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# The Limits of Sustainable City Initiatives and the Necessity for a Multi-Level Governance Approach to Climate Change Policy

## A Case Study of Berlin

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# Abstract

Cities present a unique challenge to climate governance, while they are a primary driver of climate change due to their disproportionately high levels of global energy consumption, they are also particularly vulnerable to its consequences. Recently, a trend has emerged of sustainable city initiatives that aim to develop urban climate policies on a local scale to allow the transition to a low carbon society. However, climate change transcends political and administrative borders which cannot be addressed through isolated climate policy. This suggests the need for a governance network that acts at multiple levels and integrates a variety of stakeholders as suggested by multi-level governance theory.

This thesis aims to identify the optimal design of a multi-level governance system to maximize the chances for success of sustainable cities initiatives. The City of Berlin is used as a case study to examine the potential of its current climate policy framework and its aim to become a leading city in climate action. Based on interviews with experts of the policy process, this analysis determines that an optimal multi-level governance system would require effective dialogue between players at multiple levels, enhanced streamlining policy development and distributing democratic accountability with the national level as the central player.

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# 1  Introduction

*"The fate of the Earth's climate and the vulnerability of human society to climate change are intrinsically linked to the way cities develop over the coming decades and century."* *(Corfee-Morlot et al., 2009, p. 78)*

Current greenhouse gas (GHG) emission trends cast worrying shadows over future projections of climate change. Despite being on top of the international political agenda for a number of years, and most recently at the 2015 Paris Climate Conference, global emissions of GHG have risen to unprecedented levels (IPCC, 1990; IPCC, 2007; IPCC, 2014). In order to stay below the internationally accepted two-degree target for global warming, necessary to prevent dangerous and irreversible climate change, immediate action to transition to a low-carbon society is needed. The way cities develop is fundamental to this transition. Not only do cities constitute major drivers of climate change, consuming 78% of the world's energy and producing 60% of global CO2, half of the world's population currently lives in cities. This is expected to rise to two-thirds of the world's population by 2050 (Candiracci et al., 2010; Corfee-Morlot et al., 2009).

The necessity for cities to develop sustainably was quickly integrated into the debate on how to govern climate change. The initial global governance approach to climate policy called for a 'global solution to a global problem', a problem that overrides political and administrative boundaries. However, it quickly became clear that strenuous efforts are needed to come to a legally-binding universal agreement to limit emissions, both for developing and for industrialized countries. International negotiations have come far if one acknowledges the immense effects a global climate policy would create and the diplomatic skills required to achieve this. Yet, overall a global climate policy is still considered more of a political burden than an opportunity. This became clear in the failure to reach a global agreement in Copenhagen in 2009 (Betsill & Bulkeley, 2007; Bulkeley & Betsill, 2005; Bulkeley & Schroeder, 2011). The recent climate pact in Paris in 2015 gives more hope that eventually a global solution will be found.

Limited success on the international scale combined with the recognition that a 'one-size-fits-all' solution is inadequate to tackle the multi-scale problem of climate change. The complex web of climate change, "caused locally, but cumulating into a global problem; a problem with global impacts that are experienced locally", has emphasized the necessity of empowering local levels of governance (Gupta et al., 2007, p. 146). As the effects of climate change are mostly experienced on a local level and municipal authorities possess a high degree of influence on local energy demand, transportation and urban planning, cities quickly emerged as major players in climate policy. Cities are increasingly seen as "innovators, laboratories, and groundswell actors of environmental sustainability" and a number of success stories exist where local governments have succeeded in placing climate policy on the local agenda, sometimes even influencing national policies (Homsy & Warner, 2015, p. 47). The cities of Frankfurt and London figure for instance as prominent exam-

ples, the former planning to rely on 100% renewable sources of energy by 2050 and the latter aiming to become CO2 neutral in 2025 (GCB, 2015).

Cities are part of the problem but also part of the solution. Environmental leadership with cities taking responsibility to tackle climate change provides a good starting point to transition towards a low-carbon society and alter the course of climate change. However, this cannot happen in isolation. Studies have shown that most municipalities either still do not take action or that the effects of local climate policy are limited (Homsy & Warner, 2015). A major barrier to effective sustainable city initiatives is that policies are often decoupled from other policy frameworks, especially from the national framework. This leads to policy gaps and limits the resources available for cities to support urban climate change mitigation and adaptation practices.

Multi-level governance highlights the importance of integrating all levels and actors in governance processes (Bulkeley & Betsill, 2010; Bache & Flinders, 2004; Grande, 2000). Defined as a "system of continuous negotiation among nested governments at several territorial tiers", multi-level governance therefore advances governance of climate change "across all levels of government and relevant stakeholders […] to avoid policy gaps between local actions plans and national policy frameworks (vertical dimension), and to encourage cross-scale learning between relevant departments or institutions in local and regional governments (horizontal dimension)" (Marks, 1993, p. 392; Corfee-Morlot et al, 2009, p. 2). It quickly emerged as a trend in climate governance as "climate change occurs at multiple levels, the driving forces are to be found at multiple levels, the authority to deal with the problem occurs at multiple levels" (Gustavsson, 2009, p. 144).

The review of current practices has shown that although sustainable city initiatives have a higher potential to be successful when they occur in a multi-level governance framework, success is dependent on the framework design (Homsy & Warner, 2015). In light of this existing evidence, the research reported in this paper investigates how such a multi-level governance system needs to be designed to promote and support sustainable city initiatives. The overall question this research tries to answer is, "how does a multi-level governance system need to be designed to support sustainable city initiatives and to enable the long-term implementation of municipal climate action?" In answering this question, this research advances the current debate on climate governance by applying the concept of multi-level governance to sustainable city initiatives, testing the hypothesis that "the impact of a city's climate policy is dependent on the multi-level governance system design within which it is set".

To test this hypothesis, barriers and opportunities to municipal climate policy are analysed by conducting a review of the academic debate and current practices, seeking to answer the following questions:

- What action is taking place in global cities on climate change and why?
- Can a multi-level governance approach to climate governance be identified?
- Who are the major actors in such a multi-level system?
- What interplay can be identified amongst the relevant actors and levels and how is this network structured?
- What barriers (such as policy gaps or overlaps) and opportunities have been encountered in this multi-level governance system?

This inquiry is supplemented by a case-study analysis of the City of Berlin to gain further insights into the multi-level climate governance framework the city is placed within. A policy analysis is conducted which is supplemented with semi-structured expert interviews of central actors of the policy process. All the material collected is analysed in a qualitative manner.

This case study serves to evaluate potentials for improvement in the system design, and to enable a concrete analysis of the existing governance structure, current barriers, and potential opportunities. Berlin is used as a case study, as through its auspice as the German capital, it has great potential to demonstrate whether the ambitious climate policy the German government is pursuing with its 'Energiewende' is realizable. Despite some environmental leadership in the 1990s, the City of Berlin appears to be lagging in the design and implementation of municipal climate policy (Monstadt, 2007). However, being backed by a growing green start-up scene, excellent research institutes in the field, and active engagement of the public, Berlin's potential to become a leading city in climate action is high (Entrepreneur, 2015). The City of Berlin is taking the initiative to develop sustainably and is currently creating its own approach to local climate action. A large variety of stakeholders on different levels, vertical and horizontal, are present in the policy process. This network provides an ideal basis for investigating the multi-level governance framework.

This paper proceeds as follows. First, the theoretical framework of multi-level governance is introduced, highlighting the evolving role of the nation-state, its implications for democratic legitimacy and the emergence of new, important players such as transnational city networks. This is followed by a discussion of the challenges of climate governance and the potential for addressing climate change within a multi-level governance system. The rise of cities as major players in climate policy is examined and the barriers and opportunities of sustainable city initiatives discussed. In the next section the case-study analysis of the City of Berlin is reported. Through a policy analysis and the presentation and discussion of results of the conducted interviews, the potential for improvements in the system design are evaluated.

# 2  Multi-Level Governance: A Theoretical Introduction

Multi-level governance describes a form of governance characterized by the internationalization of the democratic nation-state, the plurality of actors in decision-making, and inter-relations between those in a multi-level system (Piattoni, 2009; Brunnengräber & Walk, 2007). The concept of multi-level governance originates in European integration theory from the early 1990s to describe the integration process of the European Union (EU). In the following years, multi-level governance quickly spread from European integration theory to other fields of research, where similar transformations led to the creation of new governance structures (Walk, 2008). Currently, multi-level governance is used as an umbrella term, of a theoretical, empirical and normative nature, that captures the complexity of governance. There has been a general agreement in political science that governance has become multi-level; however, there has been no consensus on what multi-level actually implies, how multi-level governance frameworks should be structured, and what role nation-states will play (Bache & Flinders, 2004).

To gain an insight into the academic debate on multi-level governance, in the following sections this paper summarizes the current state-of-the-art, highlighting its major assumptions and stressing different theoretical perspectives. The evolving role of the nation-state in multi-level governance and implications for its democratic accountability are analysed in particular. This examination of the origins, and theoretical debate over multi-level governance is necessary before applying multi-level governance theory to climate governance in the subsequent chapter.

## 2.1  A Historical Overview

The term 'multi-level governance' was first applied by Gary Marks (1992) to describe structural changes in EU integration policy after major reforms in the late 1980s, resulting in a decentralization of power in nation-states to other European authorities (Marks, 1992; Marks, 1993; Marks et al., 1996). While the first half of the twentieth century demonstrated strong central power within nation-states, the sudden effects of European integration and the voluntary dispensation of decision-making power and sovereignty to other authorities reawakened the debate over power formations (Piattoni, 2009; Stephenson, 2013; Bache & Flinders, 2004). The drivers of European integration as well as the functioning of the "integrated entity" were heavily debated in the theoretical dispute between neofunctionalists (Haas, Lindberg) and intergovernmentalists (Hoffmann, Moravcsik) (Bache & Flinders, 2004).

Neofunctionalists stressed European integration as a self-sustaining process driven by growing economic interdependence with policy integration in one sector spreading to neighbouring areas of policy. This integration, labelled the spill-over effect, creates interdependencies that are governed by supranational actors, limiting the decision-making power and sovereignty of nation-states. Intergovernmentalists rejected the idea of a self-sustaining European integration process, proposing that any increase in power at the supranational level is a result of a precise decision by governments (Hix, 1999). Member

States of the EU solely "pool or share" sovereignty within the European Community to achieve best outcomes through commitments and compromises. European integration is steered by nation-states with only limited effects on sovereignty (Cini, 2013, p. 88; Keohane & Hoffmann, 1990, p. 277; Moravcsik, 1998, p.3-4).

A deepening European integration process alongside major shifts in structural policy demonstrated that both theoretical approaches failed to fully explain European integration. During the 1990s and early 2000s, the development of the EU emphasized that neither the predicted self-sustaining spill-over process, nor the erosion of the nation-state came true. Instead, it became apparent that the EU evolved as a novel political system within which multiple levels of governance operate. This perception acknowledges that the dichotomous view on European integration, limited to the national and supranational level, was outdated as other levels seemed to matter as well (Bache & Flinders, 2004; Piattoni, 2009). A variety of new concepts emerged that captured the relevance of multiple tiers in governance as well as the previously ignored influence of non-state actors at various territorial levels. In this context, the concept of multi-level governance started to dominate the academic debate.

## 2.2   Defining Multi-Level Governance

The academic debate on multi-level governance is omnipresent in political science and public policy theory. It offers a way of thinking that challenges the predominant centralization of power within national governments, which has thus far dominated a broad strand in political science (Piattoni, 2009; Termeer et al., 2010; Bache & Flinders, 2004). However, with its quick dissemination from European integration theory to other policy fields, multi-level governance has gone through major contextual changes, leading to an over-complexity of this concept with different empirical, theoretical and normative interpretations. Bache & Flinders capture this problem in their academic anthology by asking: "How should we define multi-level governance? How is multi-level governance utilized by scholars working in different fields? How do the structure and processes of multi-level governance differ across policy sectors and how can these differences be explained?" (Bache & Flinders, 2004). In order for multi-level governance to evolve from a 'descriptive metaphor' into a 'theoretical concept', there is a need for conceptual clarity.

Multi-level governance, as the name itself implies, consists of two key concepts: 'multi-level', and 'governance'. However, there is a distinct difference between governing multi-level systems and 'multi-level governance', which is outlined in the following paragraphs. Multi-level systems have long been present in political theory, such as in federalist systems where decision-making power is shared between the central governing authority and other political units on multiple political levels (Bache & Flinders, 2004). In recent years, these levels have increased to include levels that lay outside of the governance framework of the nation-state, such as the European level in case of EU Member States or the international level created in certain policy areas due to international agreements. In multi-level governance, the term 'multi-level' captures these political levels defined as:

"Territorial levels (supranational, national, sub-national), each commanding a certain degree of authority over the corresponding territory and the individuals residing in it, but also more generally as jurisdictional levels, identified with regard to specific functions and to the constituents who are interested in the performance of those functions." (Piattoni, 2009, p. 172).

The underlying normative assumption here is that the dispersion of governance across multiple levels is "more efficient and normatively superior" to central state government (Termeer et al., 2010, p. 29). Essentially, multi-level governance does not refer to general governance of multi-level systems but to a specific institutional structure as its crucial parameter (Grande, 2000).

Second, the application of the term 'governance' demands clarification due to its ambiguity and widespread use in political theory (Hirschl, 2008; Walk, 2008). The concept of governance has numerous definitions. It can range from thematic layouts such as corporate governance to normative attributes like good governance, or it can refer to the spatially-related concepts of regional or local governance (Walk, 2008, p. 34). Jessop portrays this terminological mobility as follows: "It appears to move easily across philosophical and disciplinary boundaries, diverse fields of practical application, the manifold scales of social life, and different political camps and tendencies" (2002, p. 33).

Generally, in political theory, democratic governance describes a shift in policy style from 'government' in the form of hierarchical state-centric authority to 'governance', characterized by the interaction of state and non-state actors. These non-state actors are of different kinds (firms, interest groups, stakeholders, and experts) and are often integrated in policy via 'public-private partnerships' (Papadoupolos, 2010, p. 1031). Therefore, policies are designed and implemented through established networks of different actors. The United Nations Development Programme (UNDP) summarizes governance in a democratic state as "the exercise of economic, political, and administrative authority to manage a country`s affairs at all levels. It comprises mechanisms, processes and institutions, through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations, and mediate their differences" (UNDP, 1997). Governance in this sense refers to the 'management of a country's affairs' as the unit of analysis. Similarly, Benz (2004) defines governance as the overall connection of polity (institutions), politics (processes) and policy (political contents) (p. 15). The essential notion emphasized in all interpretations of governance is that a decentralization of state-centric authority to multiple actors to enhance participation and dialogue through networks. Whether the nation-state remains in control of these authority shifts, and whether decision-making follows traditional hierarchical orders remains debatable. As stated by Mayntz, "every hierarchy is a multi-level system but not every multi-level [governance] system is a hierarchy" (Mayntz, 1999, p. 101).

To synthesize the relevant assumptions for optimal design of a multi-level governance framework in the following analysis, a careful examination and definition of the concept 'multi-level governance' is needed. Marks, who coined this term, defined multi-level

governance as "a system of continuous negotiation among nested governments at several territorial tiers" (1993, p. 392). Therefore, multi-level governance stresses "the increased interdependence of governments operating at different territorial levels" (multi-level), and "the growing interdependence between governments and non-governmental actors at various territorial levels" (governance) (Bache & Flinders, 2004, p. 3). All relevant actors are interconnected across several levels in a specifically designed network: the institutional architecture of multi-level governance. This architecture highlights a two-dimensional structure: policies are integrated and coordinated vertically (across levels) and horizontally (across actors, agencies). This dispersion of governance across multiple jurisdictions is needed to capture variations in the territorial reach of policy externalities (Hooghe & Marks, 2004). Marks (1996) frames it as follows:

The point of departure for this multi-level governance (MLG) approach is the existence of overlapping competencies among multiple levels of governments and the interaction of political actors across those levels. […] Instead of the two level game assumptions adopted by state centrists, MLG theorists posit a set of overarching, multi-level policy networks. […] The presumption of multi-level governance is that these actors participate in diverse policy networks and this may involve supranational actors – interest groups and subnational governments – dealing directly with supranational actors.
(Marks et al., 1996, p. 167)

Hence, within these networks, actors travel across government levels that would normally be disconnected. The implications of such governance structures to public policy gave rise to numerous theoretical constructs (Hooghe & Marks, 2001; Hooghe & Marks, 2003; Jessop, 2004). Marks and Hooghe proposed to distinguish the theoretical debate into different 'types' of multi-level governance. Their distinction focuses on the evolving role of the nation-state in order to explain the "unravelling of the state" and the novel patterns of interplay which traditionally had been of a hierarchical nature (Piattoni, 2009, p. 170; Marks & Hooghe, 2004). The more traditional Type I, closely linked to federal systems, sees the individual government as the unit of analysis, focusing on the relationship between the central government and other levels of subnational governments. The importance of non-state actors such as corporations, public-private partnerships or supranational institutions, is acknowledged. Yet, the authority over these processes remains within the nation-state, highlighting the modification – but not elimination – of the Westphalian state and the perpetuation of hierarchical orders (Caporaso, 2000).

Type II multi-level governance is characterized by issue-specific jurisdictions, instead of that of a general purpose. Governance is not bound to general administrative territorial levels; instead, they operate policy-specific at numerous territorial scales. Conflicts between different jurisdictions and state-actors are avoided by internalizing all potential effects. Therefore, Type II is issue-specific and highlights problem solving and efficiency by creating cross-border jurisdictions. Skelcher attempted to further elaborate this in the following:

Type II governance tends to flourish specifically when there is a need for a tailored governmental body to address an issue that is not susceptible to policy action by a Type I or-

ganization, for example, in the international arena and when there are particular functional governance problems. The empirical data […] show that Type II governance occurs extensively in settings where the high boundary integrity of Type I governmental systems produces a competency constraint, in other words where mainstream governmental organizations are unable to respond flexibly to policy issues that intersect their jurisdictions. (Skelcher, 2005, p. 94).

Generally, it is assumed that both types coexist in the same overarching polity. By "unravelling the central state" within this new governance context, the question of hierarchy and control has been highlighted (Hooghe & Marks, 2003). Whereas some see multi-level governance as clearly hierarchical, stressing vertically layered tiers of authority, others emphasize that multi-level governance processes actually erode these hierarchical levels of governance (Rosenau, 2004).

Pahl-Wostl concludes that if actors travel within the formally remaining hierarchical levels, a balance between bottom-up and top-down approaches leads to higher adaptive capacity (2009, p. 363). To summarize these theoretical approaches, it remains evident that a commonly agreed definition of multi-level governance is yet to be found, and that multi-level governance is still an evolving theoretical field.

## 2.3    From Concept to Theory: Critical Assumptions

Further commentary and uptake of these theoretical assumptions have carried the concept of multi-level governance into the normative sphere. From a normative perspective, many scholars conclude that such a system provides a "superior mode of allocating authority", such that decisions made through multi-level governance are seen as more legitimate in a democratic nation-state (Bache & Flinders, 2004, p. 196). This debate is essential for the current analysis as it presupposes that climate change policy - or municipal climate policy as the unit of analysis in this case - should be set within such a multi-level governance system. That is, only a multi-level governance system is able to integrate the multiple levels and actors needed for a comprehensive climate policy and is therefore the most legitimate form of governance. In order to assess the legitimacy of this statement, two important implications need to be evaluated: the role of the nation-state, and consequences for its democratic ability.

The point of departure for this analysis is the (ideal-typical) sovereign state "that authoritatively allocates competencies between the central and the peripheral tiers of government, enlists selected interests and social groups in the decision-making process, and successfully guards the gates of international mobilization of both sub-national authorities and civil society organizations" (Piattoni, 2009, p. 173). Multi-level governance potentially challenges the sovereignty of the nation-state in three ways. First, the nation-state may be forced to devolve powers to sub-national levels. Second, the state may cede sovereignty by international coordination and regulation. Third, the increasing influence of non-state actors may affect its decision-making power (Stephenson, 2013). This however is not preconditioned rather, multi-level governance can also enhance state autonomy when the nation-state takes an active role through "new strategies of coordination, steering,

and networking to protect" (Bache & Flinders, 2004, p. 197). What becomes clear from this discussion is that the nation-state needs to redefine its role in a multi-level governance system as the traditional 'sovereign' nation-state model is outdated within an increasingly complex and globalized world. According to Marks, over the past decades "states [have] remain[ed] pre-eminent but are incapable of fully controlling the integration process, which escapes their collective command in many important respects" (1992, p. 150). For example, in the context of the EU, interest groups have been seen to bypass nation-states by directly addressing the EU at the supranational level. While the state therefore remains the dominant player in this network, it does not hold absolute control over the content and direction of policy-making (Bache & Flinders, 2004).

The changing role of the nation-state within a multi-level governance system has important implications for democratic accountability. Democratic governance is characterized by popular support, control and the accountability of governments through measures such as competitive and 'fair' elections (de Bardeleben & Hurrelmann, 2007). Intrinsically uncontested as a normative standard to evaluate the legitimacy of political systems, democratic governance needs to be rethought in multi-level governance frameworks. The traditional establishment of formally elected institutions to bring unregulated transnational processes under democratic control, such as the creation of the European Parliament, are insufficient to ensure the democratic legitimacy of multi-level governance (de Bardeleben & Hurrelmann, 2007; Olsson, 2003; Papadopoulos, 2010).

The decentralization of decision-making powers from nation-states to multiple players on multiple levels imposes several constraints on traditional democratic accountability measures (de Bardeleben & Hurrelmann, 2007). Looking at the vertical dimension of multi-level governance (multi-level), many institutions holding significant power may not underlie election processes and thus inhibit its democratic legitimacy. This problem is illuminated in the case of the EU. Hence, the increased complexity of the system with many governing institutions on different levels leads to problems of accountability. Complex decision-making processes risk becoming less transparent, and responsibility is easily shifted between actors at different levels. Furthermore, a multitude of governing institutions without explicit rules and coordination create policy gaps and overlaps that decrease the efficiency of the system. These factors detract from the construction of multi-level governance as a "superior mode of allocating authority", as mentioned above.

In examining the horizontal dimension (multi-actor), it appears that non-state actors are increasingly able to engage in decision-making processes. To an extent, this adds to the legitimacy of public policy making by enabling the public to increasingly influence politics as 'government by the people'. However, at the same time, private actors are also able to increasingly influence governance to their own benefit instead of that of the society. Studies (de Bardeleben & Hurrelmann, 2007) have shown that in lieu of increasing the position of, for example underrepresented social groups as contemplated in multi-level governance theory, the empowerment of non-state actors has often led to a higher con-

centration of power among already influential actors, such as corporate players. In addition, a low level of politicizing and lack of public awareness is one of the biggest factors impeding the accountability of any democratic system (Olsson, 2003). In order for a multi-level governance system to become legitimate, the integration of all stakeholders, especially the general public, is a necessity that needs to be approached through awareness campaigns and education programs.

Whether multi-level governance adds to the legitimacy of public policy making through increased efficiency and stakeholder participation or whether its legitimacy is reduced because of the democratic dilemma is dependent on the institutional architecture. Currently, the democratic legitimacy of multi-level governance is closely linked to the role of the nation-state which needs to develop additional mechanisms of accountability that go beyond the traditional measures of representative institutions to fulfil a presently 'centre-less' system (Bache & Flinders, 2004). Multi-level governance that is "embedded in a regulatory setting which enables weaker actors to define a legal basis for their action might be the best strategy to escape the Faustian bargain and to cheat the darker powers" (Peters & Pierre, 2004, p. 89). Therefore, it is fundamental that a multi-level system is designed in such a way that it enhances social equality instead of just 'strengthening' the voice of the most influential stakeholders.

## 2.4    Concluding Remarks and Outlooks

This chapter has shown that, from its evolution to its current application, multi-level governance is evolving from an analytical framework to a normative theory of governance. Existing literature around multi-level governance supports the relevance of multi-level governance as a concept to capture the multiple actors and levels of today's politics. Yet, further case studies are needed to test its empirical significance for the practical realities of governing (Piattoni, 2009; Bache & Flinders, 2004). Regarding its theoretical relevance, the analysis of multi-level governance is still evolving, the boundaries or precise meaning of which remains to be determined. The normative assumption that multi-level governance provides a "superior mode of allocating authority" in a democratic nation-state is highly debatable and the literature reviewed does currently not support this view. Peters and Pierre (2004) argue critically that "multi-level governance appears incapable of providing clear predictions or even explanations (other than the most general) of outcomes in the governance process" (Peters & Pierre, 2004, p. 88). On the contrary, according to Bache & Flinders (2004), this criticism is a major strength of multi-level governance:

"Its broad appeal reflects a shared concern with understanding increased complexity, proliferating jurisdictions, the rise of non-state actors, and the related challenges to state power […] whether multi-level governance is accepted as a theory, an organizing perspective or a contrastive concept, it can be used in a number of ways that contribute to our understanding of the changing nature of policy making" (pp. 4-5, p. 2004).

If there is a good case for multi-level governance as a normative theory as its protagonists claim, the question of democratic accountability and legitimacy needs to be addressed.

The nation-state as the institutional body of a representative democracy needs to redefine its role in a multi-level governance system. Instead of a centre-less system, there is the need for strong policy coordination where "the state can still be an important shaper of post-decisional politics and a powerful gatekeeper" (Fairbrass & Jordan, 2001, p. 21). Stakeholders have to be included in such a way that the democratic rights of citizens are ensured. Further research needs to be done which goes beyond the scope of investigation of this dissertation.

Taking multi-level governance as a concept to advance governance across all levels of government and relevant stakeholders, the following chapter examines the importance of governing climate change through a multi-level governance framework. This chapter analyses the system design to follow the research question, *how a multi-level governance system needs to be designed to support sustainable city initiatives and to enable a long-term implementation of municipal climate action.*

## 3   The Challenge of Governing Climate Change

*"As climate change has moved from the possible to the probable and as scientists have both refined our knowledge of the processes and the predictions of the consequences, climate-change policy has not kept pace." (Helm & Hepburn, 2009, p.4)*

Throughout the academic debate over how to govern climate change, there is general agreement that climate change is currently not under control, and present policy approaches will not be able to prevent the detrimental consequences. This point is noted succinctly by Giddens, who observed that "we have no […] politics of climate change" (2008, p. 5). The question then is what makes climate change so difficult to govern? Is climate policy more effective if governed through a multi-level governance system, as suggested by the current debate over climate governance. This chapter seeks to answer this question through an examination of the challenges of governing climate change, discussing why multi-level governance has the potential to resolve these barriers. Further, the metropolitan city as a new major actor in such a multi-level climate governance system is considered.

Like the majority of political concerns, climate change is related to numerous problems that need to be governed through a diverse range of policies. Strategies for climate governance are commonly distinguished as either a mitigation or adaptation approach to policy. Mitigation, defined as "an anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases", refers to practices that reduce anthropogenic emissions as drivers of climate change (IPCC, 2001a). Adaptation refers to the "adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities" (ibid). Thereby, adaptation practices focus on the impacts of a changing climate by 'adapting' the respective environment to abate damages. Whereas climate mitigation has global benefits, adaptation is typically limited to the scale of an impacted system which is mostly local. While in the

past policy has been characterized by a focus on mitigation practices, the current state-of-the-art has acknowledged that effective climate protection must also include adaptation practices (Adger et al., 2006; Caney, 2009). Looking at the challenge of governing climate change, this implies that there are significant differences between the adaptation and mitigation policies in terms of design and implementation, and the political levels and actors involved. In order to consider the appropriate governance framework for the design and implementation of these climate change policies, the following discussion draws out challenges in governing climate change as they need to be addressed in an effective multi-level governance system.

As stated above, governing climate change imposes several significant challenges. Many of these challenges relate to the question of "who should [deal] with the burdens created by global climate change?" (Caney, 2005, p. 747). The 'polluter pays principle' is a commonly accepted practice, affirmed by organizations such as the Organization for Economic Co-operation and Development (OECD) and the EU, with nation-states as the relevant entity. This idea stresses the case of the historical accountability of nation-states, so that industrialized countries are viewed as primarily responsible for bearing the burden of climate mitigation:

"Countries [are] accountable for the amount of greenhouse gas emissions remaining in the atmosphere emanating from a country's historical emissions. It demands that the major emitters of the past also undertake the major emission reductions in the future as the accumulation of greenhouse gases in the atmosphere is mostly their responsibility and the absorptive capacity of nature is equally allocated to all human beings no matter when or where they live." (Neumayer, 2000; cited in Caney, 2005, p. 754)

This definition underpins the responsibility of state governments for climate mitigation, which then implement the 'polluter pays principle' in their respective territory. Industrialized countries need to show leadership based on their historical responsibility for climate change. With a growing share in CO2 emissions, developing countries also need to acknowledge their role in climate mitigation and adaptation. To guarantee this shared responsibility, an international agreement needs to be found.

Responsibility over and implementation of effective climate policy are complicated by several further considerations at the global, national, and local level that have shown to decrease the incentive of nation-states to take action. First, the goal of climate governance - keeping global warming below the 2 °C degree target - is a collective good (Bättig & Bernauer, 2009). That is, the benefits of limiting climate change are available to everyone everywhere, regardless of who takes action. This promotes a 'free-ride' mentality, implying that countries 'rest' upon others to mitigate climate change. As climate change exists outside of political and administrative boundaries, the free rider problem needs again to be addressed by coming to an international agreement.

At the national and local level, the development of effective climate policy is difficult due to the deep structural changes required for addressing climate change. A so called socio-technical transition needs to be induced, which entails "technology, policy, markets,

consumer practices, infrastructure, cultural meanings and scientific knowledge" (Geels, 2011, p. 24). To transition to a low-carbon society, these structural shifts are not limited to technological innovations but require, amongst other things, behavioural change across the population. As the effects of climate change will be felt by future people, and most sustainable solutions do not offer obvious user benefits but require normative decision-making (e.g. purchase of electricity from Renewable Energy Technologies (RET)). The lack of immediate consequences limits the incentive for individuals to take immediate action. Therefore, at the national and local level government institutions are crucial to manage public goods and internalize public negative externalities. According to Geels (2011), it is unlikely "that environmental innovations will be able to replace existing systems without changes in economic frame conditions (e.g. taxes, subsidies, regulatory frameworks)" (p. 25).

Human-induced climate change is therefore deeply embedded in "the socio-economic fabric of modern society" (Lidskog & Elander, 2010). The transition to a low-carbon society will entail politicking and power struggles because "various vested interests will try to resist such changes" (ibid.). How far such a transition is possible in the context of pursing continuing economic growth, a major indicator for living standards, remains questionable (Eckersley, 2004). This debate is essential but goes beyond the scope of this paper and needs to be discussed elsewhere.

This examination of several barriers to establishing effective climate change policy also raises questions around the democratic implications of climate governance, which relate to the issue of responsibility (Payne & Samhat, 2004; Lidskog and Elander, 2010). Emphasizing the centrality of the democratic nation-state in climate governance, Lidskog and Elander (2010) discuss whether "representative democracy, territorially bounded to the organization of the nation-state can effectively handle trans-boundary, complex and controversial issues [as visible in climate change]" (p. 33). In response, they outline four challenges that ecological sustainability poses to traditional democracy, related to the problems of climate governance examined above: (1) global justice, (2) intergenerational justice, (3) biospheric egalitarianism, (4) and technocratic decision-making.

Lidskog and Elander (2010) argue that the concepts of global and intergenerational justice highlight the limits of theorizing environmental democracy and justice solely in the context of nation-states and their present citizens. As noted above, the consequences of climate change are delayed in time (intergenerational) and unevenly distributed in space (global). Therefore, it is important to consider what duties to future generations those living at present have. At the same time, representative democracies of nation-states do not explicitly 'represent' future generations nor do they have the ability to govern climate change from a global justice point of view, independently of the respective nation-state's interest. Biospheric egalitarianism challenges the roots of democratic theory, raising the question of how far climate policy should consider consequences for non-human species and plants, independently of the effects on human welfare. Finally, the design and devel-

opment of climate policy is dependent on science, leading to technocratic decision-making. That is, scientists heavily influence the course of climate governance without being subject to democratic legitimisation mechanisms. Institutional solutions need to be found to guarantee democratic climate governance by meeting the basic democratic values: representation, participation, and deliberation. Additionally, and depending on the model of environmental democracy, appropriate mechanisms should be found to integrate the 'voices' of non-human entities and future generations.

Lidskog and Elander (2010) conclude that the question for climate governance is "whether the [current] political system will develop a capacity to handle the climate use in a democratic way or whether democracy has to be superseded by scientific and technocratic dictates to be able to respond to this challenge" (ibid., p. 76). It is important to keep these challenges in mind when considering if a multi-level climate governance framework allows the consideration of non-human entities and future generations to enhance the environmental democratic legitimacy of climate governance. These ideas will be explored in the following chapter.

## 3.1 Multi-level Climate Governance

"Climate change occurs at multiple levels, the driving forces are to be found at multiple levels, the authority to deal with the problem occurs at multiple levels." (Gustavsson, 2009, p. 144).

The remainder of this chapter examines the implications of governing climate change within a multi-level governance framework by drawing on the theoretical framework developed in Chapter 2. First, as climate change is multi-level and multi-actor, the paper examines how this multidimensionality is integrated in the multi-level governance system design by looking at vertical and horizontal policy integration and the role of actors.

In his quote, Gustavsson (2009) summarizes the multidimensionality of climate change. Climate change overrides political and administrative boundaries and therefore governing climate change cannot be limited to a single political level. Instead, it requires governance across numerous policy areas and political jurisdictions on the international, national, regional and local level. The transition to a low-carbon society implicates complex and long-term processes that comprise multiple actors. It also requires the implementation of policies that are likely to be resisted by major actors such as private corporations and population groups as mentioned earlier in the discussion of the challenges (Bache et al, 2015). To diminish this resistance, the governing framework should be designed to be participative and enable dialogue among a variety of stakeholders. Given the complexity of the problem, and the multiple actors operating at multiple levels, multi-level governance offers a potential framework for addressing climate governance. By incorporating this complex network of levels and actors into a framework, such an approach enables the design of appropriate policies and their coordination and harmonization (vertical and horizontal) to prevent policy gaps and overlaps. The OECD Working Paper on "Cities, Climate Change and Multilevel Governance" defines multi-level climate governance as:

"Governance of climate change across all levels of government and relevant stakeholders […] to avoid policy gaps between local action plans and national policy frameworks (vertical integration), and to encourage cross-scale learning between relevant departments or institutions in local and regional governments (horizontal dimension)." (Corfee-Morlot et al., 2009, p. 2)

Looking at multi-level climate governance systems and the integration of levels and actors, the following conclusions can be drawn. The vertical dimension is especially extensive (multi-level) in a multi-level climate governance framework as climate change overrides administrative and political boundaries. Climate policy is not limited to the global, national and local scale, but is also present at different regional scales and other sub-levels of government. These multiple vertical levels need to be integrated and coordinated.

Examining the relationship between the different level, on the one hand, there exists a top-down relationship. International agreements currently constitute a general governing framework which has developed significantly over the past 20 years (Bulkeley & Schroeder, 2008). Milestones such as the Kyoto Protocol, the Bali Action Plan, and potentially the Paris Agreement of 2015 are crucial to frame national policies based on terms of the legally binding targets. These targets are translated into national policies and passed down through governing channels to lower levels of governance. On the other hand, lower levels of government, the scope of their influence depending on the political system set within, can influence, enable or constrain policy-making at higher levels of government through bottom-up channels. This is visible for example, in the State of California where lower levels of government have successfully taken initiatives in the absence of adequate national politics and triggered national political effects (Gallagher, 2012).

Looking at the horizontal dimension of multi-level climate governance, a variety of actors can be identified where "public, private, and voluntary association actors [are] also likely to influence policy making at, or between, various levels" (Gustavsson et al, 2009, p. 72). As the transition to a low-carbon society requires deep structural changes which are not solely in the control of representative governments, it is important to create a participatory multi-level governance design which is based on dialogue and consensus-building. A variety of actors with various 'vested interests' need to be integrated into the horizontal dimension. Integrating the public and private sector is particularly relevant. This constitutes Type II governance, where the importance of networking is highlighted, operating outside of traditional governing channels. Initially defined boundaries between state and non-state actors have become transparent and evolved into the constitution of "new forms of public and private authority" in contrast to simple authority shifts between state and non-state actors (Bulkeley & Schroeder, 2011). Foucault describes this as "the tactics of government that allow the continual definition of what should or should not fall within the state's domain, what is public and what private, what is and is not within the state's competences…[of] the survival and limits of the state" (Foucault, 2009, p. 109). Whether the state is in firm control of the constitution of these new forms of authority is debatable. Moreover, the vertical dimension of multi-level governance does not only set its focus on

creating a dense network of major state and non-state actors to enhance participation and coordination. It is also associated with inter-agency and cross-sectoral dialogue to increasing the coordination of climate policy across ministries and sectors at a certain level.

The horizontal and vertical dimensions of multi-level climate governance should not be considered separate mechanisms. Rather, they are intertwined in a complex and hybrid multi-level governing framework (Bulkeley & Betsill, 2005, p. 59; Bulkeley & Betsill, 2013). Lidskog et al. (2010) summarize this in the case of climate governance in EU Member States as follows:

"We have two parallel sets of institutions, one formal, going from global agreements derived from the Kyoto Protocol via EU and national governments down to local governments, and another, informal one of a much looser kind, linking social movements, voluntary associations, single-issue pressure groups, private businesses, research institutions and sometimes also local governments to each other." (Lidskog et al., 2010, p. 38)

The role of leadership, which was briefly touched on in the theoretical discussion, is especially relevant for multi-level climate governance (Bulkeley & Schröder, 2008; Gallagher, 2012). Leadership here is understood as "the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives" (Yukl, 2010, p. 8). That is, it involves some top-down level of guidance and influence over others, in order to achieve a collective end goal. Building on this, environmental leadership can be seen as "the ability to influence individuals and mobilize organizations to realize a vision of long-term ecological sustainability" (Egri & Herman, 2000, p. 572). Environmental leadership then involves guiding or establishing shared direction towards the long-term, collective good of environmental sustainability and climate governance. Thus environmental leadership is positioned within a normative view of leadership, one that promotes "a societal change from a perspective in which economic growth is valued above all to one that recognizes the limits of natural resources" (Gallagher, 2012, p. 5). As discussed above, achieving these long-term goals of climate governance require some degree of leadership and coordination, in order to create population-wide behaviour-change and society-wide structural transitions towards low-carbon living.

Environmental leadership is performed across the vertical and horizontal dimensions of governance, with the focus of currently visible leadership shifting from political levels to specific actors. At the vertical level, it is performed at the local, state, federal, and international scale by either individual political or administrative leaders or whole governing institutions. For example, the transnational city network Local Governments for Sustainability (ICLEI), discussed further in the following section, considered as a semi-governmental environmental leader at the international scale, whereas the EU represents an example of a driver of climate policy at the European level. According to Gallagher, subnational government institutions develop environmental leadership when the national government "fails to act" (2012, p. 7). The State of California, as well as the Cities of Tokyo and Kyoto, show how lower levels of government have successfully taken initiatives in the absence of

adequate national politics (ibid.). This underlines the statement made above that when looking at the vertical dimension in multi-level governance, a clear top-down hierarchical relationship cannot be assumed. Rather, enacted environmental leadership has the possibility to influence higher levels of politics through bottom-up governance. Leadership can also be an active part of national climate policy, not only in its absence. Regarding the horizontal dimension, civil society has long been active in environmental leadership and has been a major driver in making climate policy an issue overall. The business sector has also increasingly engaged in vertical environmental leadership, following a 'green growth' model. Many partnering projects between government institutions and businesses evolved to promote environmental sustainability in various forms of public-private partnerships, linking the vertical and horizontal dimension (ibid.; Bulkeley & Schroeder, 2008).

This discussion of the dynamics and dimensions of multi-level governance has demonstrated the utility of such a framework, as it allows the integration of relevant actors and levels fundamental to effective climate governance. Environmental leadership is crucial to trigger innovative climate policies. Within a functioning multi-level governance system, this leadership has the potential to diffuse to other levels of government, leading to an overall policy change. Only the two-fold integration of governance, vertical (across levels) and horizontal (across a variety of stakeholders), allows policies to be effectively coordinated and mutually reinforced and is therefore essential for any functioning multi-level governance framework. In the past decades, cities have emerged as major players at the local level of the multi-level governance system. Given this emerging role of cities as climate governance actors, the following section examines how an overarching multi-level governance framework can determine the impact of a given city's climate policy.

## 3.2 The Metropolitan City: An Essential Global Player in Multi-Level Climate Governance

In the following, the metropolitan city is analysed as a new major actor in the multi-level climate governance system. In order to respond to the overarching research question for this paper, current barriers and opportunities that have hindered or pushed local climate action are identified through a review of current practices.

The Earth Summit in Rio in 1992 and the resulting United Nations Framework Convention on Climate Change (UNFCCC) represent the first milestone of establishing a global approach to climate governance. The UNFCCC was the first international environmental treaty to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (Article 2, UNFCCC). Simultaneously, the international community agreed on the implementation of the Agenda 21 with regard to sustainable development. Agenda 21 highlights the importance of integrating multiple levels and actors in policy-making to create action at the international, national, regional and local level. Its framework is based on the understanding that climate change is "caused locally, but cumulat[es] into a global problem; a problem with global impacts that are experienced locally" (Gupta et al., 2007, p. 146). Follow-

ing the notion of "think globally, act locally", the Agenda 21 especially emphasized the necessity of empowering local levels of governance:

"Each local authority should enter into a dialogue with its citizens, local organizations, and private enterprises to formulate 'a Local Agenda 21'. Through consultation and consensus-building, local authorities would learn from citizens and from local, civic, community, business and industrial organizations and acquire the information needed for formulating the best strategies." (Agenda 21, Chapter 28, sec 1.3)

The diffusion of power to local levels of governance – in particular cities – was meant to enhance their power and authority in implementing climate action. The development of cities is vital to the progress of climate change, with energy demand and carbon emissions concentrating in urban areas. Considering the current rate of urbanization, especially in developing countries, climate mitigation at the city level is of utmost important to tackle global warming. Furthermore, cities are particularly vulnerable to climate change being disproportionally located at coastal areas with the threat of rising sea levels, extreme weather events and urban heat island effects, which damage the physical and social infrastructure of cities (Corfee-Morlot et al., 2009). Therefore, a transition to a low-carbon society is fundamental to cities' development combined with mitigation and adaptation policies.

There are significant variations concerning the opportunities and challenges cities face. Furthermore, municipalities often possess control over energy, transport and planning infrastructure. Therefore, the design of effective climate action must take place at the city level instead of the national level to allow tailored policies to climate change mitigation and adaptation, stressed by the (Local) Agenda 21. Immediate action in cities' is vital as there is a risk of locking society into carbon-intensive infrastructure development patterns that will persist for decades to come.

The Agenda 21 quickly resulted in cities emerging as major players in climate policy since the 1990s. While the international community has been struggling to agree on common objectives and targets to fight global warming, municipalities became active in local climate mitigation efforts (Homsy & Warner, 2015). Following the formation of ICLEI, there was a rapid expansion in the emergence and activity of sustainability-related city networks, within which new forms of subnational governments have been visible. These efforts represent the environmental concerns of municipal governments globally, and highlight "the importance of transnational networking as a process of policy coordination, facilitating the exchange of information and experiences" (Betsill & Bulkeley, 2004, p. 449). The Mayor of Grand Rapids, the second-largest City of the U.S. State Michigan, visualizes the attention placed on local climate action:

"You know that the action today is in cities. You want to save the world? You start saving it in cities […] We will save the world one plan at a time, one initiative at a time, one strategy at a time, but make no mistake, we will save the world" (George Heartwell, Mayor of Grand Rapids, Michigan, cited in Homsy & Warner, 2015, p. 46).

In the early 2000s, this push for climate policy at the municipal level and the empowerment of cities was echoed in the academic debate as well as by practitioners, where "municipalities are increasingly viewed as innovators, laboratories, and groundswell actors of environmental sustainability" (Homsy & Warner, 2015, p. 47). The Local Agenda 21 quickly merged with the theoretical discussion on multi-level governance. Having become popularized by international organizations worldwide to assess the performance of cooperative frameworks, multi-level governance emerged as an important political concept to capture global complex governance areas. Due to the multidimensionality of climate change, the potential of climate governance through a multi-level governance framework was highlighted within the political community. When the OECD issued an extensive Environment Working Paper on "Cities, Climate Change and Multilevel Governance", pushing for a multi-level governance approach to local climate action, multi-level climate governance diffused to public policy-making in many OECD countries (Corfee-Morlot et al., 2009).

However, despite the early enthusiasm among researchers and practitioners for the potential of local climate action, it became increasingly obvious that local climate policy efforts are crucially dependent on other actors and political levels. Municipal action alone was not sufficient to generate the large-scale, whole-of-population transformation necessary for effective action on climate change, triggering a shift in the academic debate on the potential of sustainable city initiatives. Furthermore, studies showed that in fact most municipalities still do not take action. Even when environmental leadership at the local level existed, it often led to mainly "cosmetic results" instead of substantial emission reductions, marginal compared to the nation's overall emissions (Conroy & Iqbal, 2009; Saha & Paterson, 2008; Svara, 2011; Lindseth, 2004). City-based efforts were limited by the scope and scale of municipal-level policies, and further by a lack of effective coordination with a supportive national and global climate framework. Thus it seemed that some degree of integration with a multi-level governance system would enhance the impact of sustainable city initiatives.

In the following discussion, this hypothesis—that the multi-level governance framework is central to effective city-led climate governance—is tested through an analysis of the barriers and opportunities of current sustainable city practices. This hypothesis is based on the idea that multi-level initiatives advances governance of climate change by integrating all levels of government and relevant stakeholders. This enables the development of effective climate policy at multiple levels, rather than permitting policy gaps and overlaps through the divergence of local action plans and national policy frameworks (Corfee-Morlot et al., 2009, p. 2). Drawing on a simplified Stages-Heuristic analytical framework (Jones, 1970), sustainable city initiatives set within multi-level governance frameworks are analysed across five stages of the policy process: agenda setting, policy design, policy implementation, feedback and evaluation, and dissemination. The analysis of sustainable city initiatives is focused on metropolitan areas, defined as "concentrations of

population and economic activity that constitute functional economic areas covering a large number of authorities" (OECD, 2010, p.14)

*Agenda Setting*

Agenda setting or strategic planning of cities to engage in climate action is driven by leadership. Cities are internally motivated to act on climate change, based on their interests in "preserving home values (Fischel, 2001), city governments' interest in achieving certain co-benefits (e.g. cost savings), competition for economic development, fiscal capacity, and citizen advocacy" (Homsy & Warner, 2015, p. 47). To drive climate policy development, cities need a combination of managerial, fiscal and civic capacity. When navigating the 'sustainability triangle' of economic, environmental and social equity concerns, it is especially challenging for municipalities to put climate policy on the agenda as economic goals tend to gain priority over environmental goals (Homsy & Warner, 2015). Therefore, leadership is fundamental. A study conducted by Bulkeley & Schroeder (2008) on the City of London confirmed that internal political leadership resulted in placing climate change on the agenda. This success was however enhanced by the integration of the business sector, developing an interest in the potential of carbon markets and the creation of public-private-partnerships (Bulkeley & Schroeder, 2008).

Despite the importance of political leadership in cities and enthusiasm for local climate policy, many scholars point out that overall most municipalities have not taken action (Conroy & Iqbal, 2009; Saha & Paterson, 2008; Svara, 2011). Instead, the initiative to act has often been incentivized by federal or state governments through top-down governing channels, highlighting the necessity of political leadership at higher levels of governance. The importance of international agreements has been emphasized in many conducted studies. In particular, EU policies are highlighted as driving climate policy, effectively influencing the domestic policy of Member States (Bulkeley & Schroeder, 2008). Whereas the international level has less direct impact on actual policy making, the importance of targets and timeframes of compliance have been seen as an important driver of local action, visible for instance in the Local Agenda 21 (ibid.). In essence, general membership in an international agreement is seen more important to drive climate change engagement than actual details of the specific agreement. Moreover, the relevance of transnational city networks in organizing and uniting transnational leadership is emphasized. Through the exchange of policy experience and best practices, as well as the formation of an influential body, leadership is marketed and possibly stimulates other cities to act (Lidskog & Elander, 2010).

The importance of leadership on all levels stands in sharp contrast to the problem of political neglect at the national and international level. As stated in an interview conducted by Bulkeley & Schroeder, "there's no point in waiting for national government, no point in waiting for Europe, no point in waiting for international agreements. Obviously they are important in the long term, [but] all that's been far too slow […] you know we'll all be dead by the time anything's arrived" (2008, p. 17). Therefore, the importance of

enabling bottom-up governance as a way to diffuse leadership and climate action to the national level is stressed.

*Policy Design and Implementation*

As sustainable city initiatives are a recent development, it is difficult to review policy design and implementation practices separately. Therefore, the policy-making stages and policy implementation are merged for the following analysis, of policy formulation and approval. Generally, municipalities formulate climate policies by taking different approaches: i) "self-governing", that is focusing on areas of full decision-making authority such as the energy efficiency of municipal buildings; ii) "providing public services"; iii) "enabling citizens and business activities to take actions"; and iv) "regulating market actors and behaviour" (Corfee-Morlot et al, 2009, p. 11). In a multi-level governance framework, all models involve the integration and coordination of various stakeholders by creating a network. As urban responses cannot be "neatly contained within the boundary of the city limits or the corridors of municipal government", cities are required to integrate actors from all levels of governance as well as non-state actors (Bulkeley & Schroeder, 2008, p. 14). Already in the process of policy formulation, an approach based on partnership seems to be more successful, highlighting the need for horizontal integration. As comprehensive climate change policy requires structural shifts for a problem that mostly affects successive generations, inclusive and participatory decision-making to educate and increase public acceptance is essential (Bulkeley & Schroeder, 2008; Bäckstrand et al., 2010). The willingness of the private sector to act and engage in climate policy is a further critical factor. In many cases, placing climate change on the local agenda would not have been possible without the engagement of representatives of business and civil society (Corfee-Morlot et al, 2009).

Inter-ministerial and cross-sectoral communication and coordination are indispensable for horizontal integration within domestic government institutions. This requires institutionalized climate governance across governmental departments, including the environmental department but moving beyond to establish a whole-of-government approach. In most cities, the environmental department is in charge of climate policy, which is traditionally politically weaker than for example the department of finance and trade (Weidner & Mez). To avoid wrong prioritisation, a unit which is in charge of climate policy should be created in each climate-relevant department. For example, effective climate policy needs be integrated with a city's urban development strategy, including in particular land use and transport planning. As most cities do not follow a systematic approach to climate policy, this institutionalization helps to integrate and coordinate the multiple stakeholders and guarantees a harmonization between the different departments (Corfee-Morlot et al, 2009).

The matter of adopting appropriate targets and timeframes to monitor municipal climate policy has posed a significant challenge to many policy architects. Climate targets have been viewed as problematic as they can be linked to a tactic of blame avoidance

(Bache et al., 2015). In this view, targets are generally dangerous for politicians as they demand accountability. Thus there is a tendency to favour short-term policies that are viewed as more feasible and providing more immediate benefits. Politicians prefer to issue policies that are likely to have a positive outcome within their term of office, resulting in poor prioritizing. Instead of inducing structural shifts by investing in low-carbon infrastructure, minor policies are issued, often linked to economic growth and job creation policies (Bache et al, 2015). In contrast, some municipalities have acknowledged the need for long-term planning in climate policy and the importance of long-term targets, which will necessarily outlive current governments (Corfee-Morlot et al; 2009; Bache et al., 2015). This stresses the issue of 'blame avoidance', as it is difficult for the civil society to evaluate the policy progress and later governments will have to take responsibility for acting on failed targets. To design effective climate policies on a local scale, municipalities need to start thinking beyond typical short-term budgets and election cycles (Homsy & Warner, 2015, p. 47; Corfee-Morlot et al, 2009, p. 11). Mechanisms need to be developed that allow the evaluation of policy within the term of office as well as showing the potential emission reduction in the long-term to assess the effectiveness of the respective policy.

Examining the implementation of climate policies, there seems to be a significant governance gap between policy design and implementation. Several barriers can be found in the vertical dimension of the multi-level governance framework regarding the coordination and integration of policies at different political levels. At the national level, the inadequate support of local climate policies from national governments and/or the lack of alignment of policies are significant obstacles. Bache et al. (2015) found in a UK based research study that "although local initiatives undoubtedly have a role to play in facing the climate change challenge there does need to be some clearly defined [national] framework within which those local responses sit" (p. 84). The national framework is central to the effectiveness of sustainable city initiatives. As this discussion has shown, the inadequate alignment of policies as well as local climate action decoupled from national policy frameworks, lead to policy gaps and overlaps that severely limit the effectiveness of local climate policy. This is confirmed in an evaluation report of London's climate policy, which concluded: "the difficult truth is that in preparing this action plan we have been unable to present any realistic scenario in which we can achieve the 2025 target set out above, without major national regulatory and policy change" (GLA, 2007, p. 19 in: Bulkeley & Schroeder, 2008, p. 17). The authors continue that without concerted action at the national level, the City of London will only be able to meet about 60% of the emission reduction target set for 2025 (ibid.). Thus integrating climate policy with already existing policies at different political levels that have been in place for years, presents a major challenge. Local officers feel that "the balance between 'centralism' and 'localism' has shifted too far", and would prefer less autonomy for a clearer national framework in implementing climate policy (ibid., p. 85).

Regional integration of policies is also especially relevant for the vertical dimension of a functioning multi-level governance system. If not well coordinated, sustainable city initiatives are of limited value and can even have conflictive effects as CO2 emissions "are from widespread and geographically moveable sources […] and local action […] would merely shift those sources to other locales (potentially causing even greater harm)" (Wiener, 2007, p. 1962; p. 1964). Furthermore, the regional level can accomplish structural changes that are unattainable at the city level due to higher technological and financial capacities.

Looking at implementation barriers within the horizontal dimension of multi-level climate governance, two key obstacles are stressed: limited coordination and integration of policies within government institutions, and the integration of the business sector. At the local level, institutional blockage within local governments and inter-ministerial conflicts have proven to be a barrier to the implementation of climate policy, already visible in the policy design as discussed above. Insufficient capacity and expertise matched with funding barriers lead to inter-ministerial conflicts, and hinder bureaucratic efficiency (Corfee-Morlot et al, 2009). Institutionalization of good climate policy must be whole-of-government, and should communicate the importance of such leadership to all actors/departments/institutions. However, often coordination issues arise with sub-local units, as for example in the City of London. In this instance, the City of London faced major difficulties in pushing climate action at local levels, with the exception of urban planning and public transport, as the City level had little means in directing and coordinating over 30 local/borough councils (ibid., p. 42).

As noted above, the business sector has an important role to play in the establishment of effective climate governance. There is a need to incentivize the business sector to act through local and national legislation, as without substantial private investments and innovations in technology, it will be difficult to achieve radical GHG emission reductions. This highlights the importance of national legislation. The potential of 'green growth' has long reached the business sector, yet, in order to trigger large scale investments, there is a need to present a 'bold and clear' long-term strategy. Additionally, the establishment of a viable and stable market price for carbon has been emphasized as an important mechanism to ensure business participation (Bulkeley & Schroeder, 2008). Whereas the integration of the public and civil society has been accentuated in the design of climate policy, the reviewed practices put less importance on their integration in the implementation stage. The importance of gaining wide public acceptance for climate action is, however especially relevant at the implementation stage, as citizens act as major barriers to the implementation of climate governance—as discussed above. In an interview conducted by Bache et al (2015), a Member of the London government stated that "moving a bus stop or inserting a bus lane is almost impossible. One appeal or complaint [from the public] and its all over. They [politicians] simply don't have the balls" (p. 82). Following on from the for-

mulation, approval, and implementation of climate policy, feedback and evaluation are fundamental to review progress.

*Feedback and Evaluation*

Feedback and evaluation is an essential stage in the policy process to, on the one hand, assess progress of policies and adapt if needed, and on the other hand, to enhance accountability and legitimacy. To date, the outcomes of local climate policies have rarely been measured (Corfee-Morlot et al, 2009). Instead, it often remains unclear how targets will be assessed against performance, and who will be held accountable for success or shortcomings. In an interview conducted by Bache et al (2015), a senior official from the Transport Ministry from Greater Manchester stated:

"I don't know whether we need a particular system of accountability but there's no doubt that whatever form of accountability is needed, if you don't have a common way of measuring the problem and the solution, then frankly the system isn't going to work anyway. You know, ultimately you just need a scorecard, don't you, for something like this, and we don't really have that scorecard at the moment." (Bache et al, 2015, p. 82)

Creating standardized monitoring systems provides a major opportunity to deduce best practices and to evaluate policy performance over time. This does not only enhance transparency and accountability of climate policy, but also incentivizes local climate action (Corfee-Morlot et al, 2009). As discussed earlier, politicians tend to set their focus on policies which have the potential of achieving positive outcomes within their terms of office. A monitoring system would create the possibility to assess the performance of the government in office and therefore incentivizes local climate action for government officials. In addition, the public would be able to assess how the city and the government in place is doing in tackling climate change and providing a liveable environment for its citizens. Effective climate policy requires structural shifts requiring changes in behaviour and substantial investments. This transparency will increase public acceptance, as well as enabling the public to take action against the government if climate protection is not addressed. Therefore, the democratic legitimacy of climate change policy is increased (Bäckstrand et al, 2010). Visualizing climate change and mobilising the population toward environmentally sustainable behaviour change has proven problematic, establishing a 'scorecard' helps to illustrate the problem of climate change.

Climate mitigation and adaptation, discussed at the beginning of this chapter, require different monitoring systems which are both fundamental to the feedback and evaluation stage of policy planning. Mitigation policies can be effectively evaluated through $CO_2$ monitoring systems as its goal is to reduce the sources of GHG emissions with $CO_2$ being the primary GHG emitted through human activities. As adaptation policies focus on reducing the "vulnerability of natural, social and economic systems to climate change and to enhance their ability to effectively adapt to a changing climate", data availability and evaluation is much more complex and requires much greater capacity (OECD, 2015, p. 86). However, as discussed, the importance of monitoring climate adaptation is an evolving area of concern and has only recently entered the academic debate on climate governance.

Monitoring of climate policy is central to the final stage of policy-making, as dissemination of key findings and sharing of experiences and best practice will contribute to the establishment of effective and sustainable transnational city networks.

*Dissemination*

At the dissemination stage of policy, communicating experiences and best practices accentuates the role that transnational city networks play in driving sustainable city initiatives. Transnational city networks, comprised of actors and institutions operating at multiple levels, offer the ability to pool knowledge and develop best practices. By sharing knowledge, skills and experiences among partners, city networks are not only able to enhance climate action in cities, but also lay groundwork for national governments (Bulkeley & Schroeder, 2008). From 1982 to 2004, city networks have risen from 8 to 49 and have significantly contributed in increasing the awareness of the importance of local climate action, as well as giving cities a 'voice' by strengthening capacity building (Keiner & Kim, 2006).

Transnational city networks also initiated the development of standardized monitoring methodologies. Harmonised, internationally agreed-upon methods and inventory data enable a better evaluation and dissemination of policy experiences and best practices, and allow cities to establish a 'common language' to speak to each other. Until now, cities have mostly followed their own monitoring approaches, hindering this dialogue and exchange, and preventing effective transnational cooperation. Several major barriers exist that make it difficult to develop standardized GHG inventories for cities. First, different definitions of the urban area are applied. Second, the choice of inventory years chosen often differs, or data is not available. Third, the boundaries of the inventory vary, e.g. whether or not to include more than city-owned operations or indirect emissions. Whether and how to include emissions that arise from the consumption of imported products as well as air travel is especially challenging (Corfee-Morlot et al, 2009, pp. 68-72). Diane Wittenberg, former president of the California Climate Action Registry, stated: "The hardest part is boundaries, what's in and what's out [...] some of them are reporting [individual] buildings in the city, others are skipping things like the airport. And you've got everything in between [...] so we're looking forward to tightening up the way that cities are reporting" (cited in Corfee-Morlot et al., 2009, p. 70). Several city networks have attempted to harmonize city inventories, such as ICLEI with its Cities for Climate Protection campaign and the carbonn Climate Registry. This is however associated with high costs and extensive personal capacity.

Local authorities tend to engage in networks because of financial and political resources, in contrast to the perception of sharing technical information and best practices (Betsill & Bulkeley, 2004). Membership of a city network has become popular, however there is an essential difference between actual network governance and sole network participation, as many cities are part of multiple networks without actively engaging in them. Furthermore, several city networks such as the CCP campaign have been criticized as they

exhibit a strong trend of marketization (Whitehead, 2013). According to some scholars, network governance has become "captured by the ideology of market environmentalism", and has lost its potential to create deep structural change (Bäckstrand et al, 2010, p. 210).

Disseminating policy experiences through city networks has immense potential to push municipal climate action and to create an effective multi-level governance system by integrating the vertical and horizontal dimension of multi-level governance into a strong network. Furthermore, in the absence of effective national and international climate policy to support policy development at the local level, sustainable city initiatives can be enabled by political and financial resources provided by these networks. The full potential of city networks still needs to be tapped where instead of focusing on 'quantity', harmonization and 'quality' should play a bigger factor.

In conclusion, the review of current practices has shown that sustainable city initiatives have a higher potential to be successful when they occur in a multi-level governance framework. Such a system of climate governance demonstrates how "the strengths of all levels of governments as well as citizens are harnessed" (Homsy & Warner, 2015, p. 66). A hybrid model where nationally-led/top-down enabling frameworks as well as locally-led/bottom-up action is pursued shows the greatest potential for effective collective action. A close collaboration between local and national authorities is therefore indispensable. Moreover, the participation and integration of non-state actors, industry and civil society, is vital. Monitoring mechanisms, and the dissemination of findings, at the city scale are fundamental to identify best practices and to assess progress. This in turn serves to increase the democratic legitimacy of climate policy by improving accountability and establishing responsibility for successes and shortcomings. Moreover, the frequent monitoring of policies, especially within legislative periods of governments, enhances the incentive to take action as the timeframe of policies has proven to be a major barrier to sustainable city initiatives. As this analysis has shown, transnational city networks provide the means of sharing these best practices.

## 4   Case-Study Analysis

### 4.1   Research Design

A review of the academic debate and current practices has shown that sustainable city initiatives have a higher potential to be successful in mitigating climate change when they occur in a multi-level governance framework. Success is however dependent on the framework design and whether identified barriers can be resolved. In order to collect further empirical evidence on multi-level climate governance frameworks, within which sustainable city initiatives are placed, and to evaluate the potential for improvement in the system design, a case-study analysis of the City of Berlin was conducted. This case study will enable a concrete analysis of the existent governance structure, current barriers and potential opportunities. To do so the following questions will be addressed:

- How successful is Berlin's climate policy in comparison to national and international standards, considering policy drafting and implementation?
- Can Berlin's climate policy be considered as environmental leadership?
- Can a multi-level governance approach to climate governance be identified?
- What are the relevant levels and major actors in shaping and implementing climate policy in Berlin?
- What interplays can be identified amongst relevant actors? How is this network structured?
- What barriers (e.g. policy gaps, overlaps) and opportunities have been encountered in this multi-level governance system?

As stated above (p. 5), Berlin was chosen as a case study because of its flagship potential to realize the national goals of the German Energiewende as a metropolitan capital city. The current government (2011-2016) declared in its coalition agreement in 2011 that Berlin should become 'climate neutral'[1] by 2050, reducing its $CO_2$ emissions by 85% (Reusswig et al., 2014) Since then, the City of Berlin has taken great initiative to develop sustainably and is currently developing its own approach to municipal climate policy development. A large variety of stakeholders on different levels, vertical and horizontal, are present in the policy process. This makes Berlin a suitable case study for multi-level governance with regard to climate change.

### 4.1.1 Operation and Methodology

The case study is based on the analysis of policy documents and interviews with representatives of the public and private sector in Berlin, conducted between January and February 2016. The policy analysis seeks to explain the research context of Berlin by examining the occurrence, development and success of Berlin's climate policy. Whereas traditional policy analysis focuses on the national level as the main actor and authority, multi-level governance expands this focus to explicitly include interdependencies and interrelations between a variety of identified actors on different levels (Hirschl, 2008). Due to its recent development, existing literature on the current climate policy process is limited and the content analysis is expanded to include primary sources such as drafts of legislation and programs, conference reports, official statements and press releases. Subsequently, five semi-structured expert interviews of 45-60 minutes with central actors of the policy process were conducted to gain further insight into how Berlin's climate policy is embedded in the multi-level governance system and to identify current barriers and potential solutions to

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1 defined in section 4.2.2, from now on the term carbon neutral replaces ‚climate neutral' due to the ambiguity of the concept

optimize its system design. These interviews are fundamental to this study as multi-level governance is dependent on the integration and consensus-building of various stakeholders, and only personal interviews are able to gain information on the relationships between those actors.

The 'experts' were selected after a first analysis of the policy process. They constitute key actors involved in the current policy process (city level, national level) from institutions such as the parliament, the municipality of Berlin, the Federal Ministry for the Environment and local NGOs active in climate action.  All interviews were conducted confidentially and the names of the interviewees are withheld by mutual agreement. The semi-structured interviews were framed by an interview guide which was prepared on the basis of the book "Experteninterviews und qualitative Inhaltsanalyse" by Gläser & Laudel (2010).

The interview guide is structured into four sections. First, an introductory question is applied, interrogating the interviewee for his/her personal evaluation of Berlin's climate policy and potential leadership. In the second section, the interviewee is asked about the evolution of the current climate policy process, his/her assessment of the policy design, and certain debated assumptions concerning its policy approach, proposed targets and monitoring. Third, the interviewee is asked to identify key actors and levels, asking about their relationships and collaborations. Thereby, barriers and opportunities in the multi-level governance system design are exposed. Closing, the interviewee is interrogated concerning his/her personal view on which next steps are necessary to develop a functioning governance system that promotes sustainable city initiatives.

The interviews were analyzed following the qualitative content analysis approach derived from Mayring (2007). This approach is based on the systematic, rule guided qualitative text analysis, while adopting methodological strengths from quantitative content analysis. Originally, this content analysis approach follows an invariable categorization procedure developed prior to the analysis of the interviews (ibid.). As the proposed invariability of the categorization system restricts the functionality of the analysis, the paper adopts the content analysis approach refined by Gläser & Laudel (2009). It allows a more open process of categorization with a category set developed based on the initial hypotheses and theoretical assumptions as well as the empirical evidence collected from the literature review. Each scripted interview was screened according to the developed categories and the information extracted. Thereby, the actual analysis of the qualitative data is independent from the initial interview script. This method allows all information to be included on an equal basis, independent from where the information stands in the interview script. All irrelevant information was excluded. The following categorization set was developed and applied, again utilizing the policy cycle approach to structure the categories:

1. Agenda Setting
   a. Leadership
2. Policy Design / Implementation
   a. Participation & Horizontal Integration (Multi-Actor)
      i. Participative Network Approach
         1. Role Business Sector
         2. Role Public
      ii. Inter-Ministerial/Sectoral Integration
   b. Institutionalization
   c. Vertical Integration (Multi-Level)
      i. Top-down enabling framework
      ii. Bottom-up enabling framework
      iii. Regional Integration
   d. Implementation Gap
      i. Prioritization
      ii. Accountability
3. Feedback / Evaluation
   a. Time-Frame/Targets
   b. Monitoring
   c. Democratic Accountability/Legitimacy
4. Dissemination
   a. Transnational City Networks
   b. Harmonized GHG Inventories

A methodological problem of interviews is the risk of pre-conceived or 'strategic' answers by the interviewees. Due to its recent development and the participative policy design approach, a close circle of major stakeholders in Berlin's climate policy process has emerged. Their constant interaction within the last couple of years contributes to the fact that many of the experts hold preconceived opinions and relations, especially on heavily debated issues. Furthermore, it is difficult to extract whether a certain opinion of the interviewees is his/her actual perception or is influenced by, for example his/her official political direction. This methodological flaw is considered in the analysis and the paper tries to produce an objective picture by verifying statements with additional material. However, the possibility of strategic responses cannot entirely be excluded.

The chapter proceeds as follows. The next section outlines the research context for Berlin, looking at the international and national policy context and the history of climate policy in the city. Thereby, an overview is provided of the action taking place and the drivers behind policy development. This is followed by a detailed examination of the current policy, exposing the relevant levels and actors. Finally, the interviews are analyzed according to the category set developed and the results presented. This is followed by a discussion and a short conclusion.

## 4.2   Research Context

### 4.2.1 Climate Policy in Germany

Germany became a key actor in climate policy since the 1970s. Widespread damages to health (smog) and nature (acid rain) triggered the German government to develop initia-

tives in air pollution control. Fostered by the economic shocks following the oil crises in 1973 and 1979, public resistance manifested, opposing fossil fuel dependency and the exploitation of nature. Resistance groups quickly organized themselves politically which resulted in the formation of the Green Political Party. The Green Party has been part of the national parliament since 1983 and has led to an increased public awareness on environmental policy and climate protection. Throughout the 1980s, Germany translated leadership to the international and EU level by stimulating international negotiations and EU policy-making. The Chernobyl Disaster of 1986 emphasized the governance deficits in environmental protection - nationally as well as internationally - and resulted in a strong anti-nuclear movement in Germany. Increased scientific knowledge on climate change was quickly transmitted to the German society, increasing public awareness of anthropogenic emissions as major drivers of climate change. Already in 1986, Chancellor Kohl put climate change on the political agenda, creating the Federal Ministry of Environment and announcing the intention to reduce $CO_2$ emissions in West Germany by 25% by 2005 (compared to 1990) (Weidner & Mez, 2008; Böhler-Baedeker & Mersmann, 2013).

With the Fall of the Berlin Wall and the Reunification of the German Democratic Republic (GDR) and (West-) Germany (October, 1990), a period of reconstruction and redevelopment started. This transition, combined with the shutting-down of heavy industry of the GDR characterized by heavy air pollution and a tremendous waste of energy sources, led to a massive reduction in the Country's $CO_2$ emissions. In 1997, Germany signed the Kyoto Protocol which declared that EU Member States would reduce their $CO_2$ emissions by an overall of 8% by 2012 (compared to 1990). In order to reach this European target, Germany committed to decrease its emissions by 21%. Following a change in government, the socialist-green coalition under Chancellor Schröder declared Germany's nuclear phase-out as part of the initiated National Climate Protection Program. Moreover, the Ministry of Environment became the leader of climate policy in place of the former Ministry of Economics, showing a shift in priorities (Weidner & Mez, 2008; Böhler-Baedeker & Mersmann, 2013).

A widely received report on the economic effects of climate change titled 'The Stern Review' was released for the British Government in 2006, this document in conjunction with IPCC reports kept climate policy on the political agenda (Weidner & Mez, 2008). Chancellor Merkel as the head of the successor conservative-liberal coalition emphasized the importance of climate policy, calling climate change the biggest challenge of the 21st century. Enacting the Integrated Energy and Climate Protection Program (IECP) in 2007, the government declared that Germany would reduce its GHG emissions by 40% by 2020 (reference year 1990) as part of the EU 2020 strategy. Meeting this target would demand reducing GHG emissions by 20%, increasing energy efficiency by 20%, and enlarging the share of renewables in energy production by 20% in 2020 (reference 1990) (BMWi, 2007). Since 2005, Germany is also part of the EU Emission Trading Scheme. In this cap-and-trade

system, individual EU Member States allocate emission permits to energy and major industrial installations companies under EU observation. Firms that exceed the quota can buy certificates from firms that stayed below. The ETS covers about 55% of German CO2 emissions (Weidner & Mez, 2008).

The program currently in place is the Energy Concept of 2010, which building upon the IECP, created a long-term strategy for Germany's climate policy. Drastic CO2 emission reductions were introduced: 2030 (55%), 2040 (70%), and 2050 (80-95%) (compared to 1990) (BMWi, 2010). While the coalition initially prolonged the permitted life span of nuclear power plants, the nuclear disaster of Fukushima in 2011 led to the reintroduction of the nuclear phase-out after strong public pressure (Böhler-Baedeker & Mersmann, 2013). The government announced that it would close all of its nuclear power plants by 2022. This gave birth to the implementation of the so-called German Energiewende, the energy transition to a low-carbon energy portfolio based on renewables, energy efficiency and sustainable development (Heinrich Böll Foundation, n.d.). Thereby, a reorientation of policy is taking place, shifting from demand to supply by focusing on decentralized electricity generation. A target of a 60% share of renewables by 2050 led to the aggressive promotion of renewable energy technologies (RETs) through the Renewable Energy Sources Act (EEG) in force since 2000. The strong feed-in system in electricity generation guaranteed a set rate and power grid access. This resulted in an increase of renewable energy share in gross electricity consumption from 3.4% in 1990 to 27.4% in 2014 (BMWi, 2015). In 2014, this tariff was revised as it proved financially unsustainable in the long-term. Through the strong promotion of RETs, Germany became a world market leader in wind and photovoltaics systems.

The German Energiewende as well as the EU ETS have pushed Germany and the EU to the forefront of climate policy, attracting significant international attention. The continuous growth in the share of renewables resulted in a share of 32.5% in domestic power consumption (2015). Yet, German CO2 emissions have been fluctuating since 2012 and are at risk of not reaching the emission reduction target of 40% by 2020 (Euractiv, 2015). A new record level of export in electricity produced from coal is mainly responsible for this emission increase. On the one hand, the German Energiewende has resulted in a substitution from nuclear energy to coal power, on the other hand, the higher share of renewables has led to a coal excess which is addressed by exportation instead of simply reducing the electricity production of coal-fired power plants. Therefore, in order to reach its 40% reduction target, Germany needs to transform its coal sector (AgoraEnergiewende, 2014, Heinrich Böll Foundation, 2014; Umweltbundesamt, 2014). Additionally, a key to success at the national as well European level lies in the reform of the ETS. Due to an overallocation of permits, there is currently little incentive for companies to reduce their emissions.

Examining its governance framework, Germany is strongly multi-level due to its decentralized polycentric structure being a federal parliamentary republic. Hence, in the

vertical dimension there are multiple levels of administrative governance: the EU, the German (national) government, 16 federal states (*Länder*) and the local level (Beck et al, 2009). At the local level, over 12,300 municipalities exist with self-administration privileges guaranteed by the constitution (Art. 28, Grundgesetz). Climate policy in Germany follows mainly a top-down approach; depending on the matter, the EU and/or Germany draft legislation which is passed down to lower levels of governance. Climate leadership is mostly visible at the European and national level. Whereas the EU-German relationship is overall characterized by consensus regarding their climate policy development, there have been cases where Germany has hindered effective climate policy due to potential negative effects on Germany's industry competitiveness. The strong German lobbying against stricter rules on $CO_2$ emissions for cars deals serves as a prominent example (Weidner & Mez, 2008).

At the state level, the *Länder* have their own constitutions, parliaments and governments. Their relationship with the national level is twofold. According to the policy area, the federal states have either legislative authority, shared authority or limited authority, if the respective subject is under the exclusive responsibility of the federation such as foreign affairs and defense. Second, they are present at the federal level in the Federal Council (*Bundesrat*). There they are able to influence national policy-making to defend their states' interest, possessing a veto power. The legislative authority of climate policy as part of environmental policy is mostly at the federal level. Hence, states are mostly responsible for the implementation of national climate policy. The relationship between the state and national level follows a consensual policy style, where *Bund-Länder* Working Groups function as a platform for exchange (Beck et al, 2009). At the local level, German municipalities have become increasingly active in putting climate change on the political agenda. In particular, the 'Local Agenda 21' has worked as a driver. Yet, this is strongly dependent on leadership, financial capacities and the involvement of the civil society. While, initially, municipalities have focused on policies such as increasing the efficiency in public buildings, the changing of street lights, the promotion of public transport and green public procurement, lately the trend follows a more holistic sustainable development framework. The idea of the re-communalization of energy and water services has become popular in recent years. Sustainable city initiatives have been visible with Freiburg and Münster as leading examples and have sometimes been able to stimulate change through bottom-up channels, but in general climate policy in Germany follows a top-down approach. (Weidner & Mez, 2008)

Summing up, climate policy and politics in Germany have overall been favorable for sustainable city initiatives. Climate change has been on the German political agenda for a number of years and has become a priority, independent of party politics. With the Energiewende, a progressive approach has been triggered posing favorable framing conditions for general climate policy development in Germany. High national emission reduction tar-

gets emphasize the need to develop an overall progressive climate policy at all administrative levels. A multi-level governance framework (Type I) is theoretically existent due to the German federal system, yet policies have been mostly top-down. The Renewable Energy Act has been supportive and there has been significant policy innovation in the field of RETs. However, little explicit support for cities exists, and national policy, in particular concerning the transport sector and industry competition, is occasionally seen as a barrier to emission reduction policy and the support of sustainable city initiatives.

### 4.2.2 Berlin's Profile

Berlin is the capital of the Federal Republic of Germany and with its 3.375 million inhabitants, the largest German city. The City of Berlin is likewise one of the 16 federal *Länder* (states) and covers an area of 887.7 km2. Its population density is 3.875 persons per km2, making Berlin the densest city after Munich (Reusswig et al, 2014). Its gross domestic product lies at around 30,600 € per capita (in 2013) which is below the German state average of 33,350 €. However, in recent years there has been continuing economic growth at a yearly average of 2% (SenWTF, n.d.). The commerce, trade, and services (CTS) sector dominates Berlin's economy with ca. 84%. Tourism and creative industries are growing with a thriving start-up scene. The growing economy is also reflected in Berlin's population growth. By 2030, Berlin is expected to grow by 266,000 to a total of 3.8 million inhabitants, leading to pressure on housing space and the need for residential construction. The strong increase in the predicted population growth has been largely affected by the refugee movement from the Middle East, Africa and the Balkans (SenStadt, 2016). The unemployment rate in Berlin has decreased significantly over the past decade, yet it is still at an average of 11.7 % (in 2013), making Berlin a laggard in comparison to other German federal states.

Berlin's energy mix is primarily based on fossil fuels. The final energy consumption is split between the CTS sector (80%) and industry (20%) (Reusswig et al, 2014). Even though primary energy consumption has decreased significantly since the 1990s, over the last several years there has been an upward trend. Furthermore, there has been a structural shift in Berlin's composition of primary energy consumption from coal and lignite to gas (SenStadt, n.d.). Yet, only 3% of the primary energy consumption and about 1% of the supplied final energy is generated from renewables (in 2010), the least of all federal states.

Berlin's GHG emissions have decreased from 29.3m t in 1990 to 20.7 m t in 2012, reflecting an overall emission reduction of 30.6%. The rate of emission reduction has dropped significantly from -1.7 % per year (1990-2005) to -0.4 % per year (2006-2010) and even increased in 2012 by 4.9 % (SenStadt, n.d.). Much of the overall emission decrease is related to the reunification of West- and East-Berlin in 1990 and the subsequent period of redevelopment in East Berlin. Currently, 47% of Berlin's GHG emissions account for the

housing sector (in 2010). The transportation sector is responsible for about 23% (in 2010) with road traffic dominating emissions by far (Reusswig et al, 2014).

Regarding Berlin's administrative structure, the city-state is divided into 12 boroughs. Each borough contains a number of localities. The state government, the Berlin Senate, consists of the Governing Mayor and eight Senators. The House of Representatives (Parliament), which is elected by Berlin's citizens every five years, appoints the Governing Mayor, who then appoints the remaining Members of the Senate. The power of borough administrations is limited and subordinate to the Senate of Berlin. The Berlin Senate plays a fundamental role in putting climate change on the local agenda with the District Administration of the boroughs sharing the responsibility of the city state's targets and aims. Berlin is currently governed by a coalition of the Social Democrats (SPD) and Christian Democrats (CDU) (2011-2016). Since 2014, the office of the Governing Mayor has been held by Michael Müller (SPD) after the resignation of the former Mayor Klaus Wowereit. From 2011-2014 Müller served as Senator for Urban Development and the Environment and initiated the current climate policy; the unit of analysis of this research. In late 2016 elections will be held in Berlin.

### 4.2.3 Berlin's Climate Policy and Action

In its early stages, environmental policy in Berlin was limited to the energy sector. While totally absent in Eastern Germany, West-Berlin started to institutionalize a systematic clean air policy from the 1970s. However, until the 1990s Berlin was not proactive in setting the agenda for climate policy but limited its engagement mainly to the implementation of emission standards from the national level. With the rise of climate politics at the national and international level and a change in city government to a social-democratic - green coalition, progressive climate policy development emerged in Berlin in the early 1990s. Emphasis was laid upon ecological urban modernization, leading to the creation of an Energy Task Force within the environmental department and the Berlin Energy Agency. Additionally, the Berlin Energy Saving Act (*Berliner Energiespargesetz*) was adopted. With the Fall of the Berlin Wall in 1989 and the following reunification of the divided city, focus was set on the integration and restoration of the divided energy supply systems, following the ecological modernization approach. Already in 1994, the *Energiekonzept* Berlin was passed, targeting a $CO_2$ emission reduction of 25% by 2010 and bringing Berlin to the forefront of climate policy development among German federal states (Monstadt, 2007).

Following the reunification a fiscal crisis resulted in a major loss of traditional industries - and subsequently jobs – prompting dramatic cuts in public spending. This led to a policy shift from "a very active economic role by the city government in energy management, climate protection and the provision of public services" to an era of privatization from the mid-1990s onwards (Monstadt, 2007, p. 330). Having lost influence by no longer directly operating energy utilities, this shift negatively affected the implementation of the energy concept and public funding for energy and environmental projects. Instead, Berlin

increasingly focused on voluntary agreements with the business sector and the promotion of innovative green SMEs. Combined with limited financial and administrative capacity, this resulted in energy policy becoming increasingly dependent on private sector participation via different forms of public-private partnerships. Additionally, regulatory functions shifted to the national and European policy level, further diminishing the city's engagement in climate policy development (Monstadt, 2007).

The Renewable Energy Act of 2000 and 2004 boosted the renewable energy industry in Germany as well as in Berlin, with Berlin having especially high potential for photovoltaic systems (Agentur für Erneuerbare Energien, 2014). Combined with a high density of universities and research institutes, a significant green start-up scene developed. Contrarily to the positive development at the national level, Berlin continued in failing to develop an effective urban climate policy. Monstadt (2007) explains this failure as follows:

"The more urban and regional energy policy moves away from the traditional regulatory and public ownership model, in which energy planning took place almost bilaterally between the single supervisory authority and the regional monopolist, and the more shifts take place towards tackling energy problems in an integrated manner across different policy fields and territorial boundaries and in cooperation with numerous private actors, the more institutional problems of policy-making are likely to appear" (Monstadt, 2007, p. 338)

Therefore, according to Monstadt, climate policy has become multi-level and multi-actor in Berlin. This resulted in institutional problems limiting the capacity to govern. In order to "meet the climate and public service goals of cities and regions in a liberalized and privatized environment, public authorities have to probe new forms of governance" (ibid., p. 338).

Realizing the need to catch-up to the national emission targets by developing a progressive long-term approach to climate policy in Berlin, the government issued the policy process "Climate-Neutral by 2050: Concept for a Berlin based energy-transition act" in 2014. This act provides the fundamental legal framework for Berlin's climate policy, making it obligatory for the Senate to implement adequate measures to reach the policy goal of becoming 'climate neutral' by 2050. 'Climate neutrality` is defined the following way:

"A city can be regarded as 'climate-neutral' if its greenhouse gas emissions can keep global warming below the dangerous threshold of 2°C – assuming a world population of 9 billion people by 2050, each endowed with the same per-capita emission rights of 2 metric tonnes of $CO_2$ equivalents (life-cycle based). Berlin's greenhouse gas emissions consist mainly of $CO_2$ (98 %). Given these conditions, Berlin could become climate-neutral if total urban carbon dioxide emissions can be limited to 4.4 million tonnes by 2050 - a reduction of about 85 % compared to 1990 levels. However, absorption capacities of greenhouse gases by the biosphere ('sinks'), as well as emissions embodied in products and infrastructure should also be considered. While current $CO_2$ statistics often ignore these, the target value of 4.4 million t $CO_2$ accounts for them." (Reusswig et al, 2014, p. 4)

Applying this definition, $CO_2$ emissions have to be reduced by at least 40% by 2020, 60% by 2030 and by 85% by 2050, with the reference year of 1990. The structure of the process is threefold. First, a feasibility study (Machbarkeitsstudie Klimaneutrales Berlin 2050) was conducted to assess whether this goal is actually realizable. Second, based on this ground-

work the energy-transition act was drafted by the parliament, providing the legal framework for the process. Third, the Roadmap of energy-and climate-protection policy in Berlin (*Berliner Energie- und Klimaschutzprogramm (BEK)*) was issued which comprises a catalogue of measures that need to be implemented by the Senate to reach the policy goal of becoming carbon neutral by 2050 (Hirschl et al.,2015). In the following, the three pillars of Berlin's climate policy are examined.

After the governing coalition of Berlin decided on the goal to become carbon neutral by 2050, the Senate Department for Urban Development and the Environment commissioned the Potsdam Institute for Climate Impact Research (PIK) to estimate its feasibility. The PIK - leading a consortium of research institutes - came to the conclusion that a reduction of $CO_2$ emissions by 85% is achievable (in reference to 1990), developing two scenarios on how this could be accomplished. The first scenario sets its focus on "central structures and efficient technologies", the latter on "decentralized structures and sufficiency" (Reusswig et al., 2014, p. 26). A restructuring of the energy system based on combined heat and power generation and the use of solar energy is highlighted to allow Berlin to develop from an 'energy sink' to achieving energy surpluses. Furthermore, the importance of energy-efficient modernization of the housing sector is particularly emphasized (ibid.).

The positive results of the feasibility study published in 2014 set-off an extensive policy process. The Enquete-Commission[2] "New Energy for Berlin" was created within the Berlin State Parliament as a specific body to discuss the future development of the energy structures in Berlin. This included an evaluation of whether the power supply system, currently privatized, should be recommunalized in Berlin. Thereby, the Enquete-Commission, appointing a variety of experts, drafted a law to back the process of becoming carbon neutral by 2050 with a legislative framework. In March 2016[3], the Berlin State Parliament issued the Energy Transition Law (*Berliner Energiewendegesetz*). The general purpose of the law is to design a legal framework for the the determination of the climate protection targets. The law states that to enable implementation of the climate protection targets, a policy program needs to be issued within every respective legislative framework, outlying specific intended measures. Based on continual monitoring of mitigation as well as adaptation policies (published every second year), the program needs to be evaluated and readjusted every year. A particular emphasis is placed on the exemplary function of the public sector. By 2030, the public administration has to become carbon neutral. Furthermore, the law determines several measures to allow the energy-efficient modernization of the housing infrastructure (*EWGBln*).

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2 An Enquete-Commission is a specific body within a parliament created to develop a common position among the parliamentary groups on a complex political issue.

3 The adoption of the Energiewendegesetz took place after the conducted interviews. Therefore, during the personal communcation with the respondents, there was uncertainty whether the draft law would get adopted, vital for the further development of the policy process.

Second, in 2014, the Senate Department for Urban Development and the Environment commissioned the Institute for Ecological Economy Research (IÖW) to develop a 'Berlin Roadmap of Energy- and Climate-Protection' (*Berliner Energie- und Klimaschutzprogramm (BEK)*). The BEK comprises an extensive catalogue of measures, as foreseen in the *Energiewendegesetz*, to enable the transition to becoming carbon neutral. Specific measures are developed within five different policy areas: energy supply, housing infrastructure, economy, transportation, and private households. For each of these measures, a cost-benefit analysis was conduced, showing the potential $CO_2$ reduction. Furthermore, a specific monitoring plan is established. These mechanisms were developed by a research consortium which include a multitude of experts on the respective policy areas. In addition, a variety of stakeholders from the business sector, civil society, public administration and politics were included in the process. 'Urban dialogues' as a public information platform were initiated with events targeted to integrate the general public into the process. This was matched with an online participation platform, where citizens were able to give feedback and raise concerns over a period of seven weeks. A total of 2700 people visited the platform and about 500 comments were issued (Hirschl et al., 2015).

## 4.3  Analysis

In the following section, the results of the analysed expert interviews with key actors of the policy process of the City of Berlin are presented. The interviews were analysed according to the category system developed and organized along the stages of the policy cycle. As the interviews were conducted in confidentiality, names and identifying information are withheld. A general introduction of the respondents concerning their profession and involvement in the policy process can be found in the Appendix. As the quotes used in following section had to be translated into English, an overview of the quotes in their original form can be found in the Appendix too.

### 4.3.1  Agenda Setting

As discussed earlier in this paper, leadership is crucial for setting the agenda for cities' to engage in climate change policy. This leadership can either arise due to internal motivation of city governments or change can be stimulated through leadership on other levels of governance. Membership in an international agreement has been shown to be an important trigger.

The relevance of leadership to set climate change on the political agenda is also a characteristic of the City of Berlin. This is due to several reasons which are explored in the following. First, when looking at Berlin's overall performance in terms of statistics, Berlin stands among the leading cities within Germany as well as internationally (see section 4.2.3). Berlin performs well with regard to specific infrastructures: it has an extensive public transportation network, district heading grid, highly developed city planning with high urban density and a $CO_2$ emission reduction rate of 30% since the 1990s, leading to low per capita emissions. Looking, however at the policy context, all interviewees agree

that there is currently no progressive climate policy in place. On the contrary, Berlin is lagging behind other major cities, in Germany as well as internationally.

This divergence of policy and performance in Berlin is related to historical circumstances and leadership in the early 1990s. According to the interviewees, much of the positive development in Berlin is a result of so called 'wall-fall profits' arising from the reunification of Germany. The shut-down of heavy industry and extensive redevelopment of East Berlin reduced Berlin's overall $CO_2$ emissions tremendously (p. 39; p. 44). Looking at the political context, in the 1990s Berlin initially stood out with innovative policy programs in the area of climate protection (p. 44). Throughout the years, many of these programs were never implemented and the leadership lost, having only a minor effect on Berlin's emission reductions. A major reason highlighted to explain the implementation gap is the limited interest at the national and European level. Furthermore, limited fiscal capacity and the privatization process of the 1990s in Berlin were named as major barriers in setting the agenda for climate policy. With the City government loosing influence over energy governance and a subsequent downsizing of the Senate Department for Economics, Berlin did not have the capacity to develop progressive climate policy (Interview 5, 07.01.2016; Interview 3, 13.01.2016).

As Berlin was already performing well in comparison to other metropolitan German cities, and was able to meet required national emission targets early on, there was little incentive for the City government to further invest in and set the agenda for climate policy. Summarizing, the absence of leadership within the City government as well as at the national and European level resulted in climate change falling from the political agenda in Berlin throughout the late 1990s and early 2000s.

The recently initiated policy process with its extensive feasibility study and the engagement of a variety of actors, however, is seen as a leading process with much flagship potential. According to the respondents, setting the agenda for this intensive policy program cannot be attributed to the governing coalition, but instead to individual leadership. According to the interviewees, the coalition agreement of 2011 merely emphasized the importance of climate mitigation and adaptation processes, without having a concrete action plan. In lieu thereof, all interviewees rather highlighted the role of the former Senator for Environment and current governing Mayor Michael Müller in setting the agenda for climate policy. When Müller became Senator for the Environment in 2011, there was a significant emphasis put on climate change policy. Succeeding the former Mayor Wowereit in 2014, who pursued politics of 'social sustainability over environmental sustainability', Müller translated his engagement as the Senator for Environment to his new function as a mayor. According to one of the interviewees, his motivation was twofold. On the one hand, Müller aimed to enhance the climate change performance of Berlin which is lagging in comparison to other federal states, regarding for example the use of RETs. On the other hand, he intended to use Berlin's political engagement to transition to a low-carbon society as a marketing strategy to boost the City's image nationally as well as internatio-

nally (Interview 3, 13.01.2016). Berlin's image had been tarnished due to failed projects such as the Berlin airport[4] and presenting Berlin as the capital city of the 'Energiewende' was supposed to enhance the city's reputation as well as to direct further investments into the evolving green start-up scene.  Moreover, according to the respondent, Müller emphasized the issue of priority setting, stating that especially from a social point of view climate protection is important for the city's development (ibid.).

Adding to this individual leadership, another major driver in setting the agenda for climate change policies in Berlin has been the active engagement of the civil society. All interviewees highlight that Berlin has a population which is very progressive, visible for example in the highest rate of recipients of green electricity within Germany. Furthermore, many research institutes and NGOs exist that focus on sustainable development, positively influencing the political landscape. Berlin profits from being the capital, with many of the funding programmes targeted to the capital, making Berlin for example 'the showcase of electro-mobility'[5]. Berlin's limited political engagement in climate policy stands therefore in sharp contrast to its actual potential. According to one of the interviewees, in Berlin the citizens have always been much more progressive, with politics just following the trend (Interview 1, 03.02.2016).

The emergence of sustainable city initiatives is however strongly dependent on the framing conditions set by the national but especially the European and international level. In the case of Berlin, the national level has been a strong force for setting the agenda for climate policies as the federal state needs to implement national climate regulations, directly reporting to the federal government. Therefore, national regulations such as the EEG and Policies on Energy Savings were major drivers of the climate policy development in Berlin, despite not being specifically targeted to cities (p. 39). Furthermore, as all 16 federal states need to report to the national government, this requirement incentivizes state governments to issue local climate action so as to not perform badly in comparison with other states.

As the federal government has reporting obligations to the EU as well as the UNFCCC, all interviewees have especially highlighted the role of the EU and international agreements in enabling and driving local climate action. Whereas the EU used to be a strong initiator, the respondents unanimously agreed that in the past years leadership diminished at the European level. Rather, the politics of 'finding the lowest common denominator' are pursued instead of progressive climate politics. According to the respondents,

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4 The Berlin Brandenburg Airport (BER) is currently under construction and was originally planned to open in 2010.  The airport has encountered a series of delays due to poor construction planning and management, as well as cases of corruption.
5 The showcase of electro-mobility (Schaufenster Elektromobilität) is a program to support the development of electric vehicles initiated by the German government

this is also related to Germany's reduced engagement with climate protection at the European level.

As examined in the literature review of similar practices, membership in international agreements and the policy development at the global level is of major importance. The failed international negotiations in Copenhagen in 2009 were named as a 'disaster for climate governance on all levels', severely impacting sustainable city initiatives. According to a Member of the Berlin State Parliament, "when Copenhagen failed, [climate change] was no longer a topic on the international level. This was felt locally […] Therefore, the issue was no longer as relevant in cities anymore" (Interview 2, 14.01.2016, 5:51). This confirms the observations made in the earlier chapter that international agreements are fundamental independently of their specifics. Instead, it is the general message the international community sends that severely affects policy-making on all other levels.

In conclusion, the case of Berlin has shown that leadership was fundamental to setting the agenda for climate policy in the City of Berlin. Therefore, it is important to highlight that this was primarily due to individual leadership. Yet, for leadership to lead to the actual design and implementation of climate policy, bottom-up as well as top-down governing channels are needed to enable policy development. In particular, the national level's and European role of enabling or hindering urban climate policy was emphasized.

### 4.3.2 Policy Design & Implementation

As seen in the introduction of Berlin's current climate policy process, policy design is threefold: the development of a feasibility study, the *Energiewendegesetz*, and the Berlin Roadmap of Energy- and Climate-Protection Policy (Section 4.2.3). Examining this policy process design, all interviewees positively emphasized its systematic approach. Thereby, a shift was observed from earlier programs based on doing 'bits and pieces' to a systematic target-oriented approach, where the long-term goal is stressed and combined with individual measures which conjointly are able to reach the specific target (Interview 2, 14.01.2016). The definition of the term 'climate neutral' as applied in the BEK (p. 46) has however been criticized as for example emissions from air traffic are not included. Two aspects of the policy design are highlighted: firstly, the design of a general framework law and secondly, the creation of the Enquete-Commission as the responsible political body.

Accordingly, the legal basis is fundamental for such a long-term program to guarantee its implementation and to avoid changed prioritization after a political transition. The nature of the law is of particular interest. According to the interviewees, there was much debate on whether the law should include the specific measures laid down in the BEK. Whereas earlier processes failed due to conflicting interests, trying to combine a number of specific measures 'of whatever was popular during this time', this approach foresees a more general framing law to create consistency. Defining the target and some general guidelines but leaving the specific measures to the administration, the general consensus and common goal of a climate protection program is highlighted. This strategy avoided coming

into a deadlock position on minor disagreements between political parties. This framework approach however has also led to fundamental criticism of the draft law being too general and interpretable with the concern that future government could find a way 'to go around' the law if it is not in the government's interest. This policy approach based on a general framework is similar to processes in other German federal states as it allows flexibility and the possibility of the adaptation of measures. Hence, changing framing conditions such as allowing for unforeseen technological innovations to be integrated into the policy process without having to issue new legislative procedures, decelerating the actual implementation process.

The role of the Enquete-Commission in drafting this law has been especially emphasized. By enabling an early exchange between the parties, the focus was set on finding common grounds instead of focusing on party differences. Experts were involved early on, allowing the drafting of a progressive final report. Pushing for debate and consensus at an early stage, this enhanced the chance of drafting a law that a broad majority agreed on and that will not be discarded following elections. As some of the experts within the Commission were also responsible for the BEK, they dealt as cross-linking agents and were able to create an early streamlining of both processes.

### 4.3.2a Participation & Horizontal Integration

An important feature of the policy design is the participatory approach of the BEK and the general focus on network creation. All interviewees emphasized the importance of creating a general acceptance among all actors to enable long-term implementation. The development of the BEK followed a strongly participative approach (Section 4.2.3). Interviewees who were directly involved in the design of this process evaluated this approach as especially innovative, whereas other interviewees strongly criticized the process on the grounds that the public was not adequately engaged. There has been general consensus that the participation process was heavily based on the integration of experts, which all respondents considered a positive achievement and fundamental to the positive outcome of the BEK. A constructive exchange has been created between the public administration, parliament and the relevant research institutes involved in the process, the IÖW and the PIK. Furthermore, the business sector was involved and actively engaged, which all interviewees stressed as substantial. Especially, the feedback from the business sector during the whole process of developing appropriate measures is seen as important since the engagement of the private sector is a necessity for the implementation of climate policy. Therewith, the changing role of the business sector in climate policy was accentuated. In the 1990s, the business sector opposed the interference of governments to push for sustainable development based on the reasoning of severely affecting the industry's competitiveness, while today the sector recognizes the chance of innovation and business development that a transition to a low-carbon society would bring.

The lack of involvement of the general public however was strongly criticized. According to a high executive of the Senate Department for Urban Development and the Environment:

"It is not enough to design a general standardized participation process. Instead, there needs to be a process launched where everyone is able to articulate their fears and suggestions etc. to absorb those and create a program which is sustainable for all involved parties." (Interview 5, 07.01.2016, 55:33)

Hence, the approach of the Senate was perceived as a conventional standard-procedure where the general interest groups were invited instead of actively engaging the citizens of Berlin. Accordingly, the failed communication strategy resulted in the majority of the public having never heard of the process (Interview 1, 08.02.2016). Other criticisms of the communication strategy were setbacks such as the short time-frame of the online procedure, the website being only available in German, and no 'on-site' campaign.

### 4.3.2b Institutionalization

In order to realize this policy process, a specific body that is responsible for its management during the design as well as implementation stage needs to be created. According to a high executive from the Senate Department for Urban Development and Environment, "there are two possibilities. Either one creates a new department which organizes everything and is responsible for everything, which is not always possible, or one creates networks. Hence, within the different departments there are people appointed, which then take part in regular consultation sessions" (Interview 5, 07.01.2016, 1:00:05). This network allows human resources within all departments to be sensitized to climate protection. By providing cross-cutting interdisciplinary expertise, this network structure is important to improve the communication between the relevant departments. As the public administration is often subject to tensions between the different departments, especially between the environmental and economic administration, conflicts can be resolved early on, which increases the chance of commitment to, and engagement with implementation by the Senate. In Berlin, the institutionalization resulting from the creation of the special unit as part of the Senate Department for Urban Development and Environment has been seen as a great improvement and a driver of the process. Issuing the feasibility study and the BEK, its leadership has been summarized as follows: "something like this only works if there is a powerful team behind it" (Interview 4, 12.01.2016, 28:02). Additionally, an important driver in climate policy in Berlin is the fusion of the Senate Department for Urban Development and the Environment in 2011. Hypothetically, according to an interviewee, policies would even be more progressive if the Energy and Environment Department were merged, which is currently also a large barrier to policy development at the national level due to conflicting interests (Interview 4, 12.01.2016).

To sustain this institutionalization and the implementation of the proposed measures developed in the BEK by the Senate, adequate human and fiscal capacity is needed. Several interviewees highlighted the changing role of the legislative (Parliament) and the

executive (Senate). Referring to the distribution of capabilities with the bureaucracy having much larger resources, the task of the parliament "is reduced to expose shortcomings within the public administration and to animate processes that remove those. To simply make fundamental decisions and hope that they will be implemented" (Interview 5, 07.01.2016, 1:09:22). This raises the question of the democratic legitimacy of the process. Furthermore, as human capacity is limited, several interviewees questioned whether the creation of such a cross-departmental network will actually be maintained and further developed as suggested in the long-term.

### 4.3.2c Vertical Integration

For effective design as well as implementation of climate policy in Berlin, it is fundamental that policies are streamlined along different political levels. As Germany has a federal political structure and is a Member State of the EU, with Berlin being one of its federal states, the multiple political levels are especially present. Having its own legislative competence and being a Member of the German Federal Council, the city-state has the possibility to influence national policy-making and push for the state's interests. All interviewees accentuated the unique political role Berlin plays compared with most other cities, whose activity to act is limited to their municipal constitutions and communal associations such as the German Association of Cities and Towns. However, as Berlin has not actively pursued urban climate policy in the past decades, it also did has failed to actively engage in climate policy-making at the national level through the Federal Council. The current policy process highlighted the need for capacity building and expertise within the City government to secure the state's interests through the Federal Council. Touching on this problem, the BEK was nominated to improve this relationship by conducting an analysis that highlighted conflicting interests at the national and state level, pointing out where a streamlining of policies is needed for Berlin's climate policy to become effective. According to a former high executive of the Federal Ministry for the Environment, "a number of measures have to be implemented here in Berlin. Yet, a number of measures can only be implemented if the national level respectively changes its framing conditions" (Interview 4, 12.01.2016, 38:48).

Looking at the influence of the European level on Berlin's climate policy, all interviewees stressed that the EU needs to act as a major driver in climate protection as climate change is a transnational problem. Moreover, policies need to be streamlined at the European level in order to become effective. According to a former Member of the Berlin State Parliament, in reality, while the EU has been primarily an important driver of climate policy, there have been cases where European regulation presented a barrier to policy development (Interview 3, 13.01.2016). One issues heavily criticized by the interviewees is the existence of an implementation gap, with implementation and enforcement mechanisms being insufficient at the EU level. Accordingly, there are many cases where regulations have not been limited without treaty violation proceedings, sending wrong signals within the European community. A Member of the Berlin State Parliament stressed, "that

the EU ETS is not working and is disastrous for us. I mean, we could save a lot of work, if there would be a functioning emissions trading system. These are all substitute policies that we are doing here" (Interview 2, 14.01.2016, 20:34).

When analysing the regional level, and therefore climate policy of the individual federal states, the importance of increasing the currently restricted coordination and communication between Berlin and its neighbouring federal states has been stressed. Even though their respective climate policies might take different directions, they strongly affect each other. The relationship between Berlin and Brandenburg is an example. Berlin is planning to quit the importation of lignite by 2030. A large share of this coal comes from the State of Brandenburg which is currently planning to open up a new coal mine. On the one hand, it is important for Brandenburg to integrate Berlin's climate policy in their decision of whether, this investment is economically beneficial in the long-term, independent of environmental considerations. On the other hand, Berlin has the chance to send an important signal within the Federal Council and act as a driver for climate protection.

### 4.3.2d Top-Down/Bottom-Up Enabling Frameworks

As seen in the literature review of current barriers and opportunities to sustainable city initiatives, of top-down and bottom-up enabling frameworks in multi-level governance systems are of great importance. Examining the bottom-up framework in the case of Berlin, the local level has been active in putting climate policy on the agenda, influencing policy development through bottom-up channels. Significantly, the strong role of the Green Party and the civil society has been stressed by the interviewees, however, their activities have mainly clustered around opposition. According to a respondent, it has been difficult to engage the broader public as climate policy and the topic of climate protection are too general. As the effects are mostly long-term and will majorly affect later generations, climate change does not represent specific problems citizens relate to, diminishing the citizen's interest. Theoretically, as Berlin's state-constitution allows the possibility of a people's initiative and referendum as a tool of direct democracy, supportive bottom-up channels for lower levels of politics to influence the state government exist (Interview 1, 08.02.2016).

Looking at the federal-state – national-state relationship, all respondents stress that the effectiveness of the sustainable city initiative in Berlin is restricted by developments at the national level. Accordingly, "the influence of the state on its respective CO2 performance is limited. This is much more dependent on what happens at the national- and European level compared to what happens here, to tell you the truth" (Interview 2, 14.01.2016, 16:38). Many policies that need to be issued to allow the transition to a low-carbon society, for example regulations on emission limits, need to be done at the national level. Therefore, urban climate policy is limited in its effectiveness:

"What we do here with our policy is practically add-on. How can we accomplish something faster? We support national politics; we look at how we can contribute so everything works. Where are specific urban characteristics that need to be taken into account? Everything else is the task of federal climate policy." (Interview 5, 07.01.2016, 01:24:58)

The top-down enabling framework is therefore dominant in the case of Berlin. Policy development in the area of climate protection is strongly dependent on the framing conditions provided by higher, national levels of government that play a central role. The EU is seen as an important actor, especially in setting the agenda and providing a general direction, "but for us here, for what we have to do in this city, they are not the contributing factor, those are the national regulations" (Interview 5, 07.01.2016, 01:20:05).

The inconsistency of national politics is highlighted as a major barrier. According to a Member of the Berlin State Parliament, the impermanence of regulations at the national level, which are constantly subject to change with new legislative periods, hinder the issue of policies at the municipal level, as the framing conditions are unclear and unreliable:

"In the end, the problem is not the collaboration between the different levels but that the framing conditions from the national level are so unreliable. They are constantly changing. This makes it difficult for a city. If one looks, for example, at the problem of subsidizing energy-efficient modernization of the housing infrastructure. As the approach at the national level is constantly changing, there is a wait-and-see attitude in the city." (Interview 4, 12.01.2016, 18:14)

The respondent concludes by stressing the importance of clear framing conditions, which are reliable, even in the long-term (ibid.). Even if the top-down governance framework does not enable sustainable city initiatives in particular, the importance of using already existing potentials has been accentuated in contrast to 'waiting' for a clear strategy. According to the respondents, there are many measures that can be taken independently from the national framework, such as green public procurement and urban planning. These potentials are especially high in Berlin as its civil society is very strong with a progressive public as well as a growing green start-up scene. A Member of the Berlin State Parliament stated with regard to the current policy process in Berlin, "I think that we have currently the unique opportunity, with the Enquete-Report and the BEK draft, to reach a fundamental consensus in Berlin's energy policy […] This basis, lacking at the national level, enables the establishment of a certain rigour and planning capability" (Interview 2, 14.01.2016, 32:17).

### 4.3.2e Implementation Gap

"In the end, all comes back to the question whether climate protection is really made a top priority in Berlin. And this can't be proved by designing a good plan, but that the appropriate measures are implemented." (Interview 3, 13.01.2016, 45:10)

Failed implementation of designed policies poses the most significant barrier to the realization of climate policy in Berlin. According to a former Member of the Berlin State Parliament, "with 25 years of experience in the field of energy- and climate politics in Berlin, there have been many great initiatives with no realization" (Interview 3, 13.01.2016, 12:24). This statement is demonstrated when looking at Berlin's climate policy throughout the past decades. While Berlin was already, in the early 1990s, at the forefront of progressive climate policy development compared to the other federal states, repeated failure in the continuation of designed policy frameworks resulted in Berlin becoming a laggard. Un-

derlying reasons for this reoccurring implementation gap are twofold according to the respondents: (1) a change in priority setting, and (2) the limited degree of binding of policy frameworks.

The respondents unanimously emphasized that whether or not climate policy is made a top priority determines the course and effect of the developed climate policy framework. A former Member of the Berlin State Parliament summarized the problem of priority setting the following: "To allow the implementation of these measures, this would mean to finally make climate policy a priority, a priority in contrast to other affairs" (Interview 2, 14.01.2016, 32:43). This statement highlights the problematic perception that by setting the priority on a certain issue, less capacity is devoted to another. Instead, it is important to not perceive priorities in form of a pyramid with one priority peaking, "to not make problems compete against each other, but to see the linking connections" (Interview 4, 12.01.2016, 51:24). To make climate policy the overall priority this would imply enforcing it across all sectors and departments, irrespective of political change and changing circumstances. Accordingly, it is fundamental to make climate policy an overall policy goal in the public administration, and not just that of a single department to avoid competing interests.

In Berlin, the creation of such an overarching network within the public administration and government, to stress the overall priority on climate policy has been problematic. The current process has mainly been initiated through commitment from the Senate Department for Urban Development and the Environment and the Enquete-Commission, and has neither diffused to other departments nor is it seen as a general priority within the governing coalition. Furthermore, the attention to climate policy has decreased after the Paris Agreement in December 2015, that perceived significant international attention has shifted to the refugee crisis in Europe. As Germany and Berlin are particularly affected by an enormous migration influx, according to the respondents, the window of opportunity for climate policy is closing and has shifted to migration policy. This shift in priority setting could potentially even hinder further development and implementation of climate mitigation and adaptation policies. The current Senator of the Department for Urban Development and the Environment in Berlin for example, stated that due to the pressing need to create affordable housing space, existing energy-efficient housing regulations would have to be overridden temporarily.

Secondly, limited liability and mechanisms to enforce enacted policies are a barrier to implementation. While the problem of not meeting legally binding targets without substantial implications is already visible in international agreements, according to a respondent, this message is transported top-down throughout all levels of governance (Interview 2, 14.01.2016). Communicated to the public, this leads to distrust in the capabilities of politics. The problem of a low liability of policies has been observed in the case of Berlin. In 2014, the Green Party filed a suit against the Senate as the Senate had failed to provide an energy programme which it was obliged to issue every four years since 1990. However,

the lawsuit was rejected as no individual has been directly affected by the absence of such a program. Therefore, enforcement mechanisms are currently limited, severely affecting the democratic legitimacy of the government. Furthermore, a distrust among citizens of the City Government has recently been shown in a referendum held in 2014. Voting on the future development of the former Tempelhof airfield, Berlin's citizens voted against the construction of residential property on the open space in spite of major shortages in affordable housing (Bartlick, 2014). Consequently, all major developments at this site are prevented for a number of years. A major reason for this decision was a failure of communication with the public and transparency, as the city government failed to properly inform the citizens on the proposed development on the space and its implications for the citizens.

### 4.3.3 Feedback and Evaluation

In the feedback and evaluation stage, the impact of policies needs to be assessed to examine their effectiveness and to readjust if needed. The climate policy process in Berlin is still at the design stage and has not been enacted yet, therefore, an evaluation of the development is not possible. Nevertheless, analysing how feedback and evaluation are integrated in the policy design is necessary to examine if sufficient mechanisms are created to allow the evaluation of policies which are fundamental for the long-term success of the policy program.

The interviewees highlighted the long timeframe of the current policy process, represented in the policy goal of becoming carbon neutral by 2050 with significant quantitative $CO_2$ emissions (discussed in detail p. 46). To allow an early evaluation of the progress, the importance of intermediate goals is stressed as they allow the Senate to gradually evaluate if the implemented mechanisms are sufficient or need to be readjusted. Furthermore, they function as a basis for politics as well as for the public to assess how the Senate is performing in the implementation of climate policy. As discussed in the literature review, governments tend to issue plans with long-term targets, outside of the respective term of office. This is visible in the case of Berlin. The proposed emission reduction targets follow the guidelines provided at the national level. There are however no intermediate goals to put pressure on governments to commit. According to the respondents, a continual evaluation highlights that independently from political change, the government is committed to implement climate policy.

To allow such an assessment, a monitoring concept has to be in place, for mitigation as well as adaptation policies. The Berlin Energy Transition Act foresees a continual $CO_2$ monitoring with the results being published every second year by the Senate. As a federal state, the City of Berlin is monitored by the Statistical Office Berlin-Brandenburg in cooperation with the Federal Statistical Office. The data published is however difficult to interpret and scattered. According to a Member from the Senate, the Statistical Office is lagging in publishing data, with the latest report delivered in 2012. The current policy design emphasizes the need for evaluation mechanisms, including the evaluation of climate adap-

tation, with the BEK proposing a cost-benefit analysis with a matching monitoring process for each individual measure. To increase transparency, the importance of publishing results in a manner that is understandable for the general public is highlighted. To enable an effective evaluation which is fundamental for the success of Berlin's climate policy, there needs to be extensive capacity-building to be able to monitor, prepare and publish the data adequately, within the City Government as well as the Statistical Offices.

### 4.3.4 Dissemination

The sharing and dissemination of policy experiences completes the policy cycle, with identified best practices used for future agenda setting and readjustment of policies. The relevance of city networks as a medium for this information sharing has been explored in the literature review. The City of Berlin engages within several sustainable transnational city networks such as C40, the Covenant of Mayors, ICLEI, the Climate Alliance and the city network 'Metropolis' (Berliner Informationsstelle Klimaschutz, n.d.).Yet, according to a high executive in the Senate Department for Urban Development and the Environment, Berlin only actively engages in the Covenant of Mayors network, a European network supported by the European Commission and directly targeted to the implementation of EU regulation. As stated, there is a difference between membership of and participation in networks. Whereas it has been a trend to join city networks as a message to show that the city is active in climate protection, cities don't have the capacity to engage in all of them (Interview 5, 07.01.2016). According to the respondent, leaving a network would send a wrong political signal. Therefore, the interviewee highlights that city governments would welcome a unification or merging of networks.  Because transnational city networks currently put emphasis on different topics, city governments need to choose in which network to become active based on the importance of topics, resources and willingness to collect the specific data required. As there are overlapping areas interesting for all cities, limited capacity hinders the share and dissemination of information. Additionally, 3 out of 5 interviewees highlighted that in the case of Berlin, city networks are not as important as, being a federal state, Berlin has much more political influence compared to other cities which are dependent on networks for political and financial resources (Interview 1, 07.01.2016; Interview 2, 13.01.2016, Interview 5, 08.02.2016).

Regarding the question of harmonizing monitoring mechanisms to allow comparability, all interviewees stressed that the importance of networks should be focused on information sharing instead of comparability leading to a competitive character of networks. Whereas in theory, harmonized GHG inventories are desirable, there are many obstacles to realization such as the definition of the respective area and for example whether or not to include air travel. In particular, the case of Berlin shows that comparability does not always send the right message. In comparison to other cities Berlin is leading in its performance regarding inter alia $CO_2$ emissions per capita, however this is not the result of actual political engagement but a 'wall-fall profit' as discussed earlier (p. 44). Resting on its positive performance in comparison to other cities, this served as a major barrier to clima-

te policy development. The current policy process however has the potential to become a flagship for urban climate policy. According to a former high executive of the Federal Ministry for the Environment, "if the Parliament would pass this law and the Senate would pass the BEK to become carbon neutral by 2050, with a city of 3 ½ million inhabitants, this would send important signals to big cities globally" (Interview 4, 12.01.2016, 46:22).

## 4.4 Discussion

This analysis of the climate policy process in the City of Berlin aims to progress the debate on multi-level climate governance. The guiding assumption is that sustainable city initiatives have a higher potential to be successful when occurring in a multi-level governance framework. Further, this success is dependent on the framework design. To this effect, barriers and opportunities in Berlin's multi-level climate governance system were analysed. The case study of Berlin adds to the literature on existing policy experiences, aiming to provide empirical evidence of how a multi-level governance system should look in order to best support sustainable city initiatives.

This analysis yielded the following results. Over the past decades, Berlin has not been a leader in climate policy development, despite its good climate performance. However, the recently initiated policy process has the potential to put the City of Berlin at the forefront of climate policy, both nationally and internationally. This shift from laggard to leader is mostly the result of individual leadership in the city government. The Senator of the Department for Urban Development and Environment, Michael Müller, who later became Mayor due to unforeseeable circumstances, managed to place climate protection on top of the political agenda.

Whether leadership at the city level is successful in affecting actual political change is strongly dependent on the general framing conditions of the multi-level governance system. In the vertical dimension, the importance of streamlining policies along the different levels present, is fundamental to avoid policy gaps and overlaps. In the case of Berlin, the interplay between the multiple levels is mostly that of a top-down nature. Therefore, the effectiveness of climate policy in Berlin is strongly dependent on the national and European level. Without their explicit support, it is difficult for cities to develop sustainably. The inconsistency of national politics is seen as a major barrier.

This result is interesting as multi-level governance theory highlights the decentralization of power from nation-states to other players and levels, limiting their sovereignty to act. The issue seems not that the national level's power to implement changes is limited by decentralization, but that the national level is 'reluctant' to act when not in the state's interest. This reluctance could be a manifestation of the neoliberal market-focussed state – where state action is constrained by a fear of 'hurting' the economy, e.g. visible in the case of the German automotive industry (Eckersley, 2004). The diffusion of these neoliberal ideas to democracy and nation-states may present a major barrier to any climate po-

licy, whether at the local, national or global level, and further research could present interesting results.

At the horizontal dimension, the policy process in Berlin follows a strong participatory approach. The importance of integrating a variety of stakeholders in the policy design has been stressed. The underlying reason is that dialogue and exchange between the relevant actors result in policies being more likely to be implemented by decreasing potential opposition. Furthermore, the creation of a network presents the opportunity to develop relationships between respective stakeholders that are vital for the implementation of policies. As the policy process addresses the vertical as well as horizontal dimension, a multi-level governance approach to climate governance can be identified in Berlin.

A major barrier to the policy development is the lack of integration of the general public. In the case of Berlin, the communication strategy to integrate the public was minimized to a standard procedure, instead of a meaningful effort to engage public interest. Not informing the public presents a major barrier to the implementation of climate policy. The effects of climate change are intergenerational and spatially distant, and therefore not immediately visible to citizens. This limits public understanding of the motivation behind policies and consequently the likelihood of their acceptance. Furthermore, not integrating 'the voice' of the citizens decreases the democratic legitimacy of the policy process, inherently a limit of the multi-level governance system itself. This demonstrates the necessity to prioritize a strategy for public participation.

The case of Berlin has furthermore shown that it is fundamental for the success of the policy process to institutionalize climate governance. To make climate policy an overall priority instead of that of a single department, it is necessary to create a specific body within governing institutions responsible for diffusing climate policy throughout all departments. This is especially relevant as the different departments compete for funding. However, capacity building is needed to allow such institutionalization, which has proven to be a major limitation.

Concerning the climate policy design in Berlin, the systematic long-term approach is emphasized as a major opportunity. This approach, using a general framework law coupled with a policy program defining specific measures, has been highlighted as improving the success of the process. This is due to the fact that earlier attempts to draft detailed law failed due to diverging interest of parties. Furthermore, the general framework law allows flexibility to program amendments without having to go through a complex legislative procedure. Additionally, it is essential to develop mechanisms that ensure adherence to policies as successive governments, with different priorities, have often resulted in the abolishment of inconvenient policies. These statements are interesting as 'party-politics' are seen more as a barrier to the implementation instead of representing the citizens 'voices', which are fairly progressive in Berlin.

Results on feedback and evaluation, as well as the dissemination of policies are limited. Partially, this is due to the fact that Berlin is at an early stage of the policy process. However, primarily it reflects a more general problem of governing climate change where excessive emphasis is placed on policy design and implementation, rather than evaluating progress and adjusting policies when needed. Continual evaluation is fundamental to the success of any policy. This policy process in Berlin highlights the importance of evaluation and intermediate goals to assess progress. Yet, a fundamental problem for the evaluation of climate mitigation policies is, that in spite of the availability of data on $CO_2$ reductions, cities lack sufficient human and financial capacities to collect and prepare them frequently.

Transnational city networks, in contrast to the academic debate, do not play an important role in Berlin. A major reason for this is that Berlin, as a city-state, has more means of influence than cities in general, who are much more dependent on city networks for knowledge and financial resources. While the question of harmonizing GHG inventories has recently dominated the academic debate, this emphasis may be misplaced. The focus should be on the exchange of experience and best practices rather than comparing climate performance. The case of Berlin has shown that this practice of comparison can present a barrier to policy development, while exchange of experiences could enhance performance.

An important point to take home from this discussion is the necessity for intermediate goals. Currently, intermediate goals are assessed on a timescale of decades as per action plans proposed at the national and European level. From this analysis, it is clear that these goals must be assessed more regularly. Assessing progress within legislative periods provides a great opportunity to increase the democratic legitimacy of climate policy, and helps citizens visualise progress in real-time. This transparency increases the commitment of respective governments and public administration, and ensures policies will survive changes of government.

## 5 Conclusion

Sustainable City Initiatives describe policy developments that have been established to help cities mitigate and adapt to climate change. They emerged through a number of different pathways. In some cases, international agreements empowered local levels of governance (top-down), while in others they emerged from within cities who recognized the absence of action at higher political levels (bottom-up). The need for these initiatives evolved from the recognition that cities are a major driver of climate change and are also particularly vulnerable to its consequences. However, cities do not function in a vacuum but rather as part of a larger political and economic scheme which must be considered when governing around climate change.

Within the academic literature, it has been established that climate change transcends political, economic and geographical borders. Therefore, it demands action at different levels of governance, this implies a multi-level governance approach. An ideal

multi-level governance system should demonstrate dynamic interplay between all actors and levels so that policy can be designed with no gaps or overlaps. This should create top-down and bottom-up enabling frameworks so levels can influence each other.

Multi-level governance presents a number of opportunities. It allows the streamlining of policies that enhance the effectiveness of governing climate change. A transition to low carbon society demands deep structural changes that will affect many socially, politically and economically disparate players. Multi-level governance offers a means of opening communication between these players and therefore achieving the consensus necessary to implement these structural changes. Despite these opportunities, a number of distinct barriers currently obstruct the ideal manifestation of multi-level governance. In reality, interplay between disparate players is limited because policy processes tend to fail without concerted top-down action from the nation-state. In addition, extending influence to all actors is logistically difficult, as best represented by the limited success of strategies designed to engage the citizens of Berlin in the development climate change policy.

Perhaps the greatest challenge to multi-level governance is a theoretical caveat. Multi-level governance evolved from a concept to a normative theory which states that it is 'a superior mode of allocating authority'. This research finds that by decentralizing authority away from political institutions, multi-level governance undermines democratic legitimacy.

This thesis sought to determine how a multi-level governance system should be designed to support sustainable city initiatives, maximizing their chance of success. Ideally, multi-level governance describes a carefully managed network, where distinct actors from different vertical and horizontal levels harmoniously interact to design and implement policy. In reality, multi-level governance appears to be an incidental manifestation of poorly defined authorities, functioning in isolation but affecting the overall system.

This could potentially be addressed by re-establishing the central-state as a gatekeeper to ensure democratic legitimacy is maintained. In terms of climate policy, this would mean that the central-state would co-ordinate multi-level dialogue to achieve consensus on policy development, which would then be implemented at different levels. This could provide the necessary context to maximize the chances of success for sustainable cities initiatives.

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