon 1958; March and Olsen 1976; March 1988; Dolowitz and Marsh 1996 – but also Cini 2000a; Dunlop and James 2007), I argue that the Commission, like many other institutions, serves two institutional functions: mandate delivery and power maximization. Organizations are interested in maximizing their power (Pfeffer 1981) vis-à-vis other institutions, and their organizational units are constantly involved in bureaucratic politics (Downs 1967; Peters 1992), trying to expand their mandate, their resources and their influence in constantly ongoing turf wars. At the same time, however, organizations need to deliver on the objectives of their mandate (Weiss 1978). Other than Boswell's claims (Boswell 2008, p. 473), it is therefore rational for an organization to pursue both strategies.

More politicized units serve to maximize the power vis-à-vis other institutions, whereas more technocratic units ensure sound mandate delivery (Table 5.1). With regard to the abovementioned three characteristics, the higher up the hierarchical ladder, the more likely it is that the organizational function is power maximization; the lower down the ladder, the more likely it is to be mandate delivery. In parallel, politicized organizational units will focus on power maximization, whereas technocratic units will focus on mandate delivery. In terms of organizational tasks, those units that are involved in problem-framing will be concerned with mandate delivery, whereas in decision-taking they will more likely be occupied with power maximization. The underlying differentiations of the organizational function can be summarized as shown in Table 5.1.

The institutional function (mandate delivery or power maximization) has been conceptualized as the independent variable. In an adapted theoretical framework for knowledge utilization, this study has then linked resource dependency and logic of appropriateness determined by functional needs. Based on Bouwen's theory of access, it is assumed that the Commission is in need of critical resources as required 'for continued operation' (Bouwen 2002, p. 370). Knowledge is one of the most crucial resources for the Commission. It therefore reaches out to experts in its resource dependency. The criticality of a certain good, such as information, is dependent on the envisaged 'continued operation' – that is,

Table 5.1 Differentiation of the independent variable 'organizational function'

Organizational character	Organizational nature	Organizational locus of decision	Organizational task	Resulting organizational function
Technocracy	Technocratic	Low level of hierarchy	Policy-framing	Mandate delivery
Politicized technocracy	Technocratic	Low level of hierarchy	Decision-taking	
Bottom-up technocracy	Politicized	Low level of hierarchy	Policy-framing	
Top-down technocracy	Technocratic	High level of hierarchy	Policy-framing	
Bottom-up politics	Politicized	Low level of hierarchy	Decision-taking	Power-maximization
Top-down politics	Technocratic	High level of hierarchy	Decision-taking	
Technocratic politics	Politicized	High level of hierarchy	Policy-framing	
Politics	Politicized	High level of hierarchy	Decision-taking	

the tasks that the organization fulfills in the pursuit of its organizational aims: mandate delivery and power maximization. Seen from this perspective, learning is not necessarily determined by the quality of the knowledge but by its 'fit' with the needs of the organization. Adapting Boswell's version of an institutionalist resource-dependency argument (Bouwen 2002; Boswell 2009), a causal link has been posited between the institutional function of an organizational unit and its way of using knowledge.

This theoretical argument rests on a link that was first made by Radaelli, who connected Weiss' distinction of knowledge utilization (data, idea or argument) (Weiss 1986) with policy modes. He argued that knowledge as data will be used in cooperative games in depoliticized arenas, whereas it will be used as arguments in zero-sum games and, in particular, post-decision (Radaelli 1995, p. 176). The logics of action that correspond with the technocratic or politicized arenas are defined as problem-solving and bargaining, each with their own forms of rationality. Bargaining would be characterized by the pursuit of individual actors' interests and relative advantages, and a conflictual behavior (logic of consequentiality), whereas problem-solving would focus on common interests, pareto-optimal solutions and absolute advantages (logic of appropriateness), and exhibit cooperative behavior (Elgström and Jönsson 2000, p. 685). A definition of the 'political' which includes party orientations, ideologies, subjective judgments and values (Christiansen 1997, p. 79) would fit into the bargaining dynamics, whereas a definition of problem-solving would exclude exactly this subjectivity and reject ideologically influenced decisions. Knowledge would then be used accordingly in the different policy modes in order to deliver on the institutional functions as identified.

In this way, organizational and resource dependency theories enable us to operationalize the utilization of knowledge as a dependent variable (Table 5.2). It has been posited that expert knowledge is utilized depending on the function that it fulfills in the policy-formulation process. In this sense, technocracy, politicized technocracy, bottom-up technocracy and top-down technocracy were all expected to focus on mandate delivery and subsequently use knowledge cognitively. Bottom-up politics, top-down politics, technocratic politics and politics were, on the other hand, predicted to focus on power maximization and thus use knowledge argumentatively.

Based on this theoretical framework, three case studies of policy-making within the Commission have been analyzed. The argument pursued can be summarized as follows. First, the Commission will use

Table 5.2 Institutional function and corresponding knowledge-utilization strategy

Institutional function	Knowledge-utilization strategy
Mandate delivery	Instrumental and cognitive to improve performance
Power maximization	Argumentative to defend legitimacy and substantiate position

knowledge instrumentally as data or ideas in order to successfully deliver on its mandate (in this case, to produce technically sound, feasible and practical policies). This is a use of expertise in the paradigm of evidence-based policy-making. It will involve gathering knowledge to better understand an issue, or gathering ideas to provide policy advice. Second, the Commission will use knowledge in a legitimizing or substantiating way as an argument in order to maximize its power either internally or externally. This is a use of expertise that is strategic, supports pre-existing positions or is symbolic to send signals (Radaelli 2009, p. 1148), and involves gathering knowledge to use it as argumentative 'tools, weapons or hooks' (King 2005, p. 98). Knowledge can therefore serve either in cognitive ways, to increase the epistemic understanding of a problem, or in symbolic ways as a justification to increase the legitimacy of a decision by presenting it as rational (Radaelli 1995, p. 162). In short, a cognitive utilization of knowledge helps to make the choice, whereas an argumentative utilization helps to defend the choice.

The objective of the case studies was not primarily to test the assumed causal relation but rather to further develop the theoretical argument. It will be for other studies to test the causal relation in larger-scale settings. A small comparative case study design like this can only point to two results: the causal relation can be observed in this limited universe, and it seems that we get from the independent to the dependent variable in various ways. It is this two-pronged result that is presented in the conclusion. Before turning to the case studies themselves, a few general lessons about the Commission's internal functioning will be drawn.

5.3 The Commission's nature stretched between politicization and technocracy

The entire study has shown very clearly that the European Commission is internally differentiated. The Commission combines units differentiated by function, sector and nationality (Trondal et al. 2008; Wonka

2007, 2008), and it combines units that are technocratic with units that are politicized. The nature of these units defines what can be considered as appropriate behavior. Assuming that knowledge-utilization strategies are linked to organizational structures, the picture looks as follows, in a rough sketch. The Commission is politicized and technocratic at the same time, but far more politicized at its hierarchical top, and more technocratic at is hierarchical bottom. At the beginning of the policy formulation and at the low levels of hierarchy, learning takes place for instrumental reasons, to deliver on the mandate of producing sound policy proposals, yet toward the end of the policy cycle and at higher levels of hierarchy, the dominant function is power maximization of either DGs or the Commission as such toward the outside. Learning in this context takes place predominantly to maximize power. In short, the Commission is organized by a policy cycle that increasingly politicizes the decision-making during the process.

This is closely related to the mode of settlements within the Commission, ranging from problem-solving to bargaining. Higher levels of hierarchy draw their power from political legitimacy, whereas lower levels of hierarchy derive their legitimacy from quality performance. Equally, the character of cooperation is either determined by power maximization and bureaucratic turf wars, or by knowledge-sharing activities – depending on the hierarchical layers involved. When structuring the analysis in terms of hierarchical levels, we see that the College of Commissioners and the Cabinets are definitely the most politicized part of the European Commission. The SG can be summarized as being similarly politicized as the Cabinets. With regard to the DGs, a few differentiations seem to be necessary. First, the Directors-General are also elements of the politicized system of the Commission. Second, the interaction between DGs is distinctly different from interactions within the DGs. The nature of interaction between DGs indicates a presence of rivalry between services, which is rather politicized. Third, we can conclude that the DGs' internal functioning is deeply technocratic. We can therefore observe that the initial assumption of a Commission, which unites the paradox of technocracy and politicization in its entity, holds true.

5.4 Technocratic knowledge-utilization strategies in cross-case comparison

5.4.1 Technocracy and knowledge in cross-case comparison

According to the hypotheses for technocracy, we expected to find desk officers at low organizational levels to frame policy options. The task

of such policy officers is to attach advantages and disadvantages to different options. The role that the desk officer is expected to play is one of preparing decisions for hierarchically higher units in a technocratic, problem-solving fashion, as well as executing decisions in the form of shaping a policy principle into a legal phrasing. We would expect that the logic of appropriateness for such a role in the organization is one of mandate delivery and consequently that a desk officer seeks knowledge to cognitively grasp a problem and identify policy options. In the three case studies, we have found several strategies of knowledge utilization that correspond to these expectations.

First, a popular strategy to deliver on a mandate of providing technically sound and politically creative solutions seems to be the commissioning of technical, economic and legal studies. Such an approach becomes necessary when it is not possible to draft the proposal on the basis of existing expertise or directives, as happened to some degree in the RES case. The Commission then has to tap into the resources of external experts that would otherwise not be available. One example is the extension of the scope of the ETS for ETS II, which had been recommended as technically feasible in commissioned studies. While these studies often did recommend policy choices, the policy officers quite often refrained from making a decision right away. Rather, they distilled the disadvantages and advantages attached to the options from the studies and passed this information on to higher levels for decision-making. Studies were simply used to cognitively grasp a problem.

For ETS I, we see that good legal analysis can belong to the most valued expert contributions. Here, the Commission asked external consultants for a first draft of the directive. They did so to compensate for a lack of legal expertise regarding the interactions between the envisaged policy instrument and the existing acquis communautaire. In ETS I, the Commission invited a contractor to write legal studies and proposals for the design of the ETS, but they worked in close collaboration. The Commission regularly gave feedback on the discussion papers produced by the contractor. In ETS I and in the RES case, the studies were commissioned from those believed to be experts rather than from consultancies with a household name. One of the main criteria was instead the ability to cover all Member States – the Commission demands knowledge to best deliver on their mandate of drafting policies for the entire community.

In ETS I, it is particularly striking how the interaction between the external and internal experts was characterized as a free-floating brainstorming session where ideas could be tested and discussed openly. The participants shared a feeling of taking part in a 'grand experiment' where

a policy was developed from scratch. In the RES case, the desk officers were responsible for managing the input from universities in a Commission-funded research project (E-TRACK). They used this input and other reports, such as OPTRES, to lay the theoretical and intellectual fundaments for the policy option of RES trading. With regard to RES trading, the parameters for developing policy options were more narrowly set top-down than in other cases. The DG consequently also used its studies to argue with the Cabinet for what it believed to be technically the better option.

Second, the Commission tends to underpin its policy proposals with economic forecasts. In ETS I, a team of economists was formed to build and interpret the results of an econometric model that provided forecasts regarding energy consumption and emissions. These models informed the Commission about the distributional consequences of design choices, as well as about efficiency gains or losses associated with politically available compromise solutions. In ETS II, a policy instrument was already in place but had to be re-evaluated. The studies that the Commission did for ETS II were primarily intended to understand the market dynamics that the ETS had created and attempted to clarify the validity of arguments in the discussions. One example is the carbon-leakage argument whose scale DG ENV attempted to gauge. The studies helped to understand which sectors were actually affected and to what extent, and what interaction effects existed. By scientifically acknowledging the problem, the desk officers put carbon leakage on the political agenda. In both ETS I and ETS II, economic modeling helped to establish the validity of the arguments.

Whereas the presence of new data rationalized the debate, the absence of data in ETS II achieved the opposite. In this case, policy officers were hindered top-down to create more data to ensure the continuation of a political knowledge advantage. Instead, policy officers were tasked to develop policy options and to illustrate the technical feasibility, costs and distributional consequences attached to them. In the RES case, desk officers were managed on an even tighter leash. They did develop the economically most efficient way to calculate the distribution of RES targets among the Member States with the help of econometric models such as PRIMES. Studies such as the FORRES report and the modeling results quickly brought a politically unacceptable distribution to the fore. This result was rejected by the Cabinet, which consequently asked for the calculation methods to be tweaked until the politics came out right. It was the task of the policy officers to execute this political preference technically.

Third, in all case studies, policy officers organized a formal consultation process with stakeholders. In ETS I, the consultation was done on the basis of a Green Paper that had been developed with the help of external contractors that had identified policy options. For RES, the DG even organized four written consultations within two years, even though they did not have a standing expert group like the ECCP. The consultations were used to understand the disadvantages and advantages of the different options. The unit clearly understood it as appropriate to collect knowledge as widely as possible in the most neutral way possible in the pursuit of establishing a good knowledge base on which to base later decisions. The ECCP I and II processes were installed on the insistence of Commissioners themselves. Initially they were designed to be fora for learning and exchange, to build trust and understanding between the stakeholders. In ETS I, the desk officers describe the ECCP process as very informative, and as a capacity-building exercise that helped to clarify concepts, problems and solutions, and served to develop new ideas in a pioneering spirit. In ETS I, this was a learning process for all participants. In ETS II, however, stakeholders had developed their expertise and understood their preferences much better. The experts represented were now rather advocacy experts that represented stakes. Under the ECCP II circumstances, it was the task of policy officers to cut through the maze of interests represented, to structure and make sense of the debate. Furthermore, they had to identify those facts that underpinned the different expressions of stakes. In both cases, it delivered sectoral information that is not normally available to the Commission. ECCP I and II can be understood as a sounding board and as a preparatory expert body preparing the necessary analytical work.

Fourth, the policy officers gathered knowledge by meeting selected experts ad hoc. In the ETS case, this was done to identify policy options and to better understand their characteristics. In ETS I, experts from the USA and from the private sector were invited to illuminate the Commission regarding political, legal, economic and administrative challenges in designing an ETS. The Commission officials then understood it to be their task to transfer the lessons learnt in other contexts into the European debate. In ETS II and RES, the consultation of external experts was mostly replaced by a technocratic in-house consultation. An informal taskforce of experts from several DGs contributed with insights from earlier implementation processes. Coordinated by the SG, it served as an in-house sounding board as a forum for in-depth content discussions, which were termed by my interviews as very synergistic.

The policy officers in purely technocratic environments are also tasked with proposing a first draft of the proposal. They do so in the parameters as set by their superiors. When an article can include different policy options, these are normally passed on to the top for a decision, including an evaluation of the options. However, the policy officers themselves make some decisions, too. These are normally technical choices that do not have political ramifications. Interesting to note here is that while the policy officers were busy puzzling and problem-solving, they were bound by a few constraining guiding principle. First, in the case of ETS II and RES, they were limited by the shadow of hierarchy and political preferences as communicated from the top. Additionally, some organizational norms limit the creative thinking of desk officials. Among them are the principles of subsidiarity, a preference to further (undifferentiated) European integration and the powers of the Commission as such, as well as the need to preserve the acquis communautaire.

Analyzing pure technocracy, it can be concluded that when a unit is located at a low decisional level, engages in problem-solving and is focused on policy formulation, the logic of appropriateness does seem to lead to a cognitive utilization of knowledge on behalf of this unit. Knowledge is used to cognitively grasp a problem. Epistemic learning takes place. The units assessed in the different cases employed, in essence, four main strategies in building up its knowledge base: they engaged in focused ad hoc meetings with selected experts; they commissioned targeted studies on technical, legal and economic aspects of the proposal; they developed economic models; and they established a broad stakeholder consultation process that enabled collective learning. Knowledge in that sense was used to deliver on the Commission's mandate to propose technically and economically sound policies. Table 5.3 summarizes different causal mechanisms as identified as linked with a cognitive knowledge-utilization strategy in technocratic environments

5.4.2 Politicized technocracy and knowledge in cross-case comparison

In a politicized technocracy, a low decisional level is concerned with problem-solving and, while doing so, takes a decision. Other than in the form of pure technocracy, the picture is therefore bound to be fuzzier. In this case, the elements of organizational decisional level and of organizational nature point to a technocratic mode of knowledge utilization, whereas the element of the organizational task (decision-taking) points to some form of politicization. I have argued that, predominantly, the utilization of knowledge will be done for cognitive purposes in

Table 5.3 Knowledge-utilization strategies in technocracy

Organizational character	Organizational function	Knowledge-utilization strategy
Technocracy	Mandate delivery	Epistemic learning, cognitively grasp a problem
		Puzzling and problem-solving
		Inform and make technical decisions
		Identify legislative challenges and ensure legal consistency
		Develop policy options (sometimes under politically induced constraints)
		Identify economic, technical, political and social advantages and disadvantages attached to policy options, as well as distributional consequences
		Administer learning processes with stakeholders
		Verify stakeholder arguments and rationalize political preferences

the case of politicized technocracy, even though some elements of argumentative utilization are likely to shine through. And, indeed, my observations largely support this expectation. In most of my cases, some sort of an epistemic community or issue-specific policy network (Braun 2009, p. 469) could be observed within the lead DG. These groups of low-level officials were in charge of writing the first draft of the legislative initiatives at hand and did share some beliefs and backgrounds. The atmospheres of working together are being described as non-hierarchical, friendly and fact-based. Often the desk officials described their task as realizing a technically feasible and legally coherent draft directive. I now set out to summarize how such groups tend to use knowledge.

With the exception of ETS II, which revised an existing directive, the other cases saw officials puzzling over the right legal framework for their initiatives. In ETS I, the Commission decided to build its approach on the Integrated Pollution Prevention and Control Directive. In RES, the officials used a patchwork of directives to write their drafts. In each case, the initial directives were used as a starting point, relevant provisions were kept and irrelevant paragraphs were adapted or replaced as necessary. Such approaches reduce the political complexity because

they largely take out the politics of discussing legal provisions that have already been decided on.

Additionally, the Commission might seek the advice of legal experts. In the case of ETS I, the Commission worked with the consultancy FIELD. Decisions were taken on the basis of some basic principles that seem to be unconsciously shared across services: reduce administrative complexity, ensure smooth implementation, reduce legal uncertainties and ensure legal consistency, respect subsidiarity, guarantee delivery of policy objectives, as well as preserve the existing legislative acquis. Expertise, in these circumstances, was used to better understand the links between different directives, to identify and overcome legal overlaps and gaps, and to integrate the new provisions into the logics of the existing acquis. A politicized technocracy would often take decisions to ensure the feasibility of the directive. In the RES case, models were used to help to identify policy options and studies identified ways of drafting a certain provision. Consultants therefore helped to solidify the technical work, identify gaps and develop solutions.

Some provisions were inserted into the different legal instruments that clearly strengthened the directives. The hierarchy had set political objectives, such as containing climate change or rolling out renewable energy. The desk officials consequently identified options to achieve these aims. Whenever the choice between two options was merely technical, the officials tended to opt for the provision that would deliver the objectives better or in a more feasible way. One example of such behavior is the choice of RES target indicators as provided by Eurostat. On the other hand, expert advice that leads to a politicization of a proposal can also be rejected in a politicized technocracy. Again, a technocratic environment attempts to produce a technically sound, feasible and working policy proposal. Yet when an official faces a decision between two equally feasible options out of which one is less politically contentious than the other, they are likely to reduce the potential for future political bargaining.

Interestingly enough, most case studies also exhibit instances when desk officials develop positions of their own about what is feasible and logical. They do so by consulting stakeholders about a certain problem and assessing existing legal provisions to potentially adapt them. A good example of this dynamic is ETS II, where the carbon price was not satisfactory and the implementation of ETS I was cumbersome. A study of allocation methods recommended a revision and a change toward a central allocation. DG ENV could now propose a solution that it had preferred for reasons of environmental effectiveness and economic

efficiency during ETS I. After the implementation period of ETS I, it had become clear that competition concerns prevailed as well. In accordance with expert advice, central allocation was proposed to ensure target delivery. In the RES case, the desk officials made decisions about abolishing administrative barriers, energy-efficiency requirements for buildings and access to grids.

In all of these cases, the widely conducted studies not only supported the general direction of the proposed articles but also provided insight into how to ensure delivery. The officials then logically strengthened the provisions according to the expertise received and available in-house according to what they believed was technically possible. In this context, knowledge was used to improve the intended delivery of the legislative proposal. The interviews showed that such a step was taken to close the gap between expectation and delivery – despite the political contentiousness of the proposals. They valued mandate delivery over the potential political hiccups of negotiating their proposals. Such behavior implies that the desk officials relied on their superiors to screen their proposals again for political impossibilities.

In a politicized technocracy, mandate delivery can be defined in a rather narrow way. For ETS II, this meant target delivery of a policy instrument that was about to fail. It had become clear during the implementation of ETS I that the allocation method was the Achilles' heel of the ETS. Using a study by Ecofys, results of several econometric models such as PRIMES, and their insights from previous experiences, DG ENV officials confirmed the conclusions from academia that as an allocation method auctioning was more cost-effective than grandfathering. Consistent with the preferences of its DG, the economic mindset of its unit and its epistemic beliefs, the unit then proposed auctioning. Similar to the RES case, the desk officials understood their mandate as delivering on the objectives of their own DG, not as realizing a proposal that would do justice to potentially conflicting mandates of different DGs.

In the case of RES, this led to provisions regarding biofuels that delivered on the mandate of ensuring sustainable mobility and security of fuel supply, but not on the mandate of protecting the environment or of ensuring fair wages for farmers in Latin America. The biofuels discussion is interesting insofar as the DG TREN officials interpreted PRIMES model and other studies with a mindset that was clearly influenced by the organizational logic and norms of their unit. Inconclusive expert input was complemented and interpreted by in-house expertise that was strongly tainted by DG TREN's perception of the problem. When faced with diverging expert preferences (e.g. sustainability criteria for

biofuels), the DG chose the one approach that was closest to its organizational logic. It must have been apparent to the team that it made political decisions on the basis of politically convenient knowledge or that it might have bypassed available knowledge. At the same time, officials in politicized technocracies do not deviously disregard expertise. Rather, they are bound as much by the ideological biases of their times and of their organizational environments, as by the inconclusiveness of available data at a given point in time. One example is the calculation of emissions from biofuels. Here, DG TREN invited experts and stakeholders to discuss possible approaches. The persisting absence of a solid fundament of converging expert opinions then forced the desk officials to make a decision of their own. Technocratic officials seek to create policy solutions to policy problems – not to political problems. It is worth noting that, should the trust in expertise be unjustified, the desk officials may make mistakes. The biofuels provisions might prove to be such a case in point.

In politicized technocracy, we have observed that the desk officers were facing technical or legal problems, which they solved by taking recourse to studies while at the same time applying the norms of their organization to their solution. Basic principles and norms that seem to guide the decision-making process are: reduce administrative complexity, ensure smooth implementation, reduce legal uncertainties and ensure legal consistency, respect subsidiarity, guarantee delivery of policy objectives, and preserve the existing legislative acquis. Together with the advice of its experts or knowledge gained through studies, they constituted the grounds for the decisions made. Some of these decisions have the potential for political controversies, yet the drafting team made them. Their Head of Unit might have discussed them with them, some changes might have been imposed on them, but still, policy officers whose interest was the delivery of their mandate made the decisions on a low hierarchical level. Knowledge was used accordingly in this context. There is only limited evidence that knowledge was politicized; rather, it was used to create better understandings, fill the gaps, solidify technical annexes and make decisions. It is interesting to note that sometimes the underlying rationality was bounded by the organizational norms and the conventional expert wisdom of their times. Table 5.4 summarizes these results.

5.4.3 Bottom-up technocracy and knowledge in cross-case comparison

In a bottom-up technocracy, we see politicized low levels of hierarchy that are involved in policy-framing. This book assumes that these

Table 5.4 Knowledge-utilization strategies in politicized technocracy

Organizational character	Organizational function	Knowledge-utilization strategy
Politicized technocracy	Mandate delivery	Epistemic learning, cognitively grasp a problem
		Puzzling and problem-solving
		Inform, make and solidify technical decisions
		Ensure technical feasibility, increase efficiency or effectiveness
		Identify legislative interdependencies and ensure legal consistency
		Develop policy options (sometimes under organizationally induced constraints)
		Identify economic, technical, political and social advantages and disadvantages attached to policy options, as well as distributional consequences
		Reduce political contentiousness
		Administer learning processes with stakeholders
		Verify stakeholder arguments and rationalize political preferences

officials would use knowledge predominantly in a cognitive way in order to deliver on their mandate.

The ETS I case shows some instances of 'epistemic leadership' (Skjærseth and Wettestad 2010b, p. 320), a strategy of knowledge utilization, which has been repeated over the years. The climate change unit used knowledge in framing the debate that it initiated. Shaping preferences with the help of expertise thereby forms a rather subtle, yet proven successful, approach to bargaining. This strategy has two components: competitive knowledge advantage and favorable policy-framing. First, the units in ETS I and ETS II used the ECCP not only as a forum for mutual learning but also to amass and concentrate information provided by all stakeholders. In the RES case, informal consultations were used similarly. This strategy allows for information-gathering as unbiased as it can possibly be, because the different stakeholders, in particular NGOs and business, balance their biases out. It also enables the desk officials to become gatekeepers to information. Second, the

ECCP was used in ETS I and ETS II to construe consensus by establishing a common understanding of the facts and underlying assumptions of the policy problem.

Once all stakeholders agree to the same cognitive frame, it will be difficult to argue outside of it. In a commonly accepted discursive frame, argumentative weapons are either sharp or blunt, depending on their fit with the assumptions of the dominant discourse. In that sense, consensus-building on a factual level is a sort of a pre-emptive strike that renders some argumentative weapons useless for bargaining. Learning processes that clearly took place in the ECCP groups thereby contribute to reducing political contentiousness. It is important to note that the Commission not only learns from their experts but also educates them. Their acquired competitive knowledge advantage comes in handy at this point and might even serve in a learning process to change the preferences of some of the stakeholders involved.

This strategy of epistemic leadership enables the Commission to 'rationalize the debate'. Its insistence on discussions devoid of emotions and based on facts is in essence a technocratic *modus vivendi*. Additionally, it pulls political actors toward those grounds where the Commission has a home field advantage. In terms of facts and figures, the Commission often knows best and most. The Commission technocratizes the debate through interaction with and education of experts. This is a way of using knowledge that is profoundly epistemic. It focuses on improving the cognitive understanding of a problem and the options for its solutions. Nevertheless, as argued in the beginning, politicization casts its cloud on the utilization of knowledge in the form of strategic decisions that prepare future bargaining rounds.

Some additional remarks are in order. Much policy-framing depends on organizational norms and expectations. One example is the framing of ETS as an alternative policy instrument to taxation. My case study has shown that this frame is closely linked to the composition of the initial drafting team, which had been put together by the members' superiors in order to champion this epistemic interpretation of the policy debate. In ETS II, the diffusion of key personnel into the Commission's climate policy community led to a strong organizational norm. In fact, if there was ever an epistemic community within the European Commission, it most likely was the DG ENV team around Jos Delbeke, with its economic mindset and a strong environmental perspective. This team merged an appreciation for quantified arguments with certain regulatory assumptions that favored market-based instruments. It is interesting to note that the framing of climate policy as a cost-efficient

reaction to environmental pollution had consequences on other policy instruments, too (see Chapter 4).

In the RES case, DG ENV's epistemic and political preferences clashed with the beliefs of DG TREN, which had a clear liking for regulatory interventions. Its beliefs seem to be formed out of a mélange of organizational norms and expectations, own expert insights from its respective fields, own experiences with legislative experiments and (ideological and factual) influences from its most frequent stakeholder contacts. The interaction between the RES and ETS II cases shows how the respective bounded rationalities led to differing interpretations of the utilized models once trade-off occurred. The units started using knowledge strategically and politicized the dynamics of technocratic interaction of puzzling over the right policy options. A problem-solving area started to develop into a negotiation arena. Interestingly, when the technocratic units overstepped their organizational task descriptions and making politics with science, a mediator in the form of the SG was installed in order to ensure a technocratic, rational, depoliticized writing process of the impact assessment. We are therefore lucky enough to witness the consequences of a failed politicization of knowledge utilization at the technocratic level. A higher level, the SG, ensured that diversified policy options were developed and prevented decisions, which were perceived to be politically important, to be taken in a bottom-up fashion. They stepped in to ensure that diversity of knowledge outcomes leads to well-developed policy options instead of a technocratic preselection for the political decision-making levels. It thereby ensured that the objective of mandate delivery was adhered to and not swept to the side at the expense of the logic of power maximization.

The political compromises that are inherent in the modeling work were agreed upon by a group of Directors instead. The result of this exercise was a PRIMES model that in some way represented a frozen scientific form of the dominance of the climate change frame. A by-product of this is that DG TREN officials were forced to frame the RES directive more comprehensively (not only by clean energy but also by securing energy security). A new policy frame emerged on the basis of the reframing of scientific knowledge in the form of an econometric model. Table 5.5 summarizes the results.

5.4.4 Top-down technocracy and knowledge in cross-case comparison

For top-down technocracy, it has been claimed that a high level of hierarchy in a technocratic setting that engages in policy-framing

Table 5.5 Knowledge-utilization strategies in bottom-up technocracy

Organizational character	Organizational function	Knowledge-utilization strategy
Bottom-up technocracy	Mandate delivery	Establish epistemic leadership
		Epistemic learning and information-gathering to build competitive knowledge advantages
		Identify economic, technical, political and social advantages and disadvantages attached to policy options, as well as distributional consequences
		Establish commonly accepted facts and common analytical frame
		Administer learning processes with stakeholders to educate them and influence their preferences
		Change argumentative patterns by establishing a new frame
		Reduce political contentiousness through learning processes or framing of options

activities would use knowledge in a cognitive way in order to deliver on a mandate. This is a theoretical possibility that requires individual high-level officials to depart from their own particular logic of consequentiality in which they are normally embedded. In rare instances, this happens indeed when Directors are appointed in a personal capacity to deliver on an additional task to their normal obligations. One example is the IAB that is composed of Directors and assesses impact assessments.

One of my three cases does not exhibit such deviations from the normal tasks of high-level technocratic officials. In the ETS I case, the IAB was not yet established, and the Director responsible for climate change issued only vague instructions. This can at best be understood as agenda-setting, though not as policy-framing in terms of content. Additionally, none of my interviews or any other data assessed exhibit other examples of top-down technocracy for ETS I. In the case of RES and ETS II, we do find instances where knowledge is used epistemically in a puzzling exercise. Directors did attempt to find a way to shape the options for a policy proposal in such a way that they could respond to the political realities of the day. Knowledge, in this case, was used in cognitive ways, though at times thinking is restricted by political constraints.

For ETS II and RES, the impact assessments were jointly written, jointly submitted and jointly evaluated. The IAB at that time consisted of six Directors and a representative of the SG. The Directors formed a group that had established some very specific organizational logics and behavioral expectations. The Commission's expectation toward each IAB member is to leave their normal roles behind and not to defend their DGs' interests in the IAB. Its task was to evaluate and improve the quality of the impact assessment that was to scientifically underpin the climate and energy package. In short, the IAB is a body in charge of quality control. It made sure that the impact assessment was based on sound science, and structured the presentation of the evidence well. It particularly pointed out shortcomings with respect to competition law, administrative burdens, employment effects and the presentation of the distributional impacts of the proposals. In that sense, the IAB ensured that the policy options that were compared in an impact assessment were credible and underpinned by sufficient data. The IAB members used their background as politically savvy officials to force the impact assessment to be sharper – that is, to present the evidence in a less technocratic, more politically accessible way. It is important to note that they did not change the evidence; they insisted on an accessible presentation. Providing sound arguments, however, would also turn out to be helpful in defending the proposals. Their aim, though, was to make the assessment readable and understandable to a more lay audience in both the Council and the European Parliament. For instance, the visualization of the RES target distribution across Member States along an equality line helped to frame the debate and make the options understandable. For both the RES and ETS II cases, the IAB was therefore instrumental in framing the debate.

A second instance of Directors getting involved in policy-framing can also be observed in the ETS II and RES cases. Directors from seven DGs and the SG met monthly all throughout 2007 to guide the process of preparing the package. They particularly met as a continuation of the modeling taskforce at a higher level. The role of the Directors was to take decisions about modeling assumptions that had political implications. They wanted to ensure a consistent and coherent forecast for both the RES and the ETS II case by establishing a common understanding of the necessary modeling assumptions for the academic groundwork of the proposal. The rationale of such an uncommon interference in the technical work of policy officers was that the debate had assumed a political undercurrent that was unwanted. The integration of several legislative acts came with political choices, which could best be resolved by finding common ground regarding scientific or economic assumptions.

The Directors group aimed at rationalizing the debate. The Directors engaged in making those decisions that the service level was prevented from taking. They are the ones who resolved the political disagreements over scientific assumptions and modeling results. Often they interacted directly with their desk officers to do so. The steering group of Directors adapted its behavior and started to do work that is normally reserved for policy officers, thereby bridging and integrating formerly separate departmental logics. In short, the Directors level, combining technical expertise and political wit, acted as a catalyst to transform scientific knowledge into politically usable expert input.

In that sense, the group of Directors served the function of mediating between technocracy and politics. They had to intervene and solve technical disagreements between their services that essentially were rooted in political trade-offs that different DGs with their respective mindsets looked upon differently. For instance, the Directors had their hands full with disagreements within their services about the validity, the assumptions and the results of the common modeling work that had been done to underpin the energy and climate package. Different models were used by different DGs that were all interpreted differently according to the varying organizational biases of the DGs. Most of the Directors present in this group shared the mindsets of professional economists who were able to identify the interactions between the models and to disentangle the political ramifications that they brought along. The Directors therefore had to clarify concepts, forge consensus and establish a common analytical framework – in other words, they shaped the debate anew and in an integrated way. Like policy officers, the Directors engaged in policy-shaping, problem-solving behavior.

Ultimately, the combination of Directors guiding the actual modeling work toward the shaping of policy options and Directors assessing the accompanying impact assessment led to a high-quality result in terms of the double criteria of technical feasibility and political acceptability. Table 5.6 summarizes the results.

5.5 Politicized knowledge-utilization strategies in cross-case comparison

5.5.1 Bottom-up politics and knowledge in cross-case comparison

Bottom-up politics is when low decisional levels in the Commission take decisions in a bargaining mode: we assume that the politicized environment will trump over the technocratic element, thus creating a logic of consequentiality that will eventually cause knowledge to

Table 5.6 Knowledge-utilization strategies in top-down technocracy

Organizational character	Organizational function	Knowledge-utilization strategy
Top-down technocracy	Mandate delivery	Puzzling and problem-solving
		Clarify concepts and assumptions and test their validity
		Establish commonly accepted facts and common analytical frame
		Disentangle scientific from political disagreements
		Develop policy options (sometimes under politically induced constrains)
		Change argumentative patterns by establishing a new frame
		Reduce political contentiousness through learning processes or framing of options
		Provide accessible, understandable and logically convincing presentation

be used in an argumentative fashion. This applies to what is commonly called the interservice consultations. They mirror negotiations on higher decisional levels but, as policy officers are preparing the decisions by Cabinets and Commissioners, they are focused on technical aspects and on separating those issues that are political and have to be solved later from those that can be agreed upon more quickly. In this environment we can expect that the policy officers will follow an expected, appropriate behavior that prescribes them to represent their DGs, yet potentially in a more factually driven debate compared with the negotiations between Cabinets. Knowledge will be used accordingly in an argumentative fashion, though it might be possible that persuasive processes take place that resemble learning processes.

To begin with it is worth pointing out that in all three cases we observed the reduction of political time for the interservice consultations. In an effort to reduce the ability of actors to push their interests through, the time for deliberation was reduced. The reduction of political time as a sign of politicization has an important consequence for the utilization of knowledge: it prevents learning processes and increases the use of knowledge as arguments.

The competitive knowledge advantage that had been developed by DG ENV during the drafting phases of both ETS I and ETS II gave the policy officers a head start in the negotiations. Whereas DG ENV adopted a fact-based bargaining strategy, other DGs had to resort to procedural strategies. DG ENTR, for instance, countered DG ENV by trying to postpone decisions on carbon leakage during ETS II. During ETS I, DG TREN attempted to do the same by arguing for longer transition periods, trial periods or early review dates. In all of these cases, the validity or reliability of the knowledge base of DG ENV was questioned because the arguments could not be countered with equally potent expertise. However, DG ENV strategically used the absence of expertise in other parts of the Commission to its advantage. It forced a debate of the proposal on the basis of numbers and figures, and repeatedly demanded responses in kind. DG ENTR, for instance, was left helpless in finding numbers to substantiate claims that ETS would undermine Europe's competitiveness. In the case of ETS II, the situation did not look much different. As DG ENV provided sound analysis, other DGs needed strong arguments regarding the feasibility, cost-effectiveness and environmental protection levels to negotiate their points into the draft directive. Studies like the ZEW study on carbon leakage were used to substantiate and justify their positions.

DG ENV had managed to define the logic of appropriateness for the bargaining. In such a dynamic, all participants were expected to argue on the basis of facts and figures. This approach caught three flies at once. First, it gave DG ENV a knowledge advantage over every other DG that did not have the same modeling capacity and expertise pooled within their service. This bargaining logic obviously benefited those best prepared: the lead DG. DG ENV had strategically built up its knowledge capacity in the past to be able to argue its case during the decision-making. Second, made it difficult for DGs to come forward with common-place arguments such as that industry's competitiveness would be endangered – DG ENV would always ask for data and scientific proof of such a general argument. Other DGs had not developed the same expertise or modeling capacity and simply lagged behind. Third, it countered the increasing politicized pressures from above by forcing the discussion down to debates of a technocratic nature. In a way, this approach imposed discipline on the debate.

In the case of RES and ETS II, the services engaged in bargaining during the interservice consultation that could be termed as a proxy war between DGs on behalf of the Cabinets. The political, ideological

perspective of Cabinets was combined with the organizational sectoral bias of the DGs. The consequence of this additional politicization was that the different DGs used studies and stakeholder input as weapons in a bitter fight over turf and influence. Especially in the case of biofuels, each DG used its own studies in a heated but very technical debate that lacked a common analytical framework. DG DEVCO, for instance, used studies by the World Bank to establish a link between rising food prices and biofuel production. Different DGs fought vehemently for their own sectoral interests. However, this was hardly surprising. First, a technocratic perspective on a certain issue is always colored by the organizational affiliation of the policy officer. Second, the arguments that were advanced in the interservice consultation were also tainted by the strong vertical upwards coordination with the Cabinets. This may explain the relative lack of strong reference to technical and scientific arguments, as well as the willingness of DG ENTR to form a taskforce coalition with the energy-intensive industry to generate arguments. Knowledge became ammunition to defend the political turf of the Cabinets. Table 5.7 summarizes the results.

Table 5.7 Knowledge-utilization strategies in bottom-up politics

Organizational character	**Organizational function**	**Knowledge-utilization strategy**
Bottom-up politics	Power maximization	Substantiate arguments with studies
		Rationalize debate, insist on fact-based discussion/appeal to emotions to politicize debate
		Knowledge gatekeeping, using competitive knowledge advantage
		Reduce political time to decrease response capacities
		Question reliability or validity of data to argue for postponed or softer decisions/downplay scientific controversies to achieve strong decisions
		Involve external stakeholders to support claims
		Use arguments as weapons, ammunition, hooks

5.5.2 Top-down politics and knowledge in cross-case comparison

Top-down politics is constituted in a case where a high decisional level takes a decision while engaging in problem-solving. This is a typical instance of a Commissioner, Cabinet, Director General or Director interfering with the work of the policy unit. As such, this is a case that is deplored by policy officers who feel that 'the proposal is screened too early with regard to it being politically opportune or not' and that the shadow of the political bargaining 'is anticipated prematurely, thus rendering proper technical work impossible' (Interview 18 April 2008b). We expect that in such a situation the logics of appropriateness that the different officials follow clash. A high-level official will focus on power maximization, whereas a low-level official will focus on mandate delivery. As the high-level official has the power of decision-taking, he will ultimately get his way. Knowledge in these cases is used as an argument, barely veiling the true source of decision-making power: hierarchical superiority.

In fact, one of the major design choices for the ETS I was made in a top-down politics mode. With regard to the allocation method, there was a trade-off between technical and political feasibility. All experts pointed out that only a central allocation method would provide economically the most cost-efficient results. However, advice from the USA cautioned against such a proposal because its experience had shown that industry would create a perfect political storm while fighting it. Eventually, it was Commissioner Wallström herself who decided to make auctioning the major bargaining chip vis-à-vis the energy-intensive industries and respectively concerned Member States. She asked DG ENV to make a strategic move away from auctioning for the first trading period until 2008 – against the technocratic preferences and advice of her DG. The climate change unit predicted from the outset the overallocation of allowances that followed due to decentral allocation by the grandfathering principle. Its argument, however, could not survive political considerations. The entire decision-making process followed logics not conducive to expert advice: first the most convincing argument was chosen, and then design choices were made that would reflect this argument. This explains why a technically suboptimal solution prevailed – knowledge in this context served only as a hook and as selected expertise to realize a politically advantageous solution.

Interestingly enough, this move shows the power of knowledge: the energy-intensive industry had argued that ETS could only be introduced

if certain drawbacks were addressed, even though they actually meant to express complete opposition. By addressing its economic arguments, the Commission captured the energy-intensive industry in rhetoric entrapment. One has to give Wallström and her team further credit: they did recognize that a technically preferred option was politically not available. Instead of ruling it out completely, they ensured a revision clause and periodic allocation mechanisms. This move allowed for playing the long game: knowing that the initially proposed allocation method would fail, they could still address the issue once reality hit. The Commission also included a number of safeguards to increase its influence: the possibility of a Commission veto on national allocation plans and the harmonization of the method after 2008 through the technocratic comitology procedure. This was a move to depoliticize the debate through the back door and with a timelag of a few years – and an opportunity for 'instrument sequencing' (Gunningham et al. 1998, p. 35). And. indeed, it did not take the Commission long to publish studies, harmonize allocation plans and generally revise the ETS. In the new political climate of the late 2000s, knowledge could be used on a factual basis in these areas rather than being used as arguments.

During ETS II, Jos Delbeke as a Director shaped the knowledge-utilization strategy of the DG. He had not forgotten the defeats of the first ETS debates and saw the revision as an opportunity to finally win battles on the allocation methods. In doing so, it did help DG ENV that scientific and extensive knowledge about the extent of the most powerful argument of the industry – carbon leakage – was not available. Such data could have been harmful to DG ENV's position in the carbon-leakage debate, but no actor could provide it and it was decided that DG ENV would not devote resources to developing such insight. This lack of data led to a competitive advantage for DG ENV, which pressed energy-intensive industry to back up its claims with reliable data. This data were not available and thus the insistence on rational arguments as a political move was successful until highly politicized decision-making started to disregard the evidence (or lack thereof). Eventually the energy-intensive sectors secured grandfathering as an allocation method from Commissioner Dimas, who wanted to save the rest of the legislative package in the face of strong political pressure. On the other hand, DG ENV pointed to the windfall profits of the power producers to argue their case. This argument had its limits, but it served DG ENV well because it had gained a lot of media attention.

The same pattern repeats itself also in the RES case: top-down politics accepts a less ambitious mandate delivery to maximize

the Commission's political delivery. The scientifically informed, technocratic approach by the desk officials of developing RES targets failed to convince the political levels of the Commission. Consequently, the distribution of RES targets among the Member States was developed according to the political preferences of the Commissioner, his Cabinet and the Director General, not according to the economically most-efficient pathways identified by their services. Here, we see a 'reverse methodology' of dealing with scientific models. The initial modeling results had been economically efficient but implied politically unacceptable distributional consequences. It therefore could only inform, not dictate, political choices. Higher levels of hierarchy, including the Commissioner, decided on a rough calculation formula and left it to the services to run the economic model to confirm that their approach made economic sense and achieved a fair distribution. The Commission modified the numbers, tweaked the models and tinkered with the curves until they were politically 'right' according to their criteria of fairness. Member States were even consulted during this process. In such a context, expert input is needed to make political compromises work. The economic modeling was thus used as an instrument and control factor to ensure that politically acceptable solutions (1) were developed and (2) stayed in the range of politically defined acceptable inefficiency. Studies and modeling are used to develop a political preference into a proposal or as a hook to justify existing preferences. For instance, the Cabinets visited the Member States to conduct informal prenegotiations regarding the target distribution. During these negotiations they presented the model results as based on objective facts.

A second instance of top-down politics using knowledge is the discussion between the Cabinet and its services on RES trading. This policy option was introduced into the draft text due to the insistence of high-ranking officials and against the will of the hesitant desk officials. RES trading was supposed to serve as a safety valve against distributional consequences of the RES targets. With strong internal and external support and a clear ideological preference, the Energy Cabinet pushed for this option. DG ENV supported this idea. For instance, DG ENV officials ran models for their superiors and developed with a Greek university the notion of the 'equality line' to make an economic argument in favor of RES trading. In particular, the visual argument of the equality line, based on econometric modeling, is a strong tool in negotiations and allowed the Energy Cabinet to rein in the policy-framing activities of DG TREN. However, whereas economic modeling results are strong arguments at

Table 5.8 Knowledge-utilization strategies in top-down politics

Organizational character	Organizational function	Knowledge-utilization strategy
Top-down politics	Power maximization	Substantiate arguments with studies
		Rationalize debate, insist on fact-based discussion/appeal to emotions to politicize debate
		Knowledge gatekeeping, using competitive knowledge advantage
		Visualize arguments for negotiations
		Rhetoric entrapment
		Involve external stakeholders to support claims
		Use arguments as weapons, ammunition, hooks
		Develop politically and ideologically acceptable solutions
		Devise long-term political strategies, identify options to increase political influence

a technocratic level, they did not convince Commissioner Piebalgs. He was eventually swayed by political opposition from industry. What really changed Piebalg's mind was the uphill battle in irrational, ideological discussions that he wanted to avoid. Table 5.8 summarizes the results.

5.5.3 Technocratic politics and knowledge in cross-case comparison

Lastly, before turning to pure politics, we briefly address technocratic politics, where a high decisional level frames policy while engaging in bargaining. This applies in particular to Directors and Director Generals, as well as Cabinets and Commissioners who are facing their counterparts and are trying to frame the policy proposal in such a way that it is beneficial to their interests. The logic of consequentiality focuses here is on power maximization. Other than for technocratic layers of the Commission, knowledge is being used not to deliver on the mandate of a technically sound proposal but to defend, justify and legitimize the choices made.

In many of the cases analyzed, the most interesting instance of this kind of knowledge utilization is closely linked to political story-telling. The political frame that was used by the Commission was a reinterpretation of the environmental discourse as an economic debate. The traditional discursive trade-off between the environment and the economy was therefore lifted. As Grubb pointed out, all of sudden it was not about risks and precaution anymore but about costs and benefits (Grubb 2006, pp. 506–507). The new focus on jobs and growth in a decarbonized economy was a perfect way to streamline the proposals into mainstream politics. In the cases of ETS I, ETS II and RES, the narrative included the following elements: pointing to scientific results that prove climate change, emphasizing the inevitability of meeting Kyoto targets, referring to the cost-efficiency of the policy instrument, drawing attention to the widespread support by stakeholders, and appealing to the need for EU leadership to achieve a strong result in the international negotiations.

Apart from the last two points, the elements of this story invited particular reference to expertise. The Intergovernmental Panel on Climate Change was referred to in order to increase the legitimacy of the climate change claims. Studies were used to argue that economic development and environmental protection reinforce each other. ETS was presented as a market-based instrument that turns a burden into a business opportunity, whereas RES was perceived as part of a European innovation strategy that would boost competitiveness. Experts such as Lord Stern were used to justify why high costs needed to be incurred now in comparison with the even higher costs of non-action. Impact assessments served as a vehicle to draw all of the available expertise together and to present it in a coherent fashion.

The narrative as described was woven into two documents to accompany the climate and energy package 2008: the impact assessment and the chapeau communication. These two were closely supervised or even written by the SG. The SG therefore shaped the main narrative of the 2008 package by writing the chapeau communication, whereas the impact assessment provides the justifications for its contents. As part of a so-called 'upstream co-ordination agenda', the SG had consciously been put in a position to influence these key documents. In order to do so, the SG had to be transformed into a service that would be able to combine political wit with technical expertise, into the brain of the Commission. It was the Secretary General herself who brought in this new attention to expertise and focus on details. The SG had its finger on the pulse and access to knowledge floating around at nearly

all times of the drafting stages. It became the interlocutor of knowledge, and the coordinating space where knowledge was exchanged and debated. At times, the SG was the mediator between DGs fighting over their turfs. In these moments, it could choose which knowledge to use as solid evidence, which to pass on and which to refute as inadmissibly irrational. Knowledge was used to establish, secure and continue the superior role of the SG over the DGs as a 'service at the service of the President'. Controlling the flow of information is part of this power.

A particular strategy of knowledge utilization merits special attention: HLGs. These groups seem to serve as fora for consensus-seeking, for bargaining or as advice bodies. We have seen two groups active for ETS II and RES: an expert group that advised President Barroso directly, and a HLG with the participation of industry, NGOs and politicians. The former gave unfiltered expert advice, whereas the latter oscillated between bargaining and consensus-finding. Barroso's expert group was his personal tutorial, preparing him scientifically for the political debates that he was about to have. However, it also helped to shape his communication strategy. Once the climate and energy package was published, some of the members of this advisory body went public in support of the proposals. They served as principal witnesses for the credibility and reliability of the ideas put forward. Their third-party endorsement was paramount in lending legitimacy to costly policies. Yet even those that never went public implicitly supported the Commission's cause, too – their association with the President was of great symbolic value.

The second HLG, the Commissioners Group on Competitiveness, Energy and Environment, turned out to be highly politicized even though it had been designed as a forum for open deliberations. It therefore could not give the same kind of unanimous support that Barroso's advisory body represented. Due to the high level of the participants, it was perceived as part of the political bargaining process. Industry attempted to use it as a vehicle to push its agenda, while Commissioners did the same. A negotiation situation arose in which the integrity of the ETS was debated, even though it contributed at the same time to a more constructive stance of all participants. Eventually the group's findings were rather business-friendly. The group therefore gave additional credibility to the claims of (the energy-intensive) industry and gave Commissioner Verheugen the clout to legitimately speak about its problems in the meetings of Commissioners. Table 5.9 summarizes the results.

Table 5.9 Knowledge-utilization strategies in technocratic politics

Organizational character	Organizational function	Knowledge-utilization strategy
Technocratic politics	Power maximization	Control access and use of knowledge as a tool of power, knowledge gatekeeping
		Frame policies in a discourse embedded in a scientific narrative
		Achieve legitimacy through academic experts as principal witnesses
		Give credibility to soundness of proposals through third-party endorsement by experts
		Involve external stakeholders to support claims
		Justify costs through studies

5.5.4 Politics and knowledge in cross-case comparison

In the case of pure politics, high levels of hierarchy engage in bargaining to take a decision. This is typically the case when members of Cabinets, Heads of Cabinets or Commissioners negotiate. In all of those instances, we expect the logic of consequentiality to be at work, requiring officials to maximize the power of the organizational units that they represent. Knowledge in such a context, it is argued, will be used solely for argumentative purposes.

And, indeed, there is a plethora of instances of such knowledge utilization. In ETS I, Commissioner Wallström used economic arguments to back up her position on the competitiveness of the ETS in comparison with other policy instruments, such as taxes or quotas. In fighting off attempts to water the ETS provisions down, Wallström used arguments that had been prepared and tested by DG ENV throughout the drafting phase. The fact that DG ENV and its Commissioner had by far the best understanding of the proposal crucially helped them to defend it. In bargaining situations, it seems that the pretense of rational deliberations is upheld even though every actor involved knows that the defining factors of the situation are power and influence. In such an imagined deliberation, knowledge becomes an argumentative weapon that powerful actors need to counter with arguments of equal force to win the political battle.

For RES and ETS II, the Cabinets toured the Member State capitals to prenegotiate the main elements of the legislative architecture.

Departing in such a way from official procedures that are supposed to guard the independence of the Commission and the legitimacy of its proposals shows how strong the power-maximization tendencies at the Cabinet level were at that point. In terms of knowledge utilization, it is clear that the Commission representatives had little interest in learning from the Member States during their visits; rather, they wanted to ensure political buy-in. Here the knowledge advantage that the Commission had over the Member States was used to defend the envisaged proposal. The impact assessment played an important role in the argumentation – the significance of experts therefore lies in delivering the arguments that the Commission needed to explain and defend its proposal. Furthermore, at that point in time, PRIMES was unrivalled and its assumptions uncontested. It therefore lent credibility to the proposals of the Commission.

In ETS II and RES, we see that the Cabinets reduced the political time (Tholoniat 2007) available for preference-shaping and defending by imposing a relatively strict timeline on the process. When political time is reduced, it leads to a situation that favors those scientific results in the political discussions which are the best timed, the most certain and the least contested (Müller 1994, p. 49). Additionally, it reduces the impact of more technocratic levels of hierarchy in the process, and thereby silences, to a large degree, the voices of experts. Tough negotiations ensued and alliances between Commissioners were formed, which frequently used arguments of price uncertainty, carbon leakage, windfall profits and cost-efficiency as they saw fit. Dimas and Barroso took regular recourse to studies and the impact assessment to legitimize the proposal as cost-efficient, equitable, feasible, affordable and generally based on sound and objective science. Commissioner Dimas substantiated his proposals with claims of scientific research that had proved that not only would GHGs be reduced with ETS II but also air quality would be improved, public health would benefit, treasuries would gain up to €75 billion annually, and employment and GDP growth would rise. Cabinet Verheugen was not the only Cabinet that reached out to its services in the hope of obtaining data that matched their argumentative needs. It had become very clear that the most successful bargaining strategy was to put concrete numbers on the table that could rationally justify the exceptions that one demanded.

Some more knowledge-utilization strategies are worth mentioning. First, Commissioner Dimas was able to push back Verheugen's demands for compensation or exemption measures by pointing out the shaky scientific grounds of the claims made by industry. By referring to knowledge gaps, Dimas prevented many of the demanded exemptions. In the

face of scientific uncertainty, the final compromise was to include a paragraph in the package that the sectoral concerns would be 'addressed, once duly substantiated' (European Commission 23 January 2008b, pp. 22–24), on the grounds that the existing data on carbon leakage were neither detailed nor comprehensive but rather sketchy. Other areas were deliberately kept out of politicized decision-making by shifting the decision to a comitology procedure – for example, the list of sectors affected by carbon leakage. Cabinet Dimas achieved this success by arguing that Verheugen's facts were circumstantial but not of the quality needed to make a decision. A similar strategic move was used by Commissioners from new Member States who negotiated a Trojan horse into the proposal of a later revision, on the grounds of a lack of data on the impacts of the legislation on new Member States. A claim to inconclusive scientific evidence can serve as an excuse to postpone a decision or as a backchannel for later revisions of momentarily fixed inconveniences.

Second, with the RES case, we witness how powerful studies can be a significant source of influence. A skeptical study on biofuels by the JRC was leaked to the media and changed the dynamics of the discussions – for instance, by affecting the perceived objectivity and thus credibility of some of the players. The study turned into a power resource. Its publication was a symbol for Commissioner Piebalgs having an ideological agenda – a damaging effect for members of a publicly neutral institution. The JRC study was so potent in this regard that the only way to counter the argumentative force of the JRC was to discredit the study as unreliable in its assumptions and methods. In this process, knowledge was used to delegitimize the arguments and experts favoring biofuels. In this process, the JRC was instrumentalized and its impartiality became collateral damage in the political game. Eventually, the Presidential Cabinet insisted on a compromise that was heavily influenced by the discredit that the report had brought regarding the biofuels agenda, as well as relying on the lack of expertise among the Cabinet members. However, political path dependency prevented biofuels from being taken out of the picture completely. Instead, the focus was shifted to second-generation biofuels. For many actors in this bargaining situation, saving face was more important than developing factually correct legislation. Table 5.10 summarizes the results.

5.6 Conclusion: Transforming knowledge into politics

In a study providing the first full account of the decision-making within the Commission on the emissions trading directive 2003, as well as of

Table 5.10 Knowledge-utilization strategies in politics

Organizational character	Organizational function	Knowledge-utilization strategy
Politics	Power maximization	Control access and use of knowledge as a tool of power, knowledge gatekeeping
		Frame policies in a discourse embedded in a scientific narrative
		Achieve legitimacy through academic experts as principal witnesses
		Give credibility to soundness of proposals through third party endorsement by experts
		Involve external stakeholders to support claims
		Justify costs through studies, substantiating positions
		Delegitimize arguments or actors
		Postpone or avoid decision, shift decisional locus or time (revision provisions) by pointing to inconclusive results
		Argumentative weapon or hook in imagined deliberations

the corner pieces of the energy and climate package 2008, it was argued that the Commission is an organization that is internally differentiated by two major institutional functions: a technocratic mandate-delivery function and a politicized power-maximization function. This work argued that the organizational function as defined by the organizational character determines the demand for knowledge. Whenever the organization focuses on mandate delivery, the logic of appropriateness inherent in this organizational strategy defines the behavior of its officials as that which aims to improve the delivery on the mandate through cognitive knowledge utilization. In turn, whenever the organization focuses on power maximization, the logic of consequentiality will demand from its officials that they use knowledge to argumentatively support preferences already formed. This leaves us with a rather well-differentiated understanding of different parts of the Commission. This study has made a modest attempt at charting this territory and has identified several knowledge-utilization strategies that seem to be linked

to and caused by the logic of appropriateness inherent in different organizational strategies. The following summary is a rough conclusion. For a more differentiated view, see the tables throughout this chapter.

First, those variants calling for a mandate delivery focus:

- In a technocracy, epistemic learning is of utmost importance. The units collect knowledge as widely as possible, consult with experts in formal and informal settings, and commission studies with the aim of identifying policy options and understanding their advantages and disadvantages.
- In a politicized technocracy, knowledge is used to inform technical decisions and to understand linkages between policy measures. Advice is not followed only if there are factual reasons not to do so.
- In a bottom-up technocracy, knowledge is used to persuade. Preferences are shaped, consensus is built and debates are informed with the help of knowledge capacity-building or, in other words, teaching. In order for this to work, the debate needs to be rational.
- In a top-down technocracy, knowledge is used to inform decisions within political constraints. Knowledge is needed to determine and puzzle upon policy options that can fulfill political criteria.

Second, there are four variants that have a power-maximization focus:

- In bottom-up politics, knowledge is used to substantiate claims and decisions already taken. Arguments that were tested before in various policy fora are used in factual debates that in reality are bargaining situations.
- In top-down politics, knowledge is used – analogous to top-down technocracy – to inform decisions. However, in this case, knowledge is used to realize political advantages, to design politically feasible solutions that have strong argumentative hooks attached to them.
- In technocratic politics, knowledge is used strategically to justify one's position in a depoliticized debate that has strong bargaining elements.
- In politics, knowledge serves as an argumentative weapon that legitimizes the position, interest and preference that an actor has.

The fact that knowledge-utilization strategies vary according to the organizational unit has been displayed clearly in this work and across all cases. This study also confirms earlier findings that knowledge has different functions ranging from instrumental to symbolic (Boswell 2008;

Radaelli 2009, p. 1149). There are a few alternative explanations from other scholars that I would like to address before concluding.

5.6.1 Alternative explanations and future research avenues

Several scholars from the think tank (Mayntz 1985; Wallace 1998; Stone 2000) and epistemic community literature (Haas 1989, 2004) point to the role of scientific uncertainty and problem complexity as a factor that increases the impact of knowledge. Additionally, Radaelli argues that more uncertainty leads to problem-solving logic in using expertise (Radaelli 1999, pp. 763–764). In my cases, these two variables did indeed increase knowledge use in most, but not all, instances. Technocratic environments in all three cases did use knowledge strategies to cope with uncertainty and problem complexity. However, in ETS II and RES we also see that technocratic units were asked by their superiors to not reduce complexity or uncertainty on purpose. And, indeed, political environments seem to use knowledge in order to gain political advantage. In ETS I and ETS II it played into the hands of high-level officials to not use knowledge, and in RES it was an advantage to use science (sometimes even to increase complexity). Uncertainty and complexity as variables can therefore not be treated as variables with all-encompassing explanatory power. Rather, they become a factor that is part of the strategy of knowledge utilization.

Political salience is quoted as a variable by the policy convergence, think tank and epistemic community literature that plays a role in knowledge utilization. Radaelli believes that high political salience leads to bargaining logic in using expertise (Radaelli 1999, pp. 763–764), and Hall has similar expectations (Hall 1993, p. 280). However, the picture is not monodirectional. In technocratic environments, political salience did not increase knowledge use in ETS I, diminished the role of experts in ETS II and increased the role of experts in RES. In the politicized arenas in RES, ETS I and ETS II, it did, however, increase the use of experts, as assumed by Radaelli. It therefore seems that political salience is only clearly related to knowledge utilization in parts of the Commission. Technocracy seems to attempt to isolate itself against the political salience that surrounds the institution.

Policy convergence literature, advocacy coalition framework theories (Sabatier 1998; Schlager 2007; Interview 2008) and epistemic communities emphasize the importance of shared beliefs in the utilization of knowledge. And, surely, there has to be a match or a fit between the knowledge offered and the belief systems of those using it. However, the picture is not as clear-cut as it seems. Shared beliefs did play an

important role in the technocratic layers of the Commission during ETS I, ETS II and RES. In some cases, they were even institutionalized in the form of an internal epistemic community. However, shared beliefs cannot predict the strategic use of knowledge. In politicized environments in ETS I, they played a very limited role, whereas in ETS II and RES, shared beliefs led to the strategic use of knowledge.

Taking these three alternative explanations, it seems that the notion of organizational function can better explain when and how knowledge is being used by whom (after Adler and Haas 1992, p. 370; Radaelli 1995, p. 160). Also, the differentiation between technocracy and politicization offers a new insight that forces us to look closer at the causal dynamics of knowledge utilization than before.

All of these findings are tentative insofar as the case studies do not cover the entire universe of potentially available cases. The ambition of this work was just to develop types and to discover causal relations and mechanisms within these types that can be used by other scholars for further research. I am confident that my findings are not limited to a few DGs in the Commission but that the same dynamics can be observed in the entire Commission – that is, that the superset is subject to the same dynamics as the subset that I have analyzed (Mahoney and Goertz 2006, p. 240). However, a quantitative study that covers more DGs than those analyzed here is needed to verify that the proposed explanations can be generalized.

Such a study might also be able to assess whether the given case selection has biased the findings by overestimating the importance of the influence of some of the causal mechanisms (Collier and Mahoney 1996, p. 88). Furthermore, I have controlled for a number of variables in order to ensure that the cases are comparably homogeneous. A quantitative study might be able to relax some of these limitations, such as the short time period or type of legislations, sociocultural values, constitutional structures or socioeconomic conditions. In addition, a larger n would not have to factor in so many interactions between the cases as in this study: ETS I and II are in fact two subcases of one larger case, wherein ETS II was the continuation of ETS I and therefore included learning for adaptation and instrument sequencing. In addition, ETS II and RES had strong interactions as part of a political package (deal) and with shared modeling exercises.

In terms of generalization, it seems possible that the causal interactions identified in this book extend beyond the European Commission. It would hardly be surprising to find similar dynamics in other institutions of comparable administrative culture (e.g. ministries in different

EU Member States). Despite the *sui generis* set-up of the Commission, its challenges as an international institution are also not unique. It is possible that European, national or international agencies such as the International Atomic Energy Agency, the US EPA or international bodies such as the United Nations and their programs (e.g. United Nations Environment Programme) are experiencing similar dynamics between politics and science. Scientific bodies with a public mission, such as the International Panel for Climate Change, might be an interesting point of comparison. The generalization also does not need to be limited by political fields. Next to energy and climate, other policy fields, such as agriculture, healthcare, research and innovation, competition, economics and welfare can equally be stretched between science and politics.

5.6.2 Outlook: A normative dimension

This work has taught us that the Commission has a very conscious approach to the way in which it uses knowledge. Expertise is a power resource, but it is also a *sine qua non* for delivering feasible and evidence-based policy proposals. The Commission serves as a gatekeeper to, and master of, knowledge. Bargaining power benefits from a strong knowledge base and claim to independent expertise. In this sense, Foucault is right in saying that 'there is no power relation without the correlative constitution of a field of knowledge, not any knowledge that does not presuppose and constitute at the same time power relations' (Foucault 1977, p. 27). From this perspective, ideas and preferences are developed and defended in constant interaction with each other. In fact, the very same study can serve as plain information and as a legitimizing argument. Clearly the Commission is therefore resource dependent vis-à-vis experts. Its hierarchical layers then interact top-down and bottom-up in their knowledge utilization. Hall was right when he claimed that first-order change occurs at different levels of politicization than third-order change (Hall 1993, pp. 278–279). Policy stages are therefore of crucial importance in understanding knowledge utilization in the Commission. They form the flanks to Kingdon's streams (Kingdon 2003, p. 159), they determine the criteria, such as legitimacy provision (Haas 2004, p. 574) or technical feasibility (Kingdon 2003, p. 131) for the access of experts to the Commission's inner circles and they establish norms of appropriateness.

Having said this, there is a normative element to this set of claims that has not yet been addressed by the study. The implication of my findings is that the Commission is not a purely technocratic institution. Neither

is it purely political, and therefore it exists and works in a limbo that has been termed a 'democratic deficit'. The argument that this deficit can be addressed via either input or output legitimacy has been made repeatedly. I do not intend to repeat it here, but I would like to point out that the Commission uses knowledge to make several types of choice: problem definition, subsidiarity assessments, when and with what kind of instruments to interfere, who should win and lose, and how to ensure compliance (Jordan et al. 2010a, pp. 15–17). The responsibility associated with these choices cannot be underestimated. This responsibility is both political and technical.

The Commission's right of initiative gives this institution the power to propose legislation for 500 million citizens. It is of paramount importance that the Commission uses knowledge in order to deliver well on this mandate. However, it also needs expertise to substantiate and legitimize its proposals in the games of power that follow the official publication of a legislative proposal. The Commission pairs intellectual rigor in preparing legislation with political wit in defending it. In many ways, the Commission is a catalyst. It transforms knowledge into politics. It ensures that experts are heard and that policy proposals are feasible and implementable. Yet, it also vets these technical proposals for their political contentiousness and their fit with society's preferences and values. It mediates facts and interests, and molds them into a policy proposal. In some ways, it operates in three universes at the same time: 'the universe of the necessary, the universe of the possible and the universe of the probable' (World Resource Institute 2008). The Commission certainly might fail at times in satisfying each world equally well. However, there is no doubt that, given its current institutional hybrid nature, it has to use knowledge in different ways to have a chance of succeeding. Whether the balance needs to be recalibrated is a question for another study. What remains, though, is a statement of President Barroso with which I wholeheartedly agree: 'We need both the gin and the tonic. We need the blend of political judgment and technocratic expertise' (*The Economist* 14 April 2012).

Notes

1 Introduction: The Tension between Science and Politics

1. It requires, in my view, only a simple shortcut to apply Bouwen's thoughts to the study of expertise in politics, simply because 'experts "represent" expertise' (Radaelli 2003, p. 281).

2 The Commission's Strategies for Designing an Emissions Trading Scheme for the European Union

1. For a legal or economic analysis of the ETS, consult Delbeke (2006c), and Vainio and Zapfel (2006). For a description of the decision-making between the EU institutions, see Wettestad (2005), Skjærseth and Wettestad (2009, 2010b), and Wettestad and Boasson (2013).
2. The modeling showed that distributional differences are large in Europe: the average marginal abatement cost per avoided tonne of CO_2 was estimated to be €1,350 for Germany and €L150,70 for the Netherlands without an ETS due to differences in the existing structure of energy production, the industrial population of energy-intensive industries, and the need to adopt demand-side actions to achieve the Kyoto target (Capros et al. 2002, pp. 35–36).

3 The Commission's Puzzling and Powering over the Revision of the Emissions Trading Scheme

1. Note, however, that not all of the overallocation can be attributed to the NAPs' leniency. Scholars point out that the emission-reduction targets were partly overfulfilled (Ellerman and Buchner November 2006; Kuik and Oosterhuis 2008, p. 217) and that the weather and unexpected changes in production outputs also played a role (Grubb et al. 2005; Kettner et al. 2008, p. 58).

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Interviews

All interviews with my interview partners were conducted in a personal capacity. Their statements cannot be attributed to the institution that they work for and should only be taken as their personal opinion.

My interview partners mostly spoke very openly and frankly. In exchange for this honesty, I agreed to protect their identity. Policy communities are small. If I were simply to anonymize some names, they would still be easily identifiable to insiders. For this reason I have chosen not to name any interview partner and have – in this publication – also not coded the interviews according to hierarchy or position within the organization. The nearly 40 interview partners cover a huge majority of the key players within the Commission both within the services and the Cabinets, from policy officer to Director General. The majority of the interview partners stem from DG ENV and DG TREN, but the relevant associated DGs of the files were also covered.

For the sake of academic transparency, I am happy to make the list of interview partners available upon request.

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