Climate policy integration in the European Union, 1990 to 2020:

a multi-dimensional, multi-levelled analysis

A thesis submitted to the School of Environmental Sciences of the University of East Anglia in fulfilment of the requirements for the degree of Doctor of Philosophy

By Alba Prados Pascual

January 2025

Abstract

Despite over 30 years of climate policymaking, the European Union (EU) and its Member States continue to face the challenge of simultaneously mitigating and adapting to climate change. A widely endorsed solution amongst scholars and policymakers alike is the greater integration of climate change into other relevant policy subsystems, guided by the principle of climate policy integration (CPI). However, despite the prominence of CPI in the literature and political discourse, comprehensive, theoretically informed empirical analyses remain scarce.

This thesis addresses this gap by examining the operationalisation of CPI in the EU and its Member States from 1990 to 2020 using climate policy databases as part of a multi-case study design. Through a novel combination of policy integration and EU integration theories – specifically historical institutionalism and neo-intergovernmentalism- this study offers new insights into how CPI have evolved over time in the EU and its Member States across four salient dimensions, namely policy frame, subsystem involvement, policy goals, and instruments.

One of the main findings is that the EU has played an important role in establishing an integrative narrative of climate change over the 30-year period, but especially since the 2010s. Thus, the framing of CPI processes in the EU has largely been determined by supranational actors, as suggested by historical institutionalist perspectives. However, the day to day operationalisation of CPI remains largely controlled by the Member States, in line with new intergovernmentalist thinking; indeed, the empirical results reveal substantial and enduring differences across Member States in how CPI has been operationalised through policies, targets and instruments. This thesis makes three original contributions to the existing literature: methodologically, by employing novel climate policy databases as a source of data for CPI assessments; empirically, by examining and comparing two levels of governance; and theoretically, by bringing together policy integration and European integration theories.

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Acknowledgements

It has become growingly evident how the very lonely process of writing a thesis is also a collaborative effort in so many ways. My first thank you must go to my supervisors: Professor Andy Jordan and Professor Irene Lorenzoni. Without your impeccable guidance, challenging discussions, expert input and constant encouragement this thesis would not be a reality. You are just the best supervisory team that a PhD student could aspire to have. Not just you are extraordinarily remarkable for your scholarly excellence and generosity but hugely exceptional as supervisors, academics and ultimately, human beings.

I must also thank the Economic and Social Research Council for granting me a 1+3 PhD studentship (part-time) and the School of Environmental Sciences at the University of East Anglia, without which this PhD would not have been viable. The opportunities that the studentship and other grants have offered me, first and foremost, financially but also opportunities for training, and collaboration have greatly benefited this thesis. Additionally, I would like to remember my first years as student of the MRes on Social Science Research Methods after many years being away from the academia and how it helped me finding a group of mature students deciding to embark on a PhD journey. Thank you all for the inspiration at the starting phase of the long journey.

I would also like to look back at my Bachelor days back in the Autonomous University of Barcelona and thank Professor Joan Subirats and Dr Oriol Costa. Despite they have not been involved in the thesis directly, they clearly had an important role in developing my interest for environmental and climate change research, particularly the dynamics that arise when attempts are made to govern them using the tools of public policy.

I would also like to thank all the incredible and inspiring colleagues in the very dynamic area of policy integration scholarship. The academic debates, discussions and shared reflection have definitely expanded my vision and further my understanding of policy integration processes since I started this thesis.

Moving now to the personal side, I would like to thank my friends, my chosen family– Carla, Anna, Laura, Ali, Helena, Maribel, Ari, Adri, Merche, Maria, and my nenes of

Terrassa. I am lucky and utterly grateful to have all of you in my life. Your open hearts, enduring friendships and sorority provided me with love, encouragement and support that kept me going and going.

To my much-loved parents Magda and Francisco: for giving me wings and convincing me I could fly as high or as far as I would like to; for teaching me what it means to really love and be loved unconditionally. To my sister Marta, an inspiring, emotionally intelligent woman: for your love and support through these last years and most importantly, being my first and true friend. Thank you for sharing your lovely family with us, Nora and Rafa. To my family in Greece, Elena and Georgios. To my extended family in Spain, thank you all.

Petros - you know I could have not done this without you. Your emotional and practical support, kindness and love have been nothing short of incredible, you really have done the best that you could to get me and our family going. Thank you for being there for me, always, without reservation.

And finally, I'd like to dedicate this thesis to my daughters, Marina and Zoe. You both were born while I was already embarked on this long journey of the PhD and therefore, had to share our very precious time together with the 'other' big project. I hope that from now I will be able to compensate all the hours hidden in a room, library or conference hall writing 'a book'. I can only assure you that you have been my true motivation, the ultimate reason to persevere writing this thesis despite the many challenges, from global pandemics to everyday battles. You have given a renewed meaning to the concept 'future generations' and I can only dare hope that my contribution to scholarship will go towards the so needed advances on climate action and ultimately, it will go towards making your lives better. I love you both fiercely.

Abbreviations

CCLW – Climate Change Laws of the World database

Climate-ADAPT – European Climate Adaptation Platform

CO_2 – Carbon dioxide

COM-documents – European Commission's legislative proposals, and related documents.

CPDB – Climate Policies Database

CPI – Climate Policy Integration

CSV – Comma Separated Values

DG – Directorate-General

DG CLIMA – Directorate-General for Climate Action

DG ENER – the Directorate-General for Energy

DG ENV – Directorate-General for Environment

EPI – Environmental Policy Integration

EU – European Union

GHG – Greenhouse Gas

IPCC – Intergovernmental Panel on Climate Change

JOIN-documents – Joint proposals, communications, reports, white papers and green papers formally adopted jointly by the European Commission and the High Representative of the Union for Foreign Affairs and Security Policy.

LULUCF – Land Use, Land-Use Change and Forestry

NECP – National Energy and Climate Plan

Press corner – European Commission's Press Release Database

RQ – Research Question

UK – United Kingdom

UNFCCC – United Nations Framework Convention on Climate Change

Chapter 1
Climate policy integration: examining its operationalisation in the European Union

1.1 Setting the scene

Despite over 30 years of policymaking and governance, decarbonisation is not occurring at the scale and pace necessary to keep the global temperature increase to well below 2°C above pre-industrial levels, let alone the more ambitious 1.5°C limit (IPCC, 2023a). Although there has been a proliferation of climate change laws and policies worldwide, countries are not expected to meet the emissions reduction ambitions outlined in the Paris Agreement for both mitigation and adaptation (IPCC, 2023b; Iyer et al., 2023; United Nations Environment Programme [UNEP], 2024).

The inadequacy of existing policy responses is partly due to the magnitude of the required transition away from fossil fuel use to low- or zero-carbon energy sources, necessitating large-scale changes across many important economic sectors (IPCC, 2023b). However, it is also evident that while climate change and its policy responses have historical roots in environmental policymaking, the scope of the issue requires a significant broadening of perspective (IPCC, 2023a). In recent years, there has been a growing recognition that the policy context in which climate change decisions are made must be considered, as climate policy alone cannot secure climate goals and objectives (Shukla et al., 2023). In other words, climate policies cannot fully address climate change; decisions made across all economic and policy sectors have implications (Asselt et al., 2020) (intentionally or unintentionally) for future greenhouse gas (GHG) emissions and climate adaptation (Dubash et al., 2024) that must also be addressed and governed.

The characterisation of climate change as a policy problem that cannot be fully addressed without considering the impacts from other policy sectors is not unique to climate change but is relevant to many of today's most pressing societal challenges (Levin et al., 2012).

Many of these issues are complex and contested, requiring resolution within a context of numerous interrelated causal relations that are difficult to isolate (Christensen et al., 2019; Christensen & Lægreid, 2008; Head & Alford, 2015). Consequently, as governments and policymakers around the world grapple with these types of policy problems, they have become increasingly interested in adopting more carefully designed policy arrangements (Howlett & Rayner, 2007; Rayner & Howlett, 2009) that create multiple links between policy subsystems to foster more *integrated* policy responses. The central assumption behind this term is that "concerted policy efforts will be more effective in achieving desired outcomes compared to traditional compartmentalized policy making" (Candel, 2021).

In light of these challenges and policy developments, policy integration has emerged as major "buzzword" (Candel & Biesbroek, 2018, p. 206), and research on policy integration has become an important part of public policy scholarship (Trein et al., 2023). Part of the conceptual umbrella of policy integration (Trein et al., 2019), a new terminology has gained traction in both policy and scholarly discourses focusing on climate change as a policy problem, namely climate policy integration (CPI). CPI is defined here as the process of aligning other sectors and policy areas with the achievement of mitigation and adaptation objectives.

However, this is not entirely a new way of thinking. In the early 1990s, a related concept—environmental policy integration (EPI)—became the focus of another strand of literature. EPI emerged as a topical concept among both policymakers and scholars for addressing environmental challenges in sectorally and territorially fragmented governance contexts. It received increased scholarly attention from the early 1990s (Persson, 2004) following the United Nations Conference on Environment and Development in 1992 and the ensuing debate about how to operationalise sustainable development (Tosun & Peters, 2018). EPI refers to the incorporation of environmental objectives into non-environmental policy sectors, such as agriculture, energy and transport (Persson et al., 2018). In the social scientific literature, EPI has been attributed with various conceptual interpretations: EPI as a policy objective, a normative principle, a process, an organisational and institutional

challenge, an output or a desirable outcome, amongst others (Jordan & Lenschow, 2010; Persson, 2007).

While originally discussed as a subordinate aspect of EPI, studies focusing specifically on policy integration and climate change have emerged as an independent strand of literature in the last 15 years (von Lüpke & Leopold, 2022). Some authors have suggested that CPI can be easily defined as a policy principle simply by substituting *environmental* with *climate* (e.g. Ahmad, 2009; Nilsson & Nilsson, 2013). However, other parts of the CPI literature highlight the fact that reality is not so straightforward; climate policy (and hence CPI) is not monolithic, as it has two conceptual sub-foci—mitigation and adaptation (Mickwitz et al., 2009). Following the definition by Mickwitz and colleagues (2009), CPI can thus be defined as:

> "the incorporation of the aims of climate change mitigation and adaptation into all stages of policy-making in other policy sectors (non-environmental as well as environmental); complemented by an attempt to aggregate expected consequences for climate change mitigation and adaptation into an overall evaluation of policy, and a commitment to minimise contradictions between climate policies and other policies" (Mickwitz et al., 2009, p. 19).

Their definition of CPI considers both mitigation and adaptation at all stages of the policymaking process. Similar to EPI, CPI literature has often discussed CPI as a policy principle or desirable policy output and outcome (e.g. Adelle & Russel, 2013; Rietig, 2012), with much less attention paid to *how* policy integration is operationalised within various political systems. In terms of climate policy, the focus of the literature on CPI in practice thus far has largely been on climate change mitigation (Casado-Asensio & Steurer, 2016; Dupont & Oberthür, 2012; Dupont & Primova, 2011; Kettner & Kletzan-Slamanig, 2020), although several contributions highlight its relevance to adaptation to climate impacts (see e.g. Biesbroek et al., 2010; Russel et al., 2020).

This thesis aims to contribute to this body of literature by examining how CPI has been operationalised in the European Union (EU) and its Member States from 1990 to 2020, applying a conceptual approach based on policy integration (Candel, 2021; Candel & Biesbroek, 2016). By examining the operationalisation of CPI over a 30-year period and

empirically employing Candel and Biesbroek's (2016) four-dimensional framework of policy integration, this thesis aims to identify and explain similarities and differences in the ways that CPI has been operationalised by the Member States, considering comparative elements such as cross-temporal, cross-sectoral and cross-national.

The remainder of this chapter unfolds as follows. Section 1.2 focuses on the conceptualisation of policy integration as an operational process. Section 1.3 justifies why the EU is a suitable empirical setting for advancing the understanding of the operationalisation of CPI. Following that, Section 1.4 unpacks and justifies the aim of the thesis, outlines the main research questions and describes the research strategy. Finally, Section 1.5 provides an overview of the rest of the thesis and concludes this chapter.

1.2 Policy integration as a process

Many of today's most pressing societal problems cut across organisational entities and boundaries in the public sector, such as different ministries, departments or offices (Sjöö & Callerstig, 2023). For example, climate change, food security and biodiversity "do not fit the ministerial boxes into which governments and policy analysts tend to place policies" (Peters, 1998, p. 296). Despite the long-standing issue of coordination in the public sector (Peters, 2015), policy integration across subsystems is particularly important for tackling complex challenges that are cross-sectoral, especially when confronted with traditional forms of subsystem policymaking within hierarchical governance systems (Briassoulis, 2004).

Public policy scholars have long studied coherence, coordination and policy integration, but the academic literature in these areas has evolved rapidly in recent years (Trein et al., 2023). Over the last decade, policy integration literature has generated significant conceptual clarifications, theoretical advances and methodological improvements (Tosun & Lang, 2017; Trein et al., 2021). Conceptually, scholars of policy integration have argued that policy integration itself is indeed an operational process (Candel & Biesbroek, 2016; Cejudo & Michel, 2021; Vince, 2015) and have distinguished policy integration from similar concepts such as policy coordination and policy coherence (Cejudo & Michel, 2017).

Many researchers have conceptualised policy integration as a process based on the seminal work of Candel and Biesbroek (2016). These authors propose to address the shortcomings of existing processual approaches to policy integration by introducing a multi-dimensional framework that draws on existing literature and distinguishes four dimensions of integration: (1) policy frame, (2) subsystem involvement, (3) policy goals and (4) policy instruments (see Chapter 3 for further detail). The authors propose four theoretical starting assumptions that underlie the dynamics of their framework.

Firstly, Candel and Biesbroek suggest that the dimensions of policy integration do not necessarily develop in a concerted manner; therefore, policy integration processes may exhibit different operationalisations across the various dimensions at different moments in time: "asynchrony between different dimensions of policy integration is the rule, rather than the exception when considering policy integration as a process" (Candel & Biesbroek, 2016, p. 215).

Secondly, policymaking can be both a process of integration and disintegration. Most previous literature referred to policy integration as positive integration, i.e. more integration, but there are many examples that point to moments or stages where the policy process moves towards disintegration, i.e. less integration or even reversing integration (Biesbroek & Candel, 2020). Reasons for this can vary, such as integration that has fallen apart due to internal processes, for example, turf wars between subsystems (Head & Alford, 2015), or because other political problems are perceived as more pressing.

Thirdly, mutual dependencies and interaction dynamics exist between the dimensions of policy integration. Public policy studies have offered insights into how different elements of the policy system can affect each other in numerous ways (e.g. Hall, 1993; Howlett, 2009; Sabatier & Jenkins-Smith, 1993), which are important in the broader context of policy integration processes. Considering these interdependencies and interactions is relevant for understanding the political processes leading to (dis)integrated policy responses.

Finally, policy integration should be considered a process in which actors play a pivotal role. Until Candel and Biesbroek proposed their framework, the scientific literature on policy integration had predominantly focused on policy integration from a more abstract,

policy design perspective (Cejudo & Michel, 2021); however, they propose that policy integration also needs to be understood as a political process where actors play a crucial role in adjusting the institutional contextual conditions for integration.

This thesis, therefore, follows the approach of Candel and Biesbroek (2016, p. 217) and adopts their definition of policy integration as

> "An agent-driven process of asynchronous and multi-dimensional policy and institutional change within an existing or newly formed governance system that shapes the system and its subsystems' ability to address the cross-cutting policy problem".

This thesis also adopts their four starting assumptions: (1) asynchrony between different dimensions of policy integration, (2) processes of integration and disintegration, (3) interaction between dimensions of policy integration and (4) the pivotal role of actors in policy decision-making and the policy integration processes. The authors empirically operationalised this definition and their starting assumptions by applying the framework to different cases, such as policy integration of global food security in the EU (Candel & Biesbroek, 2018) or exploring policy integration of food and adaptation policy in the Netherlands (Biesbroek & Candel, 2020). One of the conclusions from these conceptual and empirical cases is that tracking such integration processes in a systematic manner requires a more concrete conceptualisation of the various dimensions of integration and how to operationalise them. These conclusions from conceptual and empirical contributions have informed and motivated the research design of this thesis. How specifically these elements are incorporated and undertaken in this thesis will be covered in two chapters (see Chapter 3 for a detailed description of the four dimensions of policy integration and Chapter 4 for further details on the operationalisation of the various dimensions and indicators).

1.3 Climate policy integration in the European Union

Focusing on policy practice, the EU has made significant efforts to integrate environmental objectives into the policymaking of relevant sectors since the early 1970s, particularly from the mid-1990s (Jordan & Lenschow, 2008; Lenschow, 2002). Work programmes identified key points in the policy process where integration should occur,

and various sectoral areas or agencies were assigned responsibility for its implementation (Asselt et al., 2020). However, the operationalisation of EPI in practice has proven challenging given the complexity and multi-level characteristics of the proposed integration and of the EU as a governance system (Dupont & Jordan, 2021) although arguably the multi-level aspect can potentially benefit integrative processes (Di Gregorio et al., 2019).

Policymakers' interest in CPI presents a new opportunity to develop a more integrative approach to policymaking in the EU (Dupont & Jordan, 2021). With the adoption of the 2009 package of policy measures on climate and energy (the so-called Integrated Climate and Energy Package), it appeared that the EU had finally translated its promises of international climate leadership into action and had put CPI into practice (Dupont, 2013). This trend has become even more pronounced with the launch of the European Green Deal in late 2019 (European Parliament, 2020b) and the 'Fit for 55' package of legislative measures to deliver it.

In April 2021, the EU adopted a regulation commonly known as the European Climate Law. The European Climate Law enshrined into law the goal set out in the European Green Deal for the EU to become climate-neutral by 2050 (Official Journal of the European Union, 2021); it also set an intermediate target of reducing net GHG emissions by at least 55% by 2030, compared to 1990 levels. The European Climate Law makes important advances in developing the EU's procedural climate governance towards CPI (Kulovesi et al., 2024). In particular, the European Climate Law mandates the European Commission to evaluate whether any draft EU measures or legislative proposals align with the climate-neutrality objective, the 2030 and 2040 climate targets and the adaptation objective. The first review of the newly established climate-consistency check was published in 2024 (European Commission, 2024) (For further detail, refer to Chapter 5, Section 5.2.1).

In this new phase of CPI efforts in the EU, fundamental gaps have emerged regarding existing knowledge of how CPI has been operationalised in the EU. Crucially, CPI scholars have not yet systematically compared policy integration dimensions between the EU level and across all its Member States, namely policy frame, subsystem involvement,

policy goals and policy instruments. This thesis will address this gap by assessing CPI as a multi-dimensional policy process across two levels of governance (EU and national levels) while considering *all* Member States rather than focusing on single cases or subsets. Additionally, this thesis aims to fill an existing knowledge gap by exploring the operationalisation of CPI at both the EU and Member States levels, considering both mitigation and adaptation. This thesis treats the political-administrative organisation of mitigation and adaptation as relevant for national climate policies, and therefore, both areas of climate policymaking (mitigation and adaptation) are empirically considered.

Furthermore, a number of studies have addressed CPI in EU sectoral policies (e.g. Dupont & Oberthür, 2012; Dupont & Primova, 2011; Kulovesi & Oberthür, 2020; Oberthür & Homeyer, 2022). Researchers have also explored CPI advancements in some Member States (e.g. Jensen et al., 2023; Neby & Zannakis, 2020; Russel et al., 2018). More recently, researchers have investigated aspects of CPI concerning the European Green Deal agenda of integrating specific policy areas (Kettner & Kletzan-Slamanig, 2020; Skjærseth, 2021).

Despite the EU being one of the most heavily explored cases of policy integration (Kaplaner et al., 2023), European integration theories are rarely employed to explain and understand policy integration as a process aimed at advancing the European integration project in the EU (for a notable exception, see Dupont, 2015). This thesis proposes to fill this gap by studying CPI as a policy process in the EU through the theoretical lenses of European integration theories.

Specifically, this thesis contributes to this endeavour by employing two distinct theories of European integration: new intergovernmentalism and historical institutionalism. Each of these theoretical strands provides a line of sight into European integration from contrasting angles. This thesis thus adds conceptual value by integrating strands of policy integration literature and situating them within broader theories of European integration to explain EU governance and policymaking processes, including CPI. While the analytical framework derived from policy integration literature concentrates on how (i.e.

understanding) CPI is operationalised, European integration theories address why (i.e. explaining) CPI has advanced or retracted in certain instances[1].

1.4 Overall aim, research questions and research design

The overall aim of this thesis is to offer an in-depth and systematic empirical examination of the operationalisation of CPI as a multi-dimensional and multi-level process in the EU and its Member States from 1990 to 2020. In doing so, it endeavours to provide novel contributions to the established literature on policy integration, CPI and EU policmaking.

This thesis addresses three research questions:

- **Research Question 1:** How has CPI been operationalised at EU level in the period from 1990 to 2020?
- **Research Question 2:** How has CPI been operationalised in and across the 28 Member States in the period from 1990 to 2020?
- **Research Question 3:** Has the operationalisation of CPI followed similar or different processual patterns across Member States, and if so, why?

This thesis employs a cross-national comparative case study research design to address these three questions. Case studies as a research strategy refer to the exploration of a "bounded system (a case) or multiple bounded systems (cases) over time" (Creswell & Poth, 2016, p. 153) and are applied across a wide range of areas in the social sciences (Hancock & Algozzine, 2006).

Considerations that hold importance for case study researchers are scope conditions (Stake, 1995). Scope conditions refer to the parameters or boundaries specified by the researcher that identify the types of empirical phenomena under study. These will influence the extent to which findings from the case study can be generalised (Goertz &

[1] In this thesis, there are two ways in which the term *integration* is used. First is policy integration or thematic variants such as EPI and CPI. In this instance, integration refers to an "agency- driven process of asynchronous and multi-dimensional policy and institutional change within an existing or newly formed governance system that shapes the systems and its subsystems' ability to address a cross-cutting policy problem in a more or less holistic manner" (Candel & Biesbroek, 2016, p. 217). The second use is in relation to European integration, referring to the process of "development of the European Union as a 'polity' beyond the nation-state" (Schmidt, 2024, p. 3346).

Mahoney, 2009). A general principle is that a case can be defined by three scope conditions: *spatial*, *temporal* and *substantial* (Rohlfing, 2012). In summary, these three scope conditions (spatial, temporal and substantive) led to the selection of 1+28[2] case studies: CPI at the EU level and CPI across *all* 28 Member States, as explained below.

In this thesis, I specify the first scope condition—spatial—as the EU. Thus, this thesis examines CPI in the EU, considering both the EU level and the Member States' level of policymaking. The EU represents a potentially useful case study for CPI processes for two main reasons. First, the EU is one of the largest emitters of GHGs in the world, contributing around 8% of global anthropogenic GHG emissions in 2019 and accounting for 16% of historical cumulative net anthropogenic carbon dioxide (CO_2) emissions from 1850 to 2019 (Shukla et al., 2023, p. 10). The latest data indicate that the EU has steadily decreased its GHG emissions since 1990, reaching a total reduction of -32.5% in 2022 (European Commission, 2023). However, the EU and its Member States need to significantly step up their efforts and accelerate emissions reductions to stay on track to reach the -55% net GHG target by 2030 and climate neutrality by 2050 (European Commission, 2023).

Second, the EU has made significant efforts to integrate environmental objectives, and subsequently climate objectives, into the policymaking of other relevant sectors since the early 1970s (Dupont & Jordan, 2021; Dupont & Oberthür, 2012; Lenschow, 2002). Consequently, CPI has emerged as a new opportunity to develop a more integrative approach to policymaking in the EU (Dupont & Jordan, 2021). However, there are still crucial knowledge gaps in operationalising CPI prior to this renewed boost to CPI efforts in the late 2020s (see Section 1.3 for further details).

The second scope condition refers to the *temporal* frame of the research. In this thesis, the period of study encompasses the period from 1990 to 2020. EU involvement in climate change began in the 1990s with its active role in securing the adoption of the United

[2] This research refers to the 28 EU countries, including the United Kingdom (UK), as the period of study (1990–2020) includes the period that it was a Member State. The UK Parliament ratified the EU's withdrawal agreement on 31st January 2020 (UK Government, 2020), followed by a transition period lasting until 31st December 2020.

Nations Framework Convention on Climate Change (UNFCCC) and the first national climate policies (Delbeke & Vis, 2015). This timeframe also includes the period when adaptation was fully recognised as a legitimate problem for public policymaking at the national level (Rayner & Jordan, 2010). Therefore, by covering the period from 1990 to 2020, I aim to analyse CPI considering both mitigation and adaptation areas of climate policy.

The final scope condition pertains to the *substantive* element. In this thesis, as outlined in previous sections, this is the CPI as a process. Once the main research strategy (case study) is identified, the next step is to establish the research design. For the work in this thesis, the research design can be categorised as cross-national comparative research. Cross-national comparative research has a long tradition and can be defined as research that "compares at least two countries based on data from these countries" (Andreß et al., 2019, p. 5) considering comparative elements such as cross-temporal, cross-sectoral and cross-national aspects. In this thesis, the cross-temporal analysis of the evolution of CPI processes over the study period will be explored for each level of the dimensions of CPI and levels of governance.

The 30-year study period will be divided into three sub-periods to allow for comparability and to capture the changes over time: from 1990 to 2000, from 2001 to 2010 and from 2011 to 2020. The cross-sectoral analysis will also be undertaken for each combination of secondary data analyses. The climate policy databases and other databases will include a variable or category to classify policies, targets and/or instruments according to their sectoral allocation. Finally, the cross-national analysis will be conducted using the country/geography category for each of the dimensions of the CPI. Further details of the cross-national analysis are available in Chapter 4.

This thesis proposes to utilise existing climate policy databases that include information on climate policies, climate targets and/or policy instruments to construct CPI assessments. Climate policy databases that capture the various types of climate policy adopted by national governments have expanded significantly in the last decade and are now established sources of data collection (for an overview, see Schaub et al., 2022). Given the extensive geographical coverage required to address the research questions in

this thesis, secondary data offers important advantages that primary data cannot provide. The main climate policy databases employed in this thesis are the Climate Change Laws of the World (CCLW) database, the Climate Policy Database (CPDB) and the European Climate Adaptation Platform (Climate-ADAPT). Additionally, for the EU level only, the study employs two additional databases to retrieve relevant data for analysing CPI processes: the European Commission's Press Release Database (Press Corner) and the online gateway to EU Law (EUR-Lex).

1.5 Outline of the thesis

Having identified the aim, research questions and research design, the remainder of this thesis unfolds as follows. Chapter 2 provides an overview of the existing literature that has addressed the issue of governing cross-sectoral problems using the tools and methods of public policy. Secondly, it identifies and unpacks three research gaps in the current understanding of CPI processes in the EU that motivate the author's specification of the overall aim and research questions that this thesis addresses. The three research gaps are CPI as a process (research gap 1), CPI as an operational process that includes mitigation and adaptation (research gap 2) and CPI as part of European integration processes (research gap 3).

Chapter 3 builds upon the existing literature on policy integration and European integration to establish an analytical and theoretical framework to guide the research. Drawing on Candel and Biesbroek (2016), the analytical framework focuses on four theoretically salient dimensions of the process to unpack the often-complex process of policy integration: i.e. policy frame, subsystem involvement, policy goals and policy instruments. In turn, the results of applying their analytical framework to the empirical phenomenon of CPI in the EU are viewed from the perspective of two main European integration theories, new intergovernmentalism and historical institutionalism.

Chapter 4 presents the methodology. First, it outlines the ontological and epistemological approach underpinning the research. After that, it focuses on the research method, namely secondary data collection and analyses, and how they have been undertaken in this thesis. This thesis employs climate policy databases that have expanded greatly in the last decade

and are now established sources of data (for an overview, see Schaub et al., 2022). Additionally, this chapter provides detailed accounts of data collection and analyses to explore each of the dimensions of CPI and the two levels of governance, as well as any ethical considerations.

Chapters 5–7 present the main empirical findings. Chapter 5 focuses on the first element of the research questions, namely how the commitment to CPI has been operationalised (considering both mitigation and adaptation areas of climate policymaking) and has evolved over time at the EU level from 1990 to 2020.

Chapter 6 unpacks the main findings from an empirical analysis of the operationalisation of CPI as a multi-dimensional policy process in all 28 Member States from 1990 to 2020, encompassing two salient dimensions: namely *policy framing* and *subsystem involvement.*

Chapter 7 continues by focusing on the two remaining dimensions, namely *policy goals* and *instruments.*

Chapter 8 brings together the most insightful research findings by comparing and discussing the empirical results from Chapters 6 and 7. Secondly, it examines the empirical findings from the perspective of new intergovernmentalism and historical institutionalism.

Finally, Chapter 9 answers the three research questions and identifies the main contributions made to the existing literature. It critically reflects on the research approach adopted and makes several suggestions for future research.

Chapter 2

Literature review

2.1 Introduction

While the competencies for policymaking are often distributed horizontally across different ministries and departments covering policy subsystems, many pressing and complex societal problems cut across organisational entities and areas (Kaplaner et al., 2023). For example, neither migration nor climate change "fit the ministerial boxes into which governments and policy analysts tend to place policies" (Peters, 1998, p. 296). In light of these challenges, the concept of policy integration has become a popular solution for policymakers and scholars alike (Candel & Biesbroek, 2016; Cejudo & Michel, 2017; Cejudo & Trein, 2022; Trein et al., 2021).

This chapter has a dual objective. First, it provides an overview of the literature that has addressed the issue of governing cross-sectoral problems using the tools and methods of public policy, particularly on policy integration and public coordination of cross-sectoral issues. Second, it details three research gaps in existing understandings of CPI policy processes in the EU that underpin the overall aim and research questions that this thesis will address (see Chapter 1, Section 1.4).

The remainder of this chapter unfolds as follows. Section 2.2 provides an overview of the contributions of public policy scholars in relation to the inherent problem in the public sector of governing cross-sectoral problems in departmentally structured organisations. Section 2.3 reviews the concept of policy integration over 30 years. Section 2.4 reviews the recent literature on CPI, covering the academic debates on the similarities and differences between EPI and CPI. Additionally, it discusses the three research gaps that this thesis is dedicated to addressing conceptually and empirically. Finally, Section 2.5 concludes.

2.2 Responding to the fragmentation of the public sector

The challenge of coordination has been an inherent problem for practitioners of government since the time when governing structures in departments and ministries covered different policy areas (Peters, 1998). From the 1980s onwards, many governments and public administrations developed a series of reforms aimed at improving the efficiency and performance of politico-administrative systems, making them more "business-like", known as New Public Management (Dunsire, 1995, p. 21). Amongst the variety of such initiatives, the establishment of single-purpose organisations and specialised units was considered a means to respond more efficiently and responsively to public policy administration (Cejudo & Michel, 2017). Governments reacted to policy problems by proposing and adopting measures from highly specialised departments, as this was considered an effective way to foster policy expertise (Peters, 2015).

Some of the reforms developed during this era resulted in the fragmentation of the public sector (Bezes et al., 2013; Pollitt, 2003), leading to the responsibility for addressing complex problems being dispersed among different departments, agencies, ministries and levels of government. However, this trend in public management towards disaggregation and specialisation was considered to exacerbate some of the core challenges of the public sector, such as coordination between governmental units (Christensen & Lægreid, 2008), which could even lead to policy failures in some circumstances (Howlett & Ramesh, 2014). Fragmented government action has been referred to as disjointed government (Pollitt, 2003), policy fragmentation (Koschinsky & Swanstrom, 2001), departmentalism (Christensen & Lægreid, 2007), agencification and sectorisation (Bouckaert et al., 2010b), amongst other terms.

In response to this fragmentation, both public sector institutions and academia have called for a more integrated and/or coordinated public administration to overcome the problems associated with the fragmentation of the political authority. Regardless of the variety of concepts, fragmented government is perceived to have negative implications for governing policy issues that cannot be effectively managed from a single specific policy sector (Cejudo & Michel, 2017).

Against the backdrop of organisational reforms aimed at solving the fragmentation of the public sector, a new strand of research emerged, arguing that the governance of policy sectors was becoming more integrated and/or coordinated (Trein et al., 2019). Many of these early contributions assumed that effective coordination is beneficial and even instrumental for policymaking in complex policy areas. Public policy scholars began to study the integration and coordination of policies, focusing mostly on their institutional and organisational dimensions (Geerlings & Stead, 2003; McNamara, 2012; Peters, 1998).

A growing body of research has pointed to the increasing cross-sectoralisation of policymaking and public policy instruments, as well as the enhanced integration and coordination across policy sectors or organisations. This research has built on a variety of concepts that can be broadly divided into "governance- and government-centred approaches" (Tosun & Lang, 2017, p. 4).

Government-centred approaches to the study of the integration and coordination of policies have highlighted their institutional and organisational dimensions. These organisational reforms aimed at creating more integrated policy structures have been labelled as joined-up government (Peters & Savoie, 1996) and later as whole-of-government (Christensen & Lægreid, 2008) or holistic government (Mawson & Hall, 2000).

Governance-centred approaches have been proposed by public policy scholars who focus on policy processes and implementation, including research on policy coherence (May et al., 2006a) and coordination (Casado-Asensio & Steurer, 2016; Metcalfe, 1994; Schout & Jordan, 2003). Policy coherence and policy coordination have long been promoted as tools for enhancing effective and efficient policymaking as part of the wider policy analysis literature (Mickwitz et al., 2009; Peters, 1998).

Despite being strongly related concepts, policy coherence aims to avoid conflicts between policy objectives and even achieve synergistic results between such objectives (Van Bommel & Kuindersma, 2008). Den Hertog and Stross (2011) discuss the legal foundations of policy coherence, particularly concerning external policies, with a strong focus on policy outcomes, and consider policy coherence as the "synergic and systematic

support towards the achievement of common objectives within and across individual policies" (Den Hertog & Stross, 2011, p. 4).

More recently, contributions on policy coherence have discussed trade-offs and synergies between public policies. Following Nilsson (2021), policy coherence can be defined as "a process of policymaking that systematically considers the pursuit of multiple policy goals in a coordinated way, minimizing trade-offs and maximizing synergies" (Nilsson, 2021, p. 2). Often, policy coherence or coherent policymaking reflects an aspirational aim that is easily understood but often "difficult to measure" (May et al., 2006b, p. 382).

On the other hand, policy coordination aims to achieve similar outcomes to policy coherence, namely that "policies and programmes of government are characterised by minimal redundancy, incoherence and lacunae" (Peters, 1998, p. 296). Policy coordination has been described as "a fundamental problem for public administration and policy" (Peters, 1998, p. 9), implying that achieving policy coordination is a long-standing challenge for policymakers and public institutions, with a series of factors preventing coordination or explaining resistance to more extensive coordination, such as specialisation and power dynamics within public institutions, as well as turf wars (Peters, 2018).

Coordination in the context of public policy involves mediating and bringing together different administrative units and dispersed actors to work collaboratively towards joint actions (Christensen & Lægreid, 2008). Thus, it encompasses not only vertical coordination across different levels of government but also horizontal coordination across policy subsystems and organisations at the same administrative level (Peters, 1998).

The academic literature on policy integration has rapidly evolved in recent years. Over the past decade (from the early 2010s to the early 2020s), empirical research has increasingly gravitated towards the term policy integration rather than earlier concepts (e.g. joined-up government or whole-of-government) (Trein et al., 2023). Various reviews have aimed to provide an overview of the state of research on policy integration (Cejudo & Michel, 2017; Tosun & Lang, 2017; Trein et al., 2021, 2023). These reviews have explored significant conceptual clarifications, theoretical advances and methodological improvements in the field (Trein et al., 2021).

Policy integration studies take both the literature on policy coherence and coordination into account (Dupont, 2013) and engender an overarching concept that considers the governance of cross-sectoral policies at different stages of the policy cycle (Candel, 2021). The concept of policy integration can be traced back over 30 years, with Underdal's analysis of integrated marine policy considered the first scholarly conception of policy integration (Dupont & Primova, 2011; Jordan & Lenschow, 2010; Lafferty & Hovden, 2003). This initial analysis examined the precise meaning of integrated policy, why policies—in this case, marine policies—should be integrated and how policy integration can be accomplished. According to Underdal:

> "a policy is integrated when the consequences of that policy are recognized as decision premises, aggregated into an overall evaluation and incorporated at all policy levels and into all government agencies involved in its execution." (Underdal, 1980, p. 162).

Accordingly, he defined three requirements that policies must satisfy to qualify as integrated: (1) the inclusiveness of space, time, actors and issues at the input stage (comprehensiveness); (2) the application of overarching criteria to evaluate alternatives at the processing stage (aggregation); and (3) the components of a comprehensive policy being in accord with one another (consistency). The ultimate motivation of policy integration is to improve policy outcomes and avoid the externalities produced by fragmented decisions (Underdal, 1980). Following this initial analysis, scholars explored the governance of integrated policies under the assumption that policy integration is instrumental for effective policymaking in complex policy areas and for addressing fragmentation (Cejudo & Michel, 2017).

In the early 1990s, a related concept became the focus of another strand of literature: EPI. EPI emerged as a topical concept among both policymakers and scholars for addressing environmental challenges in sectorally and territorially fragmented governance contexts. EPI refers to the incorporation of environmental objectives into non-environmental policy sectors, such as agriculture, energy and transport (Persson et al., 2018).

However, in the social scientific literature, EPI has been attributed with various conceptual interpretations: EPI as a policy objective, a normative principle, a process, an

organisational and institutional challenge, or a (desirable) outcome, amongst others (see Jordan & Lenschow, 2010; Persson, 2007).

Much of the early EPI literature understands the concept as a governing principle or a policy outcome. Fuelled by the Report of the World Commission on Environment and Development (World Commission on Environment and Development, 1987), EPI became recognised as a "first-order operational principle" for implementing sustainable development (Lenschow, 2002, p. 6). Despite the prominence of EPI references in both political and scholarly circles, no conceptual clarity was achieved until Lafferty and Hovden's (2003) contribution to defining EPI. According to these authors, "the whole point of EPI is, at the very least, to avoid situations where environmental degradation becomes subsidiary; and […] to ensure that the long-term carrying capacity of nature becomes a principal or overarching societal objective" (Lafferty & Hovden, 2003, p. 9). Based on Underdal's (1980) definition of policy integration, but considering the specificities of environmental policymaking, Lafferty and Hovden define EPI as:

> "The incorporation of environmental objectives into all stages of policymaking in non-environmental policy sectors, with a specific recognition of this goal as a guiding principle for the planning and execution of policy."
>
> "[…] an attempt to aggregate presumed environmental consequences into an overall evaluation of policy, and a commitment to minimise contradictions between environmental and sectoral policies by giving principled priority to the former over the latter." (Lafferty & Hovden, 2003, p. 9).

The definition encompasses two dimensions. First, Lafferty and Hovden's interpretation of EPI incorporates a strong normative perspective of policy integration in favour of the environment, advocating that environmental objectives should receive principled priority in other policy sectors. This consideration has attained a special status in the EU, as EPI has become a political principle that needs to be implemented. Second, their definition acknowledges that EPI must be considered at distinct phases or stages of the policymaking process, i.e. the processual aspect of policy integration (Lafferty & Hovden, 2003, p. 9).

Despite early discussions on the principled priority of EPI, more recent scholarship has shifted focus towards policy integration and EPI as a policy process, examining the ways in which EPI has been adopted within various political systems (Candel & Biesbroek, 2016). This body of research specifically emphasises a more processual approach to policy integration, categorising barriers and enablers of (dis)integrated policy (Jordan & Lenschow, 2010; Persson & Runhaar, 2018). Jordan and Lenschow (2010) proposed two different starting points for studying EPI as a policy process: one that compares political systems (institutional and political perspectives) and another derived from a policy analysis approach that considers all stages of the policymaking process and/or policy instruments used to apply EPI.

A significantly less populated body of literature has explored the outcomes of policy integration or EPI, specifically examining how EPI stimulates changes in environmental conditions. Despite acknowledging the importance of evaluating policy outcomes, measuring the effectiveness of integration processes in terms of outcomes is extremely challenging (Mickwitz, 2012), particularly due to the difficulty of isolating the effects of individual actions and measures. Consequently, EPI has often been evaluated based on the existence of relevant administrative structures, the favourability of political conditions or the effectiveness of specific implementing mechanisms and instruments (Jordan & Lenschow, 2008).

2.3 The emergence of the climate policy integration *problematique*

More recently, a new terminology has begun to appear in both policy and scholarly discourses, focusing on climate change as a policy problem—CPI. Initially discussed as a subordinate part of EPI, studies dedicated to climate policy have emerged as an independent strand of literature (von Lüpke et al., 2022). Several factors have contributed to this emergence. First, climate change has increasingly been recognised as a distinct major issue since the early 2000s (IPCC, 2023b). Second, researchers have noted potential conflicts between climate change and environmental issues (Rietig, 2013). Another reason pertains to the differing methods and operationalisation of CPI compared to other environmental policy problems (Adelle & Russel, 2013).

Building upon the literatures of policy integration and EPI, the emerging literature on CPI (Ahmad, 2009; Dupont & Primova, 2011; Jordan & Lenschow, 2010; Mickwitz et al., 2009; Rietig, 2019; Schmidt & Fleig, 2018) has focused on conceptualising CPI (Adelle & Russel, 2013) and exploring whether, how and to what extent climate concerns are integrated into other policy sectors within specific policy systems and contexts (Dupont & Oberthür, 2012; Mickwitz et al., 2009; Nilsson & Nilsson, 2005; Rietig, 2012).

Nevertheless, some early academic contributions to the CPI literature have taken Lafferty and Hovden's definition of EPI (2003) as a starting point to achieve conceptual clarity. Some authors (e.g. Ahmad, 2009; Mickwitz et al., 2009; Nilsson & Nilsson, 2005) have suggested that CPI can be defined simply by substituting *environmental* with *climate*. Following this position, CPI can be defined as "the incorporation of the aims of climate change mitigation and adaptation into all stages of policy-making in other policy sectors (non-environmental as well as environmental)" (Mickwitz et al., 2009, p. 19).

However, Lafferty and Hovden's definition of EPI (2003) contains a strongly normative element, considering the principled priority of environmental objectives over other policy objectives (Mickwitz et al., 2009). The element that remains subject to debate is how much weight or priority the environment does or should receive in the policy process and its outputs (Dupont, 2013). Some authors advocate for *strong* consideration of EPI by granting the environment "principled priority" in other policy sectors throughout the policy process and final output (Lafferty & Hovden, 2003, p. 9). Conversely, others emphasise the importance of merely taking environmental considerations into account in the formulation of policy in other sectors, representing a *weak* consideration of EPI (Jordan & Lenschow, 2008; Persson, 2004). This normative consideration is less recognisable in other parts of the CPI literature (Adelle & Russel, 2013), where a more concretely positive interpretation of the principle of EPI in politics and policies is conceptualised (Jordan & Lenschow, 2008).

Moreover, while the literature on EPI is well established and the concept has gained broad recognition in the academic world, the CPI literature is newer and references to CPI often position it as part of EPI or a closely related concept. In other bodies of literature, the terms such as mainstreaming (e.g. Nunan et al., 2012; Runhaar et al., 2018), climate

proofing (e.g. Fankhauser & Schmidt-Traub, 2011) or integration of climate objectives (e.g. Kok et al., 2008) are employed. There have been debates regarding the distinction between the terms integration and mainstreaming, but generally, it is a matter of context rather than conceptual differentiation, as the term mainstreaming is more commonly used in the development context (Yamin, 2013) than in environmental and climate governance studies. Furthermore, the literature on international development has often considered climate change adaptation mainstreaming as a mutually supportive strategy to stand-alone (climate) adaptation policies and programmes that aim to mainstream "climate change adaptation objectives into existing sectoral policies and practices" (Runhaar et al., 2018, p. 1201). Runhaar et al. (2018, p. 1202) also point out that "there is also no widely accepted agreement about what mainstreaming is to be achieved, i.e. when it is effective, and how this could be measured", highlighting knowledge gaps that require further research.

Amongst the literature focusing primarily on CPI, the EU is one of the preferred empirical settings. One of the early evaluations of CPI, published by the Partnership for European Environmental Research Group (Mickwitz et al., 2009), assessed the degree of CPI in different countries and policy sectors (energy, transport, spatial planning, education, etc.). Furthermore, several studies have concentrated on evaluating progress in integrating climate change considerations into specific EU policy sectors. For example, Nilsson and Nilsson (2005) focus on energy, transport and agriculture, while a number of other studies have examined the integration of the EU's climate objectives in the energy sector (Dupont & Oberthür, 2012; Kettner & Kletzan-Slamanig, 2020; Rietig, 2013) and development policy (Hulme et al., 2009). In some instances, studies have focused on the integration of adaptation into other policy sectors (mainstreaming), such as the EU water policy (Brouwer et al., 2013). Relatively few studies have explicitly evaluated a particular policy mechanism or instrument (but see Medarova-Bergstrom et al., 2011). Recent research has focused on the 2020 Climate and Energy Package (2009) and the subsequent 2030 climate and energy framework and 2050 long-term strategy, often acknowledged as positive developments towards coherent energy and climate policies (e.g. Adelle et al., 2009; Bocquillon, 2015; Bocquillon & Maltby, 2020; Rietig, 2013).

In summary, the academic literature on policy integration has rapidly evolved in recent years and has also coalesced under these conceptual umbrellas, encompassing studies on CPI, EPI and other non-environmental cross-sectoral issues. CPI has experienced increased interest in recent years, reflected in the growing body of literature on CPI and policy integration more generally, as well as in the incorporation of CPI into policy strategies and programmes worldwide, with particular importance in the EU. Although CPI can be regarded as a continuation and development of approaches for EPI from the 1980s and 1990s (Kettner & Kletzan-Slamanig, 2020), crucial differences between them necessitate a distinct understanding and conceptualisation of CPI separate from EPI (Adelle & Russel, 2013). Mickwitz et al. (2009) provided a well-known definition of CPI, describing it as "the incorporation of the aims of climate change mitigation and adaptation into all stages of policy-making in other policy sectors" as well as a "commitment to minimise contradictions between climate policies and other policies" (Mickwitz et al., 2009, p. 9).

2.4 Research gaps

This review of the relevant literature related to the research questions has identified three specific research gaps. The following sections focus on describing each of the research gaps that this thesis aims to address. The identified research gaps can be categorised as empirical, methodological and theoretical, aligning with the research questions of this thesis (see Chapter 1, Section 1.4).

2.4.1 Research gap 1: climate policy integration as a process

Conceptually, scholars of policy integration have distinguished policy integration from similar concepts like policy coherence or coordination (Cejudo & Michel, 2017). Recent scholarship has developed an understanding of policy integration as a dynamic policy process, recognising the importance of the cross-cutting nature of policy problems and solutions, policy subsystem involvement, integrative goal formulation and policy instrument mixes (Candel & Biesbroek, 2018).

Additionally, policy integration scholars have highlighted the importance of understanding how policy integration is adopted within various political systems and the

factors that enhance or hinder this adoption (Biesbroek, 2021). These recent contributions have considered how policy integration is a political process that entails the coordination of actors and agencies across policy subsystems, the combination of policy instruments from different policy areas and arrangements for their consistent implementation and evaluation (Cejudo & Trein, 2022). Whereas policy integration in the past was predominantly seen as a policy outcome or normative principle, it has become clear in recent years that there are benefits in considering integration as an evolving policy process situated within a particular governance setting.

Policy integration scholars have applied the conceptual framework proposed by Candel and Biesbroek (2016) to study policy integration. This framework has been applied to various policy issues, such as sustainable development (Tosun & Leininger, 2017), climate and food policies (Biesbroek & Candel, 2020) and public health (Bazzan, 2020). Most of these studies have been restricted to single case studies, with comparative policy integration research receiving much less attention (Schmidt & Fleig, 2018; Tosun & Lang, 2017).

Candel and Biesbroek (2016) discuss how the shift from a relatively static (desirable) outcome-centred approach towards a differentiated processual understanding of integration raises interesting questions about when integration is fully realised, what elements constitute integration processes and how these may develop over time. In this seminal work, Candel and Biesbroek propose to address the limitations of processual approaches to policy integration by placing the multi-layered and non-linear nature of integration processes at its conceptual core. They propose a multi-dimensional framework drawing on existing literature that aims to facilitate the study of integration pathways within a specific governance setting. These authors understand policy integration as a process that does not necessarily progress in a concerted, incremental manner but may develop at different paces and in non-linear ways. The framework distinguishes four dimensions of integration: (1) policy frame, (2) subsystem involvement, (3) policy goals and (4) policy instruments; for each dimension, there are manifestations of lesser or more advanced degrees of policy integration (Candel & Biesbroek, 2016).

Moreover, the emerging CPI literature often concludes that further research is needed to understand how the concept of CPI has been operationalised. Despite facing similar institutional coordination challenges, both EPI and CPI, all national governments organise their legislative processes differently, including horizontal cross-sectoral coordination on climate change policy. However, the cross-sectoral nature of climate and energy issues remains inadequately defined and explored empirically (Bazzan & Righettini, 2023).

2.4.2 Research gap 2: mitigation and adaptation as part of climate policy integration

As introduced in Chapter 1, there has been increased interest in the range of potential inter-relationships between mitigation and adaptation from governance, institutional and policy perspectives (see Section 1.3). One of the main contributions of this literature is the acknowledgement that mitigation and adaptation have been artificially separated in both science and policy (to some extent) (Swart & Raes, 2007) and that both adaptation and mitigation actions are essential to address climate change through policymaking (Jones et al., 2007). Mitigation involves "a human intervention to reduce emissions or enhance the sinks of GHG (IPCC, 2018, p.554) and relates to the causes of climate change.

In contrast, adaptation refers to the "process of adjustment to actual or expected climate and its effects, to moderate harm or exploit beneficial opportunities [in human systems]." (IPCC, 2023b, p. 120). However, there have been ongoing discussions concerning its definition and interpretation since the early 1990s. The main disagreement pertains to the breadth of the definition, with implications for financing and the feasibility of implementation. The narrowest definitions of adaptation (i.e. UNFCCC) only refer to actions taken in response to climate change resulting from anthropogenic GHG emissions (Klein et al., 2005).

As noted above, these two approaches share a goal in common: reducing the risks associated with climate change. Despite this, the literature comparing mitigation and adaptation has also highlighted significant differences between them (e.g. Toth et al., 2001; Tol, 2005). One of the main identified differences concerns spatial and temporal scales. Mitigation primarily addresses a global problem, while adaptation focuses on resolving regional and local issues. Thus, comparisons of mitigation and adaptation

generally refer to mitigation as action at national and global scales and adaptation as action at local or regional scales (Wilbanks et al., 2003). Regarding the temporal aspect, mitigation and adaptation manage different components of future climate-related risk. Mitigation reduces the number and magnitude of potential climate hazards, while adaptation enhances the ability to cope with climate hazards by reducing system sensitivity or the consequent level of harm (Jones et al., 2007). However, the literature on the complementarity of mitigation and adaptation has also revealed substantial differences in the relevant policy subsystems for each area of climate action and their differing motivations (Tol, 2005). Balancing mitigation and adaptation is complicated by the need to reconcile impacts, benefits and costs for different people living in different places at different times (Watkiss et al., 2015).

As previously discussed (see Chapter 2, Section 2.3), the literature on CPI has paid little attention to the relationship between mitigation and adaptation (integration within climate policy) or the consideration of both areas of climate policy when integrating into other policy subsystems (*mitigation and adaptation integration* into other environmental and non-environmental sectors). Thus, studies attempting to assess CPI in practice have rarely encompassed both mitigation and adaptation when evaluating CPI efforts (Neby & Zannakis, 2020). Consequently, when analysing how climate policy objectives become part of adjacent policy sectors, most CPI research has assimilated climate objectives as mitigation objectives.

2.4.3 Research gap 3: climate policy integration as European integration process

Policy integration has often been described as the policy solution for the eternal problem of public governance (Pierre 6, 2004; Candel, 2017; Peters, 2015). The strengthening of integrative governance approaches has been considered by both academics and policymakers as the way forwards in addressing a range of increasingly complex policy problems that span across sectors (Candel, 2021). The imperative for policy integration and coherent policies appears especially crucial and challenging in the European multi-level system of governance, given its vertical and horizontal fragmentation and the multitude of actors involved in European policymaking (Bocquillon, 2018).

In fact, policy integration efforts have a long history in the EU, with engagement in policy integration, particularly of the EPI principle, dating back to "at least the First Environmental Action Programme in 1973" (Jordan & Lenschow, 2010, p. 3). During the 1990s, Member States became increasingly interested in the principle of EPI, leading to deeper institutionalisation across EU institutions (Schout & Jordan, 2006). Additionally, EPI was incorporated into the European treaties, first in the Single European Act (Art 130r (2)) and later in the Maastricht Treaty (Art 11, Treaty on the Functioning of the EU), elevating EPI to an overarching legal principle (Schout & Jordan, 2003). In the 2000s, EPI efforts were redirected as EPI was reconnected to sustainable development and, more recently, to CPI (Dupont & Jordan, 2021).

However, the lack of CPI has been a long-standing issue in the EU's energy policy agenda (Dupont & Oberthür, 2012). In an effort to establish a supranational, integrative governance framework and advance towards CPI, since 2009, the European Commission has gradually structured an interactive and multi-level process of energy and climate policymaking (Bocquillon & Maltby, 2020). Aiming to advocate for more coherent, integrated and effective energy and climate governance across Member States, in 2018, the EU adopted Regulation 2018/1999 (European Union, 2017).

More recently, the European Commission released its European Green Deal strategy, positioning the "commitment to tackling climate and environmental-related challenges [as] … this generation's defining task" in the EU (European Commission, 2019a, p. 2). With its holistic roadmap of cross-sectoral policy proposals primarily aimed at achieving net-zero GHG emissions by 2050, the European Green Deal represents the 2019–24 Commission's top priority. Thus, since the 1970s, policy integration has transitioned from a marginal position to a prominent and dynamic area of European integration, with the European Green Deal channelling the political ambition for policy integration.

As the EU has been an area of experimentation and innovation for policy integration in its conceptual variants, it has attracted significant scholarly attention. The EU is indeed a highly important case for the study of policy integration. A literature review conducted by Kaplaner and colleagues (2023) revealed that over the last 10 years, 105 out of 850 scholarly contributions dealing with the concept of policy integration have focused on the

EU (Kaplaner et al., 2023), making the multi-level governance system of the EU the most studied political entity in the context of cross-sectoral policymaking.

Recent contributions exploring climate governance at the EU level conclude that the issue of national intragovernmental administration and cross-sectoral coordination of national climate policy across all Member States is arguably "underexplored as a climate governance topic" (Evans & Duwe, 2021, p. 27). Despite calls for better-integrated approaches to govern energy and climate policies, it remains unclear how CPI has been operationalised both at the EU level and across Member States. Until recently, very few studies have systematically compared policy integration dimensions across different countries. Notably, Bazzan and Righettini (2023) have recently applied Candel and Biesbroek (2016)'s policy integration conceptual framework to seven EU Member States (Finland, France, Germany, Hungary, Italy, Portugal and Romania).

However, despite the EU being one of the most explored case studies, European integration theories are rarely employed to explain and understand policy integration as a policy process towards advancing the European integration project in the EU (for a notable exception, see Dupont, 2013). This thesis proposes to fill this gap by studying CPI as a policy process in the EU through the theoretical lenses of European integration theories. Specifically, this thesis contributes to this endeavour by employing two distinct theories of European integration: new intergovernmentalism and historical institutionalism. Each theoretical perspective provides insights into European integration, albeit from contrasting angles, focusing on different aspects of policymaking in the EU, as well as the importance of key actors, the arenas in which they operate and the policy mechanisms employed.

2.5 Conclusion

This chapter has provided an overview of the literature that has explored the challenge of governing problems that cross-cut and extend beyond the boundaries of traditional policy areas in the public sector. After discussing policy coherence and coordination, the chapter moved to consider policy integration, demonstrating how the latter incorporates both these literatures and builds on EPI and how CPI has experienced increased interest in recent years.

Much of this literature tends to be "normatively agnostic" (Russel et al., 2018, p. 45) or generally positive about the outcomes of policy integration for the governance of the cross-sectoral problem in question (but see Page, 2005 for a more critical stand). In the case of CPI, the prevailing framing in the literature is that greater integration of climate issues into other sectoral policies would result in *better* policies and, ultimately, in improved climate change performance, i.e. climate protection efforts and progress made by individual countries or regions (Burck et al., 2020).

CPI was initially regarded as a continuation and development of approaches for EPI from the 1980s and 1990s; however, some authors have also explored crucial differences between EPI and CPI in terms of policy principles, governing processes and policy outcomes (Adelle & Russel, 2013) that necessitate specific considerations of the characteristics of CPI. One example of the need to conceptually understand the specificity of CPI is how the two dimensions of climate action, i.e. mitigation and adaptation, are integrated into all stages of policymaking across policy sectors. Despite references to both the mitigation and adaptive aspects of climate objectives in the well-known definition of CPI by Mickwitz and colleagues (2009), the CPI literature has only recently started to explore the inter-relationships between them and the implications for CPI.

Additionally, this chapter identifies how policy integration studies have used the EU as a common case study, and CPI can be viewed as a European integration process. However, no study has systematically compared policy integration dimensions between the EU level and across all EU Member States.

This thesis offers a contribution towards filling three gaps identified in the CPI literature by studying CPI both as a policy process and by considering both mitigation and adaptation policy responses. To summarise, the three research gaps consider CPI as a process (research gap 1), CPI as an operational process that includes mitigation and adaptation (research gap 2) and CPI as part of European integration processes (research gap 3).

This thesis will address these gaps by examining the operationalisation of CPI as a multi-dimensional and multi-level process in the EU and its Member States from 1990 to 2020. The next chapter will explore the analytical and theoretical frameworks employed in this thesis to study CPI as a policy process in the EU.

Chapter 3

Analytical and theoretical perspectives

3.1 Introduction

As introduced in previous chapters, this thesis explores the operationalisation of CPI in the EU over a 30-year period, considering both the EU and Member States' levels. Climate change may be regarded as the ultimate wicked problem (Pollitt, 2015). Such public policy problems necessitate enhanced, improved and elaborated approaches to the coordination of relevant governmental organisations (Christensen et al., 2019).

The first objective of this chapter is to present the analytical framework adopted in this thesis to study CPI as a governing policy process (Section 3.2). Drawing on Candel and Biesbroek (2016), I focus on four theoretically salient dimensions of the policy process to unpack the often-complex process of policy integration: *policy frame, subsystems involvement, policy goals* and *policy instruments.*

The second objective of this chapter is to outline the theoretical framework as "any empirical or quasi-empirical theory of social […] processes, at a variety of level that can be applied to the understanding of phenomena" (Anfara Jr & Mertz, 2014, p. 15). By situating the research within the EU, climate policy and CPI developments must be understood as part of EU policymaking and governance. The theories explored are, therefore, those of European integration. This chapter also aims to explore the theoretical explanatory power that European integration theories can provide in understanding the trajectory of European climate policy, particularly CPI at the EU level, as well as the approaches to CPI across Member States (Section 3.3).

Subsequently, Section 3.4 brings together the analytical and theoretical frameworks and outlines the potential contribution of connecting or applying two different European integration theories to CPI as a multi-dimensional policy process to explain CPI developments of CPI in the EU across governance levels. Finally, Section 3.5 concludes the chapter.

3.2 Analytical framework: climate policy integration as a multi-dimensional process

As discussed in Chapter 2, to respond to complex societal challenges that transcend the boundaries of traditional administrative units or functions, governments and institutions have promoted and stimulated the introduction of cross-sectoral policy integration between subsystems. However, academic accounts aimed at studying these governance initiatives have not led to a general theory of policy integration in political science (Geerlings & Stead, 2003; Tosun & Lang, 2013; Trein et al., 2021), but rather a plethora of approaches and schools of thought. Following the discussions presented in Chapter 2, the CPI literature has yet to elaborate on the inherently processual nature of policy integration, and contributors have often concluded that further research is needed to understand how the concept of CPI has been translated into governance processes in specific governance settings.

Candel and Biesbroek (2016) propose a framework to bring some conceptual convergence to the debate and study of policy integration for the governance of cross-cutting policy problems. Following the evolution of EPI and CPI literature from viewing policy integration as a governing principle or desired policy outcome, recent studies have shifted towards a more processual approach to policy integration. Therefore, these authors aim to reconceptualise policy integration from a relatively static (desired) outcome-centred approach towards a differentiated processual understanding of integration, viewing policy integration as a process of policy and institutional change where actors and their interactions play a central role (Candel & Biesbroek, 2018). This shift in analytical focus "raises interesting questions about when integration is fully realized, what elements constitute integration processes, and how these may develop over time, inter-alia" (Candel & Biesbroek, 2016, p. 213).

To systematically track the integration process, Candel and Biesbroek (2016) propose four dimensions of policy integration, namely policy frame, policy subsystems involvement, policy goals and policy instruments. For each of these dimensions, the authors describe different manifestations of the policy element that can be associated with varying levels

of policy integration. They consider four levels of policy integration, from lesser to more advanced degrees of policy integration within a governance context, derived from each of the policy dimensions of policy integration.

Following their seminal work on the dimensions of policy integration, the next sections focus on each area of the dimensions and how this thesis adopts their analytical framework to unpack the process of policy integration in the EU.

3.2.1 Policy frame

The first dimension of the analytical framework is the policy frame. The concept of policy frame or framing is a recurrent notion in public policy studies, largely building on the work of Schön and Rein (1994). This term has generally been used to refer to competing problem definitions of societal issues in public policy debates (Schön & Rein, 1994) and has been shown to have predictive value regarding public support for and governmental decisions on different policy alternatives (Lau & Schlesinger, 2005). Candel and Biesbroek (2016) take a narrower view of policy frames to focus on how a particular problem is perceived within a given governance system and, particularly, "whether a cross-cutting problem is recognized as such and, if so, to what extent it is thought to be requiring a holistic governance approach" (p. 218). In that sense, whether the policy frame adopted in different policy subsystems fosters considerations of common governance approaches or integration processes can be crucial for integration strategies.

Policy frame has generally been used to refer to the dominant way that institutions in the political system conceive of or construct a problem (Schön & Rein, 1994), the involvement of different actors and their relationships, as well as the policy process itself (Baumgartner & Jones, 1991; Cobb & Elder, 1971). The concept of frames or framing has an established history in public policy studies, largely building on the contributions of Schön and Rein (van Hulst & Yanow, 2016).

However, policy frames are not factual descriptions of reality but specific interpretative constructs of policy problems, and therefore, studying and analysing policy frames is not straightforward (Candel & Biesbroek, 2016). The cognitive and normative ideas that constitute a policy frame are not always clearly disclosed but are articulated in

foundational documents, statements or other strategic documents and sometimes seem to be assumed and not easily identifiable (Rayner & Howlett, 2009). For example, Tosun et al. (2018) analysed strategic documents produced by international organisations to identify their commitment to EPI.

Policy framing implies some level of selection in a process where the different actors involved in a policy system understand, debate, justify or contest aspects of a policy problem (Schön & Rein, 1994). In relation to cross-sectoral policies, policy framing determines how a particular policy problem is perceived within a given governance system. In particular, it assesses whether the cross-sectoral nature of the problem is recognised by different actors and, if so, to what extent it is thought to require a holistic governance approach (Peters, 2005). Once a policy issue has ascended to the agenda of high politics, i.e. the agenda of the national government, it is likely to occur under the dominance of one specific sectoral frame (Baumgartner & Jones, 1991). For example, climate change might be framed solely in terms of energy policy because it is perceived as less politicised and would encounter less resistance than a more integrative frame that presents climate change as requiring responses from a variety of policy subsystems, thereby breaking down policy monopolies (Cejudo & Trein, 2022). A cross-sectoral problem is framed to also emphasise absolute gains and synergies between different policy sectors while downplaying possible conflicts and trade-offs, for instance (Bocquillon, 2015).

Additionally, the policy frame is often informed by the administrative culture of a governance system, with some administrative cultures exhibiting a more positive attitude towards integration processes than others (Hoppe, 2010). For example, the joined-up government strategy emerged in the early 2000s in the UK (Cabinet Office, 1999, 2000) with the aim of providing better and more integrated coordination in public administration (Ling, 2002).

Previous research on policy integration has highlighted that policy framing is an important dimension of policy integration (Candel & Biesbroek, 2016; Cejudo & Michel, 2021; Jones et al., 2023). If policy framing can support an overarching frame or integrative narrative, the process of policy integration may result in the adoption of integrated policy

strategies. These strategies consist of a set of goals, objectives and plans for action to overcome policy fragmentation regarding the governance of complex policy problems (Rayner & Howlett, 2009, p. 101), including a policy framing that establishes a shared understanding of the policy problem (Candel & Biesbroek, 2016).

Cejudo and Trein (2022) discuss *integrated policy narratives* and how these are developed in the governance system when:

> "the policy setting or context, the plot, the characters, and the moral of the story (policy solution) in the policy narrative span across different established policy subsystems and connect them with each other" (Cejudo & Trein, 2022, p. 17).

Conversely, they indicate that if policy integration initiatives are not undertaken or if they fail to reach the decision-making stage, actors from different policy sectors or subsystems will continue to operate within their sector-specific subsystems, resulting in a *sectoral policy narrative* (Cejudo & Trein, 2022).

3.2.2 Subsystem involvement

The second dimension of policy integration is the involvement of the relevant policy subsystems in the governance of the complex policy problem. The concept of policy subsystems has been central to seminal works aimed at understanding policy processes and policy change (Baumgartner & Jones, 1991; Sabatier, 1988; Sabatier & Jenkins-Smith, 1993) and continues to be a useful dimension when analysing policymaking processes.

Freeman's classic definition of subsystems (or sometimes referred as subgovernments) places "a primary emphasis upon their members and the institutions and organizations in the various part of the larger political system from which they come" (Freeman & Stevens, 1987, p. 10). Therefore, the focus is on the members, institutions and organisations that become involved in governing a particular cross-sectoral policy problem. Some authors have highlighted how subsystems in contemporary politics have evolved into incredibly complex webs of interaction, with more linkages across issues (and often actors as well) than ever before (Jones et al., 2019). Redefining societal problems as cross-cutting policies may result in the broadening of the subsystems involved in the governance of the

problem. This trend has exacerbated the inherent difficulty in delineating the exact boundaries of subsystems, given that they are analytical constructs rather than firm demarcations (Nohrstedt & Weible, 2010). Nevertheless, policy subsystems denote the presence of a community of diverse actors that specialise in a particular policy problem or area of policy problems. These actors interact with other policy subsystems during the policymaking process (Howlett, 2022; Knill & Tosun, 2020).

Candel and Biesbroek (2016) conceptualise subsystem involvement with two manifestations: the range of relevant subsystems involved in the governance of a particular public policy problem and the density of interactions amongst subsystems. Subsystems are considered to be involved when they explicitly address a particular problem within their policy process—thus when they label policy efforts, i.e. activities involving agenda-setting, preparatory debates, policy design or internal and external communication—regardless of whether these efforts substantially contribute to addressing the problem (Dupuis & Biesbroek, 2013).

The assumption is that policy integration is characterised by several relevant policy subsystems that frequently interact with one another. Governmental coordination efforts on climate change can occur in a vertical dimension amongst different levels of government, or they can be horizontal between ministries, agencies or authorities. Moreover, these efforts can concern internal affairs within public administration or external relations, i.e. coordination activities between public administration and external organisations (Bouckaert et al., 2010a; Christensen & Lægreid, 2008).

Several authors have explored the scope of involvement as a key criterion to assess integrative policy capacities that extend beyond merely enunciating strategies (Candel, 2021; Oberthür & Homeyer, 2022). Therefore, integrative policy framing may also lead to the creation of integrative policy capacities (Candel, 2021) that enable integration policy structures and resources to maintain policy coherence over time as the policymaking process advances (Cejudo & Trein, 2022). Consequently, the creation of integrative policy and administrative capacities that span different policy subsystems may facilitate the transformation of practices within the relevant subsystems into an integrated approach, leading to joint decision-making or the pooling of resources (Cejudo & Michel,

2021). These demands for coordinating policy and administrative capacities often compete with sector-specific efforts, in which actors prefer to deploy sectoral policies using capacities or existing institutional arrangements (Cejudo & Trein, 2022).

Research differentiates between horizontal coordination, which targets the policy activities of different sectoral actors operating at the same level of government, and vertical coordination, which refers to linking the policy activities of actors at different levels of government (Peters, 2015). Various contributions to the literature have suggested that designing and implementing policy programmes that span across policy subsystems is challenging for several reasons, including potential conflicts of interest and incongruences among policy practices (Candel, 2021; Egeberg & Trondal, 2016). In line with CPI studies, this thesis focuses on institutional arrangements for the horizontal coordination of policy measures for climate change mitigation and adaptation (see, e.g. Biesbroek & Candel, 2020).

Von Lüpke, Leopold and Tosun (2022) define institutional arrangements as a set of organisational forms designed and deployed to facilitate climate policymaking by bringing together actors from different sectors in coordination bodies. Following this definition, this thesis considers three elements that define institutional arrangements: the type of coordination body, the political support and the interactions amongst policy subsystems.

The first element of institutional arrangements is the *type of coordination body*, namely the specific administrative and organisational form of the coordination body established for cross-sectoral horizontal coordination. Examples of different administrative and organisational forms include inter-ministerial working groups and committees. The focus on the area of climate policy is also part of the institutional arrangements, i.e. mitigation, adaptation or joint. The differentiation between mitigation and adaptation is also integral to the conceptualisation of institutional arrangements for the horizontal coordination of climate policy. Therefore, from an empirical viewpoint, it appears reasonable to expect that institutional arrangements will have specific characteristics depending on whether they focus on adaptation, mitigation or both (von Lüpke et al., 2022).

Following discussions from the policy design literature, *political support* is another important criterion for policy design. Participation from the head of government, ministers and higher-level managers (Peters, 1998, p. 52) can indicate the level of political support received, which Candel has termed "integrative leadership" (Candel, 2021). Cejudo and Trein (2022), in their understanding of policy integration through the lens of policy change theories, suggest that if policy entrepreneurs, policy brokers and heads of government prioritise policy integration as a priority, the likelihood of developing integrative policy capacities increases.

Regardless of the participation of high-level political figures, the institutional arrangements of coordination bodies typically follow a certain hierarchy, leading to the selection of specific units to lead activities. Therefore, the next aspect concerns which ministry or institution acts as the lead agency steering the coordination process. Identifying the agency with steering responsibility can provide important insights into a government's intentions regarding a particular policy problem (von Lüpke et al., 2022). The policy subsystem that leads the coordination process can also offer insights into the political intentions related to solving a specific policy process. For example, environmental ministries tend to be less powerful in intragovernmental bargaining compared to key economic sectors (Jordan & Lenschow, 2010).

Finally, another aspect of the institutional arrangements refers to the *interactions between policy subsystems*. Following Dupont's (2013) approach, these interactions can be conceptualised as functional interrelations, which help to understand the level and manner in which different subsystems are involved in the policy problem. The density of interactions amongst subsystems can range from no interactions to a high level of interactions among all relevant subsystems. Between these two extremes, the governance subsystem may exhibit infrequent and informal information exchanges between dominant subsystems and one or more relevant subsystems (i.e. the climate subsystem interacting with energy and transport only) to a stage where more regular and formal exchanges of information and coordination are present. Following Candel and Biesbroek's (2016) understanding of CPI as a process, it is noteworthy that the density of interactions is not

necessarily expected to increase gradually but may show periods of incremental interactions between subsystems followed by periods of (dis)integration.

3.2.3 Policy goals

According to the theoretical literature on policy change, policymakers are guided by paradigms when working within specific structured institutions. These paradigms shape policymakers' positioning when responding to a political problem and formulating more specific policy goals (Hall, 1993). The policy goals then determine policymakers' preferences for policy instruments and their design (Howlett & Cashore, 2009).

However, there is always a spectrum of competing or synergistic policy goals in any given policy field (Kern & Howlett, 2009; Rayner & Howlett, 2009), which requires policymakers to make "normative decisions on the relative priority of certain goals over others and striking a politically feasible balance between partially conflicting […] goals" (Quitzow, 2015, p. 234). The relative priority between environmental and other policy goals has been a longstanding debate regarding EPI and, more recently, CPI, including potential synergies and trade-offs.

Drawing from the literature on EPI, a strong consideration of EPI entails affording principled priority to policy goals, meaning "giving precedence to a policy area in the policymaking process over other policy areas" (Lafferty & Hovden, 2003, p. 10). Conversely, others have emphasised the importance of simply considering environmental considerations in the formulation of policy in other sectors, which can be described as a "weaker*"* form of EPI (Persson, 2004, p. 22)('weak' EPI Persson, 2004) . Theoretical discussions on formulation and policy design indicate that while policy goals can vary over time, the choice of policy means is context-driven and resource-contingent (Majone, 1989). Therefore, the policy outputs represent specific decisions on objectives and instruments intended to achieve the adopted policy goals, thus closely linking with the next dimension (see Section 3.2.4).

In the area of climate policy, there has been increased attention to how individual countries set robust, consistent and measurable domestic climate targets. The 2015 Paris Agreement has spurred a significant surge in national governments' net-zero

commitments underpinned by legislation or policy documents (Net Zero Tracker, 2023). Setting national quantified targets for climate change mitigation and adaptation informs the design, implementation, tracking and revision of policies and measures, as well as providing a signal and direction for the trajectory, pace and rigour of a country's intended climate actions (Nachmany & Mangan, 2018).

There are different types of climate targets (Fransen et al., 2017). One way to categorise climate targets is between those related to GHG emissions and non-GHG targets. Within GHG targets, base year emissions targets refer to commitments to reduce or control emissions by a specified quantity relative to a historical base year. These are known as absolute targets and are considered relatively simple to account for and track progress. Fixed-level targets are commitments to reduce or control the increase of emissions to a specified quantity in a target year or period. Fixed-level targets include carbon-neutrality targets or phase-out targets, such as net-zero emissions by 2050. Base year intensity targets are commitments to reduce emissions intensity (emissions per unit of another variable, typically Gross Domestic Product) by a specified quantity relative to a historical base year. Baseline scenario targets refer to commitments to reduce emissions by a specified quantity relative to a projected emissions baseline scenario, such as business-as-usual scenarios. These are considered more difficult to implement and assess progress on, requiring advanced modelling techniques. Finally, trajectory targets are commitments to reduce or control the increase of emissions to specified quantities in multiple target years or periods over a long duration.

Alternatively, climate targets can consider non-GHG targets, focusing on other related aspects of climate action, such as renewable energy targets, energy efficiency, electric vehicle targets or forestry targets (Nachmany & Mangan, 2018). Within this category, adaptation targets could also be included.

The translation of climate targets into action across sectors has generally been referred to as sector-specific [climate] targets. Climate targets can be economy-wide targets, meaning "targets communicated on a national level without being assigned to a specific economic sector or policy area" (Nachmany & Mangan, 2018, p. 3). Climate targets can also be sector-specific, usually considering the sectors covered in the Intergovernmental Panel on

Climate Change (IPCC) national GHG inventory (Fransen et al., 2017, p. 35), the Nationally Determined Contributions under the Paris Agreement or economic sectors defined by national sector classification systems. A variant of setting sector-specific climate targets is carbon budgets, which provide a statutory cap on emissions during a specified temporal period.

3.2.4 Policy instruments

The fourth dimension concerns policy instruments. Policy instruments are the generic term used to describe the '"myriad of techniques at the disposal of governments to implement their public policy objectives, sometimes referred to as governing instruments or tools of government" (Howlett, 1991 , p.2) to attain a policy objective. Often, these instruments are combined to address policy problems that require more than one intervention, and the literature refers to this set of instruments as policy mixes (Kern & Howlett, 2009), policy packages (Givoni, 2014) and less frequently, policy portfolios or instrument mixes (Kern et al., 2019). Even individual pieces of policy may comprise different policy instruments, such as combinations where regulatory targets are pursued alongside planning, reporting and reviewing processes, which are becoming increasingly relevant (Peters et al., 2018). Large legislative packages and policy frameworks, such as climate frameworks, are even more likely to include instrument mixes (Oberthür & Homeyer, 2022) rather than single policy instruments.

Earlier studies on policy mixes built on the existing concept of policy density (the number of policies or policy instruments) by considering both the number of policy instruments and the diversity of types of policy instruments (i.e. Oberthür & Homeyer, 2022; Schaub et al., 2022). Following this logic, a mix of three policy instruments is 'thicker' than one featuring two instruments, whereas a mix containing three different types of instruments is considered *thicker* than a mix composed of an equal number of instruments of the same type. Therefore, both number and variety are relevant aspects for analysing the policy integration mix in a given governance system (Oberthür & Homeyer, 2022). There has been increasing interest from innovation and policy studies in the topic of policy mixes in recent years, with a broader focus on how policy mixes can foster sustainability transitions. Broader conceptualisations of policy mixes have emerged to include

considerations of strategies and policy goals, policy mix characteristics, as well as policymaking and implementation processes (Kern et al., 2019). This thesis aims to support this broader conceptualisation of policy mixes in the context of CPI processes, thereby also considering other dimensions such as policy framing, policy goals and subsystem involvement.

There are various ways to classify policy instruments, often based on the level of public intervention. For the purpose of this study, I focus on the distinction between substantive instruments, such as regulatory, economic or information instruments, that allocate resources to directly affect the "nature, types, quantities and distribution of the goods and services provided in society" (Howlett, 2000, p. 415), and procedural policy, which are instruments designed to "indirectly affect outcomes through the manipulation of policy processes" (ibid, p. 413). Beyond their administrative function, procedural elements can also shape the substantive policy decisions that follow from the government's process-oriented actions. Additionally, reorganising an administration's internal structure can impact policy formulation processes.

Procedural policy instruments were initially less prominent in the study of policy instruments until the 1990s, when systematic treatments of procedural policy instruments began to emerge (Howlett, 2022, p. 5). As Tosun and Lang (2017, p. 555) explain, (climate) policy integration implies both "creating interdependencies between different policy sectors" and using "specific policy instruments, mostly of a procedural rather than substantive nature". In other words, policy integration typically aims at creating new instruments or tools to connect existing policy subsystems (Schaffrin et al., 2015). Procedural policy instruments can include inter-departmental plans, high-level committees or commissions, task forces or working groups, environmental impact assessments, ex-ante impact assessments and monitoring and reporting (Tosun & Lang, 2017).

3.3 Theoretical framework: new intergovernmentalism and historical institutionalism

European integration theories began in the 1950s and 1960s to explain the process of intensive cooperation among a group of European states that resulted in the European Economic Community (Rosamond, 2000) and evolved into an organisation spanning many different policy areas, including climate and environmental issues, as reflected in the name change to the EU in 1993 (European Commission, 2020d). The EU differs from other international federations or organisations. Despite the development of supranational institutions and the reordering of political authority, the Member States remain separate, independent states that retain sovereignty in crucial policy areas, such as defining their own energy mix or regulating transport services. In fact, the supranationalism-intergovernmentalism debate is at the heart of much theory on integration in Europe.

Many theories have emerged to explain the process and outcomes of European integration. For more than six decades, these theories have helped to understand how the EU functions and how integration develop, as well as hypotheses about the future of the EU. European integration theories have evolved and diversified over this period, with these approaches offering different perspectives largely determined by the socio-political and academic contexts in which they are proposed (Wiener et al., 2019). The so-called grand theories include neo-functionalism, intergovernmentalism and post-functionalism (Hooghe & Marks, 2009), which are specifically articulated to explain major episodes of EU integration, such as treaty ratifications or the creation of supranational institutions.

The different theories emphasise the importance of various actors and processes in explaining EU governance and policymaking. Following the idea of Wiener et al. (2019, p. 28) of a mosaic of EU integration theories, each approach can be seen as "a stone that adds to the picture" rather than competing for the most explanatory power. This section aims to unpack the main elements of two new strands of the two main grand EU integration theories: historical institutionalism and new intergovernmentalism. Rather than viewing them as alternative approaches, I intend to apply the Wiener et al.' (2019)

approach and establish whether these two theories can provide complementary elements for understanding the operationalisation of CPI in the EU.

The two specific theoretical bodies explored are new intergovernmentalism and historical institutionanlism. New intergovernmentalists argue that climate policy choices and specific CPI commitments at the EU level result from deliberation and consensus-seeking amongst Member States to maximise their domestically derived preferences on energy and climate issues (Section 3.3.1). In turn, historical institutionalism posits that institutions are not mere tools "in the hands of their creators but have an important impact on the integration process and the development of European governance" (Wiener & Diez, 2009, p. 9), such as climate governance, and that the structure of the EU institutionalises previous policy choices, which in turn could constrain current and future policy choices.

3.3.1 New intergovernmentalism

Intergovernmentalism is a theory of political integration where power is considered to reside with the Member States, and decisions are made unanimously. This state-centred theory of policy integration regards Member States and their interests as central to European integration (Hoffmann, 1966). However, the assumption that states should be considered the primary actors in the integration process is not exclusive to EU academic studies but is commonplace in international relations scholarship (Rosamond, 2000).

Recently, a new stream of intergovernmentalism, termed new intergovernmentalism, has been developed, focusing on the study of European integration in the post-Maastricht era (Bickerton et al., 2015). Several authors have argued that European integration is increasingly characterised by a form of new intergovernmentalism, with a growing number of decisions made through intergovernmental forms of decision-making, such as those in the European Council and the Council of the EU. One of the main motivations of these researchers is to explain the so-called integration paradox: Member States have pursued integration after the Maastricht Treaty at an unprecedented rate while simultaneously resisting further significant and lasting transfers of ultimate decision-making power to the supranational level along traditional lines (Puetter, 2012a, p. 168).

New intergovernmentalism clearly draws from previous intergovernmentalism literature, whether in its original form as proposed by Hoffmann (1966) or in its subsequent elaboration as liberal intergovernmentalism by Moravcsik (1993, 1998). In contrast to earlier intergovernmentalist approaches (Moravcsik, 1998), new intergovernmentalism highlights how political consensus among Member States is organised rather than how Member States exercise control over the integration process (Puetter, 2012b). They also note the declining significance of the European Parliament and the co-decision mode of policymaking known as the *community method* in favour of "deliberative intergovernmentalism". Bickerton et al. (2015) argue that deliberation and consensus-seeking have become characteristic of intergovernmental relations and decision-making in the post-Maastricht era, both in the European Council and the Council of the EU.

Governments' interests shape the interests and identities of states internationally. Drawing from Moravcsik's (1993, 1998) work, European integration is a two-level game consisting of national preference formation and the interaction between states at the EU level. New intergovernmentalism follows the same idea of liberal intergovernmentalism regarding how national preferences emerge through domestic political conflict among societal groups. However, neo-institutional theorists contend that the second stage is not international bargaining but rather a consensus-oriented intergovernmental policy dialogue. Therefore, new intergovernmentalism anticipates that "how core EU institutions function is transformed and these institutions need to accommodate to increased demand for intergovernmental coordination" (Puetter, 2012b, p. 59).

Energy (and subsequently, climate policy) is a policy area in which national traditions and Member States' approaches and preferences largely reflect their national energy resources and systems, as well as their political histories (Bocquillon & Maltby, 2020). Energy policies are still considered key to national sovereignty and even national security.

Consequently, preference formation in relation to energy and climate action and CPI strategies would also follow the two-stage pattern. Following previous intergovernmentalist approaches, new intergovernmentalism posits that the Member States are the key actors in the EU integration process and EU policymaking. Puetter (2012) observes that recent policy changes in the EU are not driven by further

supranationalisation of Member States' competencies but through a new form of intergovernmentalism (Puetter, 2012a), and the development of EU policy depends on the mobilisation of national resources, whether budgetary, legislative, diplomatic or military (Puetter, 2012b). Therefore, CPI processes are also dominated by Member States' preferences.

In fact, the adoption of national climate policies and other CPI measures represents a second opportunity for national governments to regain control and shape the specific policy framing and policy goals. Member States have been keen to reinforce cooperation in this area while simultaneously refraining from delegating authority to supranational institutions, preferring to maintain national sovereignty over key aspects of their energy and climate policy.

Second, the consensus-oriented intergovernmental process among the EU's most senior decision-makers would determine the specific CPI approach. Intergovernmental fora, where consensus nominally prevails, have been central in steering the energy and climate policymaking process and monitoring implementation, mostly by the European Council. New intergovernmentalism claims that post-Maastricht, the European Commission refrains from pursuing further integration as it is sensitive to Member States' concerns (e.g. Hodson, 2013), underlining the importance of ownership by Member States through consensual decision-making at the top level to ensure the authority of the decisions and facilitate smooth implementation and compliance (Puetter, 2012a). The post-Maastricht period has been characterised by the transformation of EU institutions towards deliberative intergovernmentalism, as the European Council becomes the lead executive actor within EU politics (Puetter, 2016). Deliberative intergovernmentalism anticipates how the function of core EU institutions is transformed as "these institutions need to accommodate the increased demand for intergovernmental coordination" (Puetter, 2012b, p. 57). New intergovernmentalist theorists contend that the EU's institutional architecture introduced by the Treaty of Lisbon (2009) reflects the prevalence of deliberative intergovernmentalism as a key governance method, especially in areas of economic governance and foreign and security policy, which are not governed by the classic community method. They also introduce a category of institutions referred to as *de novo*

bodies. *De novo* bodies are newly created institutions that incorporate mechanisms for Member State representation as part of their governance structure (Bickerton et al., 2015).

Puetter (2012a, 2014) considers that *deliberative intergovernmentalism* is the predominant governance method within the European Council and the Council of Ministers and that it has become the dominant perspective regulating relations between national actors in the post-Maastricht era (Bickerton et al., 2015). According to Bickerton et al. (2015), deliberation and consensus-seeking amongst Member States, rather than hard bargaining over supranational solutions, have become the behavioural norms in relation to new areas of EU activity. Moreover, throughout the post-Maastricht period, new intergovernmentalism theorists assert that there has been an enhancement of the consensus-generation capacity of forums for intergovernmental policy coordination in the EU (Puetter, 2014, p. 30).

3.3.2 Historical institutionalism

Neoinstitutionalist theories view European integration as a process rather than agreeing on a specific outcome (Wiener & Diez, 2009) and are built around the seemingly simple claim that institutions matter (Rosamond, 2000). The neo-institutionalism of the 1980s and 1990s arose from the concern that political science had long neglected the institution of the state in shaping policy outcomes (Evans et al., 1985). Neo-institutionalism is typically divided into two major variants: rational choice and historical institutionalism (Bulmer, 1994).

The historical institutionalism literature is diverse, and this approach has been applied in a wide range of empirical settings (Thelen & Steinmo, 1992). However, the EU is often seen as an ideal testing ground due to its rich mixture of formal and informal institutions. Historical institutionalism emphasises the importance of institutional factors in explaining policymaking in the study of integration and EU governance.

For Pierson (1996), historical institutionalism explains why Member States periodically lose control over particular policy areas and find themselves locked into policies that do not entirely suit their current needs (1996 cited in Jordan, 1999, p. 25). The emphasis is

on how Member States' decisions, both within and about institutions, create a set of structural, institutional conditions that unexpectedly constrain their future behaviour.

In summary, historical institutionalism, despite not being a homogeneous body of thought, stresses the role of prior commitments and institutional and policy stickiness in the process of European integration. Historical institutionalism does not necessarily predict movement towards or away from integration but hypothesises how different actors' behaviours, bargaining and preference formation are conditioned by the supranational institutional context, considering both formal and informal rules and norms. European integration is viewed as a cumulative process, where prior decisions form a basis upon which new decisions are made (Aspinwall & Schneider, 2000).

According to historical institutionalists, preference formation in relation to climate and energy action and specifically CPI strategies would primarily occur at the EU level within EU institutions. Since the 1990s, the EU institutions have actively promoted the integration of climate and energy policies through community legislation and the expansion of EU activities in these sectors (Dupont & Primova, 2011). The political spillover of internal market legislation and environmental protection measures has led to the extension of EU competencies into energy policy areas (Schmitt & Schulze, 2011; Tosun & Solorio, 2011). Therefore, we expect a similar pattern to develop in individual Member States in coherence with EU energy and climate strategies and goals. Consequently, the policy frame, involvement of different subsystems and policy goals adopted at the national level in relation to CPI across Member States should follow the general framing and policy goals established by EU policy development, anticipating a certain homogeneity across Member States.

For historical institutionalists, European institutions represent a key variable in the integration process, as they can determine and affect the course of EU policy. In fact, "institutions tend to perpetuate certain forms of decision making activity that are not derived from political debate, consultation exercises or interest group activity" (Danrnreuther, 1997, p. 4 cited in Rosamond, 2000). This offers an explanation for why national control over climate policy and CPI has shifted to the EU system. Pierson (1996) emphasises the historical logic of unintended consequences of Member States

participating in institutional designs. In hybrid governance areas such as energy, the European Council conclusions set the framework within which legislators must operate, while the European Commission plays a crucial role in framing policy debates and following up with legislative proposals (Bocquillon & Dobbels, 2014) and implementation arrangements, including infringement procedures if Member States fail to comply with EU law. The agenda-setting powers of the European Commission provide it with the ability to steer the policy process and shape policy outcomes. Additionally, with the ordinary legislative procedure, the European Parliament has progressively gained institutional power as a co-legislator in most areas, such as energy policy, transport or environmental issues.

The historical institutional definition of institutions tends to encompass both formal and informal rules and norms. Hall's most cited definition of institutions considers them as "formal rules, compliance procedures and standard operating practices that structure relationships between individual units of the polity and the economy" (Hall, 1986, p. 19). This broader definition of institutions has led new institutionalism theorists to focus on a wide variety of attributes of the EU and the integration process (Rosamond, 2000). Energy and climate policy have been characterised by soft governance objectives that are often non- (or partially) binding, with obligations falling on Member States that are generally broad in scope. Compliance mechanisms tend to incorporate a process of establishing national targets, reporting and monitoring progress by the European Commission, combined with peer pressure for those governments lagging behind (Eberlein, 2008).

For historical institutionalism, particularly in Pierson's analysis of European integration, there are two unifying themes within historical institutionalism for studying the policy process. First, the policy process cannot be understood as a series of snapshots that capture ongoing processes at a single point in time, as that *snapshot* view would be "distorted in crucial aspects" (Pierson, 1994, p. 4) and political development must be understood as a process that unfolds over time. Converging with the analytical framework adopted in this thesis, which takes a processual conceptualisation of (climate) policy integration (Candel & Biesbroek, 2016), CPI is better described as a dynamic process of advances towards

greater integration or (dis)integration rather than a linear progression towards a static outcome.

Second, historical institutionalism views integration as a *path-dependent* process. According to William Sewell (1996), path dependence implies "that what happened at an earlier point in time will affect the possible outcomes of a sequence of events occurring at a later point in time" (1996, cited in Pierson, 2000, p. 252). Under these circumstances, we may expect the EU's climate and energy policy mix to grow thicker over time (i.e. in terms of the number and variety of policy instruments). With the elaboration of EU climate policy since the early 2000s, it might seem logical that new policy instruments would gradually be added. More generally, policy analysts referring to historical institutionalist approaches have argued that new instruments are frequently layered on top of existing ones (rather than replacing, modifying or repurposing them) (Rayner & Howlett, 2009).

3.4 Applying European integration theories to study climate policy integration

This section focuses on the theoretical expectations of integrating the conceptual (CPI as a multi-dimensional process) and theoretical frameworks (European integration theories). By doing so, this dissertation contributes to the advancement of the academic literature on CPI and EU climate policymaking by presenting a conceptual framework that may be used to assess and explore approaches to CPI at different levels of policymaking in the EU (both EU and Member States' levels) and also to compare across Member States (cross-national comparison).

The remainder of this section focuses on the four different dimensions of CPI, namely policy frame, subsystem involvement, policy goals and policy instruments, and outlines how new intergovernmentalism and historical institutionalism *could* explain the developments of CPI in the EU for the period of study (1990–2020) given their theoretical suppositions on the EU policymaking process. Table 3.1 summarises the key expectations based on new intergovernmentalism and historical institutionalism for each combination of the CPI dimensions. This table will be revisited in Chapter 8 (Discussion) to explore

how well the two theories provide *actual* explanations for the levels and approaches of CPI at different levels of policymaking in the EU (both EU and Member States levels) and also across Member States (cross-national comparison).

3.4.1 Policy frame

According to new intergovernmentalism, CPI framing and its consideration as a policy principle at the EU level will be the result of the deliberative intergovernmental process among Member States (Puetter, 2012a). New intergovernmentalism would emphasise the European Council of the EU and the Council of the EU negotiation processes to explain the EU political commitments to CPI as the common strategy. Member States can influence the policy framing of CPI during the intergovernmental process at the EU level, but when EU law is transposed into national legislation, they have a second opportunity to refine policy framings, especially in relation to core aspects of their sovereignty, e.g. energy policy.

Following historical institutionalism perspectives, climate policy framing and CPI need to be understood as a long-term process (Pierson, 2000) rather than based on specific policy events (i.e. treaty amendments or policy framework adoption). CPI framing may also be affected by path-dependent processes (Pierson, 1996), and institutional choices to govern climate change and other sectoral policies with relevance for climate change made in the past can shape or constrain the options later on in time.

Despite the importance of Member States' control of policymaking processes at the EU level, the EU institutions generally seek to expand and find opportunities to enhance their powers. Therefore, apart from Member States, the main actors who determine the CPI approach are the EU institutions, particularly the European Parliament and the European Commission. In hybrid governance areas such as energy, European Council conclusions do set the framework within which the legislators develop their proposals, but the European Commission plays a substantial role in framing subsequent policy debates and steering legislative proposals (Bocquillon & Dobbels, 2014).

3.4.2 Subsystem involvement

According to new intergovermentalism, CPI as a policy principle at the EU level will be the result of the deliberative intergovernmental process among Member States (Puetter, 2012a). NI would emphasise the European Council of the EU and the Council of the EU negotiation processes to explain the EU political commitments to CPI as the common strategy. The Environmental Council would also be a forum for intergovernmental discussion by the EU's Member States environment ministers.

The transposition of EU policies into national legislation provides Member States with a second opportunity for Member States to establish the type and level of subsystem involvement based on their political histories and administrative traditions. Energy is an area in which national traditions and Member States' approaches and preferences largely reflect their national resources, energy mixes and energy systems. Energy policies are considered key to national sovereignty and security, and therefore, the Member States are reluctant to cede authority to supranational authorities. CPI is merely about framing the issue of climate change, but CPI has not been operationalised at the EU level. Similarly, other relevant areas of climate action, such as transport (including aviation and shipping), agriculture and forestry, are policy areas where Member States have strong preferences given their geography and historical developments.

For HI, institutions include informal norms and conventions as well as formal rules, which constitute actors, shaping the way in which actors view the world (Pierson, 1996). Therefore, CPI developments at the EU level would be determined by both EU climate policy and other informal norms, rules and practices, i.e. rules that lack both a formal foundation and third-party oversight via the European Court of Justice (Stacey & Rittberger, 2003).

The European Commission would try to expand its climate and CPI as a means to enhance its powers, and the European Commission's executive organisation can explain how climate issues are considered in relation to other policy areas issues, i.e. climate as part of the department in charge of environmental issues, climate as a separate directorate general (DG) and climate as part of the Secretariat general remit given its cross-sectoral nature.

3.4.3 Policy goals

New intergovernmentalism considers Member States as unitary actors, and national governments develop a consistent preference order for governing climate change as a result of domestic political conflict, and concrete preferences emerge from "specific sectoral interests, adjustment costs and, sometimes, geopolitical concerns" (Moravcsik, 1998, p. 3). Cross-sectoral policy goals are agreed upon by the European Council, and the general direction of EU climate policy and CPI options are established. For new institutionalism, the transposition of EU policies into national legislation provides Member States with a second opportunity to pursue their preferences and adjust policy outcomes, particularly in terms of framing climate change as a cross-sectoral issue. This includes the type and level of subsystem involvement and the adoption of specific policy goals and instruments. The specific ways that CPI will be incorporated as a national climate strategy depend on the "supports of coalition of domestic voters, parties, interest groups and bureaucracies whose views are transmitted through domestic institutions and practices of political representation" (Moravcsik, 1993, p. 483).

Historical institutionalism would consider that EU climate targets are significantly influenced by the European Commission's steering of the policy goals and the selection of monitoring progress. Even when there are no hard governance or binding climate targets for the Member States, compliance mechanisms have advanced to incorporate reporting obligations to the European Commission on the adequacy of national long-term climate strategies and plans (i.e. National Energy and Climate Plans [NECPs]) and monitoring progress.

3.4.4 Policy instruments

New intergovernmentalism would argue that Member States have been keen to reinforce cooperation in this area while refraining from delegating authority to supranational institutions, preferring to maintain national sovereignty over key aspects such as the national governance setting or the specific CPI policy instruments, particularly processual instruments, to employ.

Policy instruments amongst Member States can vary significantly and are rooted in their policy histories. The transposition of EU policies into national legislation in the Member States provides a second opportunity for them to pursue their preferences and adjust policy outcomes in framing climate change as a cross-sectoral policy, the type and level of subsystem involvement, the adoption and specific policy goals and instruments. The particular CPI approaches in the 28 countries are greatly influenced by national bargaining processes within their respective governance systems, leading to expected divergences amongst Member States in their approaches and levels of CPI in each of the dimensions that are expected.

Following historical institutionalism, policy instruments for developing climate policy, particularly CPI, are determined by EU climate policy frameworks and governance arrangements. CPI approaches at the national level – including specific policy goals, subsystem involvement and instruments – are largely influenced by how CPI is framed at the EU level. The mediating impact of domestic institutions on political behaviour can also help explain the differences in the developments as a Europeanisation process among Member States.

Table 3.1 *How could new intergovernmentalism and historical institutionalism explain CPI as a policy process in the EU?*

	New intergovernmentalism	Historical institutionalism
Policy frame	Member States can influence the policy framing of climate change during the intergovernmental process at the EU level. They have a second opportunity to refine how climate change is framed as a cross-sectoral issue based on their domestic preferences when EU policy is transposed into national legislation. Consequently, policy framing and narratives may differ both between the EU and Member States and among Member States themselves, with some presenting a sector-specific narrative.	Energy and climate policy in the EU is largely determined by the preferences of supranational institutions, with the European Parliament and the European Commission playing key roles in agenda-setting and policy steering. Policy framing and integrative narratives are largely 'locked' at the EU level, leading to expectations that Member States will adhere to the main elements of the policy framing and integrative narrative developed at the EU level.
Subsystem involvement	The transposition of EU policies into national legislation in the Member States with the opportunity to establish their preferred governance arrangements and determine how relevant subsystems interact. Some Member States may choose to coordinate policy and administrative capacities, while other Member States opt for sectoral-specific policymaking with limited coordination and interaction amongst policy subsystems. Variations may exist in the way that subsystems at the national level share information and participate in the density of interactions.	EU institutions will generally try to expand their powers, viewing climate policy and CPI as opportunities for greater integration. The EU will dictate the integrative policy and administrative capacities that span different policy subsystems, resulting in strong similarities among Member States in how they transform their practices into joint decision-making or pool resources from relevant policy subsystems, such as similar coordinating bodies in terms of administrative structure, functions, roles in the policymaking process and the density of interactions across relevant subsystems at the national level.
Policy goals	Policy goals and detailed climate targets are primarily determined by agreements brokered in the European Council through negotiations among Member States, which establish the general direction of EU climate policy. However, Member States also set national climate targets and their sectoral allocations.	EU climate targets are greatly influenced by proposals from the European Commission. Even when there are no hard governance or binding climate targets for the Member States, compliance mechanisms have advanced to incorporate reporting obligations to the Member States, and the European Commission has the role of evaluating the adequacy of national long-term climate strategies and plans (i.e. NECPs) and monitoring progress.
Policy instruments	Despite fostering cooperation in energy and climate, Member States are reluctant to delegate authority to supranational institutions, preferring to maintain national sovereignty over the policy instruments they employ. Consequently, the governance instruments best suited to address unmet or partially met climate governance functions will vary according to the socio-historical and political context of each country. The range of policy instruments, particularly procedural policy instruments adopted by Member States, tends to differ significantly among them, as these choices are rooted in domestic factors.	The number and variety of policy instruments to advance CPI, predominantly procedural policy instruments, are determined by EU climate policy frameworks and EU governance arrangements. CPI approaches at the national level – including specific policy goals, subsystem involvement and instruments – are largely influenced by how EU climate policy frameworks are framed at the EU level. The mediating impact of domestic institutions can also help explain the differences in CPI approaches amongst Member States.

3.5 Conclusion

This chapter has presented an analytical and theoretical framework for studying CPI in the EU. The theoretical approach outlined in Section 3.2 presented the analytical framework to study CPI as a policy process and, importantly, aids in assessing its manifestation based on four theoretically salient dimensions: policy frame, subsystems involvement, policy goals and policy instruments.

Subsequently, Section 3.3 draws from two relatively new strands of European integration theories: new intergovernmentalism (state-centred) and historical institutionalism (process-centred). These two theoretical perspectives on European integration focus on different aspects of the policymaking and decision-making processes, emphasising the various roles of different actors. This novel theoretical combination aims to enhance the potential for explaining nuanced policy processes at different levels of governance rather than testing their validity in a competing manner.

The thesis integrates aspects derived from the policy integration literature and two established theoretical perspectives on European integration. The analytical and theoretical considerations have been brought together in Section 3.4, presenting how new intergovernmentalism and historical institutionalism *could* explain CPI as a policy process in the EU across each of the CPI dimensions (see Table 3.1).

A number of key themes emerge from this chapter. One theme is that CPI should be understood as a multi-dimensional process rather than a static outcome. As discussed by Candel and Biesbroek (2016, p. 215), the different dimensions can progress "at various paces or even in opposite directions", highlighting the importance of studying CPI as a processual and multi-dimensional policy and institutional change. Second, by situating the study within the EU context, CPI processes can also be understood as processes of EU policymaking, where state-centred and process-centred theoretical approaches emphasise the roles of different actors and policymaking elements in explaining outcomes.

Chapter 4 discusses the methods for data collection and analysis employed to operationalise the nested research strategy.

Chapter 4
Methodology

4.1 Introduction

The previous chapter developed the analytical framework adopted in this thesis, drawing on Candel and Biesbroek (2016), and presented the four dimensions for studying CPI as a multi-dimensional process. Chapter 3 also outlined the theoretical framework using two European integration theories to understand the trajectory of European climate policy and particularly CPI in the EU, considering both EU and Member State levels. This chapter presents the methodology and research design used to examine the four dimensions of CPI at the two levels of governance.

The research strategy adopted in this thesis is a comparative case study design (see Chapter 1, Section 1.4). Different researchers and disciplines may have varying interpretations when discussing and applying case study research, resulting in a profusion of terms and meanings. In this thesis, the cases studied encompass both the EU level and its 28 Member States over the period from 1990 to 2020 (29 cases in total), along with a systematic comparison among all the cases.

Given that the analytical framework focuses on four theoretically salient dimensions of CPI, the study of each dimension follows a different methodological approach. Additionally, this thesis explores two different levels of government in the EU: the EU level and its Member States, necessitating specific strategies for data collection and analysis. In other words, this thesis has developed eight different strategies for data collection and analysis, corresponding to four dimensions of CPI across two levels of government.

The remainder of the chapter unfolds as follows. Section 4.2 provides an overview of the ontological and epistemological approach underpinning the research. Section 4.3 focuses on the overall strategy for data collection and explains the types of data collected. Section 4.4 explains how these data were analysed to address the three research questions. Section

4.5 discusses the specific data collection and analysis for each of the government and dimension of CPI. Following this, Section 4.6 addresses ethical considerations. Finally, Section 4.7 concludes and sets the context for the empirical chapters (Chapters 5–7).

4.2 Ontological and epistemological considerations

There are many different ways to define social science research, its aims and the methods by which it should be conducted. Every researcher possesses an ontological stance, which is a way to view the world that informs their understanding of "how knowledge is derived and what knowledge is valid" (Farquhar, 2014, p. 3). Proponents of empiricism, positivism and critical rationalism argue that external reality can be examined by researchers to discover regular social and political patterns using suitable research tools. Conversely, proponents of constructivism/conventionalism and critical theory maintain that while patterns exist, they are too complex to detect, asserting that "social science knowledge is nothing more than an interpretation of the interpretations of social actors" (Blatter & Haverland, 2012, p. 10). Other perspectives, such as pragmatism/naturalism and critical realism, posit that an objective reality exists beyond the researcher, playing a significant role in the generation of scientific knowledge. However, understanding processes, temporal sequences, underlying mechanisms and contexts is essential for identifying causal effects in the social world (Bhaskar, 1979).

The philosophical approach adopted in this thesis follows a middle-ground of critical realism. One of the most important tenets of critical realism is that ontology (i.e. what is real, the nature of reality) is not reducible to epistemology (i.e. our knowledge of reality), and human knowledge captures only a portion of a deeper and broader reality ("the epistemological fallacy", Bhaskar, 1978, p. 27). This critique also applies to constructivist perspectives, which view reality as entirely constructed through and within human knowledge or discourse, asserting that "reality is only accessible to people as an individual or social construction" (Baert, 2016, p. 97).

As a philosophy of science, critical realism provides a general framework for research but is not associated with any specific set of methods (Fletcher, 2017). However, adopting a critical realist approach influences data collection and analysis techniques. Bhaskar

(1979) and others accept the use of existing theory as a starting point for empirical research: “once a hypothesis about a generative structure has been produced in social science it can be tested quite empirically” (Archer et al., 2013, p. 228). Nonetheless, researchers must “avoid any commitment to the content of specific theories and recognize the conditional nature of all its results” (Bhaskar, 1979, p. 6).

Despite not identifying specific methods, critical realism’s emphasis on “studying multiple, dynamic, and shifting relationships in context” (Zachariadis et al., 2013, p. 861) aligns well with case study research as a commonly accepted design (Blatter & Haverland, 2012; Sayer, 1999). As noted by Blatter and Haverland (2012, p. 14), case study research is better grounded in “an epistemological middle ground”. Following Gerring (2006, p. 19), a case “connotes a spatially delimited phenomenon (a unit) observed at a point in time or over some period of time”.

The critical realist approach adopted in this thesis was chosen because it allows for the exploration of independently formulated case studies in different analytical contexts. This aligns with the comparative case study research design, which is the best fit for both the approach and methodological focus of the thesis. In terms of specific methods, this thesis employs a mixed-methods research design, enabling the combination of qualitative and quantitative insights to explain a complex phenomenon (Morse et al., 2018; Zachariadis et al., 2013), such as CPI policy processes. The term mixed-methods research serves as a shorthand for research that integrates quantitative and qualitative research within a single project (Bryman, 2016, p. 628). Drawing on a content analysis of articles derived from mixed methods research, Bryman (2006) identified various ways in which quantitative and qualitative research can be combined. This thesis follows the “completeness” approach, which posits that employing both quantitative and qualitative research can yield a more comprehensive account of the area of inquiry (Bryman, 2006, p. 106). The relationship between quantitative and qualitative components has been carefully considered for each data collection and analyses undertaken for the study of CPI as a multi-levelled and multi-dimensional process in the EU, as explained in the following sections.

4.3 Data collection

This thesis posits that measurements based on CPI assessments can be constructed using existing databases that include information on climate policies and/or policy instruments. An increasing number of climate policy databases are publicly available online, and many researchers encourage their use for secondary purposes (see more details in Section 4.6).

This thesis aims to explore the operationalisation of CPI policy processes across different levels of government and a large number of case studies (29 cases). However, it is widely acknowledged that gathering such data is practically challenging, especially when it covers many countries and extends over long periods (Cheong et al., 2023). This thesis suggests that CPI measurements can be constructed based on databases that include information on policies, targets and/or policy instruments. This strategy provides an initial opportunity to study many countries over a 30-year period. Previously, there were many impediments to such work, including access to documentation in different languages, limitations on accessing a large sample of cases and issues of comparability.

Climate policy databases that capture the different types of climate policy as they have been adopted by national governments have expanded significantly in the last decade and are now an established source for data collection (for an overview, see Schaub et al., 2022). Given the extensive geographical coverage required to answer the research questions in this thesis, secondary data offers important advantages that primary data cannot provide. In fact, most literature on CPI employs primary data sources, making this thesis one of the first analyses to draw on such climate policy databases to explore CPI processes.

Considering the different levels of analysis and CPI dimensions, the choice of the databases was determined for each level of analysis and CPI dimension, i.e. two levels of analysis and four CPI dimensions, alongside the type of data needed for each. However, several key elements guided the decision. The first element was that the datasets should cover the entire study period of study (1990–2020). Second, data on both the EU and its Member States should be available. Finally, given that the topic of CPI encompasses inter-sectoral relationships, data on sectoral aspects should be included, i.e. sectoral data on policies, targets and/or policy instruments.

The remainder of this section describes the climate policy databases employed in this thesis: the CCLW database, the CPDB and the Climate-ADAPT. Additionally, for the EU level only, the study employs two additional databases to retrieve relevant data for analysing CPI processes: the Press Corner and EUR-Lex.

4.3.1 Climate policy databases

The **CCLW**[3] is one of the most extensive datasets on national legislative activities related to climate change mitigation, adaptation and litigation (GLOBE, 2014). The database contains climate and climate-related laws, as well as laws and policies promoting low-carbon transitions, reflecting the relevance of climate aspects in other policy areas such as energy, transport, land use and urban planning. The collection of climate legislation originates from a collaboration between the Grantham Research Institute on Climate Change and the Environment and GLOBE International, aimed at assisting legislators in transforming a set of agreed legislative principles on climate change into nationally appropriate legislation (Townshend et al., 2013). The data in the CCLW is available through a searchable database and is continually monitored and updated by teams of experts at the Grantham Research Institute and Climate Policy Radar to ensure accuracy and reflect the latest developments in climate law and policy. These updates are drawn from official sources such as government websites and parliamentary records, as well as UNFCCC and related websites, where applicable.

The approach taken regarding the definition and categorisation of climate laws and policies is inclusive and flexible to represent the different regulatory approaches and cultures amongst the included legislative documents (CCLW, 2020). The database distinguishes between laws or legislative acts (e.g. acts, laws and decree-laws), which are passed by a parliament or equivalent legislative authority, and policies or other executive provisions (e.g. presidential decrees, executive orders, regulations, government policies,

[3] The Climate Change Laws of the World database (formerly known as GLOBE) is compiled by the Grantham Research Institute on Climate Change and the Environment and the Sabin Centre for Climate Change Law and can be accessed at: https://climate-laws.org/

strategies or plans), which are published or decreed by the government, president or equivalent executive authority.

The three main advantages of using the CCLW database for this research project are the ability to identify climate frameworks, the coverage of both mitigation and adaptation strategies and the option to download policy documents directly from the database. At the time of data collection (end of 2018 until 2022), the CCLW database collected climate laws primarily from official sources such as government websites, parliamentary records and court documents, aiming for comprehensiveness, with the selection of policies limited to legal documents adopted by decision-making bodies (CCLW, 2020). From a methodological perspective, this entails that individual data points are homogeneous and, therefore, comparable across countries and over time (Schaub et al., 2022).

One of the main limitations of using the CCLW database to explore CPI processes from 1990 to 2020 is its difficulty in capturing the cross-temporal dynamics of the data provided. The CCLW database only records the expansion of climate policies, not their dismantling or termination, which is potentially important for understanding CPI as more than just an incremental policy process (Biesbroek & Candel, 2020).

In this thesis, the CCLW is primarily used to retrieve documents of national climate frameworks (listed in Appendix 1) and policy goals, as well as comma-separated values (CSV) master files. These are analysed to explore policy frames at the Member State level and policy goals at both the EU and Member State levels (see Table 4.1 and Sections 4.4.2, 4.4.3 and 4.4.7 for further information on data collection choices). The data collection period spanned from November 2018 to March 2023. Since the data collection phase, the CCLW has undergone several major changes in its methodology and interface. In collaboration with Climate Policy Radar[4] 2023 and 2024, major changes have been implemented in 2023 and 2024, integrating documents from various UNFCCC data portals (first added on 23rd May 2023), including Nationally Determined Contributions,

[4] FAQ - Climate Change Laws of the World (climate-laws.org)

National Communications, Adaptation Communications, IPCC Reports and Submissions by Parties and Non-Party stakeholders to the first Global Stocktake, on a rolling basis.

The **CPDB**[5], developed by the NewClimate Institute, collects information on currently implemented national climate policies from 42 countries, including the EU (New Climate Institute, 2024). The database was originally compiled to track policy adoption and identify gaps in climate policy (Nascimento et al., 2022) and includes both mitigation and adaptation policies. A static database is created annually (New Climate Institute, 2024).

The main advantage of using this dataset is that it compiles information from a wide variety of other existing databases. The database consists of data retrieved from numerous sources, including Climate Watch, the International European Agency Policy Database and the CCLW (Net Zero Tracker, 2023). The three main advantages of using this database for this thesis are that the CPDB closely tracks climate policy developments in 42 countries, including the EU (treated as a country for this purpose), and that it is updated annually to include the latest policy developments.

These updates encompass new policies adopted and updates on existing policies, such as changes to the content and implementation status of policies (for example, when a policy is ended, superseded or transitions from being planned to being in force) (New Climate Institute, 2024). The database provides content pointing to relevant resources available on external websites rather than copies of documents or data themselves. The category 'reference' for each entry includes a link to the external website where the document can be found. The two major limitations of the CPDB are that the database does not allow the direct download of policy documents and does not include information on the type of policy for each entry. Therefore, it is not possible to differentiate between binding laws and non-binding policies, although this detail is included in the category 'policy description'.

[5] NewClimate Institute, Wageningen University and Research & PBL Netherlands Environmental Assessment Agency. (2016). Climate Policy Database. DOI: 10.5281/zenodo.7774109

In this thesis, the CPDB is primarily used to retrieve and download a CSV file with data entries for the analysis of procedural policy instruments employed at both EU and Member State levels (see Table 4.1 and Sections 4.4.4 and 4.4.8 for further information on data collection choices). The CSV file includes variables such as policy type, implementation state, date of decision, start date of implementation, end date of implementation, policy objective, source or reference and impact indicators. The data collection period spanned from September 2022 to April 2023, using version 2022, which contains policies adopted as of the end of 2022.

Another source of data for this thesis was the **Integrated NECPs** developed by the Member States. The requirement for all Member States to establish a 10-year NECP for the period from 2021 to 2030 was set out in 2018 (European Parliament, 2018). The NECP outlines the main elements of the climate governance mechanisms in each of the five dimensions of the Energy Union: energy security, the internal energy market, energy efficiency, decarbonisation and research, innovation and competitiveness (Official Journal of the European Union, 2018, p. 1).

The elaboration of the NECP is considered a "coordination exercise" for all government departments in the Member States, aimed at providing strategic planning following a mandatory template for the integrated plans to facilitate comparison and aggregation of national plans, reflecting national preferences and specificities (Official Journal of the European Union, 2018, p. 5). The submission process requires all Member States to submit their draft plans (2021–2030) by the end of 2018 and final plans after the European Commission's assessment and recommendations by the end of 2019. The monitoring mechanism includes a progress report every two years, independent of other reporting requirements stemming from the UNFCCC and Energy Union regulation (Official Journal of the European Union, 2018, p. 7). All Member States submitted their final NECPs[6], and the European Commission published its EU-wide assessment of the final NECPs on 17th October 2020 (European Commission, 2020a).

[6] The UK left the EU on 1st February 2020, and the transition period agreed upon in the EU-UK Withdrawal Agreement finished on 31st December 2020. However, as it was subject to EU legislation during the Brexit transition, the UK submitted their NECP shortly before the end of 2020.

Documents were downloaded from the European Commission website, which included the final versions of the 28 NECPs for 2012–2030 (submitted in 2019) in their English version[7]. The part of the NECPs reviewed was *Section IV: Administrative Structure of Implementing National Energy and Climate Policies (Section A: A National Plan)*, as established by Annex I of the Regulation on the Governance of the Energy Union and Climate Action (Official Journal of the European Union, 2018). It is worth noting that other potential sources of data on subsystem involvement for the Member States could have been used to complement the data, such as official websites. However, to ensure consistency and comparability, NECPs serve as the primary source of data for examining subsystem involvement in climate change governance, complemented only by Climate-ADAPT for adaptation-specific arrangements. In this thesis, NECPs have been a source of data primarily for analysing subsystem involvement at the Member State level (see Table 4.1). It is important to note that despite the revision by the European Commission and the established structure of the documents, data from the NECPs are submitted by different Member States, resulting in variability and inconsistency among documents in terms of length and detail.

The **Climate-ADAPT**[8] is a partnership between the European Commission and the European Environment Agency. The platform includes a database that contains quality-checked[9] information and offers data for all Member States[10]. The platform allows users to access and share data and information on various relevant climate adaptation aspects, including EU, national and transnational adaptation strategies and actions, which are searchable under the profiles of EU countries. The platform predominantly provides content pointing to relevant resources available on external websites rather than copies of documents or data themselves. Each link to external information is accompanied by

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[7] National energy and climate plans (europa.eu).
In the case of the UK, the analysis was done on the draft document and not the final version, as it was not available.

[8] Climate-adapt.eea.europa.eu The reported data are quality checked by the EEA and its European Topic Centre on Climate Change impacts, vulnerability and adaptation.

[10] Content provided by the UK before 31st January 2020 remains accessible on this website. From the entry into force of the UK Withdrawal Agreement on 1st February 2020, content from the UK will no longer be updated on this website.

descriptive text. In this thesis, Climate-ADAPT has been used primarily to retrieve textual data and policy documents for analysing policy frames and subsystem involvement at the Member State level for the area of adaptation (see Table 4.1), with the data collection period spanning from November 2018 to January 2022. The platform offers 'country profiles' for all Member States, including data on national circumstances, assessments, legal policy frameworks, strategies, plans, goals, monitoring and evaluation, good practices, cooperation strategies and subnational adaptation. The main sections consulted in this thesis are the 'Summary' and 'Strategies, Plans and Goals'. The 'Summary' section includes policy frameworks, their status and links to the original policy documents, while the 'Strategies, Plans and Goals' section provides data on integration into sectoral policies, plans and programmes.

4.3.2 Other databases

Finally, for the EU level only, the study employs two additional databases to retrieve relevant data for analysing CPI processes: the **Press Corner** and the **EUR-Lex**.

The **Press Corner** is the European Commission's search engine for press material from 1974 to the present day. It contains press material from the European Commission's Spokesperson's Service and allows searches of documents by various criteria such as keywords, date, document type, policy area and commissioner. In this thesis, the Press Corner has been used to retrieve PDF documents of European Commissioners' speeches (textual data) for analysing policy frames at the EU level (see Table 4.1), with the selection criteria for the analysed press material detailed in Section 4.4.1.

EUR-Lex is an official website of EU law and other public documents published in the 24 official languages of the EU. The database also contains documents preceding legal acts, such as legislative proposals, reports and green and white papers. In this thesis, EUR-Lex has been primarily used to retrieve a CSV file with entries on preparatory documents used to prepare EU legislation, including legislative proposals (COM documents) and related documents (JOIN documents) for analysing subsystem involvement at the EU level (see Table 4.1), with the specific strategy for selecting the preparatory documents analysed detailed in Section 4.4.2. Variables available in the CSV file include commission

reference, document date, type, year, number, version, department responsible (policy sector) and title.

4.4 Data analysis

This section describes the two strategies for analysing data in this thesis: content analysis and secondary data analysis. Each analysis is now described.

4.4.1 Content analysis

Content analysis is a method for analysing written, verbal or visual communication messages (Cole, 1988). It is a systematic and objective method for both describing and quantifying phenomena (Bryman, 2016). In this thesis, content analysis was employed as a method for analysing different types of documents, as explained in the following sections.

Content analysis can adopt either quantitative or qualitative approaches. It is a means of analysing text and quantifying its content "in terms of predetermined categories in a systematic and replicable manner" through the allocation of 'codes' to selected pieces of text (Bryman, 2016, p. 283). Content analysis can also be used to qualitatively analyse prevalent narratives on a particular topic, including the analysis of various documents such as press statements, policy documents or CSV datasets (Cole, 1988), as is the case in this thesis.

To support the tasks of content analysis, NVivo software (Version 12) was employed (Lumivero, 2017). NVivo is a well-established content analysis software used to store and analyse documents (Lumivero, 2017), assisting in both quantitative and qualitative tasks in developing the methods employed in this thesis. While NVivo has primarily been used for qualitative purposes, such as managing data and assisting with qualitative coding and memoing (Neuendorf, 2017), it has also incorporated quantitative supplements over the years, although its core utility remains in supporting qualitative methods (Jackson et al., 2019).

Quantitative content analysis

Quantitative content analysis is a method based on the systematic coding and quantification of content—whether written, visual or oral (Huxley, 2020). In this thesis, this research method is initially employed to "count frequencies of occurrences within each category" (Ahuvia, 2001, p. 139). Consequently, CPI-related concepts serve as the categories for coding text, followed by counting the frequencies of occurrences within each category (see Section 4.5 for details).

The operationalisation of the quantitative content analysis in this thesis was conducted on different types of textual documents (see Table 4.1 for details), such as speeches, policy documents and official reports. Quantitative content analysis was undertaken at different stages of the empirical work of this thesis. In summary, content analysis was employed to analyse the dimensions of policy frame and subsystem involvement, both for the EU and Member States.

Qualitative content analysis

Overall, qualitative content analysis refers to a systematic method for identifying and describing meanings within texts of various kinds (Morgan, 1993). The focus of qualitative content analysis is often on identifying categories or themes that summarise the content found in the full data set and highlight key content. To achieve this goal, the meaning of content may be interrogated and expanded (Drisko & Maschi, 2015). It is assumed that when classified into the same categories, words, phrases and similar elements share the same meaning (Cavanagh, 1997).

Content analysis is a research method for making replicable and valid inferences from data to their context, with the aim of providing knowledge and new insights (Krippendorff, 1980). The goal is to attain a condensed and broad description of the phenomenon, resulting in concepts or categories that describe the phenomenon (Elo & Kyngäs, 2008). Through qualitative content analysis, it is possible to distil words into fewer content-related categories following a multi-step process (Finfgeld-Connett, 2014). See Sections 4.4.1 and 4.5.1 for details on how qualitative content analysis was employed in this thesis.

4.4.2 Secondary data analysis

Secondary data analysis involves the analysis of data by researchers who will (probably) not be involved in the collection of that data (Schaub et al., 2022). This analysis may encompass either qualitative or quantitative data. Secondary analysis of existing climate policy databases is a key research method in this thesis due to the advantages it offers to the chosen research strategy, particularly the opportunity to devote more time to analysing and interpreting data in relation to CPI processes in the EU across various governance levels and among Member States over an extended study period of 30 years.

The analysis of existing data sets is routine in disciplines such as economics, political science and sociology (Donnellan & Lucas, 2013). There are numerous advantages to conducting secondary data analysis (Bryman, 2016), including the efficient use of research resources, allowing more time for analysis and interpretation rather than data collection, access to high-quality data sets and the option to analyse subsets of data.

Despite the many advantages of secondary data analysis, this type of analysis is not without challenges. Some limitations of secondary analysis include the time required to familiarise oneself with the secondary data, particularly with large, complex data sets, the lack of control over data quality and the potential absence of key variables compared to primary data collection strategies (Donnellan & Lucas, 2013).

The process of conducting secondary data analysis involves several steps. Once existing data sets are identified (see Section 4.3 for details on the different databases employed) and the codebooks are reviewed to familiarise oneself with the procedures and methods used to acquire the data, the next step is to acquire datasets and construct a working data file. In this thesis, different strategies were employed to acquire datasets and construct working data files, as detailed in Table 4.1 and the relevant sections. Data files, downloaded as CSV files, were then imported into a spreadsheet editor. At this point, a smaller 'working' file was created by extracting only relevant variables from the larger master files. Working files were generated by filtering on jurisdiction (first the EU and then Member States) and cross-temporal aspects to limit the data to climate policies and/or instruments from 1990 to 2020.

Following the assembly of the working data files, initial analyses were conducted based on the variables in the working data file (see details for each of the data collection and analysis exercises in Section 4.5). The analytical work on the different datasets was based on the variables in the working data files and the databases' codebooks.

Regardless of the different analyses undertaken based on the variables in the working data files, three aspects were covered in all secondary data analyses: cross-temporal, cross-sectoral and cross-national analyses. First, the cross-temporal analysis of the evolution of CPI processes over the study period was explored for each CPI and level of governance. The 30-year period was divided into three sub-periods to allow for comparability and capture changes over time: 1990–2000, 2001–2010 and 2011–2020. Cross-sectoral analysis was also conducted for each of the secondary data analyses. The databases included a variable or category to classify policies, targets and/or instruments according to their sectoral allocation. Finally, the cross-national analysis was undertaken using the country/geography category. See each of the databases explained in Section 4.5 for details on the variables covered.

4.5 Data collection and analyses for the European Union and its Member States

This section focuses on the different strategies for data collection and analyses developed for the EU and its Member States. Given that the analytical framework focuses on four theoretically salient dimensions of CPI and the research strategy considers two different levels of government in the EU, this thesis has developed eight different strategies for data collection and analyses i.e. four dimensions of CPI across two levels of government.

Table 4.1 provides an overview of the methodological approach for the eight strategies of data collection and analyses. The table includes the CPI dimensions, description, data collection and analyses for each of the CPI dimensions and levels of government.

Table 4.1 *The study of CPI dimensions at EU and Member States' levels, 1990–2020*

CPI Dimensions	Data Collection		Data Analysis	
	EU Level	**Member States Level**	**EU Level**	**Member States Level**
Policy frame	**96 documents of European Commissioners' speeches** were downloaded from the Press Corner. (See Section 4.5.1)	**114 national climate frameworks, including the 54 national climate frameworks in force as of 2020,** were identified via the CCLW database and cross-referenced with the Climate-ADAPT portal and CPDB database. Policy documents were downloaded from the CCLW database as PDF files. (See Section 4.5.5)	**Quantitative content analysis:** Analysis of the number of speeches containing references to CPI-related concepts occurring in the European Commissioners' speeches. Qualitative content analysis: Integrative narrative in the European Commissioners' speeches. (See Section 4.5.1)	**Secondary data analysis:** The CSV file was downloaded and imported into a spreadsheet editor. Quantitative content analysis: Occurrence of CPI-related concepts in national climate frameworks in force as of 2020. Analysis of aggregated data (28 Member States) and data for each of the Member States. (See Section 4.5.5)
Subsystems involvement	**2,908 COM and JOIN-documents data entries** from EUR-Lex were identified. Additionally, a CSV file was downloaded and imported into a spreadsheet editor. (See Section 4.5.2)	**58 national coordination bodies** were identified from **28** NECPs. The Climate-ADAPT portal was used as a complementary source for adaptation coordination bodies' textual data. (See Section 4.5.6)	**Secondary data analysis:** The CSV file was downloaded and imported into a spreadsheet editor. (See Section 4.5.2)	**Secondary data analysis:** The CSV file was downloaded and imported into a spreadsheet editor. **Qualitative content analysis:** Analysis of textual data and coding of different categories related to institutional design. **Quantitative content analysis: A**nalysis of national coordination bodies. (See Section 4.5.6)
Policy goals	**57 climate targets** contained in policy documents were identified from the CCLW. Additionally, a CSV file was downloaded and imported into a spreadsheet editor. (See Section 4.5.3)	**1,114 national climate targets** were identified from the CCLW database. Additionally, a CSV file was downloaded and imported into a spreadsheet editor. (See Section 4.5.7)	**Secondary data analysis:** The CSV file was downloaded and imported into a spreadsheet editor. (See Section 4.5.3)	**Secondary data analysis:** The CSV file was downloaded and imported into a spreadsheet editor. (See Section 4.5.7)
Policy instruments	**98 procedural policy instruments** contained in policy documents were retrieved from the CPDB. Additionally, a CSV file was downloaded and imported into a spreadsheet editor. (See Section 4.5.4)	**650 procedural policy instruments** contained in policy documents were retrieved from the CPDB database. Additionally, a CSV file was downloaded and imported into a spreadsheet editor. (See Section 4.5.8)	**Secondary data analysis:** The CSV file was downloaded and imported into a spreadsheet editor. (See Section 4.5.4)	**Secondary data analysis:** The CSV file was downloaded and imported into a spreadsheet editor. (See Section 4.5.8)

Source: Author's own composition

4.5.1 Policy frame at the European Union level: data collection and analysis

Data collection

The data were drawn from the Press Corner. The documents identified and retrieved are European Commissioners' speeches from 1990 to 2020. Communication about climate change towards an external audience may differ from internal views or positioning (Schmidt, 2010). In Candel and Biesbroek's (2018, p. 5) exploration of food security policy and policy integration in the EU, the researchers asserted that "lacking the access to such internal communication, we believe these [European Commissioners'] speeches to be a good proxy".

The documents containing the European Commissioners' speeches were collected by searching the European Commission's Press Release Database. Search terms included *climate change/adaptation AND integration/mainstreaming/climate-proofing* in both the text and/or title of documents from January 1990 to December 2020. After conducting these searches, a total of 96 European Commissioners' speeches were identified and downloaded as PDFs from the database. These PDFs were then stored in NVivo for content analysis.

Data analysis

The data analysis included a sequential content analysis, first quantitative and then qualitative. The quantitative content analysis was conducted using NVivo's 'text search query' functionality. Text search queries allow for the identification of all occurrences of a word, phrase or concept in the project (Allsop et al., 2022). Therefore, for each of the documents, four 'text search queries' were run to find the four different categories of CPI-related concepts: policy integration, policy coordination, policy coherence and cross-sectoral/inter-sectoral. As these four categories included a combination of multiple words, Boolean operators were employed when running the 'text search query', including the operator AND between words to ensure both terms were included, i.e. climate AND integration. Additionally, the 'text search queries' settings were adjusted to extend the search to words with the same stem; for example, when searching for 'integration', 'integrating' or 'integrated' also appeared as results.

After running the query, the next step was to save the content as a node. Four nodes were created for each of the CPI-related concept categories, namely policy integration,

policy coordination, policy coherence and cross-sectoral/inter-sectoral. The total number of nodes for each category was recorded in a spreadsheet editor for further analytical work, such as creating charts and tables.

Once the quantitative content analysis was completed, a qualitative content analysis was conducted to identify and elucidate *deep* information about specific pieces of text. The qualitative content analysis process included various steps, such as the identification of data segments and data coding (Finfgeld-Connett, 2014). The identification of data segments followed the work undertaken for the quantitative content analysis and categorisation of CPI-related concepts into nodes. During this early stage of document review, careful consideration was given to the size of the data segments, establishing that sentence fragments were preferable to other sizes such as paragraphs or sections (i.e. sentence fragments, sentences, paragraphs, etc.) (Elo & Kyngäs, 2008). Sentences were considered to include sufficient information about the context of the use of CPI-related concepts without risking excessively small data segments that may lack adequate contextual information or, conversely, excessively large data segments that could lead to overly abstract coding that is not fully meaningful. In this case, the qualitative content analysis aimed to understand the integrative narrative developed (see Section 3.2.1) in the documents, guiding the choice of the most advantageous data segment size.

Once the data segments were selected, they were coded using the previously identified nodes (i.e. policy integration, policy coherence, policy coordination and cross-sectoral/inter-sectoral). While processing data from individual documents containing the European Commissioners' speeches and as the data analysis progressed, reflective memos were written about the data. Throughout this process, coded findings were organised, clarified, integrated and interpreted (Finfgeld-Connett, 2014). Once that within-document memoing was completed, the next task was to integrate, interpret and synthesise memos across documents.

4.5.2 Subsystem involvement at the European Union level: data collection and analysis

Data collection

The analysis focused on the involvement of the different European Commission DGs in the preparation of policy proposals and drafting preparatory climate change legislative documents. Under the ordinary legislative procedure, the European Commission is the sole initiator of policy and legislative proposals at the EU level. The ordinary legislative procedure was first introduced in 1992 and renamed in 2007. According to this procedure, the European Parliament and the Council must jointly adopt a regulation, directive or decision on a proposal from the European Commission (Article 251). In developing proposals for legislation, the European Commission typically assesses the impacts of the new policies and consults national governments and other stakeholders (Wallace et al., 2020). By analysing the policy preparation by the European Commission's DGs, I assessed the involvement of different subsystems (subsystems involvement) in climate governance at the EU level.

The strategy involved exploring the DG or DGs responsible for preparatory documents (COM- and JOIN- documents) related to climate change. First, I conducted an advanced search on EUR-Lex. The advanced search focused on the collection of preparatory documents, using the text search 'climate AND change' in both the title and text. In the 'search by date', I included the date range from 1st January 1990 to 31st December 2020. Preparatory documents include COM- and JOIN- documents. COM-documents encompass communications, recommendations, white papers, green papers and other acts adopted within the framework of the legislative procedure. JOIN-documents refer to proposals, communications, reports, white papers and green papers formally adopted jointly by the European Commission and the High Representative of the Union for Foreign Affairs and Security Policy.[11].

From EUR-Lex, a CSV file containing a total of 2,908 entries was downloaded and imported into a spreadsheet editor for secondary data analysis. The variables included

[11] https://eur-lex.europa.eu/content/tools/TableOfSectors/types_of_documents_in_eurlex.html

in the CSV file included the title, subtitle, CELEX number[12], date of document, department responsible and author.

Data analysis

Once the working file was imported into the spreadsheet editor, the secondary data analysis was undertaken. First, the working file was prepared, and initial analyses were conducted. The initial analyses of the data were based on the variables of the working data file to capture the cross-temporal, cross-sectoral and cross-national aspects of the data. The variables analysed included the department responsible and the date of the document.

4.5.3 Policy goals at the European Union level: data collection and analysis

Data collection

The secondary data set for the EU climate targets in laws and policies was retrieved from the CCLW, first as PDFs of the policies and then as a CSV file (n=57). The primary data collected by the CCLW refers to measurable targets that consider both mitigation and adaptation targets. Aspirational and non-measurable targets were not recorded. Additionally, the CCLW distinguishes between economy-wide and sectoral targets. Economy-wide targets are those "communicated on a national level without being assigned to a specific economic sector or policy area" (Nachmany & Mangan, 2018, p. 3). In contrast, climate targets are sector-specific when there is a clear distinction between the economic sector and policy area.

Data analysis

Once downloaded, secondary data analysis was conducted using a spreadsheet editor based on the categories in the CSV file. The CSV file categorises the climate targets into different variables: type of legal act or policy, name of legal act or policy, target description, adoption year, base year, target year, type of climate target and sectoral

[12] A CELEX number is a unique identifier assigned to a document. It is independent of the language of the document. Most documents on EUR-Lex are assigned a CELEX number. A CELEX number has different parts, which vary slightly depending on the type of document. The most common case is to have the following four parts: Sector – Year – Document type – Document number.

coverage. Sectoral coverage includes agriculture; land use, land-use change and forestry (LULUCF); buildings, residential and commercial; energy; health; industry; the public sector; transport; waste; water; and the economy-wide.

4.5.4 Policy instruments at the European Union level: data collection and analysis

Data collection

As a first step, I downloaded the master file from the CPDB (version 2022), which contains policies adopted as of the end of 2022, with a total of 5,986 entries. The CSV was downloaded and imported into a spreadsheet editor. The CSV file (master file) categorises the policy instruments into different categories: policy ID, country ISO, policy name, policy title, jurisdiction, supranational region, country, subnational region or state, city or local, type of policy instrument, sector name, policy description, policy type, implementation stage, date of the decision, the start date of implementation, the end date of implementation, policy objective, source or reference, impact indicator, type of legal act or policy, name of legal act or policy, target description, adoption year, base year, target year, type of climate target and sectoral coverage. Sectoral coverage includes agriculture; LULUCF; buildings, residential and commercial; energy; health; industry; the public sector; transport; waste; water; and the economy-wide.

Data analysis

The data collection began with downloading the master file from the CPDB and then creating a working file by filtering different categories. First, in the '*country*' category, I selected the EU. In the '*date of decision*' category, I filtered for entries within the time range from 1st January 1990 to 31st December 2020. Additionally, the '*type of policy instrument*' category was filtered to include only procedural policy instruments.

As indicated in the CPDB Codebook (New Climate Institute, 2024), the taxonomy of policy instruments on the CPDB is developed based on the IEA policies database, to which a set of new categories was added. In this thesis, I focused solely on procedural policy instruments (see Chapter 3 for details). Therefore, from all the categories of policy instruments available in the CPDB taxonomy, I concentrated on those related to the "tools of government which aim to affect how policy is formulated and implemented" (Moore et al., 2023, p. 7):

I. Climate strategy
    a. Coordinating body for climate strategy
    b. Formal and legally binding climate strategy
    c. Political and non-binding climate strategy
II. Policy support
    a. Institutional creation
    b. Strategic planning
III. Regulatory instruments with procedural elements
    a. Auditing
    b. Sectoral standards
    c. Monitoring
IV. Climate targets
    a. Energy efficiency target
    b. GHG reduction target
    c. Renewable energy target
    d. Other targets

Thus, the first step was to consolidate the working file by filtering for '*type of policy instruments*'. After filtering and selecting the 'type of policy instruments' that were procedural, the working file included a total of 98 (n=98). Cross-temporal, cross-sectoral and cross-national analyses were undertaken based on the variables '*date of adoption*', '*type of climate target*', '*sectoral coverage*' and '*sectoral coverage*'.

4.5.5 Policy frame at Member States level: data collection and analysis

Data collection

The study of the first dimension of CPI (policy frame) is primarily derived from the content analysis of national climate frameworks (mitigation-specific, adaptation-specific or joint). Given these characteristics of climate frameworks, the cross-cutting consideration of climate change in the existing climate framework can be considered a proxy for the policy framing of climate change as a cross-sectoral problem in the governance setting, as [climate] frameworks "structure how climate change and governance is carried out" and detail how "governance mechanisms -instruments and institutions" operate (Moore et al., 2023, p. 7). National climate frameworks were first

identified primarily from the CCLW and contrasted with the Climate-ADAPT (adaptation-specific) and the CPDB (mitigation and adaptation).

As a first step, the list of policies and laws was filtered by time of adoption, considering the category '*first event in the timeline*' by selecting policies and laws adopted initially between 1990 and 2020. After filtering by the period of study, a total of 853 climate laws and policies were identified. The second step involved identifying the climate policies and laws classified as 'frameworks'. From the total of 853 climate laws and policies adopted by the Member States during the period from 1990 to 2020, a total of 114 national climate frameworks were identified and retrieved from the CCLW by selecting the 28 Member States in the 'geography' category and filtering the laws or policies classified as frameworks.

After identifying the 114 national climate frameworks, these were downloaded either from the CCLW database, if available or directly from the original source ('*Document content URL*'). The detailed list of national climate frameworks adopted by the Member States from 1990 to 2020 can be found in Appendix 1.

Regarding the language of the documents, 49 of the 114 documents were found in their official English translation (via CCLW, Climate-ADAPT or EUR-Lex[13]), but in 65 cases, the content of the policy document was presented in the country's official language but was translated to English by the CCLW to increase accessibility[14]. The quantitative content analysis of national climate frameworks was undertaken using NVivo 12. This quantitative content analysis focused on the incidence of CPI-related words in the 114 policy documents. This content or textual analysis follows a similar approach used by policy integration scholars (Candel & Biesbroek, 2018).

Data analysis

The quantitative content analysis of national climate frameworks was undertaken using NVivo 12, searching for words related to CPI and the consideration of climate change as a cross-cutting policy problem. The search terms included *climate integration*, *coordination*, *policy coherence* or *inter-sectoral/cross-sectoral*. This

[13] ECOLEX is an information service on environmental law operated jointly by FAO, IUCN and UNEP: https://www.ecolex.org/
[14] methodology/METHODOLOGY.md at main · climatepolicyradar/methodology · GitHub

quantitative content analysis primarily focuses on the incidence of specific CPI-related terms appearing in the text of national climate frameworks. This content or textual analysis follows a similar approach used by policy integration scholars (e.g. Candel & Biesbroek, 2018).

After identifying 114 national climate frameworks, the analysis focused on the national climate frameworks in force as of 2020. A total of 54 climate framework documents (in force as of 2020) were identified and retrieved, mostly as full documents (50), with only four cases where just the executive summary was available. Table 4.2 summarises the national climate frameworks in force as of 2020.

Table 4.2 *Summary of analysed national climate frameworks in force as of 2020*

Area of Climate Policy	Full Document	Executive Summary
Mitigation-specific policy frameworks	25	1
Adaptation-specific policy frameworks	25	3
Total	50	4

Source: Author's own composition

The quantitative content analysis of the national policy framework documents followed a similar approach to that developed in Section 4.5.1 (see Section 4.5.1 for details on the method). In summary, the quantitative content analysis was conducted by running '*text search queries*' using NVivo and its '*text search query*' functionality to first identify all occurrences of CPI-related terms in the text and then assign them to a 'node' or category. Once the data segments were selected, they were coded using the previously identified nodes (i.e. policy integration, policy coherence, policy coordination and cross-sectoral/inter-sectoral). After this process, information about the number of occurrences of the CPI-related concepts was exported into a spreadsheet editor to facilitate analysis and data visualisation.

4.5.6 Subsystem involvement at the Member States level: data collection and analysis

Data collection

In line with the dominant perspective in policy studies and coordination, this thesis concentrates on the exploration of subsystem involvement at the national level concerning institutional arrangements for the horizontal coordination of policy measures for the mitigation and adaptation to climate change (Biesbroek, 2021; von Lüpke et al., 2022). Institutional arrangements can be described "as a set of organizational forms designed and deployed to facilitate climate policymaking by bringing together actors from different sectors" (von Lüpke et al., 2023, p. 2).

To obtain data on the existence and characteristics of national bodies responsible for the horizontal coordination of climate policy, this thesis relied on the final NECPs elaborated by the Member States and submitted by 2019 (see Section 4.4.1 for details on NECPs sections reviewed). NECPs for all the Member States were downloaded directly from the European Commission website in their English version. Therefore, a total of 28[15] NECPs were downloaded in PDF format and stored in NVivo.

Data analysis

The qualitative content analysis began by reviewing textual data from the NECPs, assessing and coding it based on various theoretically relevant variables related to the administrative design of the coordination bodies (see Chapter 2, Section 2.2): year of establishment, year of termination (if relevant), type of coordination body, area of climate policy covered, political support, range of participating policy subsystems and the interactions amongst policy subsystems. The relevant coded segments of text were then pasted into a spreadsheet to facilitate analytical work. After analysing the textual content of the NECPs, a total of 58 coordinating bodies were identified and analysed based on the different variables mentioned. Quantitative content analysis was undertaken in the spreadsheet editor to analyse the data based on cross-temporal, cross-sectoral and cross-national aspects. Additionally, data is presented for both the

[15] The UK left the EU on 1st February 2020, and the transition period agreed upon in the EU-UK Withdrawal Agreement finished on 31st December 2020. However, as it was subject to EU legislation during the Brexit transition, the UK submitted their NECP shortly before the end of 2020.

aggregated total of all 28 Member States (without filtering by 'country') and country-specific analysis.

4.5.7 Policy goals at the Member States level: data collection and analysis

Data collection

The secondary data set for the national climate targets of the 28 Member States was retrieved from the CCLW and analysed. Similar to the analysis for the EU level, the sectoral analysis of climate targets differentiated between 'economy-wide' and 'sector-specific' (CCLW, 2020). Sectoral coverage includes agriculture; LULUCF; buildings, residential and commercial; energy; health; industry; the public sector; transport; waste; water; and the economy-wide. Additionally, the analysis considered the cross-temporal aspect by dividing the study period (1990–2020) into three periods of analysis: 1990–2000, 2001–2010 and 2011–2020 to capture changes over time.

Data analysis

Once the master document was downloaded from CCLW in CSV format, secondary data analysis was conducted using a spreadsheet editor based on the categories in the CSV file. The CSV file categorises the climate targets into different variables: type of legal act or policy, name of legal act or policy, target description, adoption year, base year, target year, type of climate target and sectoral coverage. Sectoral coverage includes agriculture; LULUCF; buildings, residential and commercial; energy; health; industry; the public sector; transport; waste; water; and the economy-wide. The analysis of the employment of procedural policy instruments at the Member States level focused first on aggregated data (considering all categories without filtering by country) for the 28 Member States and then detailed the details for each of the countries (filtering by each of the 28 Member States in the 'country' category).

4.5.8 Policy instruments at the Member States level: data collection and analysis

Data collection

Following the same methodological strategy described in Section 4.4.4, the dimension of policy instruments was explored by analysing the employment of procedural policy instruments employed by the Member States from 1990 to 2020. The secondary dataset for analysing EU procedural policy instruments is the CPDB, which identified

650 procedural policy instruments (n=650) included in 490 policies for the period from 1990 to 2020. The CSV file was downloaded and imported into a spreadsheet editor for analysis.

Data analysis

The data collection concluded with the downloading of a master file from the CPDB and the creation of a working file by filtering different categories. First, in the '*country*' category, all Member States were selected: The Member States of the EU are Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK. In the '*date of decision*' category, entries were filtered for the time range between 1st January 1990 and 31st December 2020. Additionally, the category of '*type of policy instrument*' was filtered to include only procedural policy instruments. See Section 4.5.4 for details on the CPDB Codebook and the taxonomy of policy instruments.

The first step was to consolidate the working file by filtering for '*type of policy instruments*'. After filtering and selecting the 'type of policy instruments' that were procedural, the working file included a total of 650 entries (n=650). Cross-temporal, cross-sectoral and cross-national analyses were undertaken based on the variables '*date of adoption*', '*type of climate target*', '*sectoral coverage*' and '*country*'.

4.6 Ethics

Ethics are important in all forms of political science research, as most studies involve human subjects, regardless of the distance between the researcher and participants (Fujii, 2012). Climate policy databases are central to the research methods (see Section 4.4.1). In the case of the climate databases, ethical considerations were carefully assessed, and no ethical issues were identified. All CPDBs are publicly available and specifically encourage researchers to download, save and distribute the results

electronically or in any other format. Indeed, academic researchers are one of the primary intended users of the CCLW dataset[16].

4.7 Conclusions

This chapter has provided an overview of the data collection and analysis methods used to address the three research questions set out in Chapter 1. It began by explaining the ontological and epistemological stances that form the foundation for the research design proposed to study CPI processes in the EU, considering two levels of governance: EU and Member States levels. It then presented the key methods employed in this research. The following sections focus on the data collection and analysis for the EU and national levels. After that, I discussed the ethical considerations of the research project.

These methods were informed by the overall aim and research questions underpinning this thesis, as well as the analytical and theoretical frameworks on the study of CPI as a multi-dimensional policy process in the EU set out in Chapter 3. The analysis of CPI as a policy process and its four dimensions – policy frame, subsystems involvement, policy goals and instruments – shaped the mixed methods chosen to explore CPI as a policy process at both the EU and Member States levels. In this way, Chapters 1–4 have created the overall structure for the research project.

Secondary data from existing climate policy databases is a key data collection strategy of this thesis because of the advantages it offers to the chosen research strategy, particularly the opportunity to invest more time in analysing and interpreting data in relation to CPI processes in the EU across two governance levels and across Member States over an extended study period, i.e. 30 years.

Given that the analytical framework focuses on four theoretically salient dimensions of the CPI, the study of each dimension followed a distinct methodological approach. Additionally, this thesis explores two different levels of government in the EU: the EU level and the domestic level, which require specific strategies for data collection and

[16] Climate Change Laws of the World data set - Terms of use - Grantham Research Institute on climate change and the environment (lse.ac.uk) (Accessed on: 2nd July 2024).

analyses. In other words, this thesis has developed eight different strategies for data collection and analyses, i.e. four dimensions of CPI for two levels of governance.

The thesis now moves on to present the empirical results from these analyses in Chapters 5–7. Chapter 5 examines the results from the analysis of the operationalisation of CPI as a multi-dimensional policy process at the EU level to address research question 1. Chapters 6 and 7 present the results of the analysis of the operationalisation of CPI at the national level for all Member States. Chapter 6 focuses on the first two dimensions of the analytical framework: policy framing and subsystem involvement. In turn, Chapter 7 presents the findings from the analyses of policy goals and policy instruments. Therefore, research questions 2 and 3 are addressed in two empirical chapters (Chapters 6–7), along with a discussion about the overall dimensions of CPI in Chapter 8.

Chapter 5
Climate policy integration at the European Union level

5.1 Introduction

Chapter 5 is the first of three empirical chapters. It focuses on the first of the research questions, namely how CPI has been operationalised and evolved over time at the EU level from 1990 to 2020.

Most aspects of climate policy in the EU are initiated, responded to or made in discussion with the EU institutions (Jordan et al., 2010). The EU began developing climate policy in the 1990s and has since built a broad portfolio of climate policy measures and governance tools. Additionally, the EU is the only supranational organisation that has joined the UNFCCC and the Kyoto Protocol as a party with the obligation to report annually on GHG inventories within the area covered by the EU countries (European Environment Agency, 2020). Therefore, to fully comprehend CPI processes in the EU, the purpose of this chapter is to examine how the commitment to CPI has been operationalised at the EU level (Research question 1) before exploring its operationalisation in the Member States (Research question 2), particularly considering differences and similarities (Research question 3) in Chapters 6 and 7.

The remainder of this chapter unfolds as follows. To examine the EU's approach to operationalising CPI, the analysis is structured according to the four analytical dimensions introduced in Chapter 3: policy frame (Section 5.2), subsystem involvement (Section 5.3), policy goals (Section 5.4) and policy instruments (Section 5.5). Finally, Section 5.6 draws some conclusions and makes links to the next two empirical chapters (Chapters 6 and 7), which explore the operationalisation of CPI at the national level in the Member States, considering the same four dimensions from the analytical framework.

5.2 Policy frame

This section presents the analysis of the policy framing of climate change at the EU level and the integrative policy narrative developed from 1990 to 2020. Following the analytical approach detailed in Chapter 3, analysis of the policy framing focuses on how climate change is perceived as a cross-sectoral issue and the integrative narrative present in the governance system. See Chapter 3, Section 3.2.1, for details on the analytical framework used in this thesis. Previous research on policy integration has pointed out that policy framing is an important dimension, notably whether there is an overarching frame that develops policy integration (Candel & Biesbroek, 2016) and the integrative narrative adopted in the governance system, which has implications for the politicisation of the policy issue (Cejudo & Trein, 2022).

The first part of the section, Section 5.2.1, provides an overview of the evolution of EU climate policy in relation to CPI. The second part of the section (Section 5.2.2) summarises the main findings from the analysis of original data on policy framing and the integrative policy narrative for CPI in European Commissioners' speeches from 1990 to 2020. For more details on the data collection and data analysis, see Chapter 4, Section 4.4.1.

5.2.1 Overview of the European climate policy

The evolution of EU climate policy is well documented, with the early 1990s characterised as a phase of agenda-setting, during which climate change formally entered the EU's institutional agenda (Jordan et al., 2010; Oberthür & Pallemaerts, 2010). Shortly after the release of the first summary report of the IPCC in 1990, climate change was first discussed in the European Council in preparation for the upcoming negotiations on the UNFCCC. The presidency conclusions of the European Council (Dublin, June 1990) framed climate change primarily as an atmospheric environmental problem rather than an energy security issue:

> "Recent scientific assessments show that man-made emissions are substantially increasing the atmospheric concentrations of greenhouse gases and that a business-as-usual approach will lead to additional global warming in the decades to come. We urge all countries to introduce extensive energy efficiency and conservation

measures and to adopt as soon as possible targets and strategies for limiting emissions of greenhouse gases" (European Council, 1990, p. 27).

The European Commission's integrated package of proposals launched in 1992 and the discussions in the European Council identified and addressed the three main areas of climate policy that remain relevant in EU climate policy today: reducing GHG emissions, promoting renewable energy sources and improving energy efficiency (Prahl & Hofmann, 2014).

By 2005, the EU entered a more dynamic phase in climate policymaking following the first European Climate Change Programme (2000–2004). This programme began to frame climate change as an issue that concerns different policy subsystems, examining a range of policy sectors (i.e. energy, transport, industry, research, agriculture and forestry) and instruments with the potential for reducing GHG emissions and developing common and coordinated strategies to fulfil the Kyoto Protocol targets. It led to the introduction of the European Emissions Trading Scheme in 2003, which established national caps for emissions from power and industry sectors in each Member State (Official Journal of the European Union, 2003). The advantages of decisively acting at the EU level on adaptation were not evident during the 1990s and 2000s (Jordan et al., 2010), and the first European Climate Change Programme did not include climate adaptation and impacts among the thematic areas of discussion.

The second European Climate Change Programme was launched in 2005 with the aim of exploring further options for reducing GHG emissions. The second phase of the programme included the working groups focused on the priority areas identified in the first phase (transport, energy supply, energy demand, non-CO_2 gases and agriculture) and additional areas (aviation, road transport, carbon capture and storage and climate adaptation and reduction of GHG emissions from ships) (European Commission, 2003). Crucially for the development of climate adaptation action at the EU level, adaptation and climate impacts became a focus area under this second European Climate Change Programme. In a speech at the Stakeholder Conference launching the Second European Climate Change Programme, Commissioner Stavros Dimas assured that the programme "will continue to respect the current principles of […] integration

of climate change measures into all relevant policy areas" (European Commission, 2005, p. 4).

In March 2007, EU Heads of State and Government agreed on a set of three targets referred to as '20-20-20 by 2020', which included targets on GHG emissions, renewable energies and energy efficiency (European Council, 2007). To implement these new targets, in 2009, the European Commission enacted the EU Climate and Energy Package. The package is considered to be "the foundation for a cross-sectoral and energy climate change policy" in the EU (Bocquillon, 2015, p. 340). Kulovesi et al. (2011)s' analysis of the EU Climate and Energy Package suggests that the package of legislative measures not only jointly addresses climate change and energy but also includes innovative legal measures that support its normative integration. Therefore, the new legal acts are incorporated into the existing EU environmental legislation by explicitly clarifying linkages with other relevant EU legislation to reduce existent contradictory signals between the EU and the policies while building upon certain pre-existing climate and energy initiatives, modifying some and implicitly ensuring the continuance of others. A new governance framework emerged, aiming to "reduce existent contradictory signals between the EU and the policies" (Morata & Sandoval, 2012, p. 3).

The climate adaptation agenda continued to gain prominence across the European Commission with the publication of the Green Paper (European Commission, 2007a) and an initial European adaptation framework set out in the White Paper (European Commission, 2009). The White Paper justifies the need for EU-level action, as many crucial sectors for climate adaptation (e.g. agriculture, water, biodiversity, fisheries and energy networks) are closely integrated at the EU level through the single market and common policies, allowing the EU to support and strengthen action taken at national, regional or local levels (European Commission, 2009, p. 6). In the context of EU climate adaptation policy, the integration of climate objectives into other policy areas has often been termed *climate-proofing* or *mainstreaming*.

The Adaptation Green Paper began to address the mainstreaming issue to some extent, highlighting that "certain sectors are largely integrated at EU level through the single market and common policies, and it makes sense to integrate adaptation goals directly into them" (European Commission, 2007a, p. 14). It also discusses the need to

"integrate adaptation when implementing and modifying existing and forthcoming legislation and policies" (European Commission, 2007a, p. 14) and that "when preparing their programmes for Community support, Member States should integrate adaptation activities" (European Commission, 2007a, p. 19). The Green Paper also argues that adaptation needs to be integrated into the EU's external policies, especially those oriented towards more vulnerable developing countries. The White Paper continues the same path and reinforces that one of the main objectives of adaptation action should be the integration of climate adaptation into EU policies. For each sector, the paper states the importance of improving "understanding of the impact of climate change, assess appropriate responses and secure the necessary funding" (European Commission, 2009, p. 8).

Following the publication of the Green and White Papers on adaptation to climate change (European Commission, 2007a, 2009), the EU Climate Adaptation Strategy became the first adaptation policy with force at the EU level. The three main objectives of the strategy are to promote action by the Member States, advance adaptation knowledge by promoting EU-wide vulnerability assessments and further develop Climate-ADAPT as the information portal for adaptation information in Europe and climate-proofing EU action (European Commission, 2013, p. 5–8).

The third objective of the strategy is directly linked to climate integration. The strategy establishes that it is a priority and responsibility of the European Commission to "mainstream adaptation measures into EU policies and programmes" (European Commission, 2013, p. 7), particularly in priority fields such as energy and transport. The strategy recognises that there are some areas of legislation in which climate mainstreaming has begun to occur, such as marine waters, forestry, transport and other existing policy instruments across various sectors (European Commission, 2013, p. 8).

Another key development in the integrated climate policy framing within the EU occurred when the Energy Union re-entered the debate in March 2014. The then Polish Prime Minister Donald Tusk emphasised the significance of energy security matters. This move can be seen as an important attempt to reshape the EU's energy and climate agenda (Szulecki et al., 2016). The newly appointed European Commission President, Jean-Claude Juncker, tasked Vice-President for Energy Union, Maroš Šefčovič and Commissioner for Energy and Climate, Miguel Arias Cañete, to his Cabinet, which

published an Energy Union strategy in February 2015 (European Commission, 2015). The framing of the proposal changed substantially from Tusk's agenda, which centred on energy security, to a more forwards-looking, holistic strategy focused on energy system transition with decarbonisation at its core (European Climate Foundation, 2015). Key themes of the agenda included energy markets suitable for renewable energy sources, infrastructure investments, a long-term energy governance system and sectoral strategies for buildings and transport (European Commission, 2015).

The Regulation on the Governance of the Energy Union and Climate Action (Official Journal of the European Union, 2018) entered into force on 24th December 2018 as part of the Clean Energy for All Europeans package. The governance mechanism is based on integrated NECPs covering 10-year periods from 2021 to 2030, EU and national long-term strategies, as well as integrated reporting, monitoring and data publication:

> "In order to exercise the implementing powers laid down in this Regulation, the Commission should be assisted in its tasks under this Regulation by a Climate Change Committee and by an Energy Union Committee. In order to ensure consistency of policies and aim at maximising synergies between sectors, both climate and energy experts should be invited to the meetings of both committees when implementing this Regulation" (Official Journal of the European Union, 2018, p. 3).

Finally, the last key development for cross-sectoral governance of climate change in the EU was the launch of the overarching framework of the European Green Deal. The European Green Deal can be characterised as a proposal that considers the long history of EPI and CPI in the EU, proposing several strategies that span beyond specific policy subsystems: climate, environment, energy, transport, agriculture, finance, regional development, industry and research and innovation (European Paliamentary Research Service, 2020). The European Commission presented the European Green Deal in December 2019, aiming to transform the EU into a "fair and prosperous society with a modern, resource-efficient and competitive economy, where there are no net emissions of GHGs by 2050 and where economic growth is decoupled from resource use". It also aims to protect, conserve and enhance the EU's natural capital and safeguard the health and well-being of citizens from environment-related risks and

hazards (European Paliamentary Research Service, 2020). Overall, the European Green Deal represents a significant step in prioritising climate objectives as a *principled priority* over other objectives. Apart from the climate neutrality goal, the Green Deal seeks to ensure that "all other EU initiatives live up to a green oath to do no harm" (European Commission, 2019, p. 19).

On 4th March 2020, the European Commission adopted a legislative proposal for a European Climate Law, setting the objective for the EU to become climate-neutral by 2050 and establishing a framework for achieving that objective (European Commission, 2020). On 17th September 2020, the European Commission amended the proposal to introduce the updated 2030 climate target of a net reduction of at least 55% of the EU's GHG emissions compared to 1990 levels (European Commission, 2020c). In the European Parliament, the proposal was referred to the Committee on Environment, Public Health and Food Safety, and the European Parliament debate took place on 6th October 2020. The European Parliament's decision after the first reading called for a 60% emissions reduction by 2030 and for an independent, interdisciplinary scientific advisory panel (European Parliament, 2020a). The 2021 European Climate Law requires the European Commission to assess the consistency of any draft measure or legislative proposal (…) with the climate-neutrality objective and the interim targets for 2030 and 2040 (Art. 6.4), as well as adaptation to climate change (Art. 5), and to review the consistency of Union measures every five years (Art. 6.2):

> "The Commission shall assess the consistency of any draft measure or legislative proposal, including budgetary proposals, with the climate-neutrality objective set out in Article 2(1) and the Union 2030 and 2040 climate targets before adoption, and include that assessment in any impact assessment accompanying these measures or proposals, and make the result of that assessment publicly available at the time of adoption. The Commission shall also assess whether those draft measures or legislative proposals, including budgetary proposals, are consistent with ensuring progress on adaptation as referred to in Article 5." (Art. 6 (4)) (European Parliament, 2021a, p. 243).

The European Climate Law creates a mandate and procedural mechanism for strengthening the integration of climate considerations into all areas of EU legislation

and policy, expanding to policy realms that go beyond past integration efforts (Dupont et al., 2024). The relevant sectors and policy areas include energy, industry, transport, agriculture, forestry, buildings, finance, trade and general foreign policy (European Parliament, 2021a). However, the potential "depends on how the Commission will define the scope of its assessments, and especially on what policies and measures beyond climate and energy policy it will consider" (Kulovesi et al., 2024, p. 13). As presented in Art. 6(4), the Commission's impact assessments will continue to be made public only at the stage when the measure or proposal in question is published.

As asserted by Kulovesi et al. (2024), despite the policy integration considerations in the European Climate Law, including a mandate for CPI, it cannot be considered as fully requiring principled priority for climate policy, in the sense suggested by Lafferty and Hovden (2003) that the policy area objectives and requirements should 'prevail' over other sectoral objectives unless there are overriding reasons to deviate from this rule. Other analyses have also highlighted the lack of criteria for assessing the consistency or alignment of legislative proposals with the climate neutrality and adaptation objectives, as well as provisions for preventing legislative or budgetary proposals from being inconsistent with the objectives of the European Climate Law (Bechtel, 2021; Duwe, 2022).

Additionally, the European Climate Law also considers mitigation and adaptation within a common legal framework. Article 5 (Adaptation to climate change) states that both the EU and the Member States shall work towards integrating *adaptation* policy in all policy areas:

> "The relevant Union institutions and the Member States shall also ensure that policies on adaptation in the Union and in Member States are coherent, mutually supportive, provide co-benefits for sectoral policies, and work towards better integration of adaptation to climate change in a consistent manner in all policy areas, including relevant socioeconomic and environmental policies and actions, where appropriate, as well as in the Union's external action." (Article 5) (European Commission, 2021).

To summarise, EU climate governance has changed substantially since 2015, with key developments related to the policy framing of CPI. The European Green Deal (2020) has been prominently established as the new strategic narrative for EU policy

development overall, with climate neutrality as its central guiding objective. The adoption of the Governance Regulation (proposed in late 2016 and adopted in 2018) already included new planning and reporting processes for the Member States—e.g. the NECPs—and new gap-filling mechanisms.

With the adoption of the EU Climate Law (2021), there is now also an overarching legal framework to support the political framing of the European Green Deal. While the new procedures are still in their initial implementation, the European Climate Law has created additional mechanisms for future EU-level target setting and progress monitoring for climate neutrality, as well as a mandate and the procedural mechanism for strengthening the integration of climate considerations into all areas of EU legislation and policy. Notably, the European Climate Law integrates mitigation and adaptation into a common legal framework.

5.2.2 The framing in European Commissioners' speeches

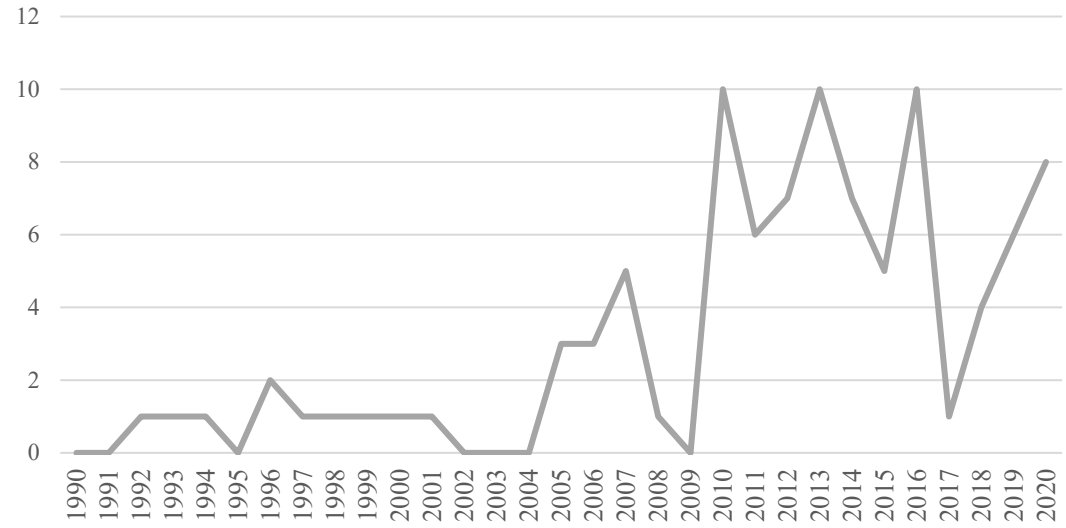
This section presents the results of analysing European Commissioners' speeches containing references to CPI (n=96) to understand how the integrative policy narrative has developed from 1990 to 2020. In total, 96 speeches were identified as containing direct references to CPI. For further explanation of the method and selection of speeches, see Chapter 4, Section 4.4.1. Section 4.4.1 details how the first dimension of CPI, i.e. policy frame, is studied by analysing the amount and content of attention to CPI in European Commissioners' speeches from 1990 to 2020. Communication about climate change towards an external audience may differ from internal views or positioning (Schmidt, 2010). However, lacking access to such internal views, European Commissioners' speeches are considered a good proxy for policy framing, following a similar approach undertaken by policy integration researchers in previous assessments of policy framing (i.e. Candel & Biesbroek, 2018).

Quantitative content analysis

Figure 5.1 shows the number of European Commissioners' speeches containing references to climate change as a cross-sectoral issue for the period from 1990 to 2020. The quantitative content analysis revealed that from 1990 to the early 2000s, the number of European Commissioners' speeches containing references to CPI-related terms was very limited. It was not until the mid-2000s that European Commissioners'

speeches began to include references to CPI-related terms. The speeches from 2005 to 2010 numbered less than six per year. From 2010 onwards, the overall number of references to CPI in European Commissioners' speeches exhibited a sawtooth pattern with an overall upwards trend, peaking in 2010, 2013, 2016 and 2020 with 10 speeches containing references to CPI-related concepts per year.

Figure 5.1 *Number of European Commissioners' speeches containing references to climate policy integration, 1990 to 2020*



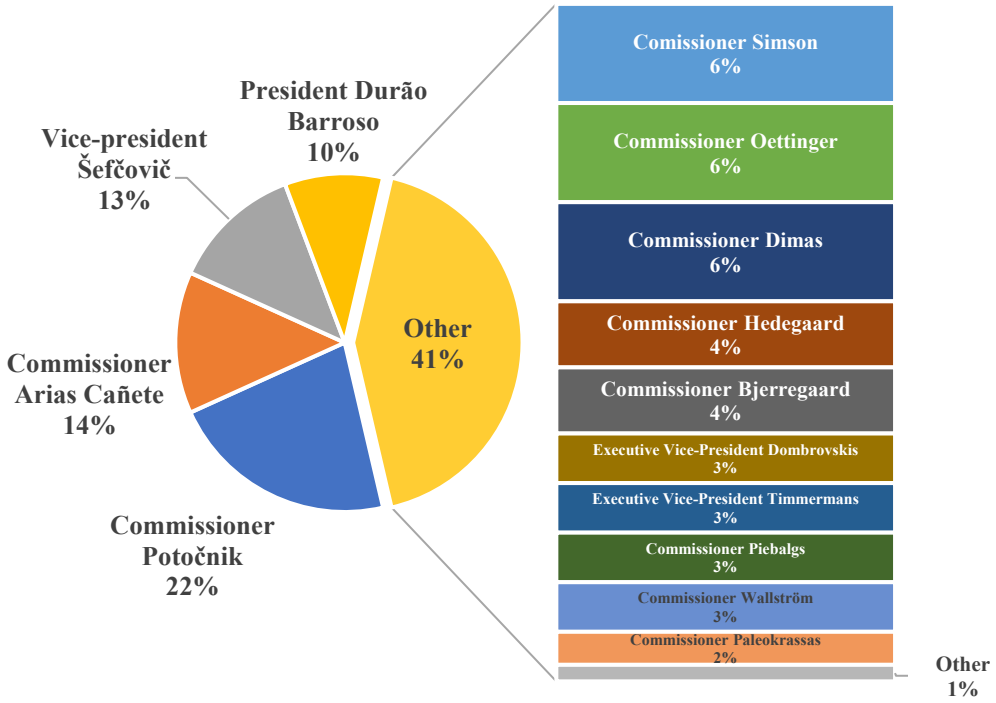
Source: Author's own composition

The next element of analysis is the framing for CPI and the integrative narrative developed by different Commissioners. Figure 5.2 shows the percentage of speeches containing references to CPI delivered by various European Commissioners (n=96).

From the total of 96 speeches, the Commissioner who most referred to CPI during the analysis period was Commissioner Potočnik, who served as Commissioner for the Environment from 2010 to 2014 and referred to CPI in 21 speeches (22% of total speeches). Following him, Commissioner Arias Cañete, who was Commissioner for Climate Action from 2014 to 2019, referred to CPI in 13 speeches (14% of total speeches), as did Vice-President Šefčovič (13% of total speeches with references to CPI), who was Commissioner for Energy (2014–2019) and, at the time of writing, Executive Vice-President for the European Green Deal. President Barroso, during his two terms as President of the European Commission (2004–2014), referred to CPI in nine speeches (10% of total speeches). Other commissioners referred to CPI aspects

in their speeches, ranging from 6% to 3% of the total of speeches. For details, see the column in Figure 5.2.

Figure 5.2 *European Commissioners that have delivered speeches containing climate policy integration-related concepts for the period from 1990 to 2020, by percentage*



Source: Author's own composition

The quantitative content analysis also revealed that, between 1990 and 2020, 36 of the speeches containing references to CPI were delivered by Commissioners of the Directorate-General for Environment (DG ENV), making it the affiliation that most frequently referred to CPI in their speeches. Following this, Commissioners from the Directorate-General for Climate Action (DG CLIMA) and the Directorate-General for Energy (DG ENER) (from its creation in 2020) closely included references to CPI in their speeches, with 17 (DG CLIMA) and 16 (DG ENER) speeches, respectively.

Qualitative content analysis

After identifying the European Commissioners' speeches from 1990 to 2020 that contained references to CPI, a qualitative content analysis was undertaken to interpret the content of the text data through a systematic classification process of coding and identifying themes or patterns (Pierce, 2011). NVivo was used to organise, systematically review and code the text data from the European Commissioners'

speeches. The development of categories and a coding scheme were derived from the data. For more details, see Chapter 4, Section 4.4.1.

The results of the qualitative content analysis are organised following four categories identified in relation to the policy framing and the integrative narrative present in the Commissioners' speeches.

First, European Commissioners' speeches from 1990 to around 2010 commonly framed CPI as a sector-specific niche as part of EPI. CPI is presented as one sector-specific niche of EPI in response to the particular issue of climate change. Additionally, the framing of the integrative narrative focuses on mitigation action.

For example, Commissioner Wallström, European Commissioner for Environment, in her speech on 26th February 2001 titled *6th Environment Action Programme: New Ways of Working*, states the following:

> "Let's lift our gaze for a moment from the fruit tree of environmental policy to the other trees in the European garden. I want some of the fruit from the tree of transport policy and from the tree of energy policy to name just two! We can reach that fruit through integration. […] Each sector should know what it has to contribute to protecting our climate, or maintaining our landscape, or safeguarding biodiversity." (European Commission, 2001, p. 5).

In this excerpt, 'protecting the climate' is listed alongside 'maintaining our landscape' and 'safeguarding biodiversity', presenting climate change objectives alongside other environmental issues. Such sector-specific niches of EPI seem to take on a "positive" meaning that is situational (i.e. different across governance levels and sectors) (Jordan & Lenschow, 2010, p. 156).

Another excerpt from Commissioner Potočnik's speech on 30th November 2010, titled *The State of the European Environment*, describes more generally the EPI challenge of designing policies:

> "We need then to build the integrated policies to meet our common goals. Policies which reflect these inter-linked and accelerating challenges such as climate change. This demands for us a new way of thinking and of dealing with the world around us […] and specifically a new policy view...one that takes coherence, integration and implementation as requirements from the start." (Potočnik, 2010, p. 3).

This implicit conceptualisation of EPI appears more aligned with the weaker interpretations of EPI and the general principle of policy integration (Underdal, 1980), where the environment or climate change is just one of a set of values to be considered in a more rational approach to policymaking, from policy design to implementation.

The second category of integrative narratives of climate change relates to *climate adaptation.* Since 2007, Commissioners' speeches have dedicated particular attention to climate adaptation as an area of climate action that needs mainstreaming into all areas of EU policy action. Prior to that, no references were identified that referred to climate adaptation in the integrative narrative.

For example, in his speech on 3rd July 2007 titled *Adaptation to Climate Change: It May Be a Matter of Survival!*, Commissioner Stavros Dimas, European Commissioner for Environment, considered the impact of climate adaptation on EU policy:

> "In short, the need to adapt to climate change will have a massive impact on almost all areas of EU policy. It is simply not possible for European politicians to ignore this reality and I am convinced that the next ears will see climate adaptation running like a thread through all of our policies." (European Commission, 2007).

Thirdly, since 2010, Commissioners' speeches have started referring to CPI as separate from EPI. The excerpt from Commissioner Hedegaard's speech on 20th March 2011 exemplifies the emergence of CPI as distinct from EPI:

> "[…] in times of severe fiscal challenges and tough austerity measures, it is crucial to focus on challenges that cannot be solved by individual countries and regions alone, actions whose impact can be magnified by achieving multiple policy objectives at the same time and measures which will bring short-term growth and employment but also puts us on the right track in the medium-term. I believe that mainstreaming climate action in European policies financed by the EU budget ticks all these boxes" (European Commission, 2011).

Finally, the fourth category of integrative narrative is identified in Commissioners' speeches from 2019. The integrative narrative of public policy responses to climate change requires society-wide transformations, with CPI expanding to encompass all policy sectors.

The excerpt from 2019 illustrates the evolution of the framing towards a consideration of climate action that affects all sectors and necessitates society-wide transformations; for example, the following excerpt from Vice-President Šefčovič (SPEECH/19/3329):

> "Here however, I would like to make a small detour to an issue that lies very close to my heart, and that is the fair and just energy transition. While we all are aware of the opportunities and benefits that the energy transition will bring, we need to ensure that no one is left behind in this huge transformation- …no sector…" (European Commission, 2019b, p. 2).

In a speech by Commissioner Simson at the Energy Council Press Conference on 4th December 2019 (SPEECH/19/6680):

> "To achieve this, I will work towards open, integrated and well-functioning energy markets; I will address energy poverty and focus on energy efficiency across all policy areas" (European Commission, 2019, p. 2).

In summary, the quantitative and qualitative content analyses of European Commissioners' speeches revealed an advancement in the integrative narrative and framing of climate change as a cross-sectoral policy problem. In the period from 1990 to 2010, European Commissioners' speeches referred to CPI as a 'sector-specific niche' within broader EPI processes. Additionally, during this initial sub-period, the focus was on mitigation action, with little attention given to adaptation aspects in relation to integration. Climate adaptation did not become noticeable as part of the integrative narrative until the late 2000s. In the 2010s, European Commissioners' speeches began to refer to CPI as separate from EPI. The recognition that climate change should not be governed by individual subsystems but by the governance system as a whole became even more clear in European Commissioners' speeches in 2019–20, hence the assertion that climate change is an issue that "affects all sectors and requires society-wide transformations" (European Commission, 2019, p. 2). By 2020, CPI was clearly advocated and fully recognised as key for all relevant subsystems in the governance of climate change.

5.3 Subsystem involvement

This section reports the results of the analysis of the second dimension of the analytical framework, namely subsystem involvement. As described in detail in Chapter 4, the analysis focuses on the involvement of the different policy subsystems in the governance of climate change at the EU level. Policy integration is a process that entails the coordination of actors across relevant policy subsystems, namely cross-sectoral coordination. Policy subsystems denote the presence of sector-specific actors in a particular policy problem, in this case, climate change governance. These specialised or sector-specific actors interact with other policy specialists to formulate and implement policies related to the subsystem (Kaplaner et al., 2023).

The first part of this section, Section 5.3.1, provides an overview of the horizontal internal coordination mechanisms at the EU level. The second part of the section (Section 5.3.2) summarises the main findings of the original data analysis of subsystem involvement in policy preparation from 1990 to 2020.

5.3.1 Overview of horizontal coordination mechanisms

Environmental and climate policy is a shared competence of the EU, meaning that both the EU and the Member States can, in principle, make policy in these areas, with EU measures confining the leeway for Member States. According to Articles 11 and 191–193 of the Treaty on the Functioning of the EU, the EU is competent to act in all areas of environmental policy, including climate change (Official Journal of the European Union, 2013).

The EU comprises three main institutions that co-decide policy governance: the European Commission, the European Parliament and the Council of the EU. EU policies are typically decided through the ordinary legislative procedure. Once the European Commission has presented its proposal, both the European Parliament and the Council of the EU review it and can propose amendments. Typically, the European Parliament, the Council of the EU and the European Commission then meet to see if they can agree on a complete set of amendments. This is followed by inter-institutional negotiation processes between the three co-deciding institutions. A proposal is adopted into law when the European Parliament and Council agree on a joint text, which is published in the Official Journal of the EU and becomes law.

EU climate policies pass through a process of internal negotiation and bargaining both within and among the EU institutions before being agreed upon. The following sections will focus on the mechanisms inside the three EU institutions to coordinate climate policy, as well as inter-institutional coordination mechanisms:

European Commission

The DG CLIMA leads the European Commission's efforts to combat climate change at both the EU and international levels. Before the establishment of DG CLIMA in 2010, the DG ENV was the Directorate-General of the European Commission responsible for climate change activities. Concurrently, the DG ENER was also established.

While the College of Commissioners meets regularly to discuss and make decisions on formal publications and proposals, there is no climate-specific coordination mechanism outside of individual processes to prepare new legal proposals or communications (Duwe, 2022, p. 17).

Council of the EU

At the Council, Member States have established a system of communication and deliberation through formal council working groups, some of which are legally established through the Treaty on the Functioning of the EU, such as the Environment Council. The Environment Council is responsible for EU environmental policy, including environmental protection and climate change.

European Parliament

The European Parliament has an elaborate and well-established working mode that divides responsibilities for topics into committees and assigns individual Members of Parliament to act as rapporteurs on specific topics or pieces of legislation to consult other Members of Parliament and draft an opinion. Most climate-related policies are classified as environmental policies and thus are dealt with in the Environment Committee. For the better part of two years, from 2007 to 2009, there was also a temporary committee on climate change.

Interinstitutional coordination

Interinstitutional agreements

The founding treaties of the EU allow for interinstitutional agreements to be concluded between the EU's institutions (Art. 295 of the Treaty on the Functioning of the EU) (The European Parliament and the Council of the European Union, 2013). Interinstitutional agreements seek to organise and facilitate cooperation between the EU institutions, specifically the European Commission, the European Parliament and the Council of the EU. These interinstitutional agreements are legislation-specific and cannot serve as an intra-institutional coordination mechanism (Duwe, 2022).

Committees

Climate change committee[17]: Since 2004, a technical committee called the 'Climate Change Committee' has been created, comprising experts from all Member States and chaired by the European Commission. This committee not only collects and exchanges data on the national inventories of Member States but also serves as the decision-making body for a wide range of technical regulations (Implementing Acts) (Delbeke & Vis, 2021).

Energy Union Committee[18]: Established in 2018 with the Regulation on the Governance of the Energy Union and Climate Action, Article 44 (Official Journal of the European Union, 2018), this committee has dedicated functions to support the implementation of the legislation.

Expert groups

Other expert groups with participation from Member States and the European Commission provide opportunities for regular exchange among Member States outside of negotiations on legislation and for dialogue with the European Commission, but usually for a specific thematic purpose and not with the mandate to create a general coordination function (Duwe, 2022).

[17] Climate Change Committee (C13600) - EU monitor
[18] Energy Union Committee (C51000) - EU monitor

5.3.2 Analysis of the subsystem involvement in the initiation of policy and legislative proposals

This section reports the results of the analysis of the second dimension of CPI, namely subsystem involvement, which revolves around the range of subsystems engaged in the governance of climate change at the EU level. Under the ordinary legislative procedure, the European Commission is the sole initiator of policy and legislative proposals at the EU level (OJEU, 2007). The analysis of subsystem involvement at the EU level is based on the involvement of different policy subsystems organised in DG in the preparation of policy and legislative proposals by the European Commission. This analysis considers the initiation of legislative proposals by different European Commission DGs as a proxy to assess the involvement of different subsystems in climate change governance for the period from 1990 to 2020.

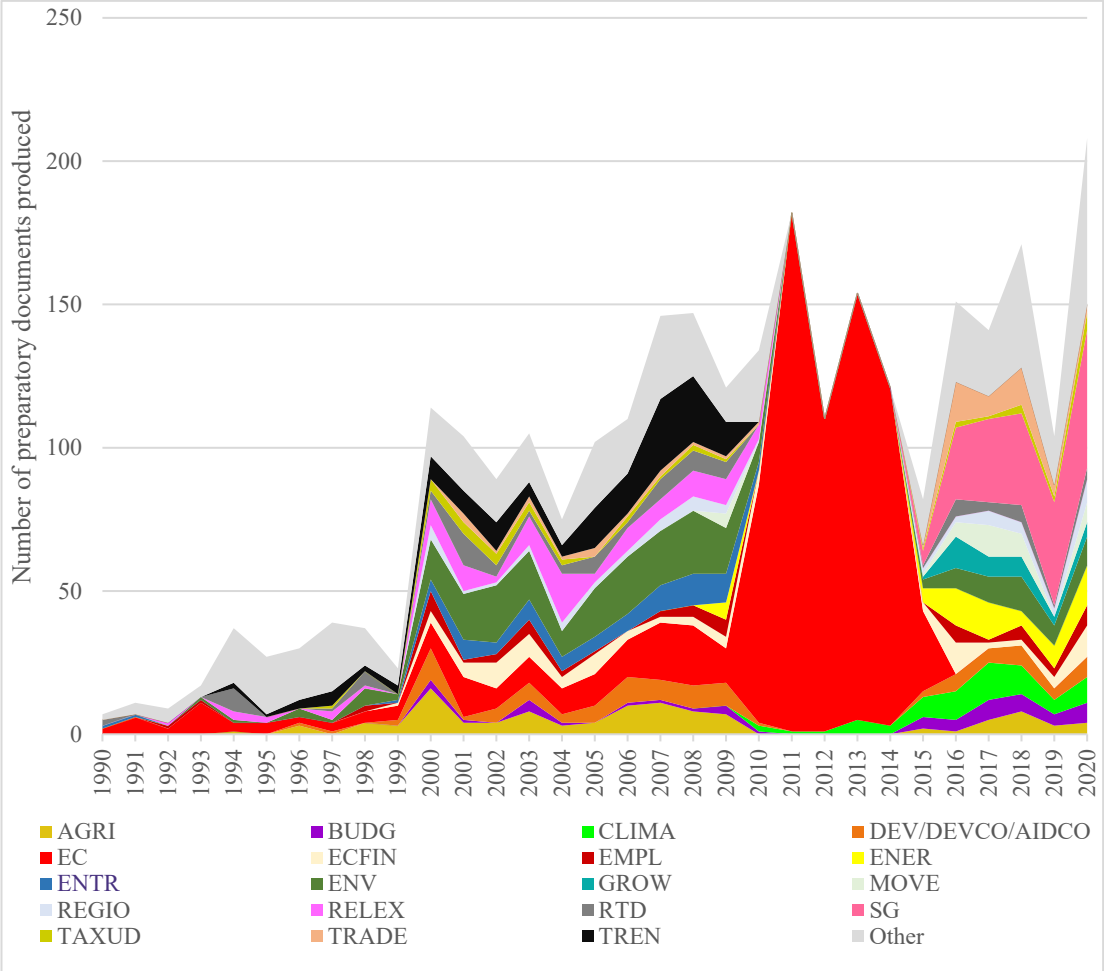
After searching policy and legislative preparatory documents related to climate change (COM- and JOIN-documents), a total of 2,908 documents were identified (n=2,908). COM-documents include communications, recommendations, white papers, green papers and other acts adopted in the legislative procedure. JOIN-documents refer to preparatory documents adopted by the European Commission and the High Representative. For further explanation of data and methods, see Section 4.4.1.

Figure 5.3 shows the number of preparatory documents led by different DGs for the period from 1990 to 2020. The vertical axis shows the number of preparatory documents that include '*climate change*' in the title or text. Notably, from 2011 to 2014, the COM and JOIN documents from the EUR-Lex service did not provide information about the lead department, and therefore, they were all coded as being led by the European Commission without a sector-specific allocation.

The graph indicates that from 1990 to 1999, there was a non-steady increase in the number of preparatory documents related to climate change, with the production of less than 50 preparatory documents produced per year. From 2000, the number of preparatory documents related to climate change rose to 110. Notable peaks occurred in 2011, 2018 and 2020. The number of preparatory documents adopted in 2020 reached a total of 208 proposals.

When examining the individual EU policy subsystems, some observations about the quantity of policy proposals can be made. From 2015 to 2020, the Secretariat-General became the department that led policy development on climate change (from 2015 to 2020, n=175). The Secretariat-General is responsible for the overall coherence of the European Commission's work and steers and coordinates the work across the entire executive, as well as managing the European Commission's decision-making process (European Commission, 2019c). Prior to 2015, the Secretariat-General had not been identified as leading any policy proposals.

Figure 5.3 *Number of preparatory documents that include 'climate change' in the title or text from the period from 1990 to 2020 by the Directorate-General responsible*

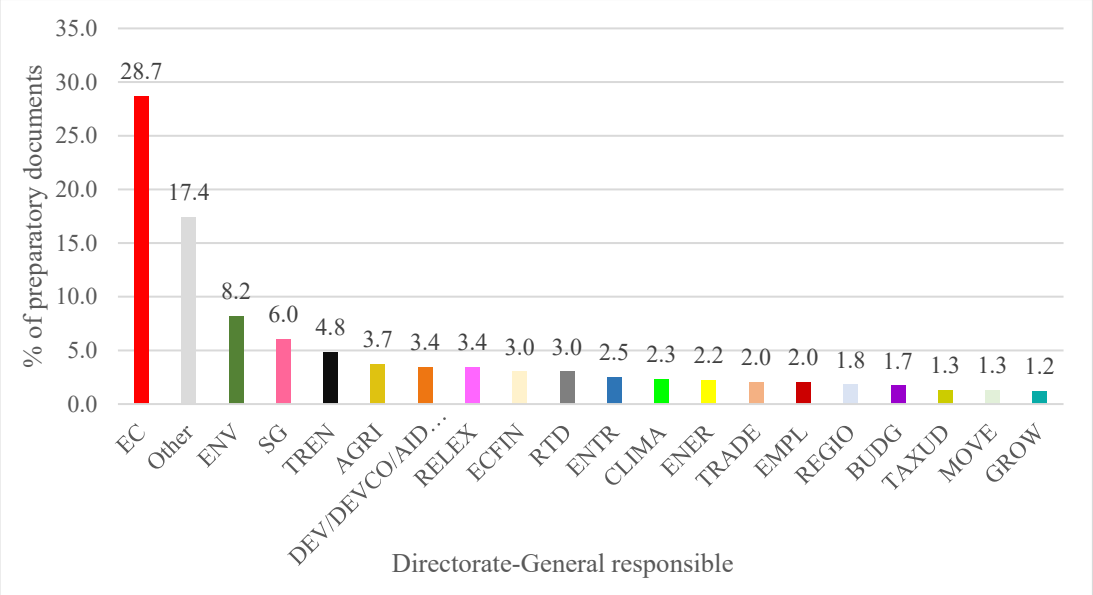


Note: From 2011 to 2014, the COM and JOIN documents from the EUR-Lex service did not provide information about the lead department.

Source: Author's own composition

Figure 5.4 shows the percentage of preparatory documents initiated by different DGs for the period from 1990 to 2020. Of these, 17.4% refer to preparatory documents led by '*other*' (than 30 COM and JOIN documents, including climate change in the title and/or text). 8.2% of the preparatory documents were produced by ENV (DG ENV), followed by the Secretariat-General (6%) and the Directorate-General for Transport and Energy from January 2000 until February 2020 (DG TREN) (4.8%). DG CLIMA was identified as responsible for leading 2.3% of preparatory documents for the period 1990–2020. DG Agriculture and Rural Development (DG AGRI) accounted for 3.7% of legislative and policy proposals.

Figure 5.4 *Percentage of preparatory documents that mention 'climate change' in the title and/or text during the period 1990–2020 by the Directorate-General responsible*



Note: All DGs that produced preliminary documents with fewer than 30 COM- and JOIN documents, including climate change in the title and/or text, are included in the 'other' category.

Source: Author's own composition

In addition to these policy subsystems, Figure 5.4 shows that several DGs were responsible for less than 3.5% of legislative and policy proposals, including the Directorate-General for International Cooperation and Development (DG DEVCO, previously DEV), the Directorate-General for the External Relations until it was merged into the European External Action Service in 2010 (DG RELEX), the

Directorate-General for Economic and Financial Affairs (DG ECFIN) and the Directorate-General for Research and Innovation (DG RTD).

To summarise, the content analysis of the preparatory documents (COM and JOIN documents) of the leading Directorate responsible revealed important insights into the number of subsystems formally involved in the governance of climate change. One of the main findings is that the DG ENV led most legislative proposals addressing climate change. Following this, the Secretariat-General, the Directorate on Transport and Energy (from January 2000 until February 2020) and then DG Climate were the DGs that acted most prominently in leading climate change legislative proposals. The empirical findings also revealed the increased importance of the Secretariat-General in leading climate change legislative proposals. In the period from 2015 to 2020, the Secretariat-General became the department that led the greatest number of preparatory documents on climate change (from 2015 to 2020, n=175).

5.4 Policy goals

The dimension of policy goals is explored by analysing the EU climate targets. Climate targets were analysed by the number of targets and the type and sectoral coverage of the climate targets adopted at the EU level for the period 1990 to 2020 based on data retrieved from the CCLW database. As expanded in Section 4.4.1, the secondary data set for the EU climate targets in laws and policies is retrieved from the CCLW (n=57).

5.4.1 Analysis of categories of EU climate targets

The identified 57 EU climate targets established mitigation goals, including both GHG reduction (21) and non-GHG reduction targets (36). Table 5.1 shows the categories of targets adopted (both GHG and non-GHG reduction targets). Non-GHG reduction year targets were the most common type of target (20), followed by GHG fixed-level targets (9), GHG reduction targets (8) and non-GHG reduction targets (8).

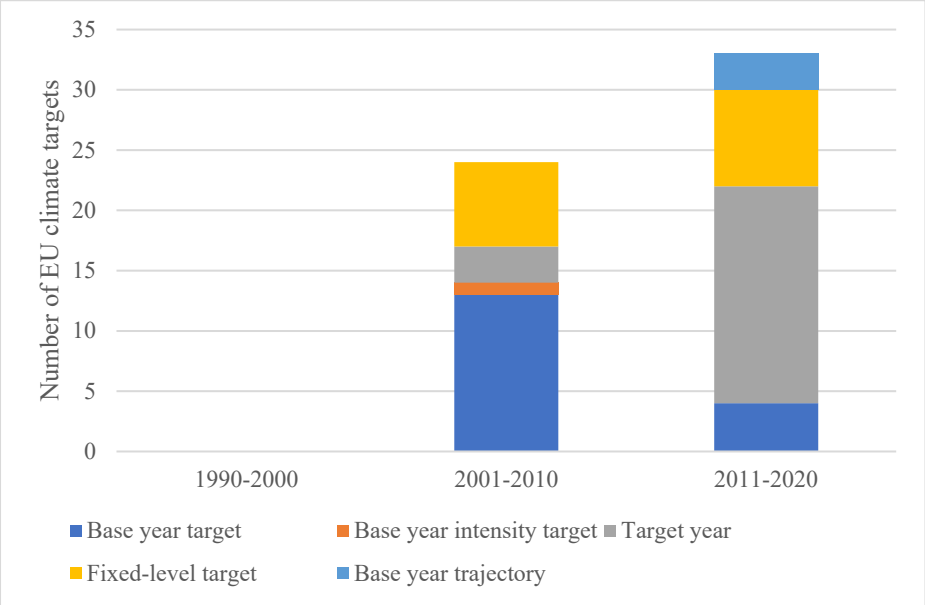
Table 5.1 *Categories of European-level climate targets adopted during the period 1990–2020*

Number of adopted GHG reduction targets	Base year target	6
	Base year intensity target	1
	Target year	2
	Fixed-level target	9
	Base year trajectory	1
Number of adopted non-GHG reduction targets	Target year	20
	Base year	8
	Fixed-level target	8

Source: Author's own composition

After identifying the categories of the total 57 EU climate targets adopted in the period 1990–2020, the next section focuses on the cross-temporal aspect. Figure 5.5 shows the different types of targets adopted during the different sub-periods of 1990–2000, 2001–2010 and 2011–2020. The graph shows an increase in the climate targets adopted at the EU level, particularly in the period from 2001 to 2010 and even more substantially in the period from 2011 to 2020. Notably, target-year targets became more common in 2011–2020 at the expense of base-year targets. Fixed-level targets have remained similarly used in both periods (n=7 in the sub-period 2001–2010 and n=8 in the sub-period 2011–2020). Finally, base-year targets and base-year trajectory targets have been used in far fewer cases.

Figure 5.5 *Evolution of different categories of European-level climate targets, sub-periods 1990–2000, 2001–2010 and 2010–2020*



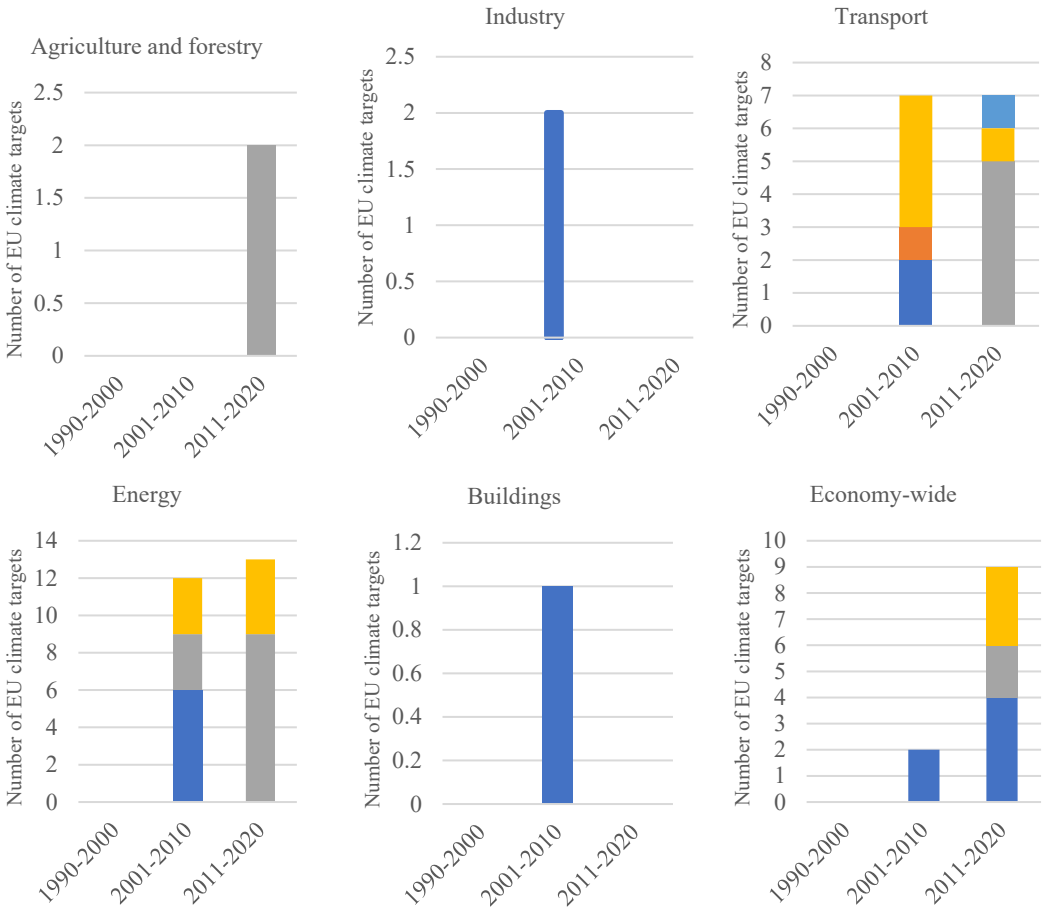
Note: Derived from data from the CCLW database; for further explanation, see Chapter 4.

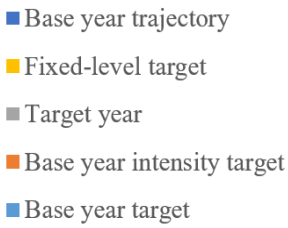
Source: Author's own composition

In summary, Figure 5.6 illustrates the temporal evolution of the EU's climate targets, including its sectoral expansion and diversification. The sectoral coverage of climate targets adopted at the EU level has predominantly addressed energy (n=27), followed by transport (n=14), cross-sectoral (n=11), agriculture and forestry (n=2), buildings/residential (n=1) and industry (n=2).

The findings now focus on the cross-sectoral aspect. The findings indicate a level of diversification in the sectoral coverage of the EU climate targets over time. However, energy, transport and cross-sectoral targets remain the most relevant types of targets adopted at the EU level (see Figure 5.6).

Figure 5.6 *Evolution of adopted EU climate targets by sector (1990–2020)*





Note: Derived from data from the CCLW database; for further explanation, see Chapter 4.
Source: Author's own composition

To conclude, the secondary data analysis of 57 climate targets contained in policy documents revealed that policy goals have been concretised in the form of EU-wide climate targets. Of the 57 climate targets set between 1990 and 2020, 21 were GHG-reduction targets, and 36 were non-GHG reduction targets. Notably, all of them addressed the area of climate mitigation. In relation to sectoral coverage, EU-wide climate targets have predominantly addressed energy (n=27), followed by transport (n=14), cross-sectoral (n=11), agriculture and forestry (n=2), industry (n=2) and the buildings and residential sector (n=1).

5.5 Policy instruments

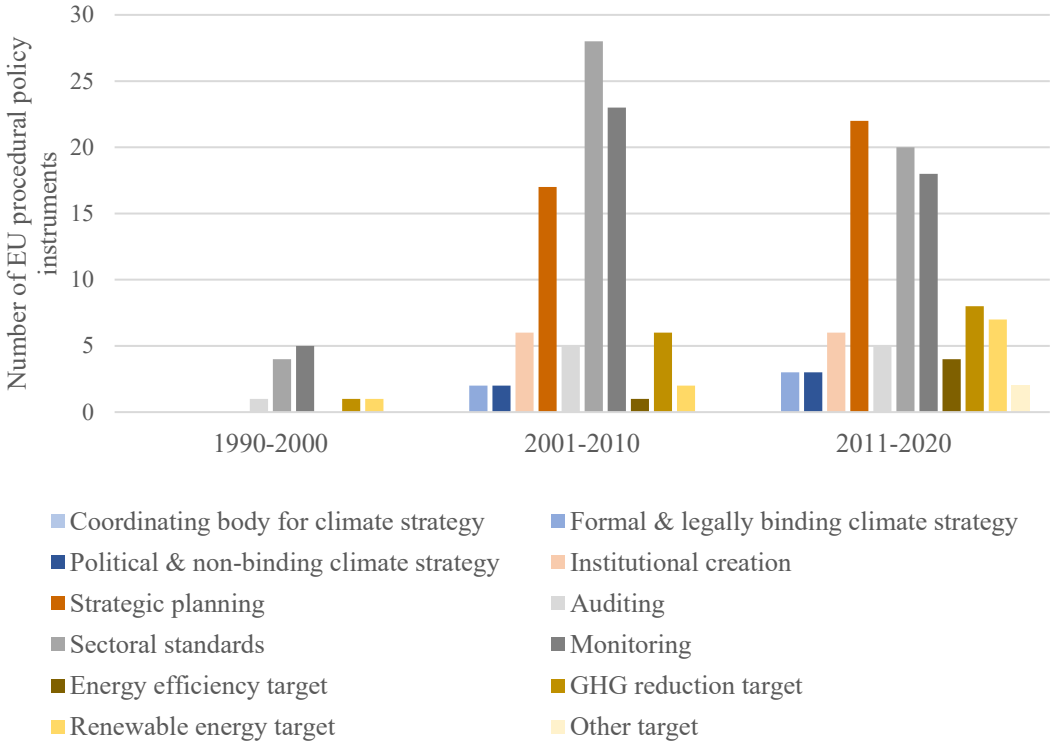
5.5.1 Analysis of procedural policy instruments

The fourth dimension of CPI consists of the policy instruments. This section explores the number and variety of procedural policy instruments adopted during the period from 1990 to 2020 to advance CPI at the EU level. Data from the CPDB identified 98 policies that included procedural policy instruments (n=98). Of these 98 policies, a large number remain in force (74.5%), while 13.3% have been superseded, and the remaining have ended (6.1%), were in planning (4.1%) or drafting (2.0%) stages. Therefore, it seems that when adding new policy instruments, these are layered on top of existing ones rather than replacing, modifying or repurposing them (Michael Howlett & Rayner, 2007). Regarding the area of climate policy, these policies have overwhelmingly focused on mitigation (n=87, 88.8%), with just two focused on climate adaptation (2.0%) and the remaining nine classified as other climate objectives (9.2%).

In relation to the type of procedural policy instruments contained in the policies, following the discussion in Chapter 4, I focus on four main categories: climate strategy, policy support, regulatory instruments with procedural aspects and climate targets in conjunction with procedural policy instruments. Of the 98 policies, the main instruments were regulatory instruments with procedural aspects (43), policy support (28), climate targets (19) and climate strategies (8).

The EU's climate instrument mix has thickened over the study period (see Figure 5.7). I distinguish four points in time, reflecting the major steps in the development of EU climate governance from 1990 to 2000, 2001 to 2010 and 2011 to 2020. Early procedural policy instruments were few and had relatively low salience. By 2020, all main categories of procedural policy instruments played a prominent role in the overall policy mix. However, three main categories are clearly more prominent: strategic planning, sectoral standards and monitoring.

Figure 5.7 *Cross-temporal analysis of the employment of different categories of procedural policy instruments at the EU level, 1990–2000, 2001–2010 and 2011–2020*

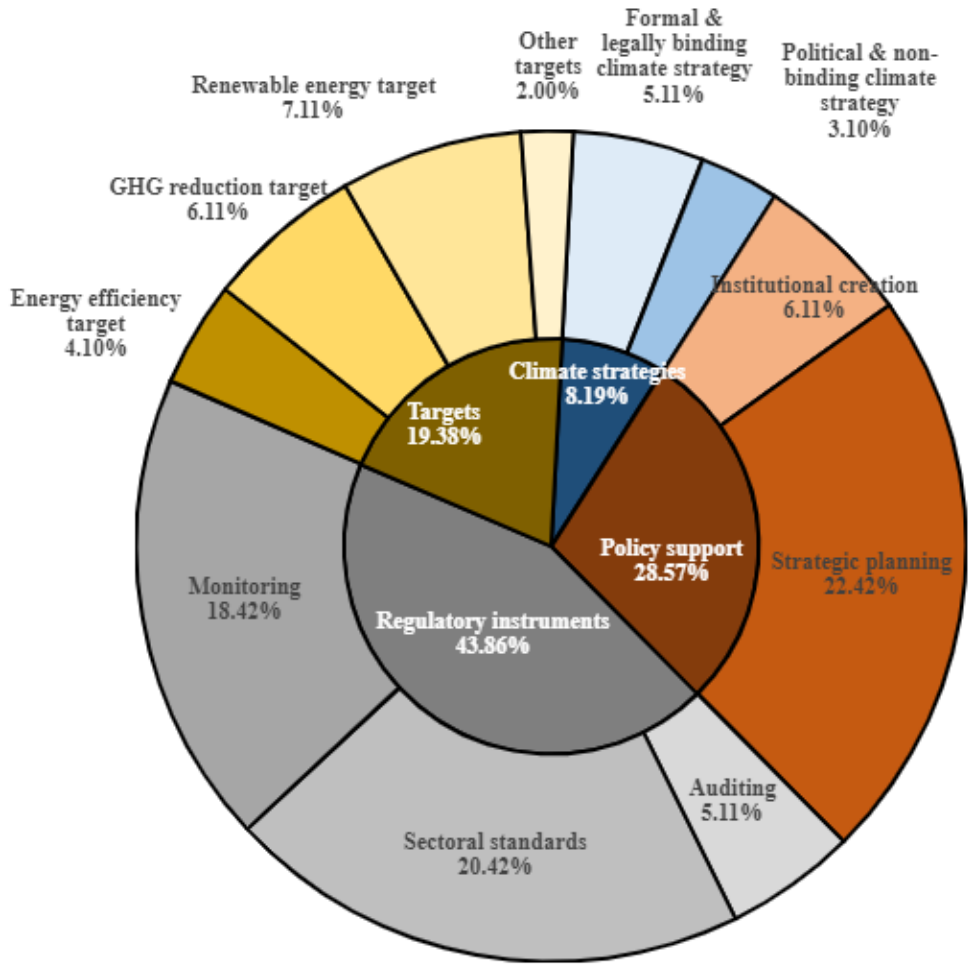


Note: Derived from data from the CPDB database; for further explanation, see Chapter 4.

Source: Author's own composition

To understand the relative relevance of each category and subcategory of policy instruments and diversification, Figure 5.8 shows the cumulative percentage of procedural policy instruments employed by 2020 at the EU level. First, regulatory instruments with procedural aspects, such as sectoral standards, monitoring and auditing, are equivalent to 43.9% of employed instruments at the EU level. Following this, policy support accounts for more than a quarter of employed instruments (28.8%), climate targets account for 19.4% and climate strategies for 8.2%. The most relevant subcategories of procedural policy instruments are strategic planning (22.4%), sectoral standards (20.4%) and monitoring (18.4%).

Figure 5.8 *Procedural policy instruments by 2020 at the European Union level: categories and subcategories*

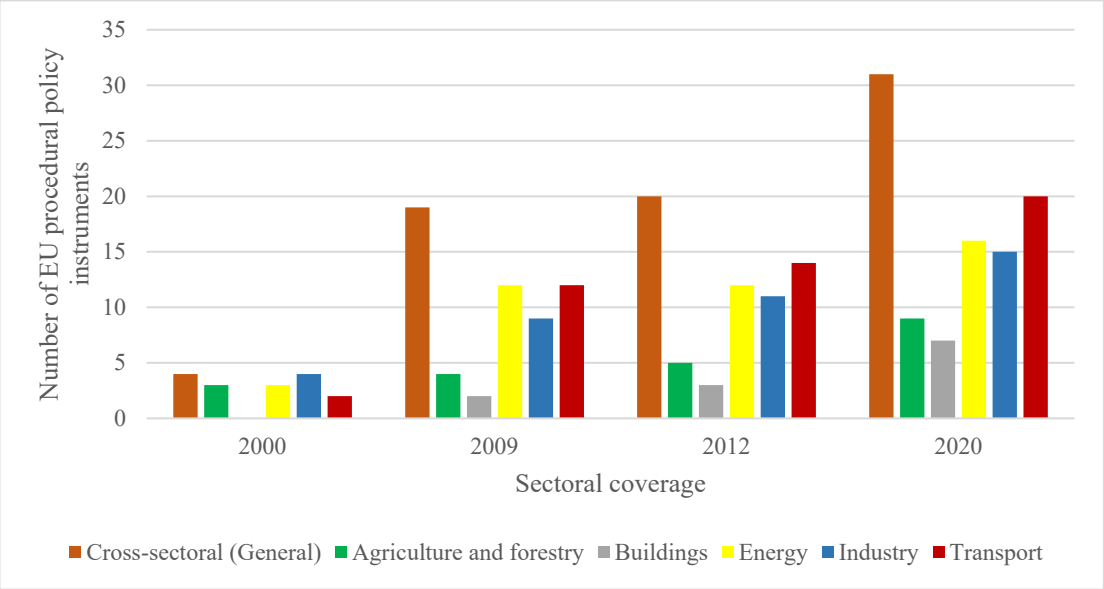


Note: Derived from data from the CPDB database; for further explanation, see Chapter 4.

Source: Author's own composition

Regarding the sectoral scope of the procedural policy instruments, climate policies initially addressed fairly equal cross-sectoral measures, agriculture and forestry and energy and industry, with transport being slightly less relevant (see Figure 5.9). However, in subsequent years, it becomes clearer that procedural policy instruments at the EU level have predominantly been of a cross-sectoral scope and have increased in number.

Figure 5.9 *Cross-temporal analysis of procedural policy instruments by policy sectors at the EU level (1990–2020)*



Note: Derived from data from the CPDB database; for further explanation, see Chapter 4.

Source: Author's own composition

To summarise the findings of this dimension of CPI, the secondary data analysis of 98 procedural policy instruments contained in policy documents retrieved from the CPDB database revealed significant advancements in the deployment of procedural policy instruments at the EU level. Procedural policy instruments, such as strategic planning, sectoral standards and monitoring requirements, constitute nearly half of the procedural policy instruments employed at the EU level for the period 1990–2020. Following this, policy support accounts for more than a quarter of the procedural policy instruments employed. Notably, in the last decade, there has been an increased use of procedural tools, particularly in strategic planning, monitoring and sectoral standards. Regarding the sectoral scope of the employed procedural tools, most are

not sector-specific but rather economy-wide. Sector-specific procedural policy instruments focus on the transport, energy and industry sectors.

5.6 Conclusion

This chapter has presented the results of an analysis of CPI as a multi-dimensional policy process at the EU level for the period 1990–2020. The findings are consistent with previous research indicating that the EU has played, and continues to play, a significant role in designing European climate change policy and CPI (i.e. Dupont, 2013; Rayner & Jordan, 2013; Dupont & Jordan, 2021; Oberthür & Homeyer, 2022). The results demonstrate that the various dimensions of CPI have significantly advanced at the EU level from 1990 to 2020.

The policy framing of climate change as a cross-sectoral issue became significant in the mid-2010s. Initially, climate change was primarily framed within the context of energy policy and was rarely connected to other policy areas. This trend became even more pronounced as European Commissioners' speeches increasingly framed the European Green Deal (European Commission, 2019a) as an integrated policy framework aimed at facilitating society-wide responses to the climate change challenge.

The analysis of subsystem involvement revealed an increased importance of the Secretariat-General in leading climate change legislative proposals, as indicated by the analysis of leading DGs on preparatory documents for the period 1990–2020. However, while the College of Commissioners meets regularly to discuss and make decisions on formal publications and proposals, there is no climate-specific coordination mechanism outside of individual processes to prepare new legal proposals or communications.

The analysis of policy goals has demonstrated that CPI has progressively extended and strengthened from directly emission-relevant sectors to more indirectly relevant policy sectors. The expansion of CPI has involved a level of sectoral differentiation and specialisation of EU climate targets, moving from GHG reduction to non-GHG reduction targets. Nevertheless, energy, transport and cross-sectoral targets remain the most relevant types of targets adopted at the EU level.

The results regarding policy instruments, particularly procedural instruments, have shown a strengthening of procedural governance at the EU level. Regulatory instruments with procedural aspects, such as strategic planning, sectoral standards and monitoring requirements, constitute nearly half of the procedural policy instruments employed at the EU level for the period 1990–2020. Following this, policy support accounts for more than a quarter of the employed instruments. Regarding the sectoral scope of the employed policy tools, it has become evident that procedural policy instruments at the EU level have especially been of a cross-sectoral nature. These findings align with previous research suggesting that the Energy Union provided an opportunity for the European Commission to gain greater leverage over the 28 EU Member States through enhanced reporting and monitoring (Knodt & Schoenefeld, 2020; Knodt & Ringel, 2018), moving towards robust processes over climate targets (Kulovesi & Oberthür, 2020), with the European Green Deal also signalling this direction (Dupont & Jordan, 2021).

In conclusion, the analysis of CPI as a policy process at the EU level has demonstrated how the EU has played a crucial role in establishing policy framing and policies with strong CPI implications. The European Commission has particularly advocated for intensified CPI. However, the specific manner in which subsystem involvement has developed and the employment of a wide range of policy instruments have shifted towards the Member State level in the form of strategic planning, monitoring or reporting obligations. Therefore, to fully comprehend CPI as a policy process in the EU, the analysis will transition towards the operationalisation of CPI in the 28 Member States, which will be the focus of Chapter 6 (policy frame and subsystem involvement) and Chapter 7 (policy goals and policy instruments).

Chapter 6
Climate policy integration in the Member States (I): policy frame and subsystem involvement

6.1 Introduction

The previous chapter presented findings on the changing operationalisation of CPI at the EU level from 1990 to 2020. It revealed that the EU has played a role in establishing an integrated narrative on climate change, highlighting the importance of CPI. The European Commission has been a particularly strong advocate of CPI. This chapter unpacks the main findings from the analysis of the operationalisation of CPI as a multi-dimensional policy process in the Member States from 1990 to 2020 and compares them across two CPI salient dimensions.

This chapter focuses on the first two dimensions of the analytical framework, namely, policy frame and subsystem involvement. These two dimensions are often determined during the initial stages of policymaking (Jenkins, 1978) when particular policy problems gain a place on the public policy agenda and are characterised and defined within the political system (Peters & Hoornbeek, 2005). These two dimensions, namely policy framing and subsystem involvement, have been shown to have explanatory value with reference to the level of policy integration (Candel & Biesbroek, 2018) (see Chapter 3 Sections 3.2.1 and 3.2.2). The analysis of policy framing explores whether a cross-cutting policy problem is recognised as such and, if so, to what extent there is an integrative narrative that supports the need for an integrated governance approach. In turn, the analysis of subsystem involvement examines the range of subsystems involved in the governance of the cross-cutting policy issue and their interactions.

As further developed in Chapter 4 (see Chapter 4 Section 4.5), the analytical strategy to explore each of the CPI dimensions is a two-stage process. First, the analysis focuses on the aggregated data for the 28 Member States, followed by an analysis of each individual country. In both steps, the analytical lines of comparison are temporal and sectoral for all phenomena described for each of the CPI dimensions.

The remainder of this chapter unfolds as follows. Section 6.2 presents the main findings from the analysis of the first dimension of the analytical framework outlined in Chapter 3, namely policy framing. Section 6.3 focuses on the second dimension of the analytical framework, namely subsystem involvement. Finally, Section 6.4 highlights the main findings and reviews them in relation to each other.

6.2 Policy frame

This section presents the analysis of policy framing of climate change in the Member States and the extent to which climate change is recognised as a cross-cutting policy problem within different national governance systems. Following the approach detailed in Chapter 3, the analysis of the policy framing focuses on how climate change is perceived as a cross-sectoral issue in the governance system and whether the cross-sectoral nature of the problem is perceived to necessitate a cross-sectoral governance response, leading to an integrated narrative. See Chapter 3, Section 3.2.1, for details on the analytical framework used in this thesis.

As developed in Chapter 4 (see Chapter 4 Section 4.5.1), the study of policy framing in the Member States is primarily distilled from the content analysis of the texts of the national climate frameworks (mitigation, adaptation or combined). National climate frameworks can be described as national public policies that serve as an overarching, comprehensive, unifying basis for climate change policy (mitigation, adaptation or both) (Nachmany et al., 2015) and are often considered a focal point for national actors (Dubash et al., 2013).

6.2.1 Analysis of national climate frameworks

Cross-temporal analysis

One of the main findings is that all countries have acted on climate change by passing national climate frameworks on mitigation and/or adaptation. Whereas all countries had adopted a national adaptation framework by 2020, 26 of the 28 countries had acted on climate change mitigation by passing a national climate policy framework that covers only mitigation. Specifically, Cyprus and Poland have not adopted a national mitigation framework during the period from 1990 to 2020.

In five instances, countries initially responded by passing a climate framework that included both mitigation and adaptation policy areas. These countries are Ireland, Lithuania, Romania, Sweden and the UK. However, these five countries subsequently adopted other climate frameworks that addressed mitigation and adaptation separately (i.e. strategies, plans or programmes focused on mitigation or adaptation after the adoption of a joint policy framework).

Consequently, there is a consistent trend amongst the Member States to adopt national climate frameworks that separately address mitigation and adaptation, even if they initially adopted a national climate framework that jointly addressed both areas. A notable example of this adoption dynamic is the UK's Climate Change Act, which initially covered both mitigation and adaptation, but later policies expanded on each of climate policymaking.

Secondly, it is noteworthy that national mitigation frameworks have increasingly evolved from original strategies or plans to encompass acts and laws. Since 2005, Member States have sought to facilitate climate policymaking comprehensively by adopting national mitigation strategies. Apart from being policy documents, typical national mitigation strategies aimed to initiate policy processes capable of better integrating mitigation concerns across relevant sectors (Nash & Steurer, 2019). Although later adopted non-legally binding national mitigation strategies advanced their process-oriented function more ambitiously; for example, by promoting climate plans alongside the national mitigation strategies, they often served to present current emissions, detailed targets and present mitigation options but had limited roles in helping governments progress towards CPI (Casado-Asensio & Steurer, 2016).

National climate frameworks have taken various formats, particularly after 2015; most Member States have opted to enshrine their decarbonisation commitments in legal acts or laws. For instance, the UK Climate Change Act of 2008 is often regarded as a pioneering framework law because "for the first time, a national government had self-imposed legally binding targets for reducing greenhouse gas emissions" (Gillard & Lock, 2017, p. 639). The Climate Change Act, adopted in 2008 (UK Parliament, 2008) and revised in 2019, sets a comprehensive framework for climate mitigation and adaptation across the country, establishing a long-term emission goal and requiring the identification of interim targets. These are expressed in five-year carbon budgets,

which the government is legally obliged to achieve. The Act also mandates the government to publish a climate change risk assessment every five years and to develop a National Adaptation Programme. In 2019, the headline target of the Act was amended to reflect the government's net-zero ambition.

However, apart from the inclusion of climate neutrality by 2040, 2045 or 2050, many other elements of the climate laws remain quite distinct. Evan and Duwe's (2021) study of the nine national climate laws adopted by Member States concludes that despite all serving the same purpose, the climate framework laws examined are very different in format and content. These authors conclude that climate framework laws share a set of core design elements, such as the use of scientific advisory bodies or progress monitoring systems. However, the different frameworks also present "numerous and at times large differences" (Duwe & Evans, 2020, p. 14). Research on the last wave of national framework legislation on climate change identified areas where the different laws differ, including GHG emission reduction targets, planning mechanisms and feedback and evaluation mechanisms (Nash & Steurer, 2019).

Another finding is that most countries have adopted several updates and revisions of policies and laws during the study period. Since the adoption of the Paris Agreement in 2015, there has been an increase in the number of European countries adopting national climate laws with a mid-century focus on climate neutrality (Evans & Duwe, 2021). By 2020, nearly half of all Member States had already adopted national climate laws, with many others adopting them after the study period (such as Greece, Spain or Portugal). Therefore, national climate laws are emerging as key governance tools to respond to the deep decarbonisation challenge.

In the case of adaptation-specific frameworks, countries often initially adopted a national adaptation strategy and then supplemented it with national adaptation plans to identify medium- and long-term adaptation needs in an iterative process. For example, the French National Strategy for Adaptation to Climate Change was adopted in 2006, addressing sector-specific issues in areas such as water, risk prevention, health and biodiversity. It also addresses sector-specific issues with regard to the sectors of agriculture, energy and industry, transport, building and housing, tourism and banks and insurance companies. Additionally, it discusses how adaptation should be approached in an integrated manner and concludes with a reference to the

implementation of the strategy. In 2011, France adopted the National Adaptation Plan to Climate Change covering the period 2011–2015. A consultation process in 2016 led to the preparation of the Second National Adaptation Plan covering the period 2018–2023, which considered the 2006 strategy still relevant (French Government, 2020).

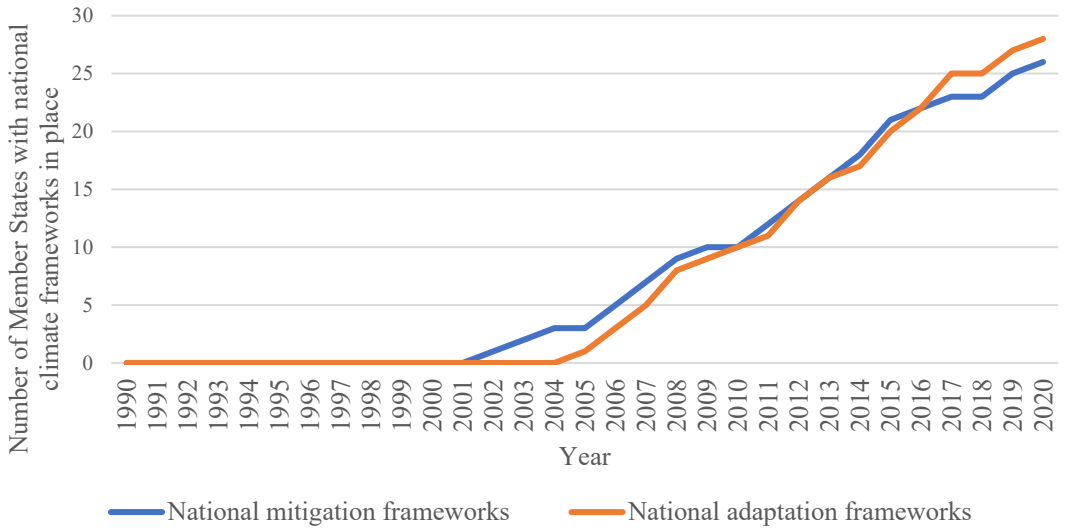
Secondly, Member States began adopting climate adaptation frameworks in the mid-2000s. This period is considered crucial for the advancement of national adaptation policy in the Member States, which also led to the publication of the EU Adaptation Strategy in 2013 (European Commission, 2013). The EU Adaptation Strategy was a 'communique', a relatively soft piece of policy offering principles and recommendations, as well as best practice guidelines for more coordinated action on national climate policy approaches (Russel et al., 2020).

Finland was an early adopter of adaptation policy. Its first National Climate Strategy was adopted in 2001 as a government report to Parliament, which noted the need to prepare a programme for adaptation, resulting in the national adaptation strategy being published in 2005. Detailed measures and implementation of the adaptation strategy were provided for 14 different sectors (Russel et al., 2020).

Following this overview of the adoption of national climate frameworks by the Member States from 1990 to 2020 (mitigation-specific, adaptation-specific or joint) based on secondary data, the analysis moves on to temporal trends. Figure 6.1 presents the timing of the adoption of the first climate framework policies and laws passed by the Member States during the period 1990 to 2020 (mitigation-specific, adaptation-specific or joint).

As a first remark, national climate frameworks became a common feature of climate policymaking in the Member States from the early to mid-2000s. In the first decade of the studied period (1990–2000), national climate policies or legislation had been adopted by some Member States, but these policies were not considered frameworks as they did not provide an overarching, comprehensive, unifying basis for climate change policy, focusing instead on particular aspects of climate mitigation, such as air quality or energy supply. However, the analysis of the adoption of national climate frameworks during the second decade of the study period (2000–2010) shows a very different situation (see Figure 6.1 below).

Figure 6.1 *Number of Member States with national climate mitigation and adaptation frameworks in place, 1990–2020*



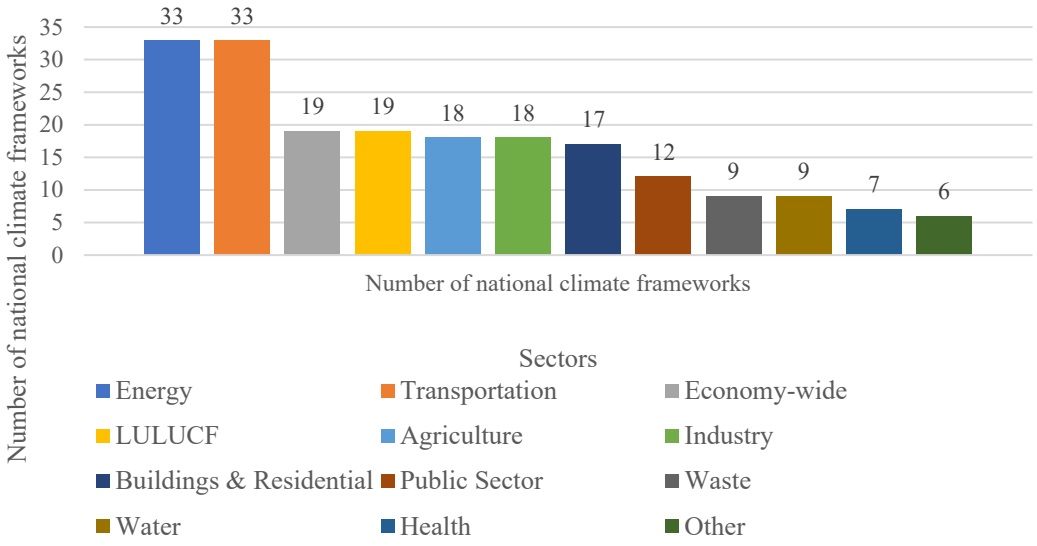
Source: Author's own composition

Figure 6.1 shows the number of Member States with national mitigation and adaptation frameworks in place from 1990 to 2020. The first observation worth noting from the original data presented in Figure 6.1 is that from 2000, following the innovators and early adopters passing their pioneer national climate frameworks, the number of first national climate frameworks covering mitigation, adaptation or both has increased, presenting a similar pattern with respect to the timing of policy adoption throughout the studied period. Despite the potentially different influences of international policy developments or other political events, such as the Paris Agreement or the European Adaptation Directive, the number of national mitigation frameworks and national adaptation frameworks adopted annually by the Member States follows a similar pattern, with the rate of adoption per year being comparable between national mitigation and adaptation policies and laws.

Cross-sectoral analysis

Based on the sectoral coverage analysis of the reported data retrieved from the CCLW database on national climate frameworks in force as of 2020 (n=65), the findings indicate that the energy and transportation sectors are the most addressed sectors by national climate frameworks, with a total of 33 national climate frameworks directly targeting these sectors (see Figure 6.2). Following this, LULUCF was addressed by 19 national climate frameworks. The agriculture and industry sectors were both addressed by 18 national climate frameworks, closely followed by the buildings and residential sectors, which were addressed by a total of 17 national climate frameworks. Less frequently, attention is given to the public sector (n=12) or other sectors such as waste, water and health.

Figure 6.2 *Number of national climate frameworks by sectoral coverage, 1990–2020*



Source: Author's own composition

The sectoral coverage of national climate frameworks differs for adaptation-specific (n=23), mitigation-specific or joint frameworks. In the case of adaptation-specific frameworks, the sectors that were addressed the most were agriculture (n=11), industry (n=11) and buildings and residential (n=11). Following this, LULUCF (n=9), waste (n=7), water (n=7), health (n=7) and energy (n=7) were also addressed. For mitigation-specific frameworks (n=28), the most addressed sectors were energy (n=17) and transportation (n=16). In a few cases, mitigation-specific frameworks

addressed buildings and residential (n=9), industry (n=8), waste (n=7) or agriculture (n=6). Finally, in the case of joint frameworks, the most addressed sectors were transportation (n=11) and energy (n=10).

Having presented what Member States have done in relation to the adoption of national climate frameworks, this section focuses on how climate change is framed within these frameworks. These frames have been shown to have explanatory value regarding the eventual policy decisions taken within the governance system (e.g. Lau & Schlesinger, 2005).

To explore in more detail the framing of climate change in national climate frameworks adopted by the Member States and the differences between the policy framing of climate change for CPI, I searched for CPI-related concepts in the texts of national climate frameworks adopted by the Member States between 1990 and 2020 (see Table 6.1 for the different details of adoption by Member States, n=110). The conceptual content analysis focuses on the search for references to CPI-related concepts, such as *policy integration*, *coordination*, *policy coherence* and *cross-sectoral/inter-sectoral*, to determine the existence and frequency of these concepts in the texts. For further details on the different national climate frameworks examined, refer to Appendix 1.

As developed in Section 4.4.2, the study of policy framing in the Member States is primarily distilled from the content analysis of the texts of the national climate frameworks (mitigation-specific, adaptation-specific or joint). As developed in Chapter 4 (see Section 4.4.2), references to CPI-related concepts in the text of national climate frameworks were used as a proxy measure for the inclusion of an integrated policy narrative. This primary data offers insights into how Member States have framed CPI processes in their national climate frameworks. The qualitative content analysis allows for a comparison of trends between mitigation and adaptation national frameworks, as well as across all Member States and throughout the period of study.

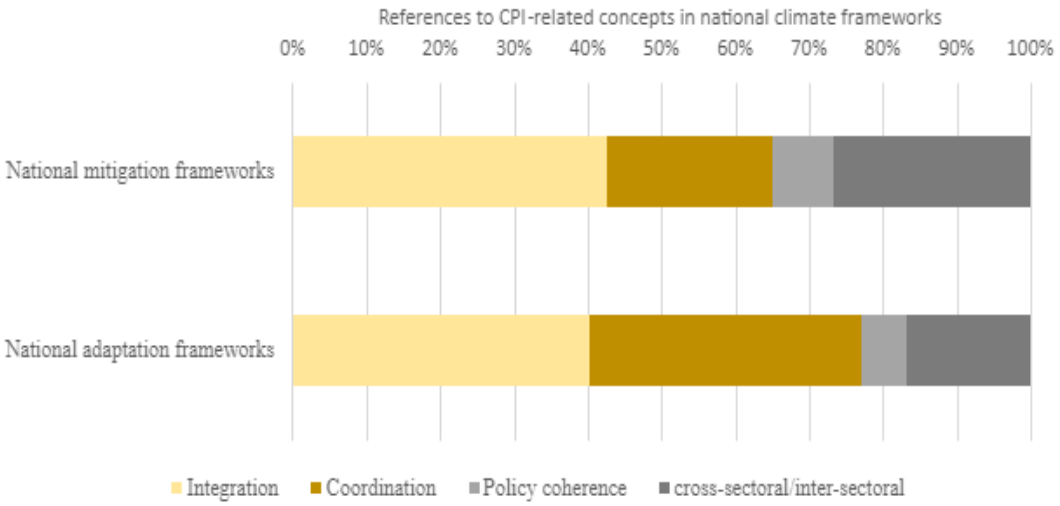
Firstly, the author of this thesis undertook a content analysis of the Member States' national climate framework texts *in force* as of 2020. A total of 54 national climate frameworks were analysed (national mitigation frameworks n=26, national adaptation frameworks n=28). In this case, the analysis began with a search for CPI-related concepts in the text of the policy documents and then progressed to a qualitative

content analysis exploring the meanings, themes and relationships among concepts using NVivo. For further details on the different national climate frameworks examined, refer to Appendix 1.

The analysis of the content of Member States' national climate frameworks adopted and *in force* revealed that from the total of 979 references to CPI-related concepts in the texts of the national mitigation frameworks in force (n=26), 36.8% were references to the integration of climate change into other sectoral policies. Additionally, 31.8% of mentions referred to cross-sectoral/inter-sectoral action. Following this, 21.3% of references were related to coordination, and finally, 10.1% of references pertained to policy coherence (see Figure 6.3).

In the case of the analysis of the references to CPI-related concepts in the texts of the national adaptation frameworks adopted by the Member States (n=28), a total of 952 references were identified. Of these, 40.2% were references to the integration of climate change into other sectoral policies. References to coordination accounted for 37% of the total references to CPI-related concepts, followed by 16.8% of references to action across sectors/cross-sectoral/inter-sectoral. Finally, 6% of references were related to policy coherence (see Figure 6.3).

Figure 6.3 *Proportion of CPI-related references in national mitigation frameworks and national adaptation frameworks in force in 2020*



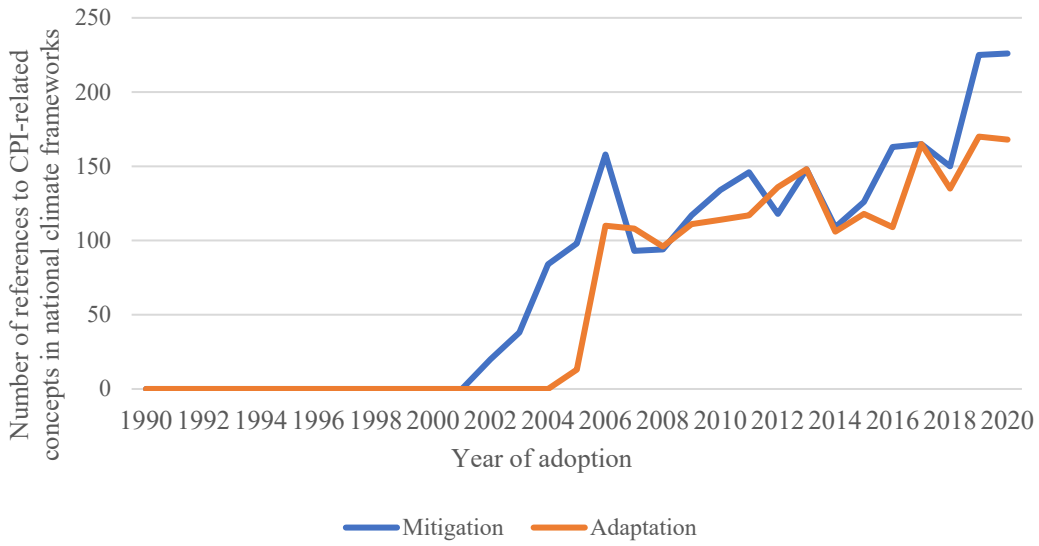
Source: Author's own composition

A main finding derived from the analyses, as shown in Figure 6.3, is that there are no substantial differences in the way that Member States have referred to CPI exercises

and the integrative narrative between their national climate frameworks. Member States have preferred to frame the CPI process using concepts such as policy integration or mainstreaming, both in mitigation and adaptation frameworks. Conversely, policy coherence has received much less attention. One element that varies between adaptation and mitigation frameworks is that national adaptation frameworks mention associated coordination challenges and the policy and administrative capacities spanning across policy subsystems more frequently, such as detailed sectoral plans or programmes, coordination bodies or information flows to facilitate interactions amongst sectoral administrative units or departments in comparison with national mitigation frameworks.

After completing the textual content analysis, the analysis focuses on the temporal aspect of policy framing in national climate frameworks. Figure 6.4 shows an overview of the attention to CPI-related concepts in the national climate frameworks per year of adoption from 1990 to 2020. The graph indicates overall upwards trends for both the number of references to CPI-related concepts in national climate frameworks for both mitigation and adaptation. In the case of mitigation, the upwards trend in CPI-related references peaked in 2006, followed by an abrupt drop to levels similar to those of 2004. The highest references to CPI-related issues are present in national mitigation frameworks adopted in 2019 and 2020. A similar upwards trend can be identified, with peaks of CPI references in the national adaptation frameworks in 2017 and 2019.

Figure 6.4 *Overview of the number of references to CPI-related concepts in national climate frameworks at the point of adoption, 1990–2020*



Source: Author's own composition

Cross-national analysis

In order to explore in more detail the adoption of national climate frameworks, I undertook an analysis of identified national climate frameworks from CPDBs (see Chapter 4). The analysis differentiates between national mitigation policies and national adaptation policies adopted by the Member States from 1990 to 2020, including revisions and updates.

Focusing on the details for each of the Member States, Table 6.1 provides an overview of the adoption of national climate frameworks by the Member States from 1990 to 2020. The colour coding indicates the adoption of different policy frameworks from lower to higher legislative levels: mitigation strategy, mitigation plan or programme, mitigation act or law. The table also includes the timing of any updates and revisions of policies and laws.

In the case of climate change mitigation, Belgium was the first adopter of a framework, having adopted an internal burden-sharing agreement negotiated between the federal government and the three Belgian regions in the context of the Cooperation Agreement of 14th November 2002. This agreement clarifies the respective responsibilities of the different authorities regarding compliance with international commitments on GHG

reduction and became an important element of the Belgian climate policy framework (CAN Europe, 2022).

The last adopter of mitigation policy was Slovakia, which in 2020 adopted its Low-Carbon Development Strategy for 2030. The country's strategy aims to identify measures to achieve climate neutrality in Slovakia by 2050, setting sectoral targets for GHG emissions reductions by 2030 in order to meet its EU commitments (Croatian Ministry of Economy and Sustainable Development, 2021).

The last adopter of mitigation policy was Slovakia, which in 2020 adopted its Low-Carbon Development Strategy for 2030. The country's low-carbon development strategy for 2030 with a view to 2050 aims to identify measures to achieve climate neutrality in Slovakia by 2050, setting sectoral targets for GHG emissions reductions by 2030 in order to meet its EU commitments (Croatian Ministry of Economy and Sustainable Development, 2021).

In the case of adaptation to climate change, Finland was the first innovator of national adaptation policy in the EU. Its first National Climate Strategy was adopted in 2001 as a government report to Parliament, which noted the need to prepare a programme for adaptation, resulting in the national adaptation strategy published in 2005. Detailed measures and implementation of the adaptation strategy were provided for 14 different sectors (Finnish Ministry of Economic Affairs and Employment, 2019).

The last adopter of the national adaptation policy was Croatia, with the Climate Change Adaptation Strategy for the period up to 2040, with a view to 2070. This strategy, based on the provisions of the Law on Climate Change and Ozone Layer Protection, sets out the climate change adaptation. During the development of the Adaptation Strategy, the sectors most exposed to the impacts of climate change were identified: water resources, agriculture, forestry, fisheries and aquaculture, biodiversity, energy, tourism and health. Two cross-cutting themes are also addressed: spatial planning and disaster risk management and governance. This adaptation strategy identifies priority measures and coordinated action through short-term action plans and a monitoring mechanism (*Climate Change Adaptation Strategy in the Republic of Croatia for the Period until 2040 with a View to 2070*, 2020).

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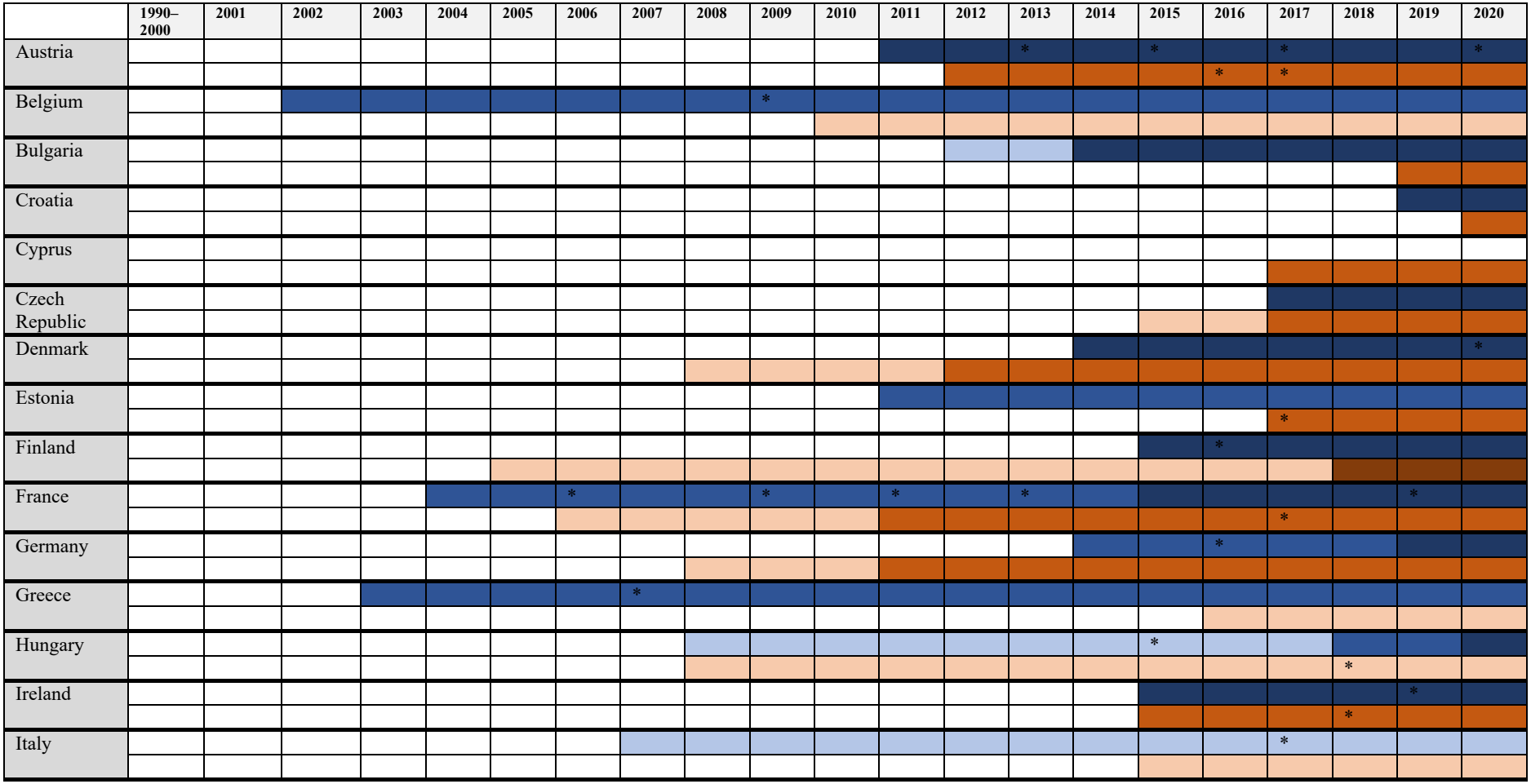
Table 6.1 *The adoption of national climate frameworks (mitigation and adaptation) in the Member States, 1990–2020*



The adoption of national climate frameworks (mitigation and adaptation) in the Member States, 1990–2020 (continued)

Table 6.2 *The adoption of national climate frameworks (mitigation and adaptation) in the Member States, 1990–2020 (continued)*

	1990–2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Latvia																					
Lithuania																					
														*							
Luxembourg																					
Malta																					
Netherlands																					
																	*				
Poland																					
Portugal									*							*				*	
																*					
Romania																					
																*					
Slovakia																					
Slovenia																					
Spain													*							*	*
										*				*							*
Sweden																					
																		*			
UK																				*	
														*					*		

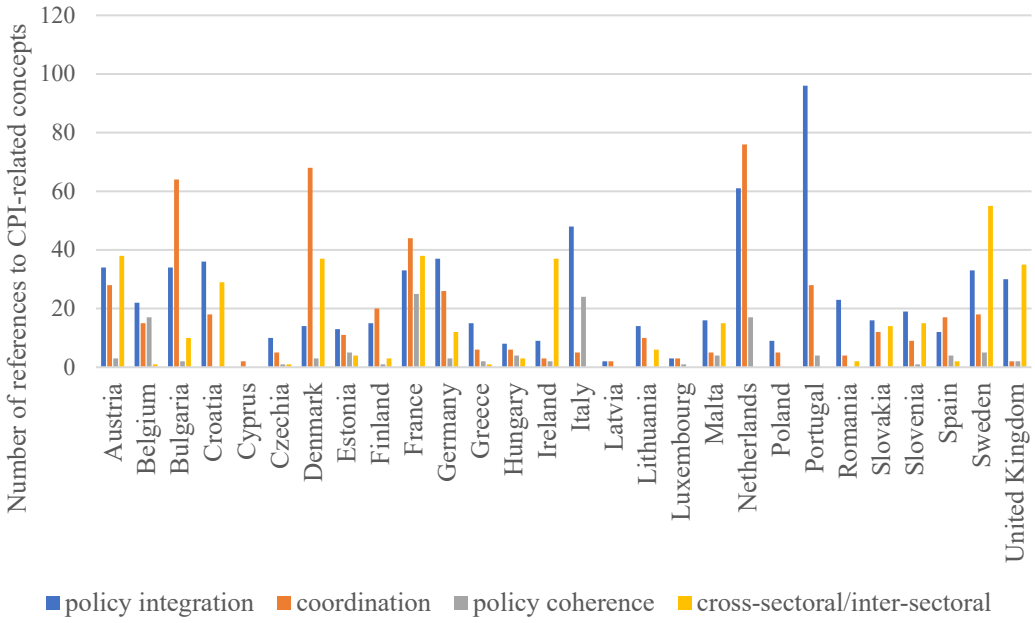
LEGEND	**Mitigation**	**Adaptation**
No national climate framework		
National strategy		
National plan/programme		
National act/law		
National strategy, plan or law update/revision	*	*

6.2.2 Integrative narratives in the national climate frameworks

The findings of the qualitative content analysis of national climate frameworks *in force* as of 2020 also provide insights into the differences in how Member States have framed CPI processes and their integrative narratives. Figure 6.3 shows the number of references to CPI-related concepts in the national climate frameworks (mitigation, adaptation and combined) *in force*.

After completing the content analysis of national framework texts, it is now possible to show that there is great variability in the number of references to CPI-related concepts in the texts. Figure 6.5 shows the number of explicit references to CPI-related concepts (*policy integration*, *coordination*, *policy coherence* and *cross-sectoral/inter-sectoral*) in the Member States' national climate frameworks (mitigation, adaptation and combined) *in force* as of 2020.

Figure 6.5 *Total number of references to CPI-related concepts per Member State's national climate frameworks (mitigation, adaptation and joint) in force as of 2020*



Source: Author's own composition

The countries that present the most CPI-related references in their national climate frameworks were the Netherlands (n=154), France (n=140) and Portugal (n=128). Conversely, Cyprus (n=2) and Latvia (n=7) were the countries with the fewest explicit references to CPI-related concepts in their national climate frameworks.

One factor explaining these results is the difference in length, expansion and/or complexity of the documents analysed. Despite serving similar purposes, the national climate frameworks examined come in various shapes and sizes, and these differences in format likely reflect different governing cultures as well as the evolving understanding of the role and functions of these national policy documents. For example, Portugal's framework is 100 pages long with numerous in-text references to other statutes, while the UK's framework is also 100 pages of dense legal language; others are significantly less complicated and amount to fewer than five pages (e.g. the Netherlands and Sweden). Nevertheless, the quantitative content analysis regarding the number of explicit references to CPI-related issues still provides a good indication of the integrative narrative included in the text.

Having provided these insights from the quantitative aspects of the content analysis, we now turn to the qualitative aspects, analysing and interpreting the content of the textual data. Some relevant examples are presented as follows.

Portugal's national climate framework (Portuguese Roadmap for Carbon Neutrality 2050) contains the national climate framework with the greatest number (n=40) of explicit references to *policy integration*. The document establishes the goal of carbon neutrality by 2050 and states that to achieve this goal, 'all sectors must contribute to reducing emissions, increasing efficiency and innovation, promoting improvements' (Portuguese Ministry of the Environment and Energy Transition, 2019, p. 9). At the core of the policy is the delineation of GHG emission trajectories to attain carbon neutrality by 2050, derived from modelling exercises encompassing all relevant economic sectors: the energy system, comprising power generation, mobility and transport, industry and buildings; agriculture, forests and other land uses; waste and wastewater. Section 9 is dedicated to the effective governance conditions necessary to ensure the integration of carbon objectives into sectoral areas, stating that it is essential to establish "a governance model that will guarantee policy articulation, climate policy implementation and the coherence of national sectoral policies and strategies with the aim of achieving carbon neutrality by 2050" (Portuguese Ministry of the Environment and Energy Transition, 2019, p. 87).

Another insightful example is the National Climate Agreement from the Netherlands (2019). The National Climate Agreement, adopted in June 2019, contains agreements

with the sectors on their contributions to achieving climate goals. The participating sectors include electricity, industry, the built environment, traffic and transport and agriculture. The document states that the five sectors "are closely intertwined and the links between them will only grow stronger" (Government of the Netherlands, 2019, p. 11). To address this, the Agreement announces the establishment of a Progress Committee, providing a platform for the [sectoral] parties to have a platform where they can "meet and reflect" (Government of the Netherlands, 2019, p. 12). The Minister of Economic Affairs and Climate Policy will have coordinating responsibility and will monitor the overall coherence envisaged as a result of the Climate Agreement, including in relation to the identified cross-sector themes (Government of the Netherlands, 2019, p. 9).

Another finding from the qualitative content analysis is the difference in the use of CPI-related concepts in national mitigation and adaptation frameworks *in force*. The results of the content analysis show that national climate frameworks present a greater variety of terms to refer to CPI exercises, but there are terms that are particularly used in the context of adaptation to climate change. Examples of these include climate-proofing, future-proofing, climate change-proofing or mainstreaming. In some cases, these differences in terminology do not imply a clear difference in meaning, and concepts can be used interchangeably, i.e. the integration of climate change considerations into other sectoral areas. However, in other instances, the choice of CPI-related concepts presents a different integrated policy narrative in terms of the policy setting or context, the plot, the actors and the policy solution(s) presented. In other words, the choice of conceptual definition of the policy integration process is not merely a semantic or labelling choice. The different conceptual choices to describe the policy integration process often emphasise different aspects of the policy process.

For example, the national climate change adaptation framework adopted by Ireland in 2018 includes nine references to climate-proofing and stresses its urgency to achieve the 2050 goals as "the need for effective climate proofing is therefore both urgent and essential in achieving a successful transition to a climate resilient economy and society by 2050" (Irish Department of Communications, 2018, p. 4).

In the glossary, climate-proofing is defined as: "protecting development investments and outcomes from the impacts of climate change. It reduces the vulnerability of

projects by: Analysing the risks that climate change poses and taking steps to counteract them." (Irish Department of Communications, 2018, p. 98). Despite the more cross-sectoral and society-wide considerations of the CPI exercise included in the initial section of the document, the definition offered in the glossary aims for a narrower integrative narrative.

In summary, the secondary data analysis and quantitative content analysis of the national policy frameworks revealed that all analysed countries have acted on climate change by adopting national climate frameworks on mitigation and/or adaptation, aiming to serve as rules of the game (Jann & Wegrich, 2017), setting out the governance arrangements for CPI as a national policy process. Whereas all countries had a national adaptation framework adopted by 2020, the analysis of secondary data from the CCLW indicated that 26 of the 28 countries had acted on climate change mitigation by passing a national mitigation framework as of 2020.

The quantitative content analysis of the national climate frameworks in force as of 2020 (n=54) revealed that in all countries, the integrative narrative and framing of climate change as a public policy issue has advanced, to at least some degree, towards a framing of climate change as a public policy issue that requires cross-sectoral action. Despite serving similar purposes, the national climate frameworks examined vary greatly in format and extent. For example, some are very brief executive summaries, while others are extensive documents. Additionally, there are substantial differences across Member States in how CPI is conceptualised; there are even differences in the overall purpose of CPI as a policy process. The concepts that have been used include *policy integration*, *policy coherence*, *integrated policy* and *cross-sectoral governance*.

6.3 Subsystem involvement

This section reports the results of the analysis of the second CPI dimension, namely subsystem involvement. As described in detail in Chapter 4, the analysis focuses on the involvement of the different policy subsystems to offer insights into the institutional arrangements established to coordinate climate policies at the Member State level. Policy integration is a policy process that entails the coordination of actors across relevant policy subsystems at the national level, namely cross-sectoral coordination. Policy subsystems denote the presence of sector-specific actors in a particular policy problem, in this case, climate change. These specialised or sector-

specific actors interact with other policy specialists to formulate and implement policies related to the subsystem (Kaplaner et al., 2023).

In other words, the involvement of the different policy subsystems is a prerequisite for the combination of policy instruments from various policy subsystems towards coherent policy goals as a response to a complex policy problem that no single policy subsystem, policy instrument or agency can resolve alone (Cejudo & Trein, 2022). Against this background, researchers of public policy and policy design have recognised that the cross-sectoral dimension of public administration and public policy is pivotal to addressing these complex policy problems (Trein et al., 2019, 2021; von Lüpke et al., 2023).

This section unpacks the main findings from the analysis of the types of horizontal coordination bodies established by the Member States to govern climate change, considering the following institutional arrangements: type of coordination body, political support and density of interactions amongst policy subsystems. For details of the conceptualisation and methodology, see Chapters 3 and 4.

6.3.1 Type of coordination body

The first elements of the analysis are the types of coordination bodies established by the Member States to coordinate climate policymaking horizontally and cross-sectorally, i.e. ministries, agencies or authorities at the national level. After collecting original data, a total of 58 national coordination bodies have been identified that have been established by the Member States to govern climate change across sectors at the national level for the period 1990–2020. Some of these are currently operational (n=42), while others have been terminated or discontinued (n=16). The first finding is that, as of 2020, all Member States have employed coordination bodies to assist national governments in various stages of climate policymaking. The terminated bodies were replaced in all instances by other cross-sectoral coordination bodies, i.e. different nomenclature in line with changes in ministerial organisation or other alterations in institutional arrangements towards cross-sectoral climate coordination at the national level.

Moving now to the temporal aspect, there are a few elements worth noting. Despite the establishment of the first cross-sectoral coordination bodies in the early 1990s

(pioneers), most countries did not establish institutional arrangements for cross-sectoral coordination until the early 2000s, when cross-sectoral coordination bodies began to be a common feature of climate governance at the national level. This upwards trend in adoption dynamics continued until 2020, peaking in 2018–2019, marked by the creation of seven coordination bodies in each of those years. The first established coordination body was the German Inter-Departmental Working Group on CO_2 Reduction, established in 1990.

Table 6.2 provides a summary of the types of coordination bodies by area of climate policy covered. In 50.9% of cases (n=29), the coordination body covers the area of mitigation policy; in 28.1% of cases (n=16), it addresses both mitigation and adaptation areas combined in a joint body; and in 21.0% of cases (n=13), the coordination body focuses specifically on climate adaptation.

Table 6.23 *Type of coordination bodies to govern climate change in the Member States (mitigation, adaptation or joint), 1990–2020*

	Mitigation-Specific Coordination Body	**Adaptation-Specific Coordination Body**	**Joint Coordination Body**
Commission	2	2	3
Inter-ministerial committee	16	1	5
Council	1	0	0
Working group	8	10	7
Conference	1	0	0
Steering committee	1	0	1
	29	**13**	**16**

Source: Author's own composition

Joint coordination bodies often comprise several different sub-committees or working groups that may specialise in various areas of climate policy. However, in very few instances are there institutional arrangements designed to coordinate horizontally both mitigation and adaptation policies.

One case where there is an institutional arrangement to coordinate horizontal *mitigation and adaptation* policies is Spain (*integration within climate policy*). The

Spanish Inter-ministerial Commission for Climate Change and Energy Transition was established in 2018, having previously been named the Coordination Commission from 2005 to 2018. Since 2007, there has been a working group on impacts and adaptation, which includes participation from ministries, agencies and other public authorities to coordinate adaptation action. Similarly, there are other working groups dedicated to various aspects of mitigation policy (Spanish Ministry of Environmental Transition, 2006). Ad hoc working groups are created to address specific areas of interaction between mitigation and adaptation, such as drafting the strategy titled 'Roadmap Strategy for the non-ETS sectors by 2030' . Additionally, there are weekly meetings between the technical staff in the areas of mitigation and adaptation, with technical staff working simultaneously in both areas (Prados Pascual, 2018).

In terms of their organisational characteristics, these coordination bodies can take the form of commissions, inter-ministerial committees, working groups, steering committees, councils or conferences. Working groups (25) and inter-ministerial committees (22) are the two primary types of coordination bodies tasked with coordinating climate change at the national level (see Table 6.2). In some instances, the inter-ministerial committee has several other working groups to cover particular subsystems or tasks. For example, the Commission for the Coordination of Climate Change Policy in Slovakia is the coordination body at the level of State Secretaries (Slovak Ministry of Economy, 2019, p. 57). In August 2018, an *ad hoc* working group was established to prepare the low-carbon strategy, and another focused on the preparation of the Adaptation Strategy of the Slovak Republic for the adverse effects of climate change. In addition to these working groups, six other working groups have been set up for different policy areas: energy, agriculture and forestry, transport, industry and waste management (Slovak Ministry of Economy, 2019, p. 59).

Another finding from the analysis of horizontal cross-sectoral coordination is that many countries have more than one coordination body covering each of the climate areas in operation. Despite one coordination body potentially taking a central role, some countries have opted to maintain several cross-sectoral coordination bodies that focus on specific elements of national climate policy or stages of policymaking. This is the case in Germany and Belgium.

Germany established its Inter-Departmental Working Group on CO_2 Reduction in 1990 as a mitigation-specific body. The Interdepartmental Working Group on Adaptation, established in 2008, and the Network on Vulnerability, established in 2011, are both adaptation-specific bodies with varying levels of involvement of high-level political and technical representatives. The Climate Cabinet was established in 2019, and the overall coordination process is steered by the Federal Ministry of the Environment (von Lüpke et al., 2023).

Belgium is another example, with various cross-sectoral coordination bodies in operation. The Coordination Committee for International Environmental Policy was established in 1995 as part of the Inter-ministerial Conference on the Environment. The Committee for International Environmental Policy is divided into so-called Steering Groups. Climate policy is monitored by one of these Steering Groups: the Coordination Working Group on the Greenhouse Effect, which in turn has several specialised working groups. The National Climate Commission, established by the cooperation agreement of 14th November 2002, is responsible for drafting and following up on the NECP and implementing international and European reporting obligations (NECP, 2019).

6.3.2 Political support

The analysis now shifts to the examination of the political dimension, i.e. the degree to which coordination is backed by high political levels and the lead agency in charge of overall coordination.

Participation from the head of government, ministers and higher-level managers (Peters, 1998, p. 52) can indicate the level of political support for the policy integration process. The analysis of the participation of the head of government in the operational Member States' coordination bodies shows that, in a vast majority of cases (85%), the head of government reportedly did not intend to participate in the coordination body. In 12.5% of cases, there is intended participation from the head of government, while in 2.5% of cases, there is no available information to establish their intended participation.

Coordination bodies that intend for head of government participation include the UK's Cabinet Committee for Climate Change (Climate Action Strategy). The creation of the

Cabinet Committee on Climate Change, to be chaired by the Prime Minister, was announced on 17th October 2019, with the aim to bring together ministers responsible for climate change policy and 'provide a forum to hold departments to account for their actions to combat climate change' (UK Government, 2019, p. 1). Other examples of coordination bodies with intended participation from the head of government include the Swedish Ministerial Working Group on Climate Policy, the Finnish Ministerial Working Group for Coordinating Climate and Energy Policy, the Estonian Climate and Energy Committee and the Belgian Inter-ministerial Conference on the Environment.

When comparing the available data between mitigation-specific, adaptation-specific coordination bodies and joint coordination bodies, the analysis shows that all coordination bodies with the intended head of government participation were either mitigation-specific (n=4) or joint coordination bodies (n=1). No adaptation-specific coordination bodies were reported to have participation by the head of government.

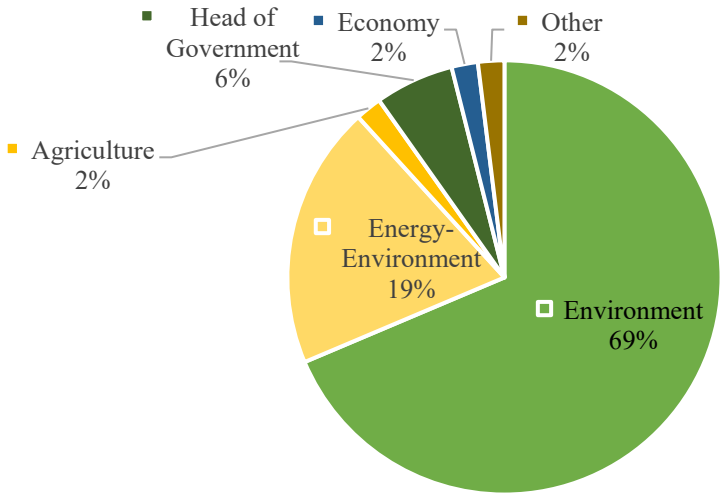
The second element to assess political support for the cross-sectoral coordination exercise at the national level concerns which ministry, department or other institution acts as the lead agency steering the overall coordination process.

Figure 6.6 shows which ministry has the responsibility for chairing the different national coordination bodies. In 69% of cases, the ministry responsible for environmental matters chairs the coordination body. The ministry with environmental responsibilities is the most common department that chairs national coordination bodies in the Member States. Some examples include the Austrian National Climate Protection Committee (which replaced the Inter-Ministerial Committee to Coordinate Measures to Protect Global Climate), which, as of 2020, was chaired by the Federal Ministry for Sustainability and Tourism, and the Bulgarian Inter-Ministerial Climate Committee on Climate Change, chaired by the Deputy Minister of the Environment and Water.

In 19% of cases, the lead responsibility was shared between the ministries of the environment and energy. Shared responsibility can occur in two different scenarios. The first is when the environment and energy are part of the same ministry, such as the Green Committee in Denmark, chaired by the Minister for Climate, Energy and Utilities; alternatively, when the coordinating responsibilities are shared by two

ministries. The Inter-ministerial Working Team for the National Plan of Poland (established in 2015) is chaired by the minister responsible for energy and the minister responsible for the environment, regardless of the governmental organigram (Polish Ministry of Environment & Energy, 2020).

Figure 6.6 *Sectoral responsibility to chair the climate change coordination body in the Member States*



Source: Author's own composition

In just 6% of the coordination bodies, the head of government is the chair and holds the responsibility for steering the coordination process, one example being the UK's Cabinet Committee on Climate Change mentioned previously.

In 2% of cases, the ministry with economic responsibilities is the lead organisation. An example of a coordination body chaired by a ministry with economic responsibilities is the Dutch coordination body established in 2019. The Implementation Committee of the Climate Agreement in the Netherlands is chaired by the Minister of Economic Affairs and Climate Policy. The minister has the coordinating responsibility, including monitoring the overall coherence and cross-sector themes identified in the Climate Agreement (Government of the Netherlands, 2019).

When comparing the available data between mitigation-specific, adaptation-specific coordination bodies and joint coordination bodies, the analysis shows that all

adaptation-specific coordination bodies were chaired by the ministry with environmental responsibilities. It is also worth noting that in 14 cases (14 of the 42 operational coordination bodies), there is no information available about the chair or coordinating agency.

6.3.3 Interactions between policy subsystems

After collecting original data on the coordination bodies as of 2020, Table 6.3 shows the sectoral participation in the national coordination bodies that are operational as of 2020. The table details the composition of climate change coordination bodies in the Member States as of 2020 that coordinate horizontal cross-sectoral action on mitigation, adaptation or combined by each of the Member States, also including the name of the coordination body and the year of establishment and termination if relevant. There are several elements worth noting from the analysis of the range of participating subsystems in coordination bodies.

Firstly, the analysis shows that the ministry or department with environmental responsibilities is present in all coordination bodies established by the Member States. Apart from the seven coordination bodies with no available data on the range of participating policy subsystems, the remaining coordination bodies (n=35), including mitigation-specific, adaptation-specific and joint), include the ministry or department with responsibilities for the environment amongst the participating policy subsystems.

Secondly, the environment, energy and transport were the most common subsystems that participated in the horizontal coordination of climate change at the national level. After the environment (n=35), energy (n=29) and transport (n=28) policy domains were the most common participating policy subsystems, particularly in mitigation-specific coordination bodies.

Finally, the range of participating policy subsystems differs amongst mitigation-specific, adaptation-specific and joint operational coordination bodies. Adaptation-specific and joint coordination bodies often include policy subsystems that are less common in mitigation-specific coordination bodies, such as agriculture, water, health and LULUCF.

Table 6.3 below summarises the details and policy subsystems' participation in the operational and focal coordination bodies in the Member States as of 2020 (mitigation-specific, adaptation-specific or joint). The table offers information about the name of the coordination body and the year of establishment. Colour coding has been used to differentiate between mitigation-specific (blue), adaptation-specific (orange) and joint coordination bodies (grey). As indicated before, seven of the coordination bodies do not provide information about the subsystem participation, as this data is not available and has been left blank.

In summary, the findings indicate a dynamic activity concerning the establishment of coordination bodies by the Member States from 1990 to 2020. Despite the establishment of the first cross-sectoral coordination bodies in the early 1990s, most countries did not establish institutional arrangements for cross-sectoral coordination until the early 2000s, when such bodies began to be a common feature of climate governance at the national level. This upwards trend in adoption dynamics continued until 2020, peaking in 2018–2019 with the creation of seven coordination bodies in each of those years. Additionally, the findings indicate that coordination bodies were amended, and their institutional design, responsibilities, names and other elements were changed throughout the study period in many countries.

Table 6.34 *Policy subsystems participation in climate change coordination bodies in the Member States as of 2020*

Member State	Name of Coordination Body (Year of Establishment)	Agriculture	Buildings & Residential	Development	Economy	Energy	Environment	Health	Industry	LULUCF	Public Sector	R&D	Tourism	Transport	Urban	Waste	Water
Austria	Inter-Organisational Working Group on Adaptation (2017)	■	■				■	■	■	■				■	■		■
	National Climate Protection Committee (2018)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Belgium	National Working Group on Adaptation (2003)	■					■	■		■							■
	National Climate Commission (2002)			■	■	■	■							■			
Bulgaria	Inter-Ministerial Climate Committee on Climate Change (2020)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Croatia	Committee for Intersectoral Coordination for Policy and Measures for Mitigation and Climate Change Adaptation (2018)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Cyprus	Ministerial Committee (2017)					■	■		■		■			■			
Czech Republic	Inter-Ministerial Working Group on Climate Protection (2015)	■				■	■	■	■	■							■
	Inter-Ministerial Working Group on Climate Change (2017)	■		■	■	■	■		■					■			
Denmark	Coordination Forum for Climate Change Adaptation (2008)	■		■			■							■			■
	Inter-Ministerial Working Group Climate Committee (2012)				■	■	■	■	■	■		■		■			
Estonia	WG for the Implementation of the National Adaptation Strategy (2017)	■			■		■				■	■					
	Climate and Energy Committee (2019)			■	■	■	■				■	■		■			
Finland	Coordination Group for Adaptation to Climate Change (2005)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Ministerial Working Group for Coordinating Climate and Energy Policy (2008)	■		■	■	■	■			■							
France	Inter-Ministerial Working Group (from 2008, but no data is still operational)	No data on subsystem participation															
Germany	Inter-Ministerial Working Group on Adaptation to Climate Change (2008)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Climate Cabinet (2019)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Greece	National Climate Change Adaptation Committee (2016)	■		■		■	■	■	■			■	■	■	■	■	■
	Government Committee for Energy and Climate (2019)	■		■		■	■	■	■			■	■	■	■	■	■
Hungary	Inter-Ministerial Working Group on Climate Change (No data)	No data on subsystem participation															
Ireland	National Adaptation Steering Committee (2015)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Climate Action Delivery Board, Cabinet Committee on Environment and Climate Change, supported by the associated Senior Officials Group (2019)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Italy	Working Group on Impacts, Vulnerability and Adaptation to Climate Change (2016)	No data on subsystem participation															
	Permanent Inter-Ministerial Working Group on the Climate Crisis (2019)	■			■	■	■	■		■				■			
Latvia	Intragovernmental Group on Adaptation (2017)	■			■	■	■	■									
	National Energy and Climate Council (2019)	■	■	■	■	■	■	■						■			

Table 6.35 *Policy subsystems participation in climate change coordination bodies in the Member States as of 2020 (continued)*

Member State	Name of Coordination Body (Year of Establishment)	Agriculture	Buildings & Residential	Development	Economy	Energy	Environment	Health	Industry	LULUCF	Public Sector	R&D	Tourism	Transport	Urban	Waste	Water
Lithuania	National Climate Change Committee (2001)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Luxembourg	Inter-Ministerial Committee for the Coordination of Climate Policy (2019)				■	■	■										
Malta	Inter-Ministerial Steering Committee (2013), Climate Action Board (2015)				■	■	■							■	■		
Netherlands	Implementation Committees and Progress Committees (2019)	■			■		■			■	■			■			■
Poland	Working Group on Climate Change Adaptation (2015)	No data on subsystem participation															
	Inter-Ministerial Working Team for the National Plan (No data) (2015)	■	■	■		■	■			■	■	■		■	■		■
Portugal	Inter-Ministerial Commission for Air, Climate Change and the Circular Economy	■		■	■	■	■	■			■	■	■	■			
Romania	National Commission on Climate Change and Ad-hoc Working Groups (No data)	No data on subsystem participation															
Slovakia	Climate Coordination Policy Commission (2012)	■		■	■	■	■	■			■	■					
Slovenia	Inter-Ministerial Climate Change Adaptation Working Group (2016)	No data on subsystem participation															
	Inter-Departmental Expert Group of Different Ministries (2019)	No data on subsystem participation															
Spain	Inter-Ministerial Commission for Climate Change and Energy Transition (2018, from 2005 Inter-Ministerial Commission for Climate Change)	■		■	■	■	■	■	■	■	■	■	■	■		■	■
Sweden	National Network for Adaptation (2016)		■				■	■	■			■		■			
	Ministerial Working Group on Climate Policy (2020)	■	■		■	■	■							■			
UK	Cabinet Committees on Climate Action Strategy and Climate Action Implementation (2020, before 2005 IMC Climate Change)	■	■	■	■	■	■		■					■	■		

Source: Author's own composition

In relation to the interaction between subsystems, the most common form of interaction is formal meetings held several times per year as part of the coordination arrangements. Other informal arrangements have not been clearly stated in the source of data, i.e. NECP and other supporting documentation (see Chapter 4 for details).

This is exemplified by one of Greece's coordination bodies, which is one of the few that publicly details the intended number of meetings and their regularity. The Greek Inter-Ministerial Committee for Energy and Climate is set to meet once a month (Article 3, Act of the Council of Ministers no. 31 / 30.09.2019: Establishment and Operation of the Inter-ministerial Committee for Energy and Climate).

However, the intended frequency of meetings may not accurately represent the frequency of interactions amongst subsystems, as some countries have reported discrepancies between the intended number of meetings and actual meetings. In the case of the UK, a report from the National Audit Office established that cross-government committees, particularly departmental boards, 'have not met as frequently as intended', with data correct as of September 2020 (Ball et al., 2019, p. 31).

Another audit report on climate change governance in Germany (2022) concluded that the Climate Committee intended to meet once per year, but the actual number of meetings differed from this:

"The meeting was scheduled for late summer. In 2020, the climate committee met once. The agenda did not encompass current emissions, and the progress made in reducing GHG emissions. […]. In 2021, the climate committee did not meet at all" (Bundesrechnungshof, 2022, p. 33).

Finally, the analysis in this section also examines the decision-making methods employed by the coordination bodies, i.e. unanimity or majority voting, veto rights, etc. One of the challenges that government departments often face when attempting to coordinate cross-government action is the mechanisms to influence the performance and engagement of other departments and to what extent they can hold other departments accountable for (not) delivering their climate goals.

However, one of the main findings is that horizontal cross-sectoral coordination arrangements are rarely publicly available and remain unknown beyond the governance system. Exceptionally, Denmark's Coordination Forum for Climate

Change Adaptation reveals that ongoing ministerial responsibility will continue to lie with the individual sector ministries, which are responsible for implementing the relevant initiatives. Existing decision-making procedures will not be changed, as the Coordination Forum will not make decisions of a binding character (Danish Ministry of Climate and Energy and Utilities, 2019).

The lack of data availability on the institutional design of coordination bodies in climate change or some of the variables studied is one of the main findings for the analytical dimension of subsystem involvement. This challenge is primarily due to the absence of a central data source and standardised reporting requirements. While the NECP to the European Commission requires Member States to report on the institutional arrangements responsible for achieving their climate policy initiatives, they have considerable discretion regarding what they report and at which level of detail. I observed that many countries did not report horizontal coordination bodies with a high level of detail. Thus, I was not always able to verify whether a coordination body lacked a certain characteristic or if it simply was not reported. Furthermore, it was only possible in a small number of cases to ascertain whether some institutional arrangements were still in place following several changes in government or had been terminated/discontinued.

Second, the secondary data and qualitative and quantitative content analyses of documentation (NECPs, Climate-ADAPT portal and literature) related to 58 cross-sectoral coordination bodies revealed that all 28 Member States had employed coordination bodies to assist national governments in the horizontal cross-sectoral integration of climate change, i.e. integration within and between policy sectors. Since the 2010s, these institutional arrangements have become a common feature of climate governance at the national level. However, the analysis of the organisational and administrative aspects of these coordination bodies, such as the type of administrative body, subsystem involvement or political support, indicates notable differences amongst coordination bodies.

Working groups and inter-ministerial committees were the most common types of cross-sectoral coordination bodies, covering mitigation (50.9%), adaptation (28.1%) or both mitigation and adaptation (21%). Often, joint coordination bodies comprise several different sub-committees or working groups that may specialise in various

areas of climate policy. However, high-level political support is not a common feature of coordination bodies: only 12.5% of them were reportedly designed to facilitate the participation of the head of government. Regarding the lead agency, in 69% of cases, the ministry responsible for environmental matters chairs the coordination body solely or shares steering with the ministry responsible for energy (19% of cases).

6.4 Conclusion

This chapter has unpacked the main findings from the analysis of the operationalisation of CPI as a multi-dimensional policy process in the Member States from 1990 to 2020 (Research question 2) and the similarities and differences in the pathways towards CPI across Member States (Research question 3). The focus of this chapter was on two of the dimensions of CPI, namely, policy frame and subsystem involvement. It has revealed five main findings regarding the operationalisation of CPI in the Member States and the similarities and differences in the pathways towards CPI.

Firstly, all 28 countries have acted on climate change by passing national climate frameworks on mitigation and/or adaptation. Despite the fact that Member States have their own specific systems for responding to climate policymaking, since the mid-2000s, national climate framework policies have become the predominant approach to establishing climate governance arrangements at the national level. Particularly after 2015, Member States opted to enshrine their commitments in legal acts or laws. The analysis of the adoption of national climate frameworks has also revealed a consistent trend amongst the Member States to adopt national climate frameworks that separately address mitigation and adaptation action.

Secondly, the quantitative and qualitative content analysis of the texts of the national climate frameworks (mitigation-specific, adaptation-specific or joint) has offered insights into how Member States have framed CPI processes in their national climate frameworks. The specific way that the Member States have referred to CPI differs, i.e. *policy integration*, *coordination*, *coherence* and *cross-sectoral/inter-sectoral*. The variety of conceptual definitions of CPI hints at divergences in the integrative narrative and the aim of CPI as a national policy process across Member States.

Thirdly, Member States have established coordination bodies to assist national governments in various stages of climate policymaking. Despite the fact that the first

coordination bodies were established by Germany in 1990 and Belgium in 1995, coordination bodies were not a common feature of national climate governance until the early 2000s. As of 2020, across the 28 Member States, no less than 58 cross-sectoral coordination bodies have been identified. Crucially, 42 of them were currently operational, while 16 have been terminated or discontinued.

Fourthly, Member States have developed different types of coordination bodies in terms of organisational arrangements and the area of climate policy covered (50.9% mitigation-specific, 28.1% adaptation-specific and 21.0% joint). Working groups and inter-ministerial committees were the most common types of coordination bodies established by the Member States. The coordination bodies present differences in terms of the type of coordination body, political support and interaction amongst subsystems. High-level political support was not a common feature of coordination bodies, as just 12.5% were planned to have head of government participation. In relation to the lead agency, in 69% of cases, the ministry responsible for environmental matters chairs the coordination body solely or in a shared steering task with the ministry responsible for energy (19% of cases).

In relation to the analysis of the range of participating policy subsystems in the coordination bodies, the empirical results show that the ministry or department with environmental responsibilities is present in all coordination bodies established by the Member States. Environment, energy and transport were the most common participating policy subsystems in the horizontal cross-sectoral coordination of climate change at the national level.

Finally, the analysis of the frequency of meetings and decision-making methods in the coordination bodies has revealed the difficulty of accessing this information through formal governmental sources and publicly accessible data sources. It is noticeable that there is a challenge in empirically exploring the coordination processes in the different Member States. The empirical examination aimed to find data on the intended participation of the head of government, the range of participating subsystems, the *intended* regularity of meetings and the *actual* regularity of meetings as decision-making methods. One of the main findings is that coordination arrangements are rarely publicly explicit and that the coordinating arrangements remain unknown beyond the governance system. This includes the relative priority of policies across government

and the mechanisms through which the lead subsystem—often the chair of the coordination body—can influence the performance and engagement of other policy subsystems.

Chapter 7
Climate policy integration in the Member States (II): policy goals and policy instruments

7.1 Introduction

The previous chapter presented the findings on the operationalisation of CPI for the period from 1990 to 2020 by the Member States on two analytically relevant dimensions, namely policy framing and subsystem involvement. One of the main findings is that, since the mid-2000s, national climate policy frameworks have become the predominant way that Member States have developed the details on national governance procedures and institutional arrangements to govern climate change, including integration into other sectors. Yet, in practice, there is substantial variability in the specific way that the Member States have referred to the CPI processes, i.e. *policy integration*, *coordination*, *coherence* and *cross-sectoral/inter-sectoral.* This terminological variety amongst the Member States hints at divergences in the integrative narratives and differences in the overall aim of CPI as processes. Another main finding is that cross-sectoral coordination bodies are now a common feature of climate governance at the national level.

This chapter continues to unfold the main findings from the analysis of the operationalisation of CPI by the Member States in the period from 1990 to 2020, focusing on the remaining salient dimensions, namely *policy goals* and *instruments*. These two dimensions of policy integration refer to the policymaking phases when integrative capacities are put to work in generating policy goals and instruments; they face the common challenges of public policy implementation and of implementing integrated public policies that involve more than one agency or sector, as well as potential political challenges (Cejudo & Trein, 2022; Egeberg & Trondal, 2016).

As expanded further in Chapter 4 (see Chapter 4 Section 4.5), the analytical strategy to explore each of the CPI dimensions is a two-stage process. First, the analysis focuses on examining the aggregated data for the 28 Member States and then the analysis of each of the units, i.e. countries. In both steps, the analytical lines of

comparison are temporal and sectoral for all the phenomena described for each of the CPI dimensions.

The remainder of this chapter is structured as follows. Section 7.2 reveals the findings of an original analysis of the total of 1,114 national climate targets adopted by the Member States from 1990 to 2020, retrieved from the CCLW database. In turn, Section 7.3 presents the findings from the analysis of 650 procedural policy instruments employed by the Member States and derived from the CPDB database. After presenting the main findings on policy goals (Section 7.2) and policy instruments (Section 7.3) at the national level, Section 7.4 highlights the main findings and bridges to Chapter 8, Discussion.

7.2 Policy goals

This section presents the results of the analysis of the third dimension of the analytical framework to examine CPI as a multi-dimensional policy process, namely *policy goals*. Following Candel and Biesbroek (2016, p. 220), policy goals in the context of policy integration processes refer to "the explicit adoption of a specific concern within the policies and strategies of a governance system, including its policy subsystems, with the aim of addressing the concern" . As detailed in Chapter 3, Section 3.1.3, this thesis considers *climate goals* as both are mitigating the effects of climate change (*mitigation goals)* and reducing vulnerability to the impacts of climate change (*adaptation goals)*, as well as the concretisation of these climate goals into specific, measurable and time-bound objectives (*climate targets*, *considering both mitigation* and *adaptation targets*) to guide decision-making and provide a framework for evaluating public policies.

This section presents the main findings from the analysis of national climate targets adopted by the Member States during the period 1990–2020. These were analysed by the number of targets and the type and sectoral coverage of the climate targets adopted. As expanded in Chapter 4, Section 4.4.2, the secondary data set of Member States' climate targets in laws and policies adopted from 1990 to 2020 is retrieved from the CCLW database (n=1,114). Aspirational and non-measurable targets were not recorded and, therefore, not included in the analysis.

7.2.1 Analysis of national climate targets

Of the total of 1,114 national climate targets, 79.9% were enshrined in executive orders and policies, while 19.9% of national climate targets were enshrined in legal acts passed by parliaments. There were 0.2% of climate targets that had both executive and legislative features or could not be classified. Thus, executive orders, decrees or policies issued by governments account for four-fifths of national climate frameworks containing climate targets and were the most common way to adopt national climate targets by the Member States aggregated over the study period of study. Previous contributions to the study of climate change legislation have pointed out the importance of robust climate frameworks (CAN Europe, 2022, p. 5). Enshrining such a framework in dedicated laws that are legislative acts passed by parliament "not only reflects a government's resolve to achieve its climate objectives but can also facilitate planning, improve investment security, increase buy-in and heighten transparency" (Duwe & Evans, 2020, p. 4).

Focusing on the area of climate policy covered by national climate targets, one of the main findings of the analysis is that amongst the 1,114 national climate targets, 1,107 deal mainly with mitigation, and just seven of the national climate targets have an adaptation component. The data retrieved from the CCLW for the adoption of climate targets from 1990 to 2020 have shown very limited action by the Member States in defining short-, medium- and long-term climate targets focused on adaptation action to concretise goal setting in national adaptation policies such as climate laws, strategies, programmes or plans. A total of seven national climate targets with an adaptation component (7 of 1,114 national climate targets) were related to the water sector (Malta) and disaster risk management (UK). An example is the aim to 'reduce water leakage by 50% by 2050', which is included in the Maltese Strategy 'Preparing for a Drier Future' (National Infrastructure Commission of England, 2018).

In relation to the focus of the climate targets on mitigation action, 86.3% of national climate targets were non-GHG reduction (or *non-emissions reduction*) targets. National climate targets aimed at GHG reduction (or *emissions reduction*) accounted for 13.7% of national mitigation climate targets.

Cross-temporal analysis

Table 7.1 summarises the distribution of national climate targets adopted during the period 1990–2020 by the Member States (n=1,114). Target-year targets were the most common targets (41.1%), followed by fixed-level (25.3%) and base-year targets (24.5%). Less common were trajectory (7%), intensity (1.4%) and baseline year scenario (0.7%) targets.

Table 7.1 *Type of national climate targets adopted during the period 1990–2020*

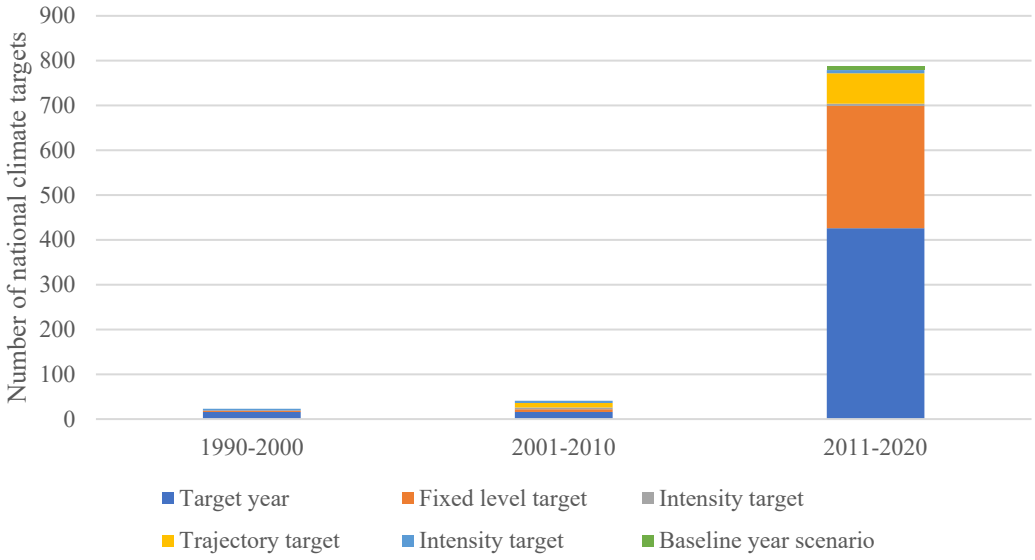
Type of Climate Targets	Total	%
Target year	458	
Fixed level target	282	
Base year target	273	24.5%
Trajectory target	78	7.0%
Intensity target	16	1.4%
Baseline year scenario	7	0.7%
	1,114	33.6%

Note: Derived from data from the CCLW database; for further explanation, see Chapter 4.

Source: Author's own composition

After identifying the categories of the total 1,114 national climate targets adopted in the period 1990–2020, the next section focuses on the cross-temporal aspect. Figure 7.1 shows the different types of targets adopted during the different sub-periods of 1990–2000, 2001–2010 and 2011–2020. The figure illustrates how there has been an increase in the climate targets adopted at the national level, notably in the period 2011–2020.

Figure 7.1 *Evolution of different categories of national climate targets, sub-periods 1990–2000, 2001–2010 and 2011–2020*



Note: Derived from data from the CCLW database; for further explanation, see Chapter 4.

Source: Author's own composition

Target-year targets were the most common way that Member States translated their mitigation goals into measurable national climate targets (458 of the total of 1,114 national climate targets). The years 2020, 2030, 2040 and 2050 have commonly been used as the target years for national climate targets. From the total of 458 target-year national climate targets, 149 have a target year of 2020, 163 have a target year of 2030, 10 have a target year of 2040 and 67 have a target year of 2050. The remaining national climate targets with a target year (n=69) have employed other years different from 2020, 2030, 2040 or 2050 as the target year.

A relevant example of target-year national climate targets is the net zero target. At the time of writing this thesis, 26 of the 28 Member States have adopted net zero targets that are enshrined in law (n=15 national climate targets)[19], in policy documents (n=9 national climate targets)[20] or in declarations/pledges (n=2 national climate targets)[21].

[19] Austria, Germany, Spain, Finland, France, the UK, Greece, Croatia, Hungary, Ireland, Luxembourg, Portugal, Slovakia, Sweden and the Netherlands.
[20] Belgium, Cyprus, Italy, Lithuania, Latvia, Malta, Slovenia, Poland and Romania.
[21] Denmark and Estonia.

Two Member States, namely the Czech Republic and Bulgaria, were reported to be in discussion/proposal for the adoption of net zero targets. The way that the term net zero has been used and detailed in the national climate target to achieve net zero differs across the Member States: climate neutral(ity) (n=12)[22], net zero (n=10)[23], carbon neutral(ity) (n=3)[24] and zero emissions (n=3)[25].

Additionally, there are differences in the target year; this is constantly changing as countries participate in what has been described as the 'race to net zero' (Alliance for Sustainability Leadership in Education, 2023). As of 2020, 22 of the Member States have pledged for net zero by 2050 (n=22); three Member States have pledged for net zero by 2045 (i.e. Germany, Denmark and Sweden). In turn, Austria has established 2040 as the target year. Finally, Finland has brought their net zero commitment forwards to 2035.

Fixed-level targets were the second most commonly adopted type of national climate targets (282 of the total of 1,114 national climate targets). An example of this type of target is France's pledge to have seven million electric charging points for electric vehicles by 2030, enshrined in Law No. 2015/992 on Energy Transition for Green Growth (Energy Transition Law).

Closely related to fixed-level targets, ***base-year targets*** were the third type of national climate targets (273 of the total of 1,114 national climate targets). An example of this type of climate target is Belgium's target of a reduction of GHG-ETS emissions by 35% compared to 2005 in the final integrated NECP. Common base years for national climate targets were 1990, 2005 and 2020. From the total of 273 base-year targets, 65 have a base year of 1990, 82 have a base year of 2005 and 63 have a base year of 2020. The remaining 63 base-year targets have base years different from 1990, 2005 and 2020.

Trajectory targets (n=78), ***intensity targets*** (n=16) and ***baseline-year scenarios*** (n=7) were less common. Baseline-year scenarios were very similar to base-year targets. An

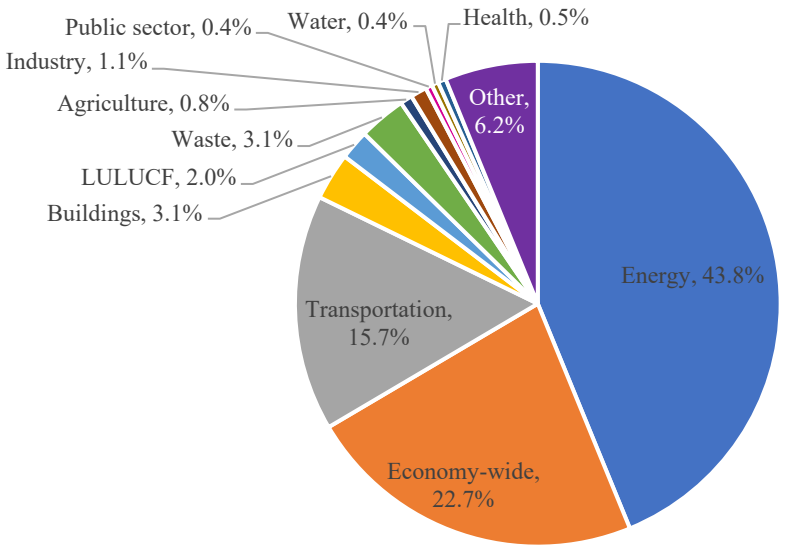
[22] Austria, Cyprus, Czech Republic, Germany, Spain, Finland, Greece, Croatia, Ireland, Italy, Malta and Romania.
[23] Denmark, France, the UK, Hungary, Lithuania, Luxembourg, Slovakia, Slovenia, Sweden and Bulgaria.
[24] Belgium, Latvia and Portugal.
[25] Estonia, the Netherlands and Poland.

example of a trajectory target is Romania's climate target adopted in 2008, which details electricity consumption from renewables: 33% by 2010, 35% by 2015 and 38% by 2020 (Law no. 220/2008 for the promotion of energy production from renewable energy sources). An intensity target example is the Spanish climate target of 2011: *reduction of energy intensity of 2% p.a. between 2010 and 2020 against a 2010 baseline* (Plan for Renewable Energy in Spain Plan for Renewable Energy 2011–2020).

Cross-sectoral analysis

Figure 7.2 illustrates the sectoral coverage of national climate targets adopted by the Member States from 1990 to 2020. The sectoral coverage of national climate targets is derived from the categorisation assigned in the CCLW database: agriculture, transport, energy, waste, environment, tourism, LULUCF, industry, buildings and residential, water, health, public sector and others[26]. A breakdown of the sectoral categories covered by the national climate targets can be found in Figure 7.1.

Figure 7.2 *Sectoral coverage of national climate targets adopted by the Member States from 1990 to 2020*



Note: Derived from data from the CCLW database; for further explanation, see Chapter 4. Source: Author's own composition

[26] https://climate-laws.org/methodology

Energy, economy-wide and transport account for nearly 80% of the total national climate targets. The energy sector is the most targeted, comprising 43.9% of national climate targets (n=488). This is followed by economy-wide (non-sector-specific) targets, which represent 22.7% of national climate targets (n=253), and transportation, which accounts for 15.7% of national climate targets (n=175). The latter sometimes includes surface transport, aviation and shipping, although there is no consistency across all countries. As noted by CCLW researchers (Nachmany et al., 2015, p. 30), a "clear delineation of the related energy and economy-wide distinctions is not always possible" as the energy system is a major driver of climate change and transformation in how we produce and consume energy is closely related. Economy-wide targets are high-level objectives communicated on a national level without being assigned to a specific sector (Nachmany & Mangan, 2018).

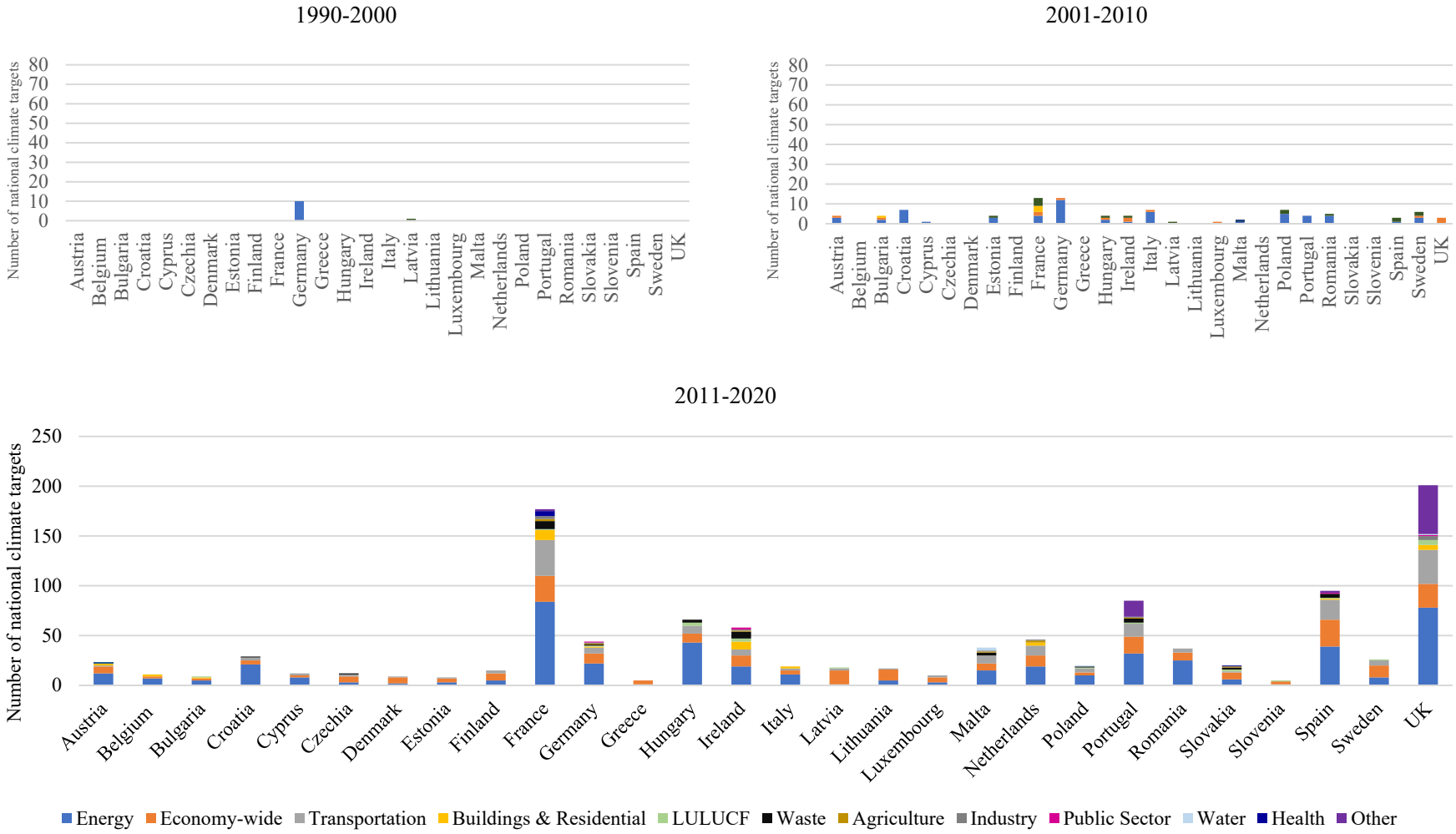
In contrast, the remaining sectors account for less than 20% of national climate targets, with 6.2% assigned to the category 'other' (n=69); 3.1% to buildings and residential (n=35); 3.1% to waste management (n=35); 0.8% to agriculture (n=9); 1.1% to industry (n=12); and 0.4% assigned to both water (n=5) and to the public sector (n=5).

Cross-national analysis

These findings provide insights into the extent to which specific economic sectors or policy areas are deemed responsible for climate action in the 28 Member States. The following section of the analysis focuses on sector-specific national climate targets adopted by each Member State.

Figure 7.3 presents the evolution of sector-specific national climate targets adopted by the Member States for the periods 1990–2000, 2001–2010 and 2011–2020.

Figure 7.3 *Adoption of sector-specific national climate targets across the Member States, 1990–2000, 2001–2010 and 2011–2020*



Note: Derived from data from the CCLW database; for further explanation, see Chapter 4. Source: Author's own composition.

The two countries that adopted the most national climate targets from 1990 to 2020 were the UK (n=201) and France (n=177). The data on the adoption of national climate targets from the UK and France stand out from those of other Member States, particularly during the period from 2010 to 2020. Of the total 201 national climate targets adopted by the British government, 78 were assigned to the energy sector, 49 to other sectors such as research and development or finance, 34 to the transportation sector and 24 were regarded as economy-wide (non-sector-specific). Other sectors that have received significantly less attention include buildings and residential (n=5), LULUCF (n=5), industry (n=4), public sector (n=1) and water (n=1).

France has recorded 177 national climate targets. Of these, 84 were assigned to the energy sector, 36 to the transportation sector, 26 were regarded as economy-wide (non-sector-specific) and 10 were targeted at the buildings and residential sector.

A commonality between these two countries regarding their climate governance arrangements is their shared approach to organising national mitigation policy into carbon budgets. Carbon budgets were introduced in the UK under the Climate Change Act in 2008. Each carbon budget provides a five-year statutory cap on the total amount of GHG emissions that can be emitted in the UK for a given five-year period. The first budgetary period was from 2008 to 2012 (UK Department of Energy and Climate Change, 2014). So far, six carbon budgets have been established in law, covering the period from 2008 to 2037 (Climate Change Committee, 2020b). The carbon budgets concern overall emissions from all sectors. After a carbon budget has been set, the government is mandated under the Climate Change Act to define, as soon as practical, its strategy for meeting that budget. The relative contributions expected from different sectors are left to policy.

Each relevant UK ministry draws up sector-specific proposals and policies for compliance with emission budgets and submits these to Parliament. Most recently, the government completed this process in 2021 as part of its ‘Net Zero Strategy’, which identifies measures for power, fuel supply and hydrogen, industry, heat and buildings, transport, natural resources, waste and F-gases and GHG removals (HM Government, 2021).

In France, a relevant piece of legislation for climate governance is the 2015 Energy Transition for Green Growth law. Carbon budgets, or caps on GHG emissions in

France, define the target trajectory for emissions reductions over successive five-year periods. The revised national low-carbon strategy, adopted by decree in April 2020, incorporates the goal of carbon neutrality (Jensen & Seppälä, 2021). It provides guidelines for implementing the transition to a low-carbon economy across different sectors. These guidelines have been translated into sectoral legislation covering GHG-emitting sectors, such as the Energy and Climate Act in 2019. The French Energy Transition for Green Growth law stipulates that the emission budgets be distributed among the sectors via the national decarbonisation strategy, although this distribution is only indicative and does not carry formal responsibility allocation (Duwe & Evans, 2020).

Following the UK and France, the two countries with the most reported national climate targets based on the CCLW database were Spain (n=95) and Portugal (n=85). Of the total 95 national climate targets adopted in Spain, 39 were assigned to the energy sector, 27 were regarded as economy-wide (non-sector-specific), 20 to the transportation sector and 4 to the waste sector, and finally, sectors such as buildings and residential (n=1), LULUCF (n=1) and the public sector (n=1). Spain's approach to sector-specific assignment differs from the carbon budget approach. The first framework policies for climate governance in Spain were Law no. 1/2005, which regulated the GHG emission rights trading scheme and created the Climate Change Policy Coordination Commission, followed by the National Climate Change Adaptation Plan (2006) and the Strategy for Climate Change and Clean Energy, along with the related Plan of Urgent Measures (2007) (Prados Pascual, 2018). More recently, the Climate Change and Energy Transition Law (National Government of Spain, 2021), adopted in May 2021, serves as the new framework policy that organises the governance of climate change and establishes sector-specific targets for transport, buildings, waste and agriculture enshrined in law. The sector-specific targets were developed in the Long-term Strategy (*Spanish Long-term Strategy for 2050*) and the NECP adopted in 2020 for the sectoral areas of transport, agriculture, waste, residential, commercial and institutional, industry and F-gases (Spanish Ministry for Ecological Transition and Demography, 2020; Spanish National Government, 2020).

In the case of Portugal, the Strategic Framework for Climate Policy (*Quadro Estratégico para a Política Climática*) was adopted in 2015 as the first step towards implementing the national plan of the European Climate and Energy Package for 2030

(Portuguese Republic, 2019). The Climate Strategy, in conjunction with the National Programme on Climate Change (*Programa Nacional para as Alterações Climáticas - PNAC 2020-2030)* and the Adaptation Strategy (*Estratégia Nacional de Adaptação às Alterações Climáticas)*, sets out sectoral goals with a 2020 and 2030 horizon in areas such as transport and mobility, buildings and residential, industry, water, agriculture, LULUCF, R&D, knowledge, information and communication, public sector, finance and cities (Portuguese Environment Agency, 2015).

After these four countries (the UK, France, Spain and Portugal), the remaining Member States have adopted significantly fewer recorded national climate targets during the period from 1990 to 2020. The countries with the lowest number of reported national climate targets were Slovenia (n=5) and Greece (n=5). Of the total national climate targets adopted in Greece, four were considered economy-wide (non-sector-specific), and one was assigned to the energy sector. In Slovenia, three were economy-wide targets; one was assigned to the energy sector and another to LULUCF.

Another noteworthy element from Figure 7.2 is the temporal aspect of the adoption of sector-specific climate targets. Overall figures indicate that Member States adopted 91.6% of the total national climate targets between 2011 and 2020 (see Figure 7.2). Despite that, Member States progressively increased the adoption of national climate targets in previous decades, and the period from 2010 to 2020 has seen an exponential increase in the adoption of national climate targets by the Member States.

These results demonstrate that Member States, albeit at different levels, have advanced in developing systems to differentiate sectoral responsibilities and establish sector-specific national climate targets, particularly from 2010 to 2020. Some of the latest climate laws developed in the late 2010s include highly elaborated provisions differentiating responsibilities by sector in countries such as Germany and the Netherlands (Duwe & Evans, 2020).

Germany adopted a mechanism to ensure sector-specific targets were assigned and reviewed amongst the Member States in 2019 (Duwe & Evans, 2020). Germany's national climate targets are enshrined in the Federal Climate Change Act (Bundes-Klimaschutzgesetz), which was approved in 2019 and amended in 2021 (German Government, 2021). For 2022–2030, the Act defines quantified, annual GHG emissions reduction targets for six individual sectors (sector-specific targets): energy,

(small) industry, buildings, transport, agriculture, waste and others. The targets are set in line with the European GHG reduction plans, following a linear trajectory. The pace of emissions reductions varies by sector. For example, to meet its 2030 sector targets, Germany's energy sector needs to cut emissions by 37.5%, while emissions from agriculture are required to decrease by 17% between 2020 and 2030. The 2021 amendment tightened annual emissions reduction targets for each sector until 2030 (German Government, 2021). If a target is missed or exceeded, the difference will be subtracted from or added evenly to the remaining annual emissions budgets of the sector until 2030 and beyond (Organization for Economic Co-operation and Development, 2022). New emissions budgets for the years after 2030 will be set in 2024. The climate ambition of national climate targets can be further raised but not lowered. Responsibility for ensuring compliance with annual emissions budgets lies with the respective federal ministry.

Moreover, the Federal Climate Change Act introduced a mandatory emissions monitoring mechanism in which sectoral emissions are assessed annually and compared to sectoral targets. Every year, on 15th March, the German Environmental Protection Agency publishes an estimate of annual emissions by sector. If a sector fails to meet its annual target, the responsible ministry is required to prepare an instant programme within three months. This aims to adjust the sector's trajectory and ensure compliance with the annual sectoral emissions budgets in subsequent years. The instant programme is then reviewed by the independent Council of Experts on Climate Change. The Council, created in 2019, advises the government on the implementation of the Federal Climate Change Act. The instant programme, along with the experts' assessment, is then presented for decision to the Federal Parliament (German Government, 2021).

However, the German federal government has recently stepped back from the system that breaks down overall climate targets into sector-specific targets. The latest reform of the climate change law (2021) introduced changes in how sectoral reporting and the establishment of sectoral targets operate. Instead of each sector reporting on its progress towards the climate targets, the latest amendment to the climate change law establishes that the overall progress towards meeting the target was reported. In this way, sectors can compensate for each other, and federal ministries are no longer

responsible for reaching the sectoral target or developing emergency programmes if a target is missed.

The Netherlands has developed a different approach based on sectoral agreements. The National Climate Agreement, concluded in June 2019, contains agreements with different sectors on what they will do to help achieve the climate goals. The participating sectors include electricity, industry, the built environment, mobility, agriculture and land use (Government of the Netherlands, 2019). The main goal of the National Climate Agreement is to achieve a 49% reduction in national GHG emissions by 2030 compared to 1990 levels. Consultations on how to achieve this target took place within five sector platforms. To facilitate the debate on measures and specific instruments and to provide clear direction, each sector platform was assigned a sector-specific target regarding the reduction of emissions that would have to be realised by 2030, in respect of established and previously proposed policies, to collectively achieve the 49% reduction. The sector-specific targets were indicative and formulated by the government based on calculations by the Netherlands Environmental Assessment Agency on the national cost-effectiveness of various carbon emissions reduction measures. Regarding sectoral responsibility, the document states that "the implementation of the agreements will remain in the hands of the participating parties, including the Dutch government" (Government of the Netherlands, 2019, p. 9). The Minister of Economic Affairs and Climate Policy will have a coordinating responsibility and will monitor the overall coherence that is envisaged as a result of the Climate Agreement, including in relation to the cross-sector themes it has identified.

A different approach has been developed in Finland, where coordination in governing the climate is stated as a purpose of the law. Article 15 of the law describes an organised framework in which responsibility is spread relatively evenly across multiple ministries; each ministry is required to prepare its sectoral input for each long-term and medium-term climate plan and provide the necessary information for their sector for annual reporting in the medium term. The Ministry of the Environment has overall responsibility for medium-term policy planning, while the Ministry of Employment and the Economy is responsible for the long-term strategy.

In summary, the secondary data analysis of the 1,114 national climate targets retrieved from the CCLW database revealed that the energy sector was the most targeted sector (43.9% of national climate targets). Following this, a total of 22.7% of national climate targets were classified as economy-wide (non-sector-specific). As noted by the CCLW researchers (Nachmany et al., 2015, p. 30), a 'clear delineation of the related energy and economy-wide distinctions is not always possible', as the energy system is a major driver of climate change, and transformations in how we produce and consume energy are closely related. Economy-wide targets are high-level targets communicated at the national level without being assigned to a specific sector (Nachmany & Mangan, 2018). Transport was the second most targeted sector by national climate targets, with a total of 15.7%. In contrast, the remaining sectors accounted for 17.7% of national climate targets, including buildings and residential (3.1%), waste (3.1%), agriculture (0.8%), industry (1.1%), water (0.4%) and other (6.2%).

Regarding the temporal evolution, the secondary data analysis revealed that Member States adopted 91.6% of the total national climate targets between 2011 and 2020. Despite that, Member States have progressively increased the adoption of national climate targets in previous decades, and the period from 2010 to 2020 experienced an exponential increase in the adoption of national climate targets at the national level.

7.3 Policy instruments

This section covers the findings of the fourth and final dimension of the CPI—policy instruments. Following the approach detailed in Chapter 3, the analysis of policy instruments explores the governing instruments or tools employed by Member States across different policy sectors, as well as the arrangements for their consistent implementation and evaluation to address various dimensions of a complex problem (Candel & Biesbroek, 2016; Cejudo & Michel, 2021; Tosun & Lang, 2017; Trein et al., 2019, 2021). As Tosun and Lang (2017, p. 555) explain, (climate) policy integration implies both "creating interdependencies between different policy sectors" and using "specific policy instruments, mostly of a procedural rather than substantive nature".

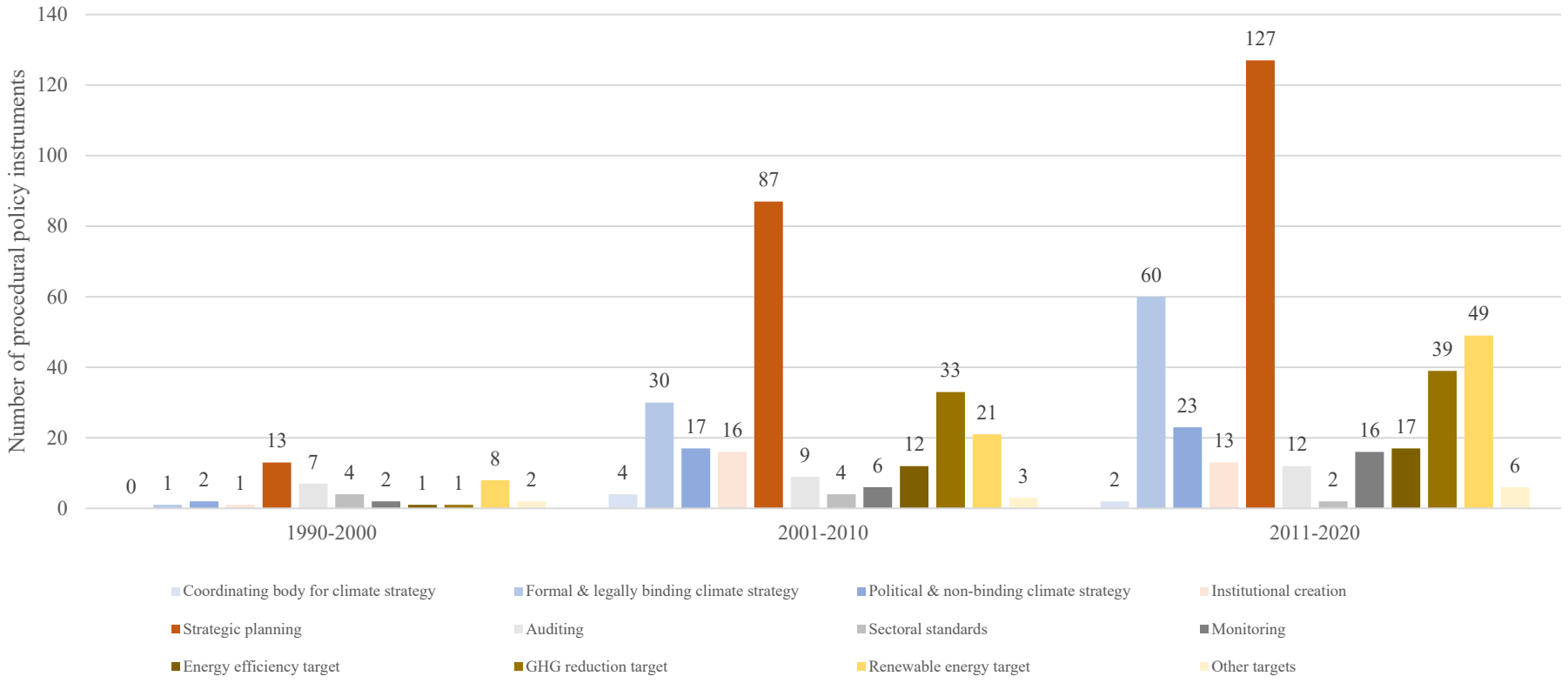
As developed in Section 4.4.2, the study of policy framing in the Member States explores the number and variety of procedural policy instruments adopted during the period from 1990 to 2020 to advance CPI at the national level. Derived data from the

CPDB database, 490 policies that include 650 procedural policy instruments were identified (n=650). According to the policy instruments taxonomy of the CPDB, there are four main categories: economic instruments, regulatory instruments, information and education, policy support and voluntary approaches (New Climate Institute, 2024). Drawing on the discussion in Chapter 4, the analysis focuses on four categories of policy instruments of a procedural nature: climate strategy, policy support, regulatory instruments with procedural aspects and climate targets.

Cross-temporal analysis

Focusing first on the temporal aspect, this section unfolds the findings from the analysis of the evolution of the employment of different types of national climate procedural policy instruments at the national level, considering the periods of 1990–2000, 2001–2010 and 2011–2020 (see Figure 7.4), as well as exploring the total procedural policy instruments for the period 1990–2020. One of the first elements worth noting from the figure is that the number of national procedural policy instruments has overall increased from 1990 to 2020. Particularly, it is observed that in the period 2001–2010, there was a substantial increase in the employment of national procedural policy instruments by the Member States, particularly in strategic planning (n=87), GHG reduction targets (n=33) and formal and legally binding climate strategies (n=30). The incremental trend intensified in the period of 2011–2020, during which the key subcategories of procedural policy instruments remained strategic planning (n=127), formal and legally binding climate strategies (n=60) and climate targets, including both renewable energy targets (n=49) and GHG reduction targets (n=39).

Figure 7.4 *Sectoral coverage of national climate targets adopted by the Member States from 1990 to 2020*

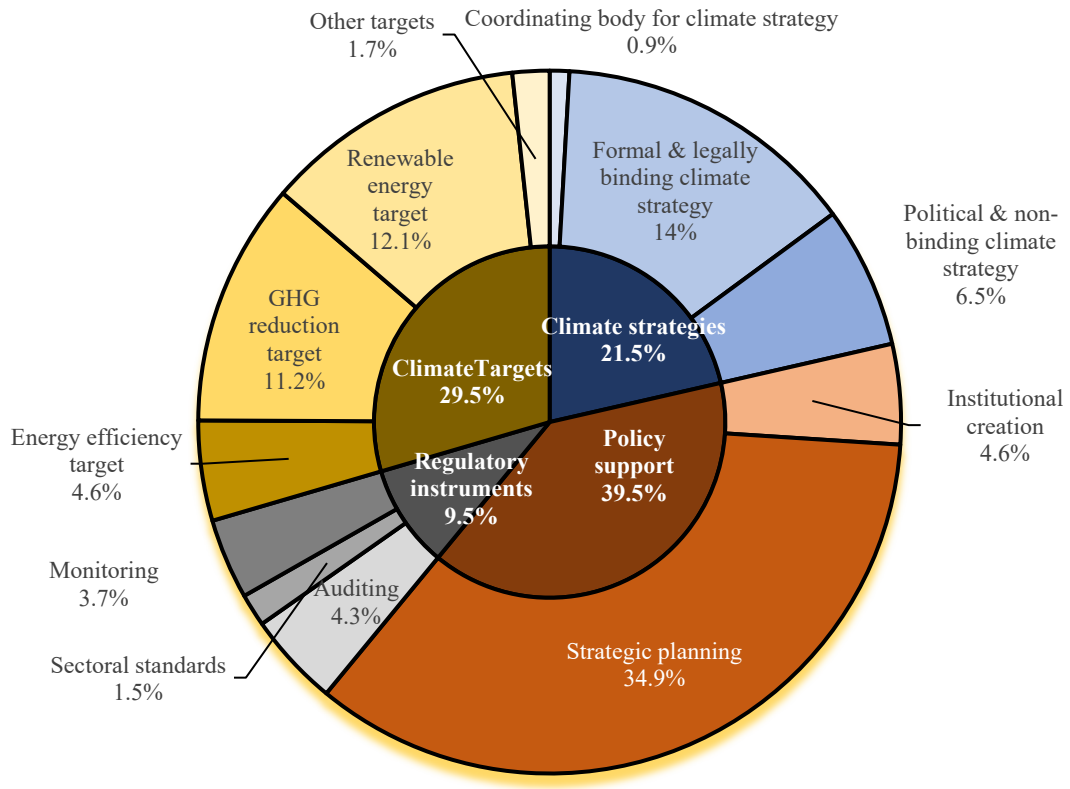


Note: Derived from data from the CPDB database; for further explanation of the method, see Chapter 4. Source: Author's own composition.

Figure 7.4 shows an increase in the number of policies and policy instruments, as well as an increased thickening of the policy mix. The diversity of types of procedural policy instruments has increased, particularly since the 2000s. Two categories have become notably relevant: strategic planning, formal and legally binding climate frameworks (decision-making) and national climate targets, both GHG and non-GHG targets (target-setting).

The analysis now focuses on the types of procedural policy instruments employed by the Member States from 1990 to 2020. Figure 7.5 provides an overview of the number of procedural policy instruments organised into categories and subcategories (see Chapter 4 for further details).

Figure 7.5 *National procedural policy instruments employed by the Member States from 1990 to 2020: categories and subcategories*



Note: Derived from data from the CPDB database; for further explanation of the method, see Chapter 4.

Source: Author's own composition.

The first element worth noting is the stage of policymaking. Of the 650 national procedural policy instruments, most remain in force (66.7%), indicating that the policy is currently implemented and/or enforced. In 25.9% of cases, the instruments have ended, referring to policies with a determined implementation timeframe that has concluded. In 5.9% of cases, the implementation stage is considered superseded, meaning that policies have been replaced by a new distinct policy. In 1.4% of cases, the policies are in gestation, indicating that the policy has been discussed and designed, but its implementation start date is set in the future, and the policy document can still be modified before adoption.

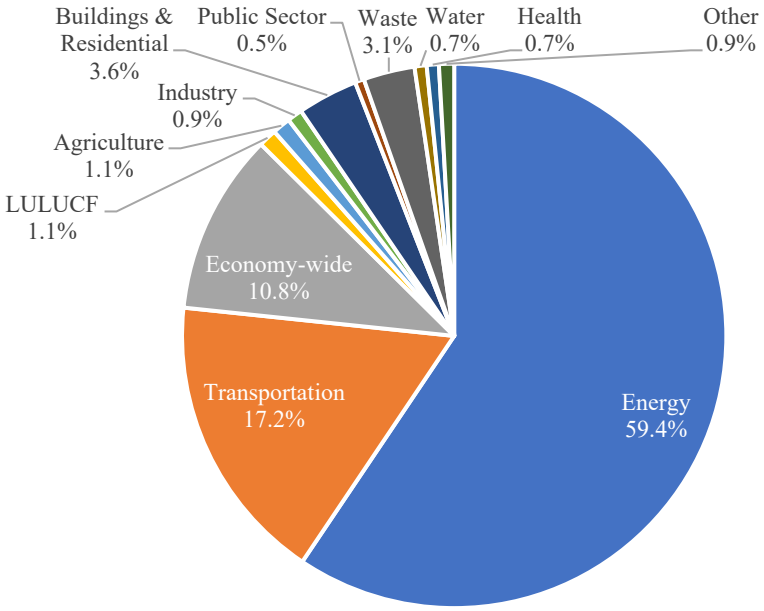
In regard to the area of climate policy, these policies have mostly focused on mitigation (70.8%); climate adaptation was the objective of 2.7% of policies, while the remaining 26.5% were classified as a mix of climate action areas, i.e. mitigation and adaptation mixes, as well as air pollution, energy security or economic development.

Of the 650 national procedural policy instruments, the most frequently employed were policy support (39.5%, n=257), followed by climate targets (29.5%, n=192), climate strategies (21.5%, n=139) and regulatory instruments with procedural aspects (9.5%, n=62) (see Figure 7.3). The subcategories of procedural policy instruments that have received less attention are coordinating bodies for climate strategies (0.9%, n=6), which refers to the creation of a dedicated institution to coordinate climate strategies, and sectoral standards (1.5%, n=10), which establish sector-wide mandatory standards with climate purposes (refer to the CPDB database codebook for more details).

Now, focusing on the subcategories, strategic planning was the most employed type of procedural policy instrument, accounting for 34.9% of the instruments (n=227). This subcategory refers to policies that establish strategic priorities and roadmaps for specific relevant policy sectors or, alternatively, economy-wide (non-sector-specific). Following this, 14.0% of procedural policy instruments refer to formal and legally binding climate strategies (n=91), which are climate change economy-wide strategies enshrined in law, i.e. national climate frameworks. Subsequently, 12.1% of procedural policy instruments refer to renewable energy targets (sectoral or economy-wide targets) (n=78), and 11.2% refer to GHG reduction targets (sectoral or economy-wide targets) (n=73).

Cross-sectoral analysis

Figure 7.6 *Sectoral coverage of established procedural policy instruments by the Member States, 1990–2020*



Note: Derived from data from the CPDB database; for further explanation of the method, see Chapter 4.

Source: Author's own composition

Figure 7.6 illustrates the sectoral coverage of procedural policy instruments established by all Member States for the period 1990–2020. The first finding indicates that energy, economy-wide and transport account for 87.4% of total procedural policy instruments. The energy sector was the most targeted, with 59.4% of procedural policy instruments directed to this sector (n=386/650). This is followed by transport, which accounts for 17.2% of national climate targets (n=112/650); 10.8% of procedural policy instruments are economy-wide (n=70/650) (sometimes including surface transport, aviation and shipping, although there is no consistency across all countries).

In contrast, the remaining sectors account for less than 15% of procedural policy instruments, with 3.6% assigned to buildings and residential (n=23/650), 3.1% to waste management (n=20/650), 1.1% to agriculture (n=7/650) and 1.1% to LULUCF (n=7/650). The remaining sectors (industry, water, other and the public sector) account for less than 1% of total procedural policy instruments.

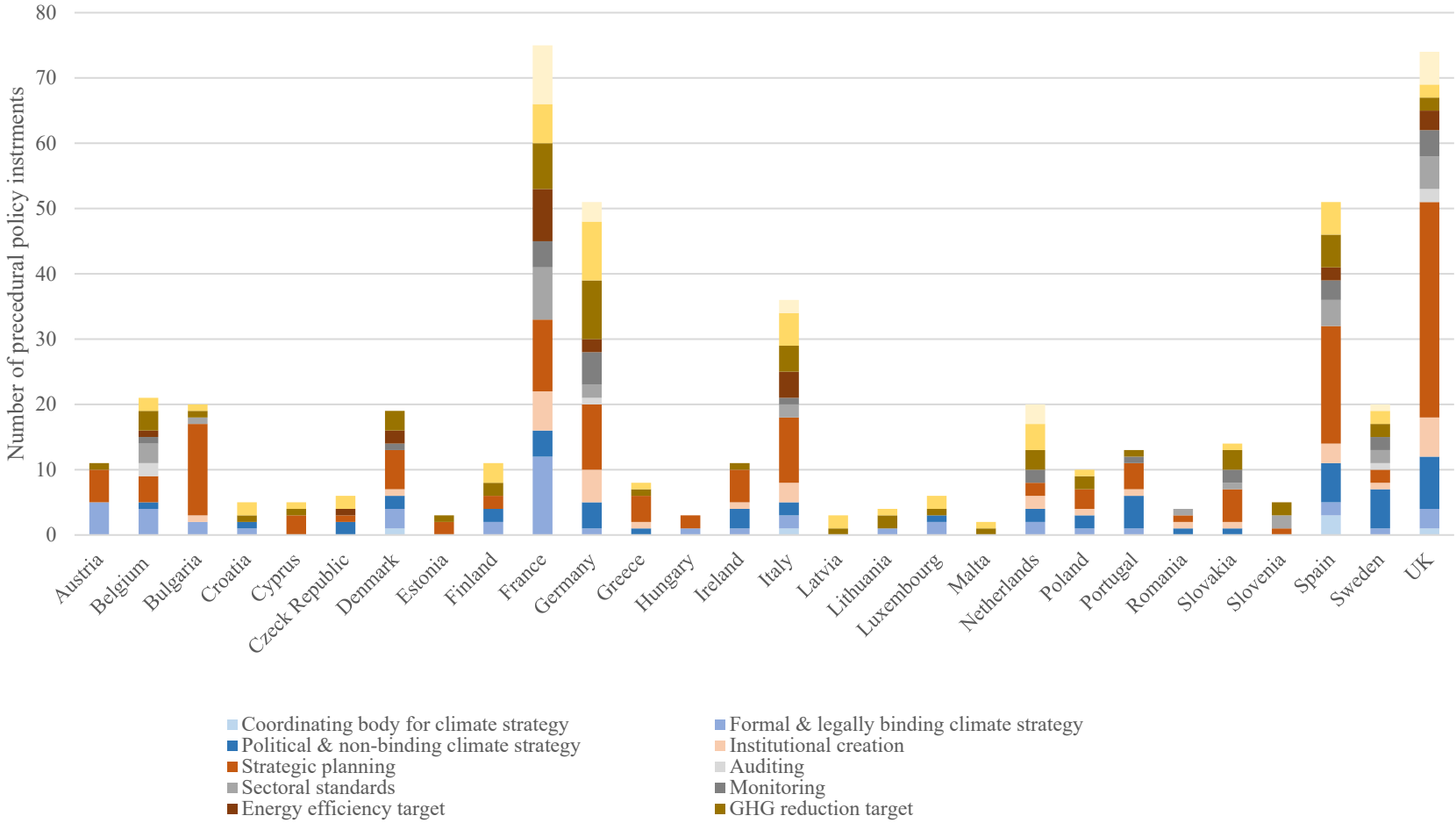
Cross-national analysis

Focusing on the details for each of the Member States, Figure 7.7 provides an overview of the employment of different categories and subcategories of procedural policy instruments by the Member States for the period from 1990 to 2020. According to the secondary data, the Member States that have employed the greatest number of procedural policy instruments are France (n=75/650), the UK (n=74/650), Germany (n=51/650) and Spain (n=51/650) (see Figure 7.6).

France is the European country that has reportedly employed the most procedural policy instruments from 1990 to 2020. Of the total 75 employed procedural instruments, 30 were target-setting mechanisms, including energy-efficiency targets (n=8), GHG-reduction targets (n=7), renewable energy targets (n=6) and other national climate targets (n=9). A total of 16 were related to decision-making mechanisms, either formal and legally binding climate frameworks (n=12) or political and non-binding climate frameworks (n=4). Additionally, 11 instruments were categorised as strategic planning, four as institutional creation and four as monitoring. France's employment of procedural policy instruments was fairly evenly distributed amongst categories.

An example of strategic planning and sectoral standards is the strategic planning regarding the development and use of biomass in France. In 2018, the French government adopted the National Strategy for the Mobilisation of Biomass (*Stratégie Nationale de Mobilisation de la Biomasse*), targeting the sectors of agriculture, LULUCF and energy. In relation to the instrument mix, this policy is considered to include procedural policy instruments such as strategic planning and target setting (renewable energy targets) and sectoral standards.

Figure 7.7 *Employment of different types of procedural policy instruments by the Member States, 1990–2020*



Note: Derived from data from the CPDB database; for further explanation of the method, see Chapter 4. Source: Author's own composition

Closely following the French government, the British government has reportedly employed a total of 74 procedural policy instruments during the study period. In the case of the UK, the distribution of the procedural policy instruments shows a greater emphasis on climate policy planning, with 33 instruments categorised as strategic planning. There were 12 target-setting mechanisms, including energy-efficiency targets (n=3), GHG-reduction targets (n=2), renewable energy targets (n=2) and other national climate targets (n=5). A total of 11 were related to decision-making mechanisms, either formal and legally binding climate frameworks (n=3) or political and non-binding climate frameworks (n=8).

An example of an instrument categorised as policy support and institutional creation is the establishment of the Energy Technologies Institute in the UK (2007–2019). The Energy Technologies Institute was a public-private partnership between global energy and engineering companies and the UK government, established in 2007. The purpose of the Energy Technologies Institute in the UK is to accelerate the development, demonstration and eventual commercial deployment of a focused portfolio of energy technologies, which will increase energy efficiency, reduce greenhouse gas emissions and help achieve energy and climate change goals. The institute collaborates with a range of academic and commercial bodies.

After France and the UK, Germany and Spain have both reportedly employed the same number of procedural policy instruments (n=51). Both countries demonstrate a diverse employment of policy instruments, with Spain favouring strategic planning over other categories of procedural policy instruments. Examples of procedural policy instruments employed by the Spanish government that fall under both institutional creation and strategic planning include the creation of the inter-ministerial commission established in 2004 (*Inter-Ministerial Commission for Biomass)*.

In Germany, an example of a policy that includes various policy instruments across categories such as grid access and priority for renewables, feed-in tariffs or premiums, information and education and policy support is the Renewable Energy Act (2000).

On the other side of the spectrum, Malta (n=2) was the country with the fewest identified procedural policy instruments recorded in the CPD database. Notably, apart from Malta, 12 other European countries have also reportedly employed a relatively low number of procedural policy instruments, with 10 or fewer during the study

period. These countries include Croatia (n=5), Cyprus (n=5), the Czech Republic (n=6), Estonia (n=3), Greece (n=8), Hungary (n=3), Latvia (n=3), Lithuania (n=4), Luxembourg (n=6), Poland (n=10), Romania (n=4) and Slovenia (n=5). The Member States that fall into a middle position based on their number of employed procedural policy instruments include Austria (n=11), Belgium (n=21), Bulgaria (n=20), Denmark (n=19), Finland (n=11), Ireland (n=11), Italy (n=36), the Netherlands (n=20), Portugal (n=13), Slovakia (n=14) and Sweden (n=20).

Figure 7.6 illustrates that very few countries have established more than 50 procedural policy instruments, while many others have employed a significantly lower number, ranging from 2 to 20. This finding indicates once again the considerable disparity of approaches to operationalising CPI that have been displayed by the Member States during the study period.

7.4 Conclusions

This chapter has revealed the main findings from the analysis of the operationalisation of CPI as a multi-dimensional process in the Member States from 1990 to 2020, focusing on two analytically relevant dimensions: policy goals and policy instruments. The analysis has revealed four main findings, summarised as follows.

Firstly, the analysis of national climate targets has shown that, apart from very few exceptions, national climate targets adopted by the Member States are directed towards mitigation action. In very few exceptional instances, national climate targets focused on quantifiable adaptation objectives, particularly in the areas of water and disaster risk management. Most adopted national climate targets were non-GHG (or *non-emissions reduction*) reduction targets (86.3% of total national climate targets), while GHG reduction (or *emissions reduction*) targets account for 13.7% of national climate targets. The two Member States that have adopted the most national climate targets during the period from 1990 to 2020 were the UK (n=201) and France (n=177). Following these two countries, Spain, Portugal, Hungary and Ireland each recorded between 50 and 100 national climate targets. The remaining Member States have adopted fewer than 50 national climate targets.

Secondly, the analysis of sector-specific climate targets has revealed that the energy sector is the most targeted, accounting for 43.9% of national climate targets adopted

by the Member States. In contrast, 15.7% of national climate targets were targeted at the transport sector. Economy-wide targets (non-sector-specific) represent 22.7% of national climate targets.

Conversely, the remaining sectors account for less than 20% of national climate targets. The buildings and residential sectors account for 3.1%, waste management also accounts for 3.1%, agriculture for 0.8%, industry for 0.8%, water for 0.8% and the public sector for just 0.4%.

Thirdly, the analysis of policy instruments has also revealed that most policy instruments aim to respond to the mitigation of climate change (70.8%). Adaptation-specific objectives were targeted by only 2.7% of procedural policy instruments, while the remaining 26.5% were classified as a mix of climate action areas, i.e. mitigation and adaptation mixes.

The analysis of procedural policy instruments has also shown an increase in the density and thickness of the policy mix during the study period. The diversity of categories of procedural policy instruments has increased substantially since 2010, and they have become a common type of instrument in the climate governance area at the national level. However, there is a strong employment of some types of procedural policy instrument subcategories compared with others. The most common subcategories are strategic planning, decision-making (including both the adoption of formal and legally binding climate frameworks and non-legally binding climate frameworks) and target-setting, particularly the adoption of non-GHG national climate targets.

In summary, secondary data analysis of the 650 procedural policy instruments contained in policy documents and retrieved from the CPDB database indicated that policy support is the most common category of procedural policy instruments (39.5%), including strategic planning, followed by climate targets (29.5%) and climate strategies (21.5%). Considering the temporal dimension, the secondary data analysis also revealed that national procedural policy instruments have expanded over the study period. Particularly, in the sub-period from 2001 to 2010, there was a substantial increase in the employment of national procedural policy instruments by the Member States, especially in strategic planning (n=87), GHG reduction targets (n=33) and formal and legally binding climate strategies (n=30). The incremental trend intensified in the period from 2011 to 2020, during which the key subcategories of procedural

policy instruments remained strategic planning (n=127), formal and legally binding climate strategies (n=60) and climate targets, including both renewable energy targets (n=49) and GHG reduction targets (n=39).

Procedural policy instruments have become commonly employed by the Member States as tools of government that aim to influence how climate policy is formulated and implemented and are generally embedded in procedural governance frameworks, such as national climate frameworks, as well as the NECP or long-term strategies. However, the analysis of the employment of procedural policy instruments, particularly from the 2010s, has revealed a significant disparity in the number and types of procedural policy instruments among the Member States. Some countries, such as France, the UK, Germany and Spain, employed the largest number of procedural policy instruments from 1990 to 2020, with more than 50 recorded. Conversely, the analysis of secondary data from the CPDB has revealed that most Member States have employed 10 or fewer procedural policy instruments during the study period.

The next chapter aims to bring together findings from the four dimensions of CPI at the Member State level (Chapters 6 and 7) and examine the empirical findings through the lens of the two theoretical perspectives, namely new intergovernmentalism and historical institutionalism.

Chapter 8
Theoretical analysis

8.1 Introduction

For the first time, this thesis has examined the operationalisation of CPI in the EU over a 30-year period, from 1990 to 2020. By applying an analytical framework centred on policy integration (Candel, 2021; Candel & Biesbroek, 2016), it has investigated how CPI has been operationalised both at the EU level (Chapter 5) and Member States level (Chapters 6 and 7). It has employed two European integration theories as the main theoretical framework underpinning the research design. As explained in Chapter 3, each theory emphasises the importance of different actors, institutions and processes in explaining EU governance and policymaking, including CPI.

This chapter comprises several sections. Firstly, Section 8.2 aims to synthesise the most insightful empirical findings across the four dimensions of CPI at the Member State level (i.e. bringing together the results from Chapters 6 and 7). To facilitate a systematic discussion of the empirical findings, this chapter draws out three comparative elements: the cross-temporal (8.2.1), the cross-sectoral (8.2.2) and the cross-national (8.2.3).

After that, Section 8.3 examines the process of CPI (i.e. drawing upon the empirical findings outlined in Chapters 5–7) through the lens of the two theoretical perspectives presented in Chapter 3, namely new intergovernmentalism and historical institutionalism. According to the theoretical mosaic idea advanced by Wiener, Börzel and Risse, "each [theoretical] approach can be seen as a stone that adds to the [overall] picture" (Wiener et al., 2019, p. 28). Rather than attempting to ascertain which approach offers the most explanatory power, Section 8.3 reflects on how far each approach provides different but complementary elements for understanding CPI across the main CPI dimensions. For the sake of consistency, it is organised in the same order as Section 3.4 (Chapter 3), i.e. the order of the dimensions of CPI. The final section (8.4) concludes and bridges to the concluding chapter.

8.2 Climate policy integration at the national level

8.2.1 The temporal aspect

The empirical findings presented in Chapters 6 and 7 offered three important insights into the operationalisation of CPI by the Member States. The period of study (from 1990 to 2020) has been divided into three sub-periods, namely 1990–2000, 2001–2010 and 2011–2020. The next sections discuss the findings for each sub-period.

First, in the period from 1990 to 2000, there were very limited CPI developments at the national level across all Member States. During this decade, few national climate policies or legislation were adopted. The policies that were adopted were not considered climate framework policies as they did not have an overarching, comprehensive, unifying basis for climate change policy at the national level; rather, they were focused on particular areas of climate mitigation or related policy areas, i.e. energy supply, air quality, etc. Similarly, despite the early establishment of the first cross-sectoral coordination bodies in the early 1990s (such as the German Inter-Departmental Working Group on CO_2 Reduction, established in 1990), most Member States did not have institutional arrangements for cross-sectoral coordination and responsibility for governing climate change was assigned to a single ministry or department (often one with environmental responsibilities).

The findings on the dimensions of policy goals and instruments also evidenced limited developments by the Member States on the adoption of sector-specific national climate targets and procedural policy instruments during this decade. As expanded in Chapter 7, the findings based on data from the CCLW database on the adoption of national climate targets by Member States indicated that in the sub-period from 1990 to 2000, Member States adopted just 1.79% of the total national climate targets adopted in the 30-year period. Similarly, the data from the CPDB database on the employment of procedural policy instruments by the Member States showed that in the period from 1990 to 2000, Member States employed only 11.02% of the procedural policy instruments employed in the 30-year period. Therefore, the sub-period saw very little development in both dimensions of CPI.

The empirical findings from Chapters 6 and 7 indicate that the second sub-period from 2001 to 2010 saw major changes in the operationalisation of CPI by Member States

analysed by all four dimensions of CPI. For the dimension of policy frame, the first national climate frameworks were established in the early 2000s (mitigation-specific frameworks) and mid-2000s (adaptation-specific frameworks)[27].

The empirical insights on the dimension of subsystem involvement indicate that national governments predominantly utilise cross-sectoral coordination bodies as the most common institutional arrangements for coordinating horizontal climate governance at the national level. By 2020, all Member States had established such structures in the areas of mitigation, adaptation or joint. The empirical findings also suggest that various Member States rearranged or changed some institutional characteristics of the cross-sectoral coordination bodies one or more times during the 30-year study period. These changes included alterations to institutional design characteristics, such as the type of administrative body, the level of policy support or involvement of the head of government and changes in the leading department. These findings align with previous studies on institutional coordination arrangements for governing climate change, which indicate that countries are willing to experiment with the design of such arrangements (von Lüpke et al., 2022).

During the 2001–2010 sub-period, countries began to establish measurable national climate targets within their national policies and legislation. The findings in Chapter 7 indicated that from 2001 to 2010, Member States adopted 16.64% (n=102) of the total national climate targets (n=613) established over the 30-year period. The two main types of climate targets employed by Member States are base-year targets and fixed-level targets.

Regarding the employment of procedural policy instruments, the period from 2001 to 2010 saw a much more noticeable increase in the employment of national procedural policy instruments by the Member States, particularly in strategic planning, GHG reduction targets and formal/legally binding climate strategies. In this period, Member

[27] In this thesis, national climate frameworks have been characterised as mitigation-specific policy frameworks (i.e. national policies that set out the strategic direction for national climate change mitigation policy and the arrangements for mitigation governance), adaptation-specific policy frameworks (i.e. national policies that set out the strategic direction for national climate change adaptation policy and the arrangements for adaptation governance) or joint policy frameworks (i.e. jointly addressing mitigation and adaptation areas of climate policy).

States implemented 48.78% (n=239) of the procedural policy instruments employed throughout the whole period of study.

Chapter 7 reported the findings of the analysis of goals and policy instruments. The CCLW database retrieved data on the adoption of climate targets by the Member States from 2011 to 2020, accounting for 81.57% of the total national climate targets established during the 30-year period. In turn, data from the CPDB database on procedural policy instruments by Member States during the study period accounts for 40.20% of the total of procedural policy instruments adopted over the 30 years.

In the third sub-period (from 2011 to 2020), the operationalisation of CPI continued to expand. Despite the early adoption of pioneering national climate frameworks in the early to mid-2000s, Member States significantly increased the use of national climate frameworks from 2010 onwards. The analysis of the adoption of national climate frameworks, based on policy data from the CCLW database, indicates that Member States intensified their policy activity in the decade from 2010 to 2020, during which 20 Member States adopted their first national climate framework, whether mitigation-specific, adaptation-specific or joint. This contrasts with the relatively steady employment of procedural policy instruments during the period from 2011 to 2020, which totalled 197 procedural policy instruments, with key subcategories remaining strategic planning, formal and legally binding climate strategies and climate targets, including both renewable energy targets and GHG reduction targets. The two most intense periods of legislative and executive activity occurred in 2014/2015 and 2020.

By 2020, all Member States had taken action on climate change by adopting national climate frameworks (i.e. either a mitigation-specific, adaptation-specific or joint policy framework). While all countries had adopted a national adaptation framework by 2020, analysis of secondary data from the CCLW database indicates that 2 out of 28 countries had not acted on climate change mitigation (i.e. by passing a national climate framework covering the area of mitigation) as of 2020. The quantitative content analysis of CPI-related concepts in national climate frameworks in force indicates that policy framing increasingly supported an overarching frame or integrative narrative that establishes a shared understanding of climate change as a policy problem, particularly in terms of how established policy subsystems connect

with one another. The highest references to CPI-related concepts were found in mitigation-specific frameworks adopted in 2019 and 2020. In the case of adaptation, a similar upwards trend can be identified in adaptation, with the peak of references to CPI-related concepts in adaptation-specific frameworks in 2017 and 2019.

The results of the analysis of cross-sectoral institutional arrangements indicated that Member States continued to establish new coordination bodies up to 2020, peaking in 2018 and 2019, when seven coordination bodies were created in each of these years across all Member States. Empirically, the analysis revealed that as of 2020, all Member States had established cross-sectoral coordination bodies.

In summary, there was limited development of CPI during the sub-period from 1990 to 2000 across the Member States, despite the early establishment of cross-sectoral coordination bodies in some Member States. In contrast, the sub-period from 2000 to 2010 saw key developments in the operationalisation of CPI at the national level, including the adoption of national climate policy frameworks (mitigation-specific, adaptation-specific or joint) that framed climate change as an integrative challenge and the expansion of cross-sectoral coordination bodies across Member States. The empirical findings also revealed an increased adoption of sector-specific national climate goals and the employment of procedural policy instruments to influence climate policy and administrative processes, particularly strategic planning, GHG reduction targets and formal and legally binding climate strategies. This dynamic continued into the sub-period from 2011 to 2020 and expanded in the last five years of the study period. As of 2020, all Member States had adopted a national climate framework (mitigation-specific, adaptation-specific or joint) that included an integrative narrative of climate change as a policy problem requiring cross-sectoral responses.

8.2.2 The sectoral aspect

First, based on the sectoral coverage analysis of the reported data retrieved from the CCLW database on national climate frameworks in force as of 2020 (n=65), the findings indicated that the energy and transportation sectors are the most commonly addressed sectors by national climate frameworks, with a total of 33 out of 65 frameworks directly targeting them. Following this, LULUCF was addressed by 19 out of 65 national climate frameworks. The agriculture and industry sectors were both

addressed by 18 out of 65 national climate frameworks, closely followed by the buildings and residential sectors, which were addressed by a total of 17 out of 65 frameworks. Attention to the public sector and other sectors, such as waste, water and health, was less frequent.

The sectoral coverage of national climate frameworks differs by type, i.e. adaptation-specific (n=23), mitigation-specific or joint. In the case of adaptation-specific frameworks, the sectors that were addressed the most were agriculture (n=11), industry (n=11) and buildings and residential (n=11). Following this, LULUCF (n=9), waste (n=7), water (n=7), health (n=7) and energy (n=7) were also addressed. For mitigation-specific frameworks (n=28), the most addressed sectors were energy (n=17) and transportation (n=16). In a few cases, the mitigation-specific frameworks addressed buildings and residential (n=9), industry (n=8), waste (n=7) or agriculture (n=6). Finally, in the case of joint frameworks, the most addressed sectors were transportation (n=11) and energy (n=10).

Second, the analysis of the national coordinating bodies shows that the ministry or department responsible for environmental responsibility is present in all coordination bodies established by the Member States (apart from the seven coordination bodies with no available data on the range of participating policy subsystems).

Subsequently, the most common participating policy subsystems across all coordinating bodies are energy (n=29) and transport (n=28). The findings revealed that adaptation-specific and joint coordination bodies have a wider representation of relevant subsystems (including agriculture, LULUCF, waste, water and health), while mitigation-specific coordination bodies have more limited subsystem involvement (ministries/departments responsible for the environment).

Third, the empirical analysis of the total 1,114 adopted national climate targets and their sectoral coverage (see Chapter 7, Section 7.2.1) supports the finding that energy has been the most targeted sector, with 43.9% of national climate targets (n=488) assigned to this policy sector. The energy sector was followed by economy-wide targets, which account for 22.7% of national climate targets (n=253); 15.7% of national climate targets refer to transportation (n=175) (in some instances including surface transport, aviation and shipping, but there was no consistency across all countries). In contrast, the remaining sectors account for less than 20% of national

climate targets (buildings and residential, waste, agriculture, industry, water, public sector or other).

Fourth, regarding the sectoral coverage of procedural policy instruments, the quantitative content analysis indicates that 40.3% of the total procedural policy instruments employed from 1990 to 2020 were not assigned to specific policy subsystems or sectors and were regarded as economy-wide. Additionally, 25.4% of procedural policy instruments were directed to the energy sector, while 13.1% were directed to the transport sector, followed by 9.5% for industry and 9.2% for buildings. Procedural policy instruments directed at agriculture and forestry account for 2.5% of national procedural policy instruments. The findings also point to instances where *disintegration* can be identified (Candel & Biesbroek, 2016) concerning procedural mechanisms or tools to ensure sector-specific targets and responsibilities (see the following section for some examples).

In summary, the sectors that are more targeted across the four dimensions of CPI are energy and transport. Other policy sectors, such as agriculture, LULUCF, industry, buildings and residential and waste, have received much less attention. This is based on findings considering the integrative narratives and the involvement of these subsystems in the governance of climate change, as well as the setting of policy goals and the establishment of procedural policy instruments. The findings also revealed different levels of involvement of relevant subsystems when considering mitigation-specific, adaptation-specific or joint policies, targets or instruments, with adaptation-specific or joint policies, targets or instruments often involving a higher number of relevant subsystems. Overall, the findings revealed that energy and transport are the two sectors most involved in the governance of climate change at the national level, receiving more attention in policies, targets and instruments. Finally, the results also hint at the existence of processes of *disintegration.* This supports the value of adopting a processual view of CPI and conceptualising it as a dynamic process that encompasses both advancing integration processes and *disintegration* i.e. policy integration as an asynchronous process in line with Candel and Biesbroek's (2016) definition (see Section 1.2).

8.2.3 The cross-national aspect

This section considers the empirical findings in relation to the operationalisation of CPI by different Member States. Therefore, after examining aggregated data at the national level, the focus now shifts to empirical insights on the operationalisation of CPI across countries to explore similarities and differences in their approaches to CPI as a national policy process. An analysis of the empirical findings from the perspective of cross-national comparisons offers two important insights.

First, the findings of the analysis of the operationalisation of CPI at the national level have shown substantial differences in the operationalisation of CPI across Member States over the study period. This trend became more notable in three dimensions of CPI: subsystem involvement, policy goals and instruments.

The findings of the analysis of subsystem involvement at the national level indicate that Member States have established cross-sectoral coordination bodies to assist national governments in various stages of climate policymaking. Despite cross-sectoral coordination bodies becoming a standard feature of climate governance in the Member States, there are significant differences in the level of policy support, sectoral coverage, administrative characteristics and policymaking functions of these coordination bodies.

The findings from the analysis of policy goals at the national level presented in Chapter 7 indicate considerable variation in the number of adopted targets by each Member State. The two countries that adopted the most national climate targets during the period from 1990 to 2020 were the UK (n=201) and France (n=177). Conversely, based on data from the CCLW, the countries with the lowest number of reported national climate targets for the period were Slovenia (n=5) and Greece (n=5).

Focusing on the details of the employment of procedural policy instruments, according to data from the CPDB database, the Member States that have employed the greatest number of procedural policy instruments were France (n=75), the UK (n=74), Germany (n=51) and Spain (n=51). In contrast, Malta (n=2) was the country with the fewest identified procedural policy instruments recorded in the CPDB database. It is noteworthy that apart from Malta, 12 other European countries have also reportedly employed a relatively low number of procedural policy instruments, with 10 or fewer procedural policy instruments employed during the study period. These countries

include Croatia (n=5), Cyprus (n=5), Czech Republic (n=6), Estonia (n=3), Greece (n=8), Hungary (n=3), Latvia (n=3), Lithuania (n=4), Luxembourg (n=6), Poland (n=10), Romania (n=4) and Slovenia (n=5).

The data retrieved from climate policy databases for the remaining countries, including Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Poland, Romania, Slovakia and Slovenia, indicate lower advances in CPI based on proxies such as the adoption of sector-specific national climate targets and the employment of procedural policy instruments.

Second, the findings indicate that France and the UK have demonstrated advanced levels of CPI operationalisation across all four dimensions. When exploring policy framing and integrative narratives, both countries have enshrined their carbon neutrality ambitions in law and employ a carbon budget approach to define GHG caps over different periods—carbon budgets—to establish the target trajectory for emissions reductions and to set sectoral targets. France has also adopted a multiannual energy plan identifying energy-related actions to achieve its climate objectives. The quantitative content analysis of CPI-related references in the national climate frameworks indicates that France is one of the Member States that included the most references to integrative narratives in the frameworks.

Meanwhile, climate change has been a domestic policy priority in the UK since the early 1990s (Lockwood, 2021), with the first domestic governance instruments adopted in 1994, leading to the adoption of the Climate Change Act in 2008 (UK Parliament, 2008). The UK Climate Change Act has received considerable attention and is regarded as the world's first national framework legislation, providing a comprehensive and overarching law that outlines the UK's approach to both mitigating climate change and preparing for its impacts (Climate Change Committee, 2020a).

Apart from an economy-wide strategy that sets a path to net zero by 2050, as well as a legal obligation to outline its objectives for adaptation, the exploration of subsystem involvement (Chapter 6) indicates that the UK has strong administrative cross-sectoral coordination mechanisms featuring political support (i.e. participation of the Prime Minister in the coordination bodies). Additionally, when analysing the adoption of

national climate targets and the employment of procedural policy instruments, the UK ranks amongst the top Member States in terms of both total number and sectoral coverage (see Chapter 7 for details), alongside France. Therefore, the results indicate an increasing number of system-level procedural policy instruments that facilitate subsystems in jointly addressing the problem.

The findings of this thesis indicate that particularly in the dimensions of policy framing, policy goals and instruments, France has advanced integration capacities and a broad range of procedural policy instruments at the system level, including boundary-spanning structures that coordinate, steer and monitor subsystem efforts.

Apart from France and the UK, a second subset of countries has also advanced in one or more CPI dimensions. These countries include Germany, Spain, Portugal, Denmark, Finland, Sweden, the Netherlands and Italy. For example, the quantitative content analysis of national policy frameworks on CPI-related references indicates that Portugal's national climate framework (Portuguese Roadmap for Carbon Neutrality 2050) has the greatest number (n=40) of explicit references to *policy integration*. The document establishes the goal for carbon neutrality by 2050 and states that to achieve this goal, "all sectors must contribute to reducing emissions, increasing efficiency and innovation, promoting improvements" (Portuguese Ministry of the Environment and Energy Transition, 2019, p. 9). See Chapters 6 and 7 for more detail.

Overall, the empirical findings on the operationalisation of CPI by the 28 Member States over the last 30 years have shown substantive differences across the four dimensions of CPI, particularly in the dimensions of policy goals and instruments. Based on retrieved data from the CPDB database, the content analyses of proxies for these two dimensions indicate strong differences in the adoption of sector-specific targets at the national level and the employment of procedural policy instruments. Two countries have consistently demonstrated high operationalisation across all dimensions of CPI: the UK and France. Another group of Member States has shown high operationalisation in one or more dimensions of CPI, namely Germany, Spain, Portugal, Denmark, Finland, Sweden, the Netherlands and Italy. The empirical findings on the analyses of the dimensions of policy goals and instruments indicate that the remaining countries have set significantly fewer sector-specific national targets and established procedural policy instruments.

8.3 Theoretical discussion

This thesis was designed with the initial assumption that explaining the empirical results of applying Candel and Biesbroek's (2016) analytical framework to study CPI as multi-dimensional processes with European integration theories would help contextualise CPI processes within the broader policymaking processes in the EU. To achieve this, two different European integration theories were employed: historical institutionalism and new intergovernmentalism. The next section discusses the findings of CPI operationalisation by the EU and its Member States through the lenses of these two theoretical frameworks.

8.3.1 Policy frame

The empirical findings of Chapter 5 indicate that CPI became an area of attention for European Commissioners in the early 2010s. Prior to that, European Commissioners' speeches from 1990 to around 2010 commonly framed CPI as a 'sector-specific niche' and considered it mostly as part of EPI efforts. The relevance of CPI became even more pronounced in European Commissioners' speeches in 2019 and 2020 in the context of the European Green Deal. The content analysis of Commissioners' speeches in 2019 and 2020 revealed that climate change was framed as a societal challenge requiring society-wide transformations and CPI as a policy process that gradually expands to all policy sectors (see Chapter 5 for more detail).

The empirical findings of the analysis of policy framing at the EU level (see Chapter 5) show that the framing of climate change as a cross-sectoral issue became significant in the mid-2010s. In the 1990s and 2000s, climate change was primarily framed within the context of energy policy and rarely connected to other policy areas. From the mid-2010s, European Commissioners' speeches began to refer to CPI as an area of policy action separate from EPI, framing climate change as a policy problem that necessitates cross-sectoral governance. This trend became even more pronounced as European Commissioners ramped up the framing of the European Green Deal (European Commission, 2019) as an integrated policy framework to facilitate the response to the climate change challenge through society-wide transformations. The analysis of DGs on preparatory documents for the period from 1990 to 2020 also revealed the increased importance of the Secretariat-General in leading climate change legislative proposals. However, while the College of Commissioners meets regularly to discuss and make

decisions on formal publications and proposals, there is no climate-specific coordination mechanism outside of individual processes to prepare new legal or policy proposals.

However, the quantitative and qualitative content analyses of the texts of the national climate frameworks (mitigation-specific, adaptation-specific or joint) provided insights into how Member States framed CPI processes in their national climate frameworks. For example, the specific terminology used by Member States to describe CPI varies significantly, with different concepts employed to describe CPI efforts, such as policy integration, coordination coherence and cross-sectoral/inter-sectoral. This indicates divergences on (a) the integrative narrative and the aim of CPI as a national policy process across the Member States, as well as (b) the focus on different aspects of CPI as a policy process (see Chapter 6). Since the early 2000s, the most common approaches to facilitate national climate policymaking comprehensively have been national climate strategies and plans. Since 2015, the most prevalent form of national climate frameworks has been climate laws, particularly with a mid-century mitigation target focus (see Chapter 6).

In turn, the empirical findings on policy framing by the Member States align more closely with the theoretical expectations of new intergovernmentalism. The findings in this thesis indicate that Member States have utilised the second opportunity presented when EU policy is transposed into national legislation to refine how climate change is framed as a cross-sectoral issue based on their domestic preferences. Consequently, policy framing and narratives may differ both between the EU and Member State levels and across Member States, with Member States describing the CPI exercise according to their national interests and preferences (see Chapter 3).

In summary, the content analysis of the texts of the national climate frameworks indicates that national climate frameworks have incorporated the cross-sectoral framing of climate policymaking and an integrative narrative of climate change across Member States, which derives from the EU level, which historical institutionalism theories are well placed to explain. However, analysis of the policy framing at the Member State level has also revealed that Member States have taken the opportunity to refine and control the CPI process, i.e. framing CPI processes with a focus on

different actors, institutions or policy processes in line with new intergovernmentalist perspectives.

8.3.2 Subsystem involvement

The second dimension of CPI revolves around the involvement of the relevant policy subsystems in the governance of a shared policy problem such as climate change. Policy subsystems denote the presence of a community of diverse actors specialised in a particular policy problem or area of policy problems. These actors interact with other policy subsystems during the policymaking process (Michael Howlett, 2022; Knill & Tosun, 2020). In line with CPI studies, this thesis has explored in more detail the institutional arrangements for the horizontal cross-sectoral coordination of policy measures for the mitigation of and adaptation to climate change (see, e.g. Biesbroek & Candel, 2020).

The content analysis of the preparatory documents (COM and JOIN documents) of the leading Directorate responsible revealed important insights into the number of subsystems that are formally involved in the governance of climate change at the EU level. One of the main findings is that the DG ENV is the DG that led most of the legislative proposals addressing climate change. Following this, the Secretariat General, the Directorate on Transport and Energy (from January 2000 until February 2020) and then DG CLIMA acted most prominently in leading climate change legislative proposals. The empirical findings also revealed the increased importance of the Secretariat-General in leading climate change legislative proposals. From 2015 to 2020, the Secretariat-General became the department that led the greatest number of preparatory documents on climate change (n=175), indicating that it was a political priority for the whole European Commission.

In turn, the analysis of subsystem involvement at the Member States level has revealed that as of 2020, all Member States have employed coordination bodies to assist national governments in different stages of climate policymaking, and these institutional arrangements are now a common feature of climate governance at the national level across Member States. Historical institutionalism could explain this level of harmonisation across Member States by pointing at the EU level of government on the response to the coordination challenge across sectors at the national level, expecting that Member States will present strong similarities in how they

transform their practices into joint decision-making or pool resources from relevant policy subsystems into integrated capacities, for example.

However, the findings on the institutional arrangements of these cross-sectoral coordination bodies revealed substantial differences in the characteristics of such bodies across Member States. Notably, the type of administrative structure, political support, and role in climate policymaking have shown considerable diversity across the 54 cross-sectoral bodies analysed. These findings can be explained by new intergovernmentalist perspectives, as Member States take the transposition of EU policies into national legislation as an additional opportunity to establish their preferred governance arrangements for coordinating relevant sectors at the national level. Therefore, some Member States may opt for coordination policy and shared administrative capacities, while other Member States opt for limited coordination and interaction amongst policy subsystems.

In summary, Member States have responded to the challenge of coordinating across sectoral or policy subsystems by establishing and experimenting with cross-sectoral coordination bodies. These coordination bodies are mitigation-specific, adaptation-specific or joint, and the harmonisation of responses by the Member States could be better explained through a historical institutionalist perspective. However, the variation in terms of the type of administrative structures, political support or the role of the cross-sectoral coordination body in climate policymaking aligns with new intergovernmentalist propositions, suggesting that the adoption of EU policy (i.e. the Governance Regulation in 2018 (Official Journal of the European Union, 2018)) in the Member States provides opportunities for them to establish their preferred institutional arrangements for cross-sectoral horizontal coordination at the national level.

8.3.3 Policy goals

The empirical work on policy goals at the EU level (see Chapter 5) based on secondary data from the CCLW database has revealed that there has been a progressive extension and strengthening of climate targets at the EU level, moving from directly emission-relevant sectors to more indirectly relevant policy sectors. EU-level climate targets have experienced a level of sectoralisation, transitioning from GHG reduction to non-

GHG reduction targets. However, energy, transport and economy-wide targets (not sector-specific) remain the most relevant types of targets adopted at the EU level.

The cross-sectoral analysis has shown that the energy sector is the most targeted sector, with 43.9% of national climate targets adopted by Member States. Following the energy sector and receiving much less attention, 15.7% of national climate targets were directed towards it. Economy-wide targets account for 22.7% of national climate targets, meaning they are not targeted at specific sectors but at the overall economic system. In contrast, the remaining sectors account for less than 20% of national climate targets, with finance, health and other sectors accounting for 6.2% of national climate targets.

When examining the data by Member States, the findings indicate notable differences in the number of climate targets adopted by the 28 countries and in the sectoral coverage of these targets. The two countries that adopted the most national climate targets during the period 1990 to 2020 were the UK and France, each with more than 150 climate targets. Conversely, other countries have not adopted more than five climate targets over the period (i.e. transposed into national law or policies the targets established at the EU level via the Effort Sharing Regulation, for example).

The analysis revealed Germany as a puzzling case that reflects the role of domestic conditions in shaping CPI operationalisation. Germany adopted one of the most advanced procedural mechanisms to ensure sector-specific assignment of targets and review amongst the Member States in 2019 (Duwe & Evans, 2020) (see more details in Chapter 7). However, the German federal government later amended the system to break down overall climate targets into sector-specific targets. The latest reform of the climate change law (2021) introduced changes in the way that sectoral reporting and the establishment of sectoral targets operate. Instead of each sector reporting on its progress towards the climate targets, the latest amendment establishes that overall progress towards meeting the target is reported. In this way, sectors can compensate for each other, and federal ministries are no longer responsible for reaching the sectoral target or elaborating emergency programmes if a target is missed (see more details in Chapter 7). This example illustrates how CPI efforts may also falter as a result of internal processes, such as friction between actors and institutions or changing ideas or agendas (Keast et al., 2007; Rayner & Howlett, 2009).

In summary, both theoretical perspectives can offer insights into explaining the empirical findings on the establishment of sector-specific climate targets at the Member State level. Therefore, EU climate targets are largely directed by the EU level. Policy goals and detailed climate targets are primarily determined by agreements brokered in the European Council through negotiations among Member States that establish the general direction of EU climate policy (see Chapter 5). Even when there are no hard governance or binding climate targets for the Member States, compliance mechanisms have advanced to incorporate reporting obligations for the Member States. The European Commission has expanded its role in monitoring progress, evaluating the adequacy of national long-term climate strategies and plans and ensuring coherence between short-term and long-term objectives (i.e. NECPs and long-term strategies). The transposition of EU policies into national legislation in the Member States provides an additional opportunity for them to pursue their domestic preferences by establishing their own sector-specific goals and national policies, such as climate budgets and sector-specific policies.

8.3.4 Policy instruments

The empirical findings from the exploration of policy instruments at the EU level revealed a strengthening of procedural governance. In line with existing literature on procedural policy instruments in the EU (Oberthür & Homeyer 2022), from 1990 to 2010, procedural policy instruments were few and had relatively low salience. However, since the late 2010s, procedural policy instruments have become a core component of the EU-level instrument mix, as acknowledged by other researchers on procedural governance in the EU (Oberthür & Homeyer, 2022).

The secondary data analysis of 98 procedural policy instruments contained in policy documents and retrieved from the CPDB database revealed an advancement and expansion in the deployment of procedural policy instruments at the EU level. Procedural policy instruments such as strategic planning, sectoral standards and monitoring requirements constitute almost half of the procedural policy instruments employed at the EU level for the period 1990–2020. Following this, policy support accounts for more than a quarter of the procedural policy instruments employed. Regarding the sectoral scope of the procedural tools employed, most of them were not sector-specific but economy-wide. Particularly in the last decade, there has been

significant expansion in procedural tools, including strategic planning, monitoring and sectoral standards.

These findings align with previous research on the Energy Union as an opportunity for the European Commission to gain more leverage over the 28 Member States through greater reporting and monitoring (Knodt & Schoenefeld, 2020; Knodt & Ringel, 2018). The European Commission and the evolution of climate governance from 2015 to 2020 appear to be moving towards strong procedural climate governance that encompasses the instruments, institutions and processes shaping climate policies and their implementation concerning climate targets (Kulovesi & Oberthür, 2020), with the European Green Deal and the European Climate Law also signalling this direction (Dupont & Jordan, 2021; Kulovesi et al., 2024).

In turn, the analysis of policy instruments at the national level has also revealed an increase in the density and thickness of the procedural policy instruments policy mix. The diversity of categories of policy instruments has substantially increased since the 2000s, and procedural policy instruments have become a common type of instrument in the climate governance area at the national level. However, there is a strong employment of some types of procedural policy instruments subcategories compared to others. The most common subcategories are strategic planning, formal and legally binding climate frameworks and national climate targets, particularly non-GHG targets.

Empirical findings also revealed significant disparities in the instruments employed by Member States during the study period. Some countries, such as the UK, France, Germany and Spain, employed the largest number of procedural policy instruments from 1990 to 2020, with more than 50 recorded procedural policy instruments employed. On the other side, the analysis of secondary data from the CPDB has revealed that some Member States have employed fewer than five procedural policy instruments during the study period.

Advocates of new intergovernmentalism would argue that Member States have been keen on reinforcing cooperation in the area while at the same time refraining from delegating authority to supranational institutions, preferring to maintain national sovereignty over key aspects such as the national governance setting or the particular CPI policy instruments, particularly procedural policy instruments. The data on

procedural policy instruments supports this theoretical perspective. Procedural policy instruments amongst Member States can be very different and rooted in their unique policy histories. The transposition of EU policies into national legislation in the Member States provides a second opportunity for Member States to pursue their preference and adjust the policy outcome in terms of framing climate change as a cross-sectoral policy, the type and level of subsystems involvement, the adoption and specific policy goals and instruments. The particular CPI approaches in the Member States depend on national bargaining processes within their governance systems; therefore, higher divergences amongst Member States in their approaches and CPI advances across the distinguished dimensions can be expected from intergovernmentalist accounts.

An alternative explanation for the different levels of employment of procedural policy instruments by the Member States can be linked to path-dependence processes occurring at the domestic level. From a historical institutionalism perspective, the differences in the employment of procedural policy instruments by Member States can be explained as the result of gradual institutional change heavily influenced by domestic institutions, with a considerable degree of path dependence.

Therefore, the employment of procedural policy instruments aimed at altering policy interactions within policy subsystems (Klijn et al., 1995) can be understood as a path-dependent process, where earlier points in time will affect the possible outcomes of subsequent events. Under these circumstances, one could expect that each Member State's procedural instrument mix would evolve such that Member States that pioneer the establishment of procedural policy instruments would layer new instruments on top of existing ones (rather than replacing, modifying or repurposing them) (Rayner & Howlett, 2009).

In summary, the empirical findings revealed a very different deployment of procedural policy instruments during the study period. Some countries have expanded and added new types of procedural policy instruments to their portfolio, while others have limited the expansion and experimentation with types of procedural policy instruments, resulting in a low development of tools aimed at influencing how climate policy is formulated and implemented, including boundary-spanning structures that coordinate,

steer and monitor subsystems' efforts. Both European integration theories can offer insights to explain these results.

As suggested by new intergovernmentalism, despite reinforcing cooperation in the policy areas of energy and climate change at the EU level, Member States have maintained national sovereignty in energy and climate policy. Procedural policy instruments are rooted in domestic policy preferences, as this type of policy instrument is "designed to affect how a policy is formulated and implemented" (Howlett, 2000, p. 298). From a historical institutionalism perspective, the differences in the employment of procedural policy instruments by the Member States can be explained as the result of gradual institutional change heavily influenced by domestic institutions, with a considerable degree of path dependence, as each step in the same direction makes it increasingly difficult to reverse course.

8.4 Conclusion

This chapter has discussed the findings of a novel, multi-dimensional, multi-level analysis of the operationalisation of CPI in the EU.

First, the empirical findings revealed that the decade from 2000 to 2010 saw key developments in the operationalisation of CPI at the national level, including the adoption of national climate policy frameworks (whether mitigation-specific, adaptation-specific or joint) that framed climate change as an *integrative* challenge and the expansion of cross-sectoral coordination bodies across Member States. The empirical findings also revealed an increased adoption of sector-specific national climate goals and the employment of procedural policy instruments to influence climate policy and administrative processes, particularly strategic planning, GHG reduction targets and formal, legally binding climate strategies.

Second, the empirical findings for the Member States indicate that despite a growing consideration of sector-specific aspects across the four dimensions of CPI, the operationalisation of CPI has been unevenly distributed across sectors. The sectors that have received more attention are energy and transport, while sectors such as buildings and residential, industry, agriculture and LULUCF are comparatively *less* advanced across all four dimensions of CPI, namely policy framing, subsystem involvement, policy goals and instruments. Thus, the findings reveal that there is scope

for Member States to advance in policies, targets and/or instruments with sector assignments and associated responsibilities that are more clearly delineated amongst the relevant public actors.

Third, when considering the cross-national aspect, there are substantial differences in the operationalisation of CPI across Member States over the study period. This is especially notable in three of the four dimensions of CPI: subsystem involvement, policy goals and instruments. France and the UK have demonstrated high levels of operationalisation across all four dimensions of CPI. When exploring policy framing and integrative narratives, both countries have enshrined in law their carbon neutrality ambitions and share a carbon budget approach to define GHG caps over different periods—carbon budgets—to establish the target trajectory for emissions reductions and to set sectoral targets.

Apart from France and the UK, the detailed exploration of CPI reveals that a second subset of countries, including Germany, Spain, Portugal, Denmark, Finland, Sweden, the Netherlands and Italy, have also made significant progress in the proxies used to explore the CPI dimensions. In contrast, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Poland, Romania, Slovakia and Slovenia indicate lower advances in CPI based on the proxies such as the adoption of sector-specific national climate targets and the employment of procedural policy instruments.

Finally, this chapter also views the empirical results through the lens of two European integration theories: new intergovernmentalism and historical institutionalism. These theories offer complementary elements for understanding the operationalisation of CPI across the four dimensions, uncovering the different motivations and powers of EU and domestic actors, institutions and processes.

In summary, in the dimensions of policy framing and subsystem involvement, historical institutionalism explains well how national climate frameworks have incorporated the cross-sectoral framing of climate policymaking and an integrative narrative of climate change across Member States that derives from the EU level, as well as the generalised use of cross-sectoral coordinating bodies by the Member States. However, when examining the details of these policies and institutions, there is much

more variation, indicating a picture of partial harmonisation (Klamert, 2015; Radaelli, 2003).

In the dimensions of policy goals and instruments, although both historical institutionalism and new intergovernmentalism can offer insights into the empirical findings, the Member States clearly exhibit notable differences in the setting of domestic sector-specific goals in national policies (i.e. climate budgets, sector-specific responsibilities, etc.) as well as the deployment of procedural policy instruments. Some countries have expanded and added new types of procedural policy instruments to their portfolios, while others have limited the expansion and experimentation of procedural policy instruments, resulting in a low development of tools aimed at influencing how climate policy is formulated and implemented, including boundary-spanning structures that coordinate, steer and monitor subsystems' efforts.

The next and final chapter returns to answer the three research questions that motivated this thesis, outlines its contributions to existing knowledge and identifies priority areas for future research.

Chapter 9
Conclusions

9.1 Introduction

This thesis examined how CPI has been operationalised in the EU and its Member States from 1990 to 2020, applying a conceptual approach based on policy integration (Candel, 2021; Candel & Biesbroek, 2016). By exploring the operationalisation of CPI over a 30-year period and empirically employing Candel and Biesbroek's (2016) four-dimensional framework of policy integration, it has identified similarities and differences in the way CPI has been operationalised by the Member States, focusing on salient *cross-temporal*, *cross-sectoral* and *cross-national* comparative elements. This thesis employed two European integration theories as theoretical perspectives to explain CPI processes. See Chapter 6 for details on the empirical findings regarding policy framing and subsystem involvement, Chapter 7 for details on the empirical findings concerning policy goals and instruments and Section 8.2 for further details on the comparative discussions of the empirical findings.

The analytical and theoretical perspectives adopted in this thesis are outlined in Chapter 3. First, it presented CPI as a multi-dimensional policy process with four salient dimensions, namely *policy framing*, *subsystem involvement*, *policy goals* and *policy instruments*. Second, it outlined the theoretical framework of the thesis. By situating the research in the EU context, climate policy and CPI developments are understood as part of the EU policymaking and governance; therefore, European integration theories possess explanatory power to understand the trajectory of European climate policy and, particularly, CPI as a multi-dimensional policy process in the EU across governance levels. Two European integration theories, namely historical institutionalism and new intergovernmentalism, were employed in this thesis, given their different assumptions and focus on key actors that shape EU climate policy. In doing so, Chapter 3 viewed the development of CPI in the EU in a new light: moving from sometimes abstract explorations of CPI towards understanding CPI as part of the wider policy processes of European integration.

The remainder of this final chapter is organised as follows. Section 9.2 answers the three research questions, drawing on the findings presented in Chapters 5–7 and the comparative discussions in Chapter 8. Section 9.3 outlines the thesis's methodological, empirical and theoretical contributions. Finally, Section 9.4 critically reflects on the research approach adopted in this thesis and makes suggestions for future research.

9.2 The three research questions

RQ1: *How has CPI been operationalised, and how has it evolved over time at the EU level?*

RQ1 was addressed through a multi-dimensional analysis of CPI (namely *policy frame*, *subsystem involvement*, *policy goals* and *policy instruments*) applied to the EU level, derived from the analytical framework identified in Chapter 3 and employing a diverse corpus of data sources such as written speeches from European Commissioners (n=96), legislative preparatory documents (n=2,908), climate targets (n=57) and procedural policy instruments (n=98) contained in policy documents (see Chapter 4, Table 4.1 for details).

First, the quantitative and qualitative content analyses of European Commissioners' speeches revealed that they reflect an advancement in the integrative narrative and framing of climate change as a cross-sectoral policy problem. In the period 1990–2010, European Commissioners' speeches referred to CPI as a 'sector-specific niche' within the wider context of wider EPI processes. Additionally, in this initial sub-period, the focus was on mitigation action, with little attention being given to adaptation aspects in relation to integration. Climate adaptation did not become noticeable as part of the integrative narrative until the late 2000s. In the 2010s, European Commissioners' speeches began to say that CPI was separate from EPI. The recognition that climate change should not be governed by individual subsystems but by the governance system as a whole became increasingly clear in European Commissioners' speeches in 2019–20, hence the claim that climate change is an issue that "affects all-sectors and requires society-wide transformations" (European Commission, 2019, p. 2). By 2020, CPI was clearly advocated and fully recognised as key for all relevant subsystems in the governance of climate change.

Second, the content analysis of the preparatory documents (COM and JOIN documents) of the leading Directorate responsible revealed important insights into the number of subsystems that are formally involved in the governance of climate change. One of the main findings is that the DG ENV is the DG that led most of the legislative proposals addressing climate change. Following that, the Secretariat General, the Directorate on Transport and Energy (from January 2000 until February 2020) and DG CLIMA are the DGs that have acted most prominently in leading climate change legislative proposals. The empirical findings also revealed the increased importance of the Secretariat-General in leading climate change legislative proposals. In the period 2015–2020, the Secretariat-General became the department that led the greatest number of preparatory documents on climate change (n=175), indicating that it was a political priority of the entire European Commission.

Third, the secondary data analysis of 57 climate targets contained in policy documents revealed that policy goals have been concretised in the form of EU-wide climate targets. Of the 57 climate targets set in the period 1990–2020, 21 were GHG-reduction targets, and 36 were non-GHG reduction targets. All of them have addressed the area of climate mitigation. No adaptation target has been identified. In terms of sectoral coverage, EU-wide climate targets have predominantly addressed energy (n=27), followed by transport (n=14), economy-wide (n=11), agriculture and forestry (n=2), industry (n=2) and the buildings and residential sector (n=1).

Finally, the secondary data analysis of 98 procedural policy instruments contained in policy documents and retrieved from the CPDB database revealed that there has been an expansion in the deployment of procedural policy instruments at the EU level. Procedural policy instruments such as strategic planning, sectoral standards and monitoring requirements constitute almost half of the procedural policy instruments employed at the EU level for the period from 1990 to 2020. Following that, policy support accounts for more than a quarter of the procedural policy instruments employed. Regarding the sectoral scope of the employed procedural tools, most of them are not sector-specific but economy-wide. Particularly in the last decade, there has been an increased use of procedural tools, especially in strategic planning, monitoring and sectoral standards.

RQ2: *How has CPI been operationalised across the Member States, and how has it evolved over time?*

RQ2 was addressed by applying the multi-dimensional analytical framework of CPI at the national level, namely the 28 Member States, and employing a diversity of data sources such as national climate frameworks (n=114), documentation on cross-sectoral coordination bodies (n=58), national climate targets (n=1,114) and procedural policy instruments (n=650) contained in policy documents (see Chapter 4, Table 4.1 for details).

First, the secondary data analysis and quantitative content analysis of the national policy frameworks revealed that all analysed countries have acted on climate change by adopting national climate frameworks on mitigation and/or adaptation that aim to serve as "rules of the game" (Jann & Wegrich, 2017), setting out the governance arrangement for CPI as a national policy process. Whereas all countries had a national adaptation framework adopted by 2020, the analysis of secondary data from the CCLW indicated that 26 of the 28 countries had acted on climate change mitigation by passing a national mitigation framework as of 2020.

The quantitative content analysis of the national climate frameworks in force as of 2020 (n=54) has revealed that all countries' national climate frameworks have advanced to at least some degree on the integrative narrative. Despite serving similar purposes, the national climate frameworks examined vary greatly in format and extent, i.e. number of pages, inclusion of complementary information, etc. Additionally, there are substantial differences across Member States in how CPI is conceptualised; there are even differences in the overall purpose of CPI as a policy process. The concepts that have been used include policy integration, policy coherence, integrated policy and cross-sectoral governance.

Second, the secondary data and qualitative and quantitative content analyses of documentation (NECPs, Climate-ADAPT portal and literature) related to 58 cross-sectoral coordination bodies revealed that all 28 Member States had employed coordination bodies to assist national governments in the horizontal cross-sectoral integration of climate change, i.e. integration within and between policy sectors. Since the 2010s, these institutional arrangements have become a common feature of climate governance at the national level. However, the analysis of the organisational and

administrative aspects of these coordination bodies, such as the type of administrative body, subsystem involvement or political support, indicates notable differences amongst coordination bodies.

Working groups and inter-ministerial committees are the most common types of cross-sectoral coordination bodies, covering mitigation (50.9%), adaptation (28.1%) or joint mitigation and adaptation (21%). Often, joint coordination bodies comprise a number of different sub-committees or working groups that may specialise in different areas of climate policy. However, high-level political support is not a common feature of coordination bodies: just 12.5% of them were reportedly designed to facilitate the participation of the head of government. In relation to the lead agency, in 69% of cases, the ministry responsible for environmental matters chairs the coordination body solely or shares steering with the ministry responsible for energy (19% of cases).

When considering the *cross-temporal* aspect, the analysis pointed towards dynamic activity in relation to the establishment of coordination bodies by the Member States from 1990 to 2020. Despite the establishment of the first cross-sectoral coordination bodies in the early 1990s, most countries did not establish institutional arrangements for cross-sectoral coordination until the early 2000s, when cross-sectoral coordination bodies began to be a common feature of climate governance at the national level. This upwards trend in adoption dynamics continued until 2020, with a peak in 2018–2019 with the creation of seven coordination bodies in each of those years. Additionally, the findings indicate that coordination bodies were amended, and their institutional design, responsibilities, names and other elements were changed throughout the study period in many countries.

In relation to the temporal evolution, the secondary data analysis revealed that Member States adopted 91.6% of the total national climate targets between 2011 and 2020. While Member States have progressively increased the adoption of national climate targets in previous decades, the period from 2010 to 2020 experienced an exponential increase in the adoption of national climate targets at the national level.

Third, considering the *cross-sectoral* aspect, the secondary data analysis of the 1,114 national climate targets retrieved from the CCLW database revealed that the energy sector was the most targeted sector (43.9% of national climate targets). Following that, a total of 22.7% of national climate targets were classified as economy-wide (non-

sector-specific). As noted by the CCLW researchers (Nachmany et al., 2015, p. 30), a "clear delineation of the related energy and economy-wide distinctions is not always possible", as the energy system is a major driver of climate change, and transformation in how we produce and consume energy is closely related. Economy-wide targets are high-level objectives communicated on a national level without being assigned to a specific sector (Nachmany & Mangan, 2018). Transportation was the second most targeted sector by national climate targets, with a total of 15.7%. In contrast, the remaining sectors account for 17.7% of national climate targets, including buildings and residential (3.1%), waste (3.1%), agriculture (0.8%), industry (1.1%), water (0.4%) and other (6.2%). These findings reveal that CPI operationalisation has targeted only a few directly related sectors, such as energy and transport, but not all sectors.

Fourth, secondary data analysis of the 650 procedural policy instruments contained in policy documents and retrieved from the CPDB database indicated that policy support was the most common category of procedural policy instruments (39.5%), including strategic planning, followed by climate targets (29.5%) and climate strategies (21.5%). Considering the temporal dimension, the secondary data analysis also revealed that national procedural policy instruments have expanded over the study period. Particularly, in the sub-period from 2001 to 2010, there was a substantial increase in the employment of national procedural policy instruments by the Member States, particularly strategic planning (n=87), GHG reduction targets (n=33) and formal and legally binding climate strategies (n=30). The incremental trend intensified in the period from 2011 to 2020, during which the key subcategories of procedural policy instruments remained strategic planning (n=127), formal and legally binding climate strategies (n=60) and climate targets, including renewable energy targets (n=49) and GHG reduction targets (n=39).

RQ3: *Does the operationalisation of CPI follow similar or different processual patterns across Member States, and if so, why?*

First, the findings of the analysis of the operationalisation of CPI at the national level have shown that there are substantial differences in the operationalisation of CPI across Member States over the study period. Moreover, these differences are

particularly notable in three of the dimensions of CPI: subsystem involvement, policy goals and instruments.

The findings of the analysis of subsystem involvement at the national level indicate that Member States have established cross-sectoral coordination bodies to assist national governments in different stages of climate policymaking. Despite cross-sectoral coordination bodies becoming a standard feature of climate governance in the Member States, there are important differences in the level of policy support, sectoral coverage and the functions of the coordination bodies (see Chapter 6 for more detail).

The findings on the analysis of policy goals at the national level indicate that there is a great variation in the number of adopted targets by each of the Member States. The two countries that adopted the most national climate targets during the period from 1990 to 2020 were the UK (n=201) and France (n=177). At the other end of the spectrum, based on data from the CCLW, the countries with the lowest number of reported national climate targets for the period were Slovenia (n=5) and Greece (n=5).

Focusing on the details of the employment of procedural policy instruments, according to the secondary data from the CPDB database, the Member States that employed the greatest number of procedural policy instruments were France (n=75), the UK (n=74), Germany (n=51) and Spain (n=51). Malta (n=2) was the country with the fewest identified procedural policy instruments recorded in the CPDB database. It is noticeable that apart from Malta, 12 other European countries have also reportedly employed a relatively low number of procedural policy instruments, with 10 or fewer procedural policy instruments employed during the study period. These countries include Croatia (n=5), Cyprus (n=5), Czech Republic (n=6), Estonia (n=3), Greece (n=8), Hungary (n=3), Latvia (n=3), Lithuania (n=4), Luxembourg (n=6), Poland (n=10), Romania (n=4) and Slovenia (n=5).

Second, France and the UK have sought to act strongly in relation to all four dimensions of CPI. When exploring policy framing and integrative narratives, both countries have enshrined in law their carbon neutrality ambitions in law and share a carbon budget approach to define GHG caps over different periods—carbon budgets—to establish the target trajectory for emissions reductions and to set sectoral targets.

For example, France has adopted a multiannual energy plan identifying energy-related actions to achieve its climate objectives. The quantitative content analysis of CPI-related references in the national climate frameworks indicates that France is one of the Member States that included the most references to integrative narratives in its frameworks. Meanwhile, in the UK, climate change has been a domestic policy priority since the early 1990s (Lockwood, 2021), with the first domestic governance instruments adopted in 1994, leading to the adoption of the Climate Change Act in 2008 (UK Parliament, 2008). This Act has received significant attention and is considered the "world-first national framework legislation", providing a comprehensive and overarching law setting out the UK's approach to both mitigating climate change and preparing for its impacts (Climate Change Committee, 2020a). One of the pillars of the Climate Change Act (amended in 2019 with the net-zero target) is the establishment of carbon budgets, which set legally binding limits for UK GHG emissions over five-year periods as interim milestones on the pathway to long-term emission reduction goals. Regarding adaptation, the Climate Change Act requires the British government to outline its objectives for adaptation and the programme to meet them.

The UK has also positioned policy integration, particularly EPI, as a policy priority since the early 1990s (Schout & Jordan, 2006), including key developments such as a network of green ministers, a green cabinet committee and a long-established environmental policy appraisal regime (Russel, 2005). The findings of this study support this. Apart from an economy-wide strategy setting a path to net zero by 2050, as well as a legal obligation to outline its objectives for adaptation, the exploration of subsystem involvement (see Chapter 6 for details) indicates that the UK has strong administrative cross-sectoral coordination mechanisms featuring political support (i.e. participation of the Prime Minister in the coordination bodies). Additionally, when analysing the adoption of national climate targets and the employment of procedural policy instruments, the UK ranks amongst the top of the Member States in total number and sectoral coverage (see Chapter 7 for details), alongside France. Therefore, the results indicate an increasing number of system-level procedural policy instruments that facilitate subsystems to jointly address the problem.

France has also adopted the objective of achieving net-zero emissions by 2050 in its revised low-carbon strategy (amended in 2020), which sets out the objective,

enshrined in law, of achieving carbon neutrality (net-zero emissions) by 2050. Under this framework strategy, France has two major cross-sectoral planning approaches: the five-year carbon budget and a multiannual energy plan identifying energy-related actions to achieve its climate objectives (European Parliament, 2021b). The findings of this thesis indicate that, particularly in the dimensions of policy framing and the inclusion of the CPI narrative in the national climate frameworks, as well as in the dimensions of policy goals and instruments, France has highly developed various integration capacities and a broad range of procedural policy instruments at the system level, including boundary-spanning structures that coordinate, steer and monitor subsystems' efforts.

Apart from France and the UK, the analysis of the different dimensions of CPI has identified a second set of countries – such as Germany, Spain, Portugal, Denmark, Finland, Sweden, the Netherlands and Italy – that have also advanced in the proxies used to explore the CPI dimensions. For example, the quantitative content analysis of national policy frameworks on CPI-related references indicates that Portugal's national climate framework (Portuguese Roadmap for Carbon Neutrality 2050) is the national climate framework with the greatest number (n=40) of explicit references to policy integration. The document establishes the goal for carbon neutrality by 2050 and states that the strategic vision to achieve this goal is that "all sectors must contribute to reducing emissions, increasing efficiency and innovation, promoting improvements" (Portuguese Ministry of the Environment and Energy Transition, 2019, p. 9). See Chapters 6 and 7 for more detail.

The data for the remaining countries, including Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Poland, Romania, Slovakia and Slovenia, indicate less evident CPI progress, as exemplified by a lower number of sector-specific national climate targets and the employment of fewer procedural policy instruments.

Overall, the empirical findings have shown substantive differences amongst Member States in their operationalisation of CPI across *all* four dimensions, but particularly in subsystem involvement, policy goals and instruments. The cross-temporal, cross-sectoral and cross-national comparisons have helped to identify that the main differences are found when considering the *cross-temporal* and *cross-national* aspects.

This thesis has revealed that the EU has played an important role in establishing an integrative narrative of climate change over the 30-year period, particularly since the 2010s. Thus, the *framing* of CPI processes in the EU has largely been determined by supranational actors, as historical institutionalism theories would expect. Member States have also shown increased similarities in the adoption of climate policy frameworks. The content analysis of the texts of the national climate frameworks has indicated that national climate frameworks have incorporated the cross-sectoral framing of climate policymaking and an integrative narrative of climate change across Member States that derives from the EU level, which historical institutionalist theories are well-placed to explain. However, the analysis of the policy framing at the Member State level has also shown that Member States have taken the additional opportunity to refine how climate change is framed as a cross-sectoral issue based on their domestic preferences when EU policy is transposed into national legislation, i.e. framing CPI processes with a focus on different actors and institutions. Therefore, policy framing and narratives differ across Member States, which can be best explained by adopting a new intergovernmentalist perspective.

The empirical findings on *subsystem involvement* concluded that Member States have responded to the challenge of coordinating across sectoral or policy subsystems by establishing and experimenting with cross-sectoral coordination bodies that are mitigation-specific, adaptation-specific or joint. This harmonisation of responses by the Member States can be explained by historical institutionalist accounts. However, the variation in terms of the type of administrative structures, political support or the interactions amongst policy subsystems aligns with the new intergovernmentalist propositions that the adoption of EU policy in the Member States provides opportunities for the Member States to establish their preferred institutional arrangements for cross-sectoral horizontal coordination at the national level.

The results of the *policy goals* analysis have pointed to notable differences in the number of climate targets adopted by the 28 countries and also the sectoral coverage of these targets. The two countries that are recorded to have adopted the most national climate targets during the period 1990–2020 are the UK and France, with over 150 climate targets. Other countries have not adopted more than five climate targets over the period of study (i.e. transposed into national law or policies the targets established at the EU level via the Effort Sharing Regulation, for example).

9.3 Key contributions of the research

9.3.1 Methodological contributions

The methodological contributions of this thesis relate to the data collection and analytical strategies undertaken to explore CPI as a multi-dimensional policy process in the EU, considering both the EU and Member States' levels of governance. Three main methodological contributions are derived from this thesis and unfolded below.

The first methodological contribution refers to the application of the seminal analytical framework proposed by Candel and Biesbroek (2016), which distinguishes four dimensions of policy integration: (1) policy frame, (2) subsystem involvement, (3) policy goals and (4) policy instruments. Conceptually, scholars of policy integration have advanced the understanding and distinction of policy integration from other related concepts, such as coordination or policy coherence (Tosun & Lang, 2017; Trein et al., 2023), as well as moving the concept of policy integration from a relatively static outcome-centred approach to an understanding of policy integration as a dynamic policy process (Candel & Biesbroek, 2016; Cejudo & Trein, 2023).

In this thesis, the analytical framework was applied to the study of a 30-year period from 1990 to 2020. By doing so, the thesis has contributed to the exploration of CPI as a process that is not static but evolves over time and unfolds as a policy process across several levels of governance and dimensions of policymaking. Following Candel and Biesbroek's (2016, p. 215) approach, the four dimensions of policy integration have been explored separately to enable differentiation in how the operationalisation of CPI advances in each dimension, which "may increase or decrease at various paces and even in opposite directions" (Candel & Biesbroek, 2016, p. 215). The literature shows that there are mutual dependencies and interactions between the four dimensions of policy integration (Hall, 1993; Rayner & Howlett, 2009). The contribution of this thesis is that these have been explored in relation to each other across levels of governance and through time.

The second methodological contribution refers to the overall research design, particularly the number of cases and levels of governance to which the analytical framework has been applied. Most existing policy integration literature has been dominated by qualitative methods, with most studies focusing on a single country

(Trein et al., 2023). In contrast, as expanded in Chapter 1, this thesis employed a comparative case study research design based on multiple case studies (29 cases in total: 1 EU + 28 Member States). The uniqueness of the EU as a multi-level system (Wallace et al., 2020) cannot be captured by exploring just one of the governments, as the EU is widely considered a unique system of multi-level governance (Wallace et al., 2020). This research design adopted in this thesis thus enables the exploration of multiple levels of governance required to address the research puzzle and questions posed.

Additionally, this thesis adopted a mixed-methods research design, which allows qualitative and quantitative insights to be combined to explain a complex phenomenon (Morse et al., 2018; Zachariadis et al., 2013), namely the CPI policy processes. The term mixed methods research is used to indicate research that integrates "quantitative and qualitative research within a single project" (Bryman, 2016, p. 628). The relationship between quantitative and qualitative components was carefully considered for each of the data collection and analyses undertaken in studying CPI as a multi-levelled and multi-dimensional policy process in the EU, as developed in Chapter 4.

The third methodological contribution that this thesis makes is employing a variety of data collection sources and analyses to analyse the four dimensions of CPI and the two levels of governance. Based on the research design choices expanded in the previous paragraphs, the data collection and analysis strategy needed to respond to the challenge of examining many dimensions across multiple cases over an extended study period. Thus, departing from the strong focus on single case studies in the policy integration literature (Trein et al., 2023), this thesis makes use of the climate policy databases that have expanded significantly in the last decade and are now established sources of data (for an overview, see Schaub et al., 2022). Recent research assessing the depth of data available on existing climate policy databases asserts that the "richness of datasets is unprecedented, surpassing even long-established research areas such as welfare and environmental studies" (Steinebach, 2024, p. 7), helping to overcome, at least in part, some of the previous impediments to this work, such as access to documentation in different languages, limitations on access to such a large sample of cases and issues of comparability.

9.3.2 Empirical contributions

The first empirical contribution is establishing more clearly and with empirical evidence that CPI advances have focused mostly on mitigation rather than adaptation. Hence, the much-discussed advances in CPI are more accurately described as *mitigation policy integration*. As previously discussed in various points along this thesis, particularly in Chapter 2 (Section 2.3), the existing literature on CPI has paid little empirical attention to the relationship between mitigation and adaptation (i.e. integration within climate policy) or the consideration of the two areas of climate policy when integrating into other policy subsystems (i.e. mitigation and adaptation integration into other environmental and non-environmental sectors). Thus, studies attempting to assess CPI as a process have rarely encompassed both mitigation and adaptation (Neby & Zannakis, 2020). Therefore, when analysing how climate policy objectives become part of other policy sectors, most CPIs have assimilated climate objectives by limiting GHG emissions or increasing carbon capture capacity, which are essentially the goals of mitigation.

In terms of *subsystem involvement*, less than 30% of horizontal cross-sectoral coordination bodies jointly address mitigation and adaptation. Often, joint coordination bodies comprise a number of different sub-committees or working groups that may specialise in mitigation or adaptation. In very few instances, evidence of institutional arrangements to coordinate horizontal mitigation and adaptation policies were found, i.e. *ad hoc* working groups to work on the interaction between mitigation and adaptation under the Spanish Inter-Ministerial Commission for Climate Change and Energy Transition (see Chapter 6).

The findings also revealed that national climate targets adopted by the Member States were directed mostly towards mitigation. In very few instances have national climate targets focused on quantifiable adaptation objectives. One of the empirical findings of the analysis is that out of 1,107 national climate targets that deal with mitigation, only seven of the national climate targets have an adaptation component, particularly in the areas of water and disaster risk management (see Chapter 7). Finally, most procedural policy instruments aim to respond to the mitigation of climate change challenges (70.8%). Climate adaptation was the objective of only 2.7% of policies, while the

remaining 26.5% were classified as a mix of climate action areas, i.e. mitigation and adaptation mixes.

The second empirical contribution this thesis has made is through exploring the operationalisation of CPI at and across different levels of governance. Literature on policy integration often focuses on one level of government (for a recent review of the literature, see Trein et al., 2023), and limited attention has been placed on the dynamics between governance levels when advancing policy integration. This is particularly relevant in the EU, as European institutions have become responsible for many policy areas, such as environmental policy (Jones et al., 2013), enhancing coordination is increasingly crucial. Given that context, this thesis examined CPI policy processes at both the EU and Member State levels. See Chapter 5 (EU level) and Chapters 6 and 7 (Member States' level) for more details on the empirical findings. The value added by examining processes across levels of governance is the richness of findings as well as comparative options, i.e. cross-temporal, cross-sectoral, etc.

The third empirical contribution refers to the examination of the operationalisation of CPI at the national level for each and *all* Member States. This thesis has responded to calls from previous contributions of policy integration scholars highlighting the importance of expanding research on policy integration to include more cross-sectional and longitudinal studies across countries over time (Trein et al., 2019) and the use of new methods to amplify the possibilities of larger datasets (Trein et al., 2023). The value added to exploring policy integration lies in assessing change over time rather than focusing on describing CPI at a particular moment.

9.3.3 Theoretical contributions

The main theoretical contribution offered by this thesis revolves around utilising two streams of literature that are often kept separate: the literature on policy integration and the literature on European integration. Scholars of policy integration have devoted much attention to the EU, which has been an area of experimentation and innovation for policy integration in its various iterations, i.e. EPI, CPI, etc. (Kaplaner et al., 2023; Maltby, 2013; Rietig, 2013). However, even though the EU is one of the most explored case studies in the European integration literature, European integration theories are rarely employed to explain and understand policy integration as a policy process

towards advancing the European integration project in the EU (for a notable exception, see Dupont, 2013).

This thesis has addressed this gap by studying CPI as a policy process in the EU through the theoretical lenses of European integration theories. Specifically, it has brought together an analytical framework derived from policy integration studies (Candel & Biesbroek, 2016) and utilised it with two distinct theories of European integration. Each theory provides a different vision into the process of European integration. However, they do so from contrasting perspectives, focusing on different aspects of the policymaking in the EU, as well as the importance of key actors, the arenas in which they act and the policy mechanisms employed, resulting in political outcomes.

In summary, the European Commission has expanded its role in monitoring progress, evaluating the adequacy of national long-term climate strategies and plans and ensuring coherence between short-term and long-term objectives (i.e. NECPs and long-term strategies). Even when there are no hard governance or binding climate targets for the Member States, compliance mechanisms have advanced to incorporate reporting obligations and strategic planning for the Member States. Historical institutionalism is particularly useful for explaining the increased influence of supranational actors, notably the European Commission and its agenda-setting power.

Finally, as suggested by new intergovernmentalists, despite reinforcing cooperation in the policy areas of energy and climate change at the EU level, the operationalisation of CPI remains largely controlled by the Member States. Indeed, the empirical results revealed substantial differences across Member States in the way that CPI has been operationalised via national policies, cross-sectoral governance arrangements, targets and instruments.

9.4 Limitations and new avenues for research

During the design of this research, several choices had to be made. This section reflects on several limitations that became apparent during the research and identifies relevant areas for future research.

9.4.1 Data availability

First, to study CPI over a 30-year period across a total of 29 case studies (1 at the EU level and 28 Member States) along four theoretically salient dimensions, this thesis drew upon a variety of data sources and examined each dimension of CPI using various proxies. For example, exploring European Commissioners' speeches served as a proxy for policy framing at the EU level, while the participation of different administrative policy areas in the Member States' cross-sectoral coordination bodies acted as a proxy for subsystem involvement. The use of diverse climate policy databases is a strength of this thesis, as this strategy has enabled an exploration of CPI as a multi-levelled and multi-dimensional policy process, significantly contributing to the understanding of CPI across these dimensions. However, challenges and limitations arise from using multiple data sources, particularly regarding the time and resources required to collect, evaluate and calibrate data from different origins.

A limitation of this thesis is the availability of data concerning certain elements of CPI, particularly in relation to subsystem involvement, with several missing values across some of the aspects explored. The empirical examination aimed to gather data on characteristics such as the intended participation of the head of government, the range of participating subsystems, the intended regularity of the actual regularity of meetings and decision-making methods. The research design revealed the difficulty of accessing this information through the chosen data sources and standardised reporting requirements, i.e. NECP, the Climate-ADAPT platform and official governmental sources.

This is primarily due to the absence of a central data source and standardised reporting requirements. Although the NECP mandates Member States to report on administrative arrangements for implementing national energy and climate policies (see more detail in Chapter 4, Section 4.3.1), Member States retain considerable discretion in deciding what they report and, crucially, the level of detail provided. Notably, despite revisions from the European Commission and the pre-established structure of the documents, data submitted through the NECP varies significantly among Member States in terms of length and level of detail.

This limitation has, in itself, constituted a research finding supporting the notion that coordination arrangements are rarely publicly explicit, and the coordinating

mechanisms remain not known beyond the governance system, i.e. the relative priority of policies across government and mechanisms for the lead subsystem, often the chair of the coordination body, to influence the performance and engagement of other policy subsystems. This finding aligns with recent studies on horizontal coordination regarding climate change (von Lüpke et al., 2023).

Further research could involve in-depth case studies of different policy sectors and/or countries to explore the *black box* of government decision-making, as well as the internal politics, motivations and preferences of various policy subsystems and their actors. Such research could help elucidate the mechanisms of policy integration at work. In this regard, in-depth interviews or surveys with relevant policymakers could serve as potential research methods to expand upon the findings presented in this thesis.

9.4.2 The political aspects of policy integration

The processual approach adopted in this thesis aligns with the argument that policy integration should be understood as a process. Consequently, the thesis has analysed CPI based on Candel and Biesbroek's (2016) framework of policy integration as a policy process. Recent reviews of policy integration research have identified a dominance of problem-oriented design perspectives, with considerably less attention paid to the political dynamics of policy integration (Cejudo & Trein, 2022, 2023).

Thus, a future avenue of research could build upon the work undertaken in this thesis, focusing on how governments implement CPI. The research agenda should pay greater attention to the political dynamics of CPI, including the study of interactions between policy subsystems, the roles of different actors and their interactions and the effects of politicisation on policy integration processes.

9.4.3 Different theoretical perspectives

This thesis is grounded in two key research choices. First, it adopted a theoretical approach to understanding CPI policy processes through the lens of European integration theories. Second, it integrated analytical and theoretical frameworks to explore the operationalisation of CPI within the EU. One of the strengths of this novel combination is its consideration of CPI as a policy process that evolves across different levels of policymaking within the complex political system of the EU.

In this thesis, a key research choice involved understanding CPI as part of European integration processes. Future research could focus on examining the role of each EU institution (supranational actors) in shaping CPI advancements across its dimensions, namely policy framing, subsystem involvement, policy goals and instruments. Additionally, this thesis has considered two European integration theories—new intergovernmentalism and historical institutionalism—that emphasise different actors, institutions and processes and the explanatory power they hold in elucidating CPI developments over the 30-year period.

However, the thesis has not concentrated on testing the relative explanatory power of each of these theories by developing and testing hypotheses related to each theoretical framework. Instead, the two European integration theories were treated as "a *mosaic"*, following Wiener et al. (2019, p. 28) rather than competing with each other to attain the most explanatory power. Future research could assess the explanatory power of European integration theories at different stages of CPI operationalisation. Furthermore, future research could explore other grand theories of European integration or alternative streams of intergovernmentalism or institutionalism to evaluate their capacity to explain CPI processes.

9.4.4 The evaluation of integrated policies

This thesis commenced by adopting the definition of CPI developed by Mickwitz and colleagues (2009), who conceptualised CPI as the integration of mitigation and adaptation at all stages of the policymaking process, including evaluation. One limitation of this thesis has been its consideration of the operationalisation of CPI during the evaluation stage of policymaking. This limitation arises from the lack of data on the evaluation of integrated policies and the existence of evaluating mechanisms specifically designed for integrated policies by Member States.

Future research on policy integration could focus on evaluating integrated policies to determine whether such measures effectively contribute to meaningful emission reductions and advance adaptation efforts. Policy integration research would benefit from incorporating aspects of policy evaluation literature and advancing empirical accounts evaluating the performance of integrated policies at various governance levels, utilising larger sets of data. Evaluation could play multiple roles in the implementation of policy integration, such as providing policymakers with means to

assess the effectiveness of policy instruments used for integration purposes, offering insights into the results of integrated sectoral policies, or evaluating competing horizontal objectives prior to, or irrespective of, the level of integration between sectoral policies (Sjöö & Callerstig, 2023).

9.4.5 Processual and procedural conceptualisations of policy integration

This thesis examined the operationalisation of CPI in the EU through processual and procedural conceptualisations of policy integration. The processual element is derived from the analytical framework proposed by Candel and Biesbroek (2016), which elaborates on the foundational assumptions of their processual approach to policy integration (see Chapter 1, Section 1.3, Chapter 2 and Chapter 3 for further details).

Conversely, policy integration literature has emphasised the procedural dimension when examining policy instruments (Tosun & Lang, 2017). The procedural aspect has been captured in this thesis by exploring the dimension of policy instruments, focusing on those designed to "indirectly affect outcomes through the manipulation of policy processes" (Howlett, 2000, p. 413) (see Chapter 3 for more details). Recently, another body of research has conceptualised procedural governance, particularly in the context of EU climate policy (Kulovesi et al., 2024; Moore et al., 2023). Kulovesi and Oberthür (2024, p.2) discuss procedural climate governance as the "regulatory frameworks, instruments, institutions and processes that shape substantive climate policies and their implementation".

Given the proximity between these three conceptual uses of *procedural*, future research could aim to provide conceptual clarity on the three elements and their interactions, namely policy integration as a policy process, procedural policy instruments and procedural governance. In particular, future research could investigate how these three elements interact when addressing policy problems across different governance scales and policy subsystems. In the context of the EU, this research could inform EU policymaking on policy integration and climate change, especially during the crucial implementation stage of the European Green Deal.

9.5 Concluding remarks

One of the most significant lessons to emerge from this thesis is that, despite more than 30 years of climate policymaking in the EU, the integration of climate change into all sectors and policy areas does not fully align with the achievement of climate neutrality and adaptation to the impacts of climate change.

At this juncture, it seems inadequate to just claim that more CPI is needed given that countries must urgently deliver stronger ambition and action (IPCC, 2023b), both in mitigation and adaptation (UNEP, 2024a). In fact, when and how this CPI can make a sufficient impact in terms of emissions reductions and adaptation objectives relative to the extensive efforts required must be carefully considered. One cannot simply assume that because a policy is integrated, it will inherently yield better performance than a non-integrated policy response. This underscores the necessity for further research on CPI, the evaluation of integrated policies and the conditions under which they become crucial for effectively directing integrative capacities in this race against time.

In late 2019, the European Green Deal emerged as a new initiative aimed at developing a more integrative approach to policymaking in the EU (Dupont & Jordan, 2021). In 2021, the adoption of the European Climate Law enshrined the 2050 climate-neutrality objective in law and upgraded the 2030 emission reduction target. The European Climate Law represents significant progress in establishing EU requirements for assessing EU measures or legislative proposals in line with climate objectives (European Commission, 2021). Specifically, the European Climate Law requires the European Commission to assess whether any draft EU measures or legislative proposals are consistent with the climate-neutrality objective, the 2030 and 2040 climate targets and the adaptation objective. This first review of the newly established climate-consistency check was published in 2024 (European Commission, 2024), indicating that, despite "good progress", nearly 30% of impact assessments were found not to have adequately evaluated the consistency of initiatives with climate objectives (European Commission, 2023, p. 11). Some authors also caution against the European Climate Law's lack of criteria for assessing the consistency or alignment of legislative proposals with climate-neutrality and adaptation objectives or for

providing safeguards to prevent legislative or budgetary proposals from conflicting with the objectives of the European Climate Law (Kulovesi et al., 2024).

The second important lesson that emerged from this thesis is the consistent interest of the EU in pursuing policy integration and its variants, first EPI and later CPI. The analysis has shown that CPI has significantly advanced within EU climate governance over the last 30 years, enacting an increasing number of policies, targets and instruments to influence Member States' climate change policymaking. CPI has also progressively extended from directly emission-relevant sectors to more indirectly related policy areas. These findings support the conceptualisation of CPI within the context of European integration processes, thereby highlighting the utility of employing European integration theories to understand CPI as an agent-driven process of policy and institutional change within the EU.

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Appendix 1: List of Member States' national climate frameworks in place

National climate frameworks in force as of 2020 (n=54)

Member state	National mitigation framework	Year	National Adaptation framework	Year
Austria	Austrian Climate and Energy Strategy #mission2030	2018	The Austrian Strategy for Adaptation to Climate Change	2012
Belgium	Climate Protection Policy	2017	Strategy on Adaptation to Climate Change	2015
Bulgaria	Third National action plan on climate change 2013-2020	2012	National Climate Change Adaptation Strategy and Action Plan	2019
Croatia	Low-carbon development strategy looking forward towards 2030, and beyond towards 2050	2017 (2021)	National Climate Change Adaptation Strategy	**2020**
Cyprus	**NA**		National Strategy for climate change adaptation	**2017**
Czech Republic	Climate Protection Policy	**2017**	Strategy on Adaptation to Climate Change	**2015**
Denmark	Climate Policy Plan	2013, 2016	Danish strategy for adaptation to a changing climate	**2008**
Estonia	National Reform Programme Estonia 2020	**2019**	Climate Change Adaptation Development Plan until 2030	**2017**
Finland	National Energy and Climate Strategy for 2030	**2017**	Finland's National Climate Adaptation Plan 2022	**2014**
France	National strategy for energy and climate	**2019**	Climate Change Adaptation Programme (2018-2023)	**2018**
Germany	Climate Action Plan 2050	**2016**	German Strategy for Adaptation to Climate Change	**2008**
Greece	First climate change action plan	**2005**	National Adaptation Strategy	**2016**
Hungary	National Clean Development Strategy 2020-2050	**2020**	Climate Adaptation Strategy	**2018**
Ireland	Climate Action Plan	**2019**	Climate Action Plan	**2019**
Italy	National Energy Strategy	**2017**	Climate Adaptation Strategy	**2015**

Latvia	Strategy to achieve climate neutrality by 2050	**2019**	National Plan for Adaptation to Climate Change until 2030	**2019**
Lithuania	Strategy for the National Climate Change Management Policy until 2050	**2012**	Strategy for the National Climate Change Management Policy until 2050	**2012**
Luxembourg	First climate change Plan	**2006**	Strategy and Action plan on Adaptation 2018-2023	**2018**
Malta	Low Carbon Development Strategy	2017 (2021)	Climate Adaptation Strategy	**2012**
Netherlands	National Climate Agreement	**2019**	Climate Adaptation Strategy	**2016**
Poland	**NA**		Climate Adaptation Strategy	**2013**
Portugal	Strategic framework for Climate Policy	**2015**	Strategic framework for Climate Policy	**2015**
Romania	National Climate change strategy 2016-2020 and Action Plan	**2016**	National Climate Change Strategy (2013-2020)	**2013**
Slovakia	Low-Carbon Development Strategy of the Slovak Republic until 2030 with a View to 2050	**2020**	Adaptation Strategy, Resolution of the Slovak Government No. 148/2014	**2018, 2018**
Slovenia	Renewable Energy Action Plan	**2017**	Strategic Framework Adaptation	**2016**
Spain	Spanish Strategy on Climate Change and Clean Energy	2007,2012, 2020	National Adaptation Plan	**2006**
Sweden	Climate Policy Framework	**2017**	National Adaptation Strategy	**2017**
United Kingdom	Climate Change Act	**2009, 2011**	Climate Change Adaptation Programme (2018/2023)	**2018**

Source: CCLW database (initially accessed on: 18 November 2021)

Total national climate frameworks adopted by the Member states from 1990 to 2020 (n=114)

Geography	Document Title	Framework	First event in timeline
Austria	Administrative Reform Act BMLFUW	Mitigation	21/11/2011
Austria	Federal law consolidated: entire legal regulation for the climate protection law	Mitigation	21/11/2011
Austria	Federal law consolidated: entire legal regulation for the climate protection law	Mitigation	21/11/2011
Belgium	National Climate Change Adaptation Strategy	Adaptation	06/12/2010

Bulgaria	National Climate Change Adaptation Strategy and Action Plan	Adaptation	25/10/2019
Bulgaria	National Climate Change Adaptation Strategy and Action Plan	Adaptation	25/10/2019
Bulgaria	Climate Change Mitigation Act	Mitigation	11/03/2014
Bulgaria	Climate Change Mitigation Act	Mitigation	11/03/2014
Croatia	Law on Climate Change and the Protection of the Ozone Layer	Adaptation, Mitigation	01/12/2019
Czech Republic	Adaptation strategy to climate change in the Czech Republic	Adaptation	01/10/2015
Czech Republic	Climate Protection Policy: Executive Summary	Mitigation	22/03/2017
Czech Republic	Climate Protection Policy	Mitigation	22/03/2017
Denmark	Climate Act	Mitigation	26/06/2020
Denmark	Climate Act (2021 update)	Mitigation	26/06/2020
Denmark	Climate Act (2021 update)	Mitigation	26/06/2020
Denmark	Climate Act	Mitigation	26/06/2020
Denmark	Climate Act	Mitigation	26/06/2020
Denmark	Danish strategy for adaptation to a changing climate (2008) and the Action Plan for a climate-proof Denmark (2012)	Adaptation	01/03/2008
Estonia	Climate Change Adaptation Plan 2030	Adaptation	02/03/2017
Estonia	Estonia 2020' National Reform Programme	Mitigation	25/12/2017
Finland	Climate Change Act	Adaptation, Mitigation	01/03/2015
Finland	Climate Change Act	Adaptation, Mitigation	01/03/2015
Finland	National Energy and Climate Strategy for 2030	Mitigation	24/11/2016
Finland	National Climate Change Adaptation Plan 2022	Adaptation	20/11/2014
Finland	Government Presentation of 2022 Amendment to the Climate Change Act	Adaptation, Mitigation	01/03/2015
Finland	Climate Change Act	Adaptation, Mitigation	01/03/2015
France	Dacret nÂ° 2020-457 du 21 avril 2020 relatif aux budgets carbone nationaux et Ã la strategie nationale bas-carbone	Mitigation	21/04/2020
France	Draft Carbon Capture, Storage and Use (CCUS) Strategy	Mitigation	23/06/2023
France	Understanding the National Climate Change Adaptation Plan (PNACC 2)	Adaptation	01/12/2018

France	The National Climate Change Adaptation Plan (PNACC 2)	Adaptation	01/12/2018
France	Law no. 2019-1147 on Energy and the climate	Adaptation, Mitigation	08/11/2019
France	Law no. 2015-992 on Energy Transition for Green Growth (Energy Transition Law)	Mitigation	17/08/2015
France	Climate plan	Adaptation, Mitigation	06/07/2017
France	Climate Plan	Adaptation, Mitigation	06/07/2017
Germany	Federal Climate Change Act	Mitigation	20/12/2019
Germany	Federal Climate Change Act	Mitigation	20/12/2019
Germany	Federal Climate Protection Act (2021 Amendment)	Mitigation	20/12/2019
Germany	Action Programme on Climate Protection 2020	Mitigation	03/12/2014
Germany	Federal Climate Change Act (2021 Amendment)	Mitigation	20/12/2019
Germany	Information on the 2021 Amendment to the Climate Change Act	Mitigation	20/12/2019
Germany	Climate Action Plan 2050	Mitigation	14/11/2016
Germany	Summary of the German Strategy for Adaptation to Climate Change (DAS)	Adaptation	17/12/2008
Germany	Information on the Action Programme on Climate Protection 2020	Mitigation	03/12/2014
Germany	German Strategy for Adaptation to Climate Change (DAS)	Adaptation	17/12/2008
Germany	Federal Climate Change Act	Mitigation	20/12/2019
Greece	National Climate Change Adaptation Strategy	Adaptation	01/04/2016
Greece	Second National Climate Change Programme (approved by Act of the Ministerial Council 5/27.02.2003, amended in 2007)	Mitigation	05/03/2003
Greece	National Climate Change Adaptation Strategy	Adaptation	01/04/2016
Hungary	Law on Climate Protection	Mitigation	03/06/2020
Hungary	Law on climate protection	Mitigation	03/06/2020
Ireland	National Mitigation Plan	Adaptation, Mitigation	19/07/2017
Ireland	National Adaptation Framework	Adaptation	19/01/2018
Ireland	National Mitigation Plan	Adaptation, Mitigation	19/07/2017

Ireland	Information on the Climate Action and Low Carbon Development (Amendment) Bill 2021	Adaptation, Mitigation	10/12/2015
Ireland	Climate Action and Low Carbon Development (Amendment) Bill 2021	Adaptation, Mitigation	10/12/2015
Ireland	Climate Action and Low Carbon Development Act 2015	Adaptation, Mitigation	10/12/2015
Ireland	Press Release on Sectoral Emissions Ceilings	Adaptation, Mitigation	10/12/2015
Ireland	Climate Action Plan	Adaptation, Mitigation	17/06/2019
Italy	Decree Approving the National Strategy on Adaptation to Climate Change	Adaptation	16/06/2015
Italy	National Strategy on Adaptation to Climate Change	Adaptation	16/06/2015
Italy	Climate Change Action Plan (CIPE Deliberation No. 135/2007)	Mitigation	11/12/2007
Lithuania	Resolution Approving the National Strategy For Climate Change Management Policy	Adaptation, Mitigation	06/11/2012
Luxembourg	Law of 15 December 2020 relating to the climate	Adaptation, Mitigation	15/12/2020
Luxembourg	Action Plan towards the reduction of greenhouse gases emissions	Mitigation	01/04/2006
Malta	Climate Action Act	Adaptation, Mitigation	07/07/2015
Malta	National Climate Change Adaptation Strategy	Adaptation	12/05/2019
Netherlands	The Netherlands Climate Strategy	Adaptation, Mitigation, Drm/Drr	07/10/2022
Netherlands	The Netherlands' Global Climate Strategy (Internationale Klimaatstrategie)	Adaptation, Mitigation, Drm/Drr	07/10/2022
Netherlands	National Implementation Programme on Climate Adaptation (NUPKA)	Adaptation	01/12/2016
Netherlands	Strengthened goals (net zero pledge) and additional climate package	Adaptation	28/06/2019
Netherlands	National Climate Agreement summarised	Adaptation	28/06/2019
Netherlands	Consolidated Environment and Planning Act 2023	Adaptation, Mitigation	26/04/2016
Netherlands	First publication of the Environment and Planning Act	Adaptation, Mitigation	26/04/2016
Netherlands	Digital information point	Adaptation, Mitigation	26/04/2016

Netherlands	Digital information point	Adaptation, Mitigation	26/04/2016
Netherlands	Decision determining the date of entry into force	Adaptation, Mitigation	26/04/2016
Netherlands	Environment and Planning Act (Omgevingswet)	Adaptation, Mitigation	26/04/2016
Netherlands	Translated webpage with information on the National Climate Agreement	Adaptation	28/06/2019
Netherlands	Information on the National Climate Agreement	Adaptation	28/06/2019
Netherlands	Climate Act	Mitigation	02/07/2019
Netherlands	National Climate Adaptation Strategy	Adaptation	01/12/2016
Netherlands	Climate Act	Mitigation	02/07/2019
Netherlands	National Climate Agreement	Adaptation	28/06/2019
Netherlands	Climate Act	Mitigation	02/07/2019
Netherlands	Climate Act	Mitigation	02/07/2019
Netherlands	Climate Agenda: Resilient, Prosperous and Green - English Summary	Adaptation, Mitigation	01/10/2013
Netherlands	Climate agenda: Resilient, Prosperous and Green	Adaptation, Mitigation	01/10/2013
Netherlands	Climate Act adopted by the Senate	Mitigation	02/07/2019
Poland	Polish National Strategy for Adaptation to Climate Change (NAS 2020)	Adaptation	29/10/2013
Poland	Strategic adaptation plan for sectors and areas sensitive to climate change until 2020	Adaptation	29/10/2013
Portugal	Resolution of the Council of Ministers No. 53/2020, of July 10: Approves the National Plan Energy and Climate 2030 (PNEC 2030)	Adaptation, Mitigation	30/07/2015
Portugal	Resolution No. 53/2020	Adaptation, Mitigation	30/07/2015
Portugal	Framework climate law no 98/2021	Adaptation, Mitigation	31/12/2021
Portugal	Decree of the President of the Republic No. 87/2015	Adaptation, Mitigation	30/07/2015
Portugal	Resolution of the Council of Ministers No. 53/2020, of July 10: Approves the National Plan Energy and Climate 2030 (PNEC 2030)	Adaptation, Mitigation	30/07/2015
Portugal	Resolution No. 53/2020	Adaptation, Mitigation	30/07/2015
Romania	Government Decision no. 739/2016 approving the National Climate Change and Low Carbon Green Growth Strategy 2016-	Mitigation	05/10/2016

	2020 and National Action Plan for Implementation of the Strategy		
Romania	Decision no. 529/2013 for the approval of the National Strategy of Romania on climate change, 2013-2020	Adaptation, Mitigation	01/06/2013
Romania	The National Strategy of Romania on climate change 2013 - 2020	Adaptation, Mitigation	01/06/2013
Slovakia	Strategy of adaptation of the Slovak Republic to the unfavourable consequences of climate change	Adaptation	26/03/2014
Slovakia	Strategy of adaptation of the Slovak Republic to the unfavourable consequences of climate change	Adaptation	26/03/2014
Slovenia	Environmental Protection Act (March 2022)	Mitigation	04/04/2006
Slovenia	Environmental Protection Act	Mitigation	04/04/2006
Slovenia	Environmental Protection Act	Mitigation	04/04/2006
Slovenia	Strategic framework for climate change adaptation	Adaptation	01/12/2016
Slovenia	Decree on the Use of the Climate Change Fund in 2017-18	Mitigation	24/12/2016
Spain	Spanish Climate Change and Clean Energy Strategy Horizon 2007- 2012 -2020	Mitigation	02/11/2007
Spain	Royal Decree 658/2019 on environmental subsidies	Mitigation	19/11/2019
Sweden	Climate Act	Adaptation, Mitigation	22/06/2017
Sweden	The Swedish Climate Policy Framework	Mitigation	15/06/2017
Sweden	Climate Act	Adaptation, Mitigation	22/06/2017
Sweden	Information on the Swedish Climate Policy Framework	Mitigation	15/06/2017
United Kingdom	Markets for nature policy framework	Adaptation, Mitigation	30/03/2023
United Kingdom	Climate Change Act 2008	Adaptation, Mitigation	26/11/2008
United Kingdom	The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting: Making the Country Resilient to a Changing Climate	Adaptation	01/06/2013
United Kingdom	The National Adaptation Programme: Making the Country Resilient to a Changing Climate	Adaptation	01/06/2013

Source: CCLW database (initially accessed on: 18 November 2021)