

The dynamics of multilevel administration. Coordination processes between national, supra- and international administrations in energy policy

Andreas Corcaci

Accepted: 31 March 2022 / Published online: 26 April 2022
© The Author(s) 2022

Abstract Multilevel governance of energy transitions depends on the coordination between national, supra- and international administrative actors. Coordination takes place in systems of multilevel administration, which constitute highly dynamic arenas dominated by legally non-binding instruments and reciprocal interactions and relationships. This article seeks to gain insights into the underlying coordination processes by asking *which conditions account for the change over time of coordination between administrative actors in multilevel administration systems*. First, research on multilevel administration is summarized. Second and starting from historic and discursive institutionalist theory, a conceptual framework is outlined to assess the conditions and modes that account for the dynamics of coordination in general, and the change of coordination instruments in particular. A trend towards persuasive coordination in a process of institutional layering driven by endogenous conditions is expected. Empirically, an in-depth comparative analysis is conducted based on exploratory interviews with 90 experts mainly from the European Commission, the International Energy Agency, and national administrators from Canada and Europe. The results unveil that administrative coordination evolves according to at least three types of layering that go beyond the initial hypothesis: first, through layering of coordination instruments; second, as an increase in formal and non-formal interactions through a growing number of channels and complexity of interactions over time; third, as layering of inter-administrative relationships through a growing importance of personal networks and the creation of new contacts. By analysing the dynamics of multilevel administrative coordination, the article contributes to an

Availability of data and material Interview questions, protocols, and recordings (when permitted)

Code availability Not applicable

Dr. Andreas Corcaci (✉)
Goethe University Frankfurt, Frankfurt am Main, Germany
E-Mail: andreas.corcaci@gmail.com

important but underdeveloped aspect of the governance of supra- and international energy transitions.

Keywords Governance · Energy transitions · Institutional change · Institutional layering · European Union · International Energy Agency

Die Dynamiken von Mehrebenen-Administration. Koordinationsprozesse zwischen nationalen, supra- und internationalen Administrationen in der Energiepolitik

Zusammenfassung Mehrebenen-Governance von Energietransformationen hängt von der Koordination zwischen nationalen, supra- und internationalen Verwaltungsakteuren ab. Koordination findet in Systemen der Mehrebenen-Administration statt, hoch-dynamische Arenen, die von rechtlich nicht-bindenden Instrumenten sowie reziproken Interaktionen und Beziehungen dominiert werden. Dieser Beitrag zielt darauf ab, Einsichten in die zugrunde liegenden Koordinationsprozesse zu gewinnen, indem gefragt wird, *welche Bedingungen für die zeitliche Veränderung der Koordination zwischen Verwaltungsakteuren in Systemen der Mehrebenen-Administrationen begründen*. Erstens wird die Forschung zu Mehrebenen-Administration zusammengefasst. Zweitens wird ausgehend von den historischen und diskursiven Varianten der institutionalistischen Theorie ein konzeptueller Rahmen skizziert, um die Bedingungen und Modi festzustellen, welche die Dynamiken von Koordination im Allgemeinen, und den Wandel von Koordinationsinstrumenten im Speziellen begründen. Dabei wird ein Trend zu persuasiver Koordination in einem Prozess des institutionellen *layering* erwartet, der von endogenen Bedingungen bestimmt wird. Empirisch wird eine detaillierte vergleichende Analyse durchgeführt, basierend auf explorativen Interviews mit 90 Experten hauptsächlich aus der Europäischen Kommission, der Internationalen Energieagentur und nationalen Administrationen aus Kanada und Europa. Die Ergebnisse enthüllen, dass sich Verwaltungskoordination nach zumindest drei Typen des *layering* entwickelt, die über die ursprüngliche Hypothese hinausgehen: erstens durch *layering* von Koordinationsinstrumenten; zweitens als ein Anstieg formaler und non-formaler Interaktionen durch eine wachsende Anzahl an Kanälen und Komplexität von Interaktionen im Zeitverlauf; drittens als *layering* interadministrativer Beziehungen durch die wachsende Bedeutung persönlicher Netzwerke und die Schaffung neuer Kontakte. Indem die Dynamiken von administrativer Mehrebenen-Koordination analysiert werden, trägt dieser Artikel zu einem wichtigen, aber unterentwickelten Aspekt der Governance supra- und internationaler Energietransformationen bei.

Schlüsselwörter Governance · Energietransformation · Institutioneller Wandel · Institutionelles *layering* · Europäische Union · Internationale Energieagentur

1 Introduction

Multilevel governance of energy transitions depends on the coordination of national, supra- and international administrative actors. This coordination takes place in systems of *multilevel administration* (MLA; see Benz 2015, 2017; Benz et al. 2016, 2017; Egeberg 2006; Grande and McCowan 2015; Heidbreder 2015), highly dynamic arenas characterized by legally non-binding coordination instruments and the interactions and relationships between actors. While multilevel governance has been defined in the literature on European integration as “the dispersion of authoritative decision making across multiple territorial levels” (Hooghe and Marks 2001a, p. xi),¹ multilevel administration can be conceptualized as a distinctive subset of governance distinguished by specific coordination instruments. The underlying relationships between different actors, but also structures and political processes involved are subject to change and thus dynamic. This gives reason to assume that administrative coordination in multilevel contexts is in constant flux as well. In energy policy, this observation is especially relevant because of the absence of strong regulatory regimes internationally and even in the EU, where the Commission lacks a strong mandate to regulate in ways that prevent exit options for the member states (Art. 194 TFEU; see Helm 2014). Therefore, softer and more flexible and dynamic types of coordination over time can be expected in this policy area (Knodt et al. 2020).

This study seeks to expand the conceptual and empirical knowledge on dynamic processes of coordination by investigating interactions between actors in systems of multilevel administration. By analysing multilevel interactions in energy (transition) policy and their evolution based on insights from historical and discursive institutionalist approaches, it addresses the following *research question*: *Which conditions account for the change over time of coordination between administrative actors in multilevel administration systems?* Two types of how administrative interactions change over time are analysed empirically: endogenous change occurs through institutional layering, and exogenous influences affect how that change happens. The study is structured as follows: first, research on administrative coordination across governance levels is outlined. Second, theoretical insights into the dynamics of multilevel administration are provided based on historical and discursive institutionalism (Thelen 1999; Schmidt 2010). Following these theoretical considerations from the literature, the *hypothesis* is formed that *a trend towards persuasive coordination instruments in a process of institutional layering* (Mahoney and Thelen 2010) should be observed. From this perspective, endogenous change in the mode of institutional layering is driven by administrative actors as the central change agents. Third, the subsequent section provides empirical insights into the change of administrative coordination, i.e., the processes of interaction between administrations as the ‘cases’ of this study, based on *exploratory interviews* with 90 experts mainly from the Eu-

¹ Strictly speaking, this definition describes Type I multilevel governance, where authority is dispersed “to a limited number of non-overlapping jurisdictions at a limited number of levels” (Hooghe and Marks 2001b, p. 4). Type II then refers to a situation characterized by a “complex, fluid, patchwork of innumerable, overlapping jurisdictions” (ibid) with interchangeable competences.

ropean Commission, the International Energy Agency (IEA), and national administrators from Canada, France, Germany, and the United Kingdom. Understanding the dynamics of coordination processes in the field of energy in general can be important for future research on various more specific questions, e.g., the trajectories of energy transitions. Carving out trends of how coordination develops and which types and instruments of interaction become more important helps illustrate the complex interplay of actors at different governance levels and form expectations about the coordination instruments required to facilitate sustainable energy transitions.

While institutional layering as described by Mahoney and Thelen (2010) is identified as a ubiquitous mode of change, the results unveil *several types of layering* that go beyond the initially hypothesized trend, leading to a *specification of the concept*: first, through layering of coordination instruments, where new instruments or different variations of instruments are added to existing processes of interaction between administrators as the main change agents in MLA systems; second, as an increase in formal and non-formal interactions through a growing number of channels and complexity of interactions over time; third, as layering of inter-administrative relationships through a growing importance of personal networks and the creation of new contacts. These changes thus affect the *context of coordination*, i.e., the involvement of and relationships between administrative actors. This occurs on a macro level by impacting the frame in which coordination takes place, and on a micro level by impacting the specific relationships and interactions. Finally, a synthesis of the results is presented prior to the conclusion. By identifying these different types of layering and their effect on the context of administrative coordination processes, this study provides highly relevant theoretical and empirical insights into inter-administrative relationships and dynamic processes of coordination in energy policy and energy transitions.

2 The dynamics of multilevel administration

Bureaucracies as organizational entities are traditionally described by a fundamental institutional continuity and professionalized staff (Weber 1980 [1922], Pt. 1, Ch. III). From this perspective, bureaucrats are not primarily concerned with questions of competence allocation, because competences are established through an organization's foundation and without the need for regular overhauls in the context of increasing integration. Interactions between national bureaucrats and administrators from supra- and international organizations therefore do not primarily concern political integration. Instead, the concept of multilevel administration can be used as an analytical approach to assess such interactions. It seeks to capture both processes of coordination across territorial levels of governance, and the underlying administrative dynamics as its essential aspects (Benz 2017, p. 13). These dynamics result from the choice of coordination instruments and the opportunities or constraints of their application (Benz et al. 2016, 2017). Such processes are usually discussed from an integration perspective in existing research, e.g., in the literature on a common European Administrative Space (EAS; see Olsen 2003; Trondal and Peters 2013; Trondal 2015; Trondal and Bauer 2017), which deals with the integration of admin-

istrations in Europe, or in Wessels' fusion hypothesis (Wessels 2003). Changes of governmental relations have also been discussed, e.g., in the relationship between the EU and its member states regarding the Energy Union (Szulecki et al. 2016) or with respect to the role of the IEA in international energy governance (Florini 2011). In this context, an emphasis is often put on the growing importance of new and *soft* modes of governance (Shelton 2000), such as the open method of coordination (Barcevičius et al. 2014). Administrative coordination, however, is usually not addressed explicitly, let alone its dynamics in the form of radical and especially incremental change over time.

As a starting point, it is assumed that power asymmetries between administrations at different levels and governments influence the availability of coordination modes and instruments, thereby affecting interactions (Benz 2017, p. 7–8, p. 15–18; see Benz et al. 2016, 2017; Trondal and Bauer 2017). International administrations exist as organizational units of international organizations, responsible for the support of their operation and, usually in cooperation with national administrations, the implementation of their decisions. MLA emerges in this structural context defined by the mandate of an international administration, the resources available to it, and the expertise acquired by its staff (Benz 2017, p. 18). In practice, these are limited compared to their national counterparts. In their interactions, administrators select the instruments they deem appropriate in a specific context. International administrations usually use communicative and persuasive strategies to extend their impact on national policy making because they lack the ability to implement a policy or enforce national implementation (Benz et al. 2017, p. 163–164). They must therefore rely on their expertise to widen their scope of action (Benz 2017, p. 14), regardless of decisions from the political arena.

To understand the dynamics of multilevel administrative interactions, *historical and discursive institutionalism* can provide useful theoretical insights (Pierson 2004; Steinmo et al. 2008; Schmidt 2010; Streeck and Thelen 2005; Thelen 1999). Historical institutionalists traditionally conceive of change by referring to constraining mechanisms such as path dependence and self-reinforcing lock-in (Hall and Taylor 1996). These make change unlikely, although they deem it possible through so-called critical junctures, contingent situations when “the usual constraints on action are lifted or eased” (Mahoney and Thelen 2010, p. 7). Critical junctures effectively open windows of opportunity that enable institutional change. However, the possibility of incremental and slowly evolving change also entered this approach through the assumption that path-dependent lock-ins constitute a rare phenomenon, which is why gradual administrative change can occur frequently (*ibid.*, p. 3). These types of change are slow processes which accumulate causes, threshold effects, and causal chains (Baumgartner and Bryan 1993; Capoccia and Kelemen 2007; Cioffi-Revilla 1998; Pierson 2004).

A connection with administrative coordination and thus the empirical study in this article can be made, first, by applying the sequential development implied by *historical institutionalism* to supra- and international administration. This type of administration emerged much later than national bureaucracies, forming a new multilevel structure of low institutionalization (Benz 2017, p. 15). Second, the role of ideas in accounting for “how and why public actors bring about institutional change

through public action” (Schmidt 2010, p. 21) can be integrated by acknowledging Schmidt’s conceptualization of *discursive institutionalism*. Ideas enable processes of administrative learning and persuasion, leading to new perspectives and preferences about institutions, thus facilitating institutional transformation. Subsequently, new ways of coordinating across territorial levels may evolve, either through so-called discursive coalitions or by providing information and orientation (ibid, p. 16). The transformative power of ideas should therefore facilitate communicative interaction as opposed to more hierarchical forms. Ideas and power relations are intertwined in this context, “since ideas and values infuse the exercise of power and (subjective) perceptions of position” (ibid, p. 18; see Benz 2017, p. 15). Discourse about how actors use or should use power may in turn change the perception of power that emanates from their position.

Such communicative interactions are expected to play a significant role empirically. More specifically, empirically observed instruments of persuasive coordination such as authoritative advice², consultations, and knowledge transfer (e.g., through policy proposals) can facilitate endogenous processes of learning in MLA systems (Benz 2017, p. 12). This type of coordination plays an important role in the development of administrative governance. This is partly because in contrast to their national counterparts, supra- and international administrations require the support of member state governments to extend their formal powers and resources (ibid, p. 14). The former seems unlikely for the European Commission outside of EU treaty changes. Moreover, conferences of political leaders often commission specialized administrations to provide advice or elaborate proposals for problem solving, thus orchestrating organizations or formal bodies to take coordinated action (Abbott et al. 2015). An intensification of multilevel administrative interactions rather than gradually increasing autonomy of international administrations is expected for this reason. Meanwhile, cooperative coordination beyond hierarchy (voluntary cooperation³, various forms of assistance and incentives) can indicate a deepening of interactions in well-established MLA systems (Benz 2017, p. 13).

In this study, administrative coordination is conceptualized as *reciprocal interactions and relationships between national, supra- and international administrative actors*. This approach considers the essential role national administrations play in reacting to efforts of coordination made by the upper level. Coordination is understood as a communicative and discursive process, predominantly expressed through cooperative and especially persuasive instruments (Benz 2017, p. 22). In contrast, bureaucrats do not usually coordinate through compulsory instruments, which do not provide an exit option. Exceptions include, e.g., policy enforcement through infringement proceedings by the European Commission (Benz et al. 2016, p. 1007). The processes in which coordination evolves depend on the institutional context. Recent theories of institutional change distinguish between displacement, layering, drift, and conversion (Mahoney and Thelen 2010, p. 15–22; see Capano 2019;

² Called *recommendations* by Benz et al. (2016, 2017).

³ Called (*voluntary*) *negotiations in networks* by Benz et al. (2016, 2017).

Streeck and Thelen 2005).⁴ Although these modes refer to rules and the allocation of power, they can also be applied to changes of administrative interactions, whether they originate from rules and power structures, or from emerging constellations of actors and their interactions. Persuasive instruments often add to compulsory or cooperative approaches through institutional layering (Mahoney and Thelen 2010, p. 16–17), but their use can also lead to a drift or conversion of coordination.

Based on these arguments and accounting for the restricted set of instruments available to most international administrations, processes of layering or “the introduction of new rules on top of or alongside existing ones” (Mahoney and Thelen 2010, p. 15) seem to be of particular importance to administrative coordination. Change occurs by altering the logic according to which existing rules function, i.e., adding new parts to institutional setups. Layering usually involves incremental change through what Streeck and Thelen (2005, p. 23–24) call *differential growth* (see Schickler 2001) and becomes relevant when institutions face strong veto possibilities or a low level of discretion (Mahoney and Thelen 2010, p. 19). Commonly used in administrative coordination, existing instruments and other types of interaction will often be combined with new ones due to functional needs or learning processes, e.g., offering technical assistance when a prior policy recommendation goes unnoticed. Finally, layering occurs when the willingness and/or ability to fully replace existing rules or institutions does not exist, e.g., in EU-member state relations.

Two types of how administrative coordination changes over time are analysed in the empirical part of the study. One central argument in this context is that the *endogenous change of multilevel administration takes place in the mode of institutional layering* as derived from the historical institutionalist approach. New instruments of coordination and ways of interacting are thus expected to add to existing ones and widen the scope of action as well as expand the channels of interaction. *Administrative actors constitute the main change agents*, while change is enabled by institutional features of administrations and especially the capacity for (administrative) learning as derived from the discursive institutionalist approach. Change usually needs to be negotiated, either in communicative discourses relating to the evolution of ideas, or in coordinative discourses leading to new rules or standard operating procedures (Schmidt 2010). However, change might also be induced by independent action of an administration. These processes can occur and evolve inside the administrative sector, or they can signify responses of administrations to pressure from political actors.

Another central argument is that *exogenous influences play a role in how endogenous change occurs*, two of which are considered in the empirical analysis. First, *external shocks* constitute sudden and often short-term events that can force administrations to adapt to the new circumstances. This in turn can affect coordination on a macro level and steer the overall interaction approach of an administration towards

⁴ Displacement refers to “the removal of existing rules and the introduction of new ones” (Mahoney and Thelen 2010, p. 15); drift occurs when a rule’s impact changes due to environmental shifts; and conversion means that rules are applied differently due to strategic considerations (ibid, p. 16). Layering is described below.

other actors in a different direction, or lead to a new set of coordination instruments. Second, *technological advancement* has long-term effects on coordination on a practical or micro level. New technologies can facilitate different forms of interacting across territorial boundaries, but also lead to the introduction of new coordination instruments. The dynamics of multilevel administrative coordination thus constitute a multi-causal and complex phenomenon. Based on this conceptual outline, the next section presents comparative empirical findings resulting from expert interviews with a wide range of actors.

3 Coordination processes between administrations across governance levels

To answer the *research question of which conditions account for the change over time of coordination between administrative actors in multilevel administration systems*, the empirical part of this article presents findings from a qualitative study in which explorative expert interviews were conducted and analysed through content analysis to produce comparative case studies. The aim of this approach was to gain a basic understanding of the dynamics of multilevel administrative interactions in energy policy and the conditions affecting how coordination changes over time. The empirical study was guided by an actor perspective and focused on discursive elements and how administrators interacted with each other across governance levels. Studying the above research question is highly relevant for the emerging literature on multilevel administration because the specific interactions and coordination instruments of bureaucrats and administrative actors in multilevel systems—as opposed to multilevel governance in general—have not been explored in much detail yet. Understanding the underlying dynamics and how inter-administrative coordination beyond the nation state evolves more broadly can facilitate a better grasp of current developments in supra- and international energy policy and other policy areas such as ongoing energy transitions within the European Union or in multilevel systems involving nation states and international organizations.

The empirical study was based on the *hypothesis that the evolution and change of MLA follows a trend especially towards coordination through persuasive instruments in a process of institutional layering* (see Benz, Corcaci, and Doser 2016, p. 1013; Mahoney and Thelen 2010, p. 16–17). While the hypothesized trend was generally confirmed, several restrictions were observed. More importantly, different types illustrating the *complexities of layering* were identified based on the interview data. The central endogenous conditions affecting the dynamics of multilevel administrative coordination are *the complementarity and complexity of coordination instruments; the amount and intensity of multilevel interactions in a two-way street; personal networks and the relationships between individual actors; and changes at the high administrative or political levels*. These conditions are in turn affected both by the *context of coordination* and by exogenous factors, namely *the consequences of policy and technological advancements* as well as *external shocks and crises*.

The exploratory interviews were framed by several grouped guiding questions on the types of interactions with administrators from different governance levels, and

on their evolution and change over time⁵. Most of the interviews were recorded and extensive minutes were taken during the interviews. Based on these data, statements relating to coordination instruments and patterns of change (layering in its different forms and various exogenous influences) were structured and compared with each other, from which the central findings could be derived.

Results are based on 77 exploratory interviews with a total of 90 experts from the national administrations of Canada (ten interviews with twelve experts, mostly at NRCAN and DFATD)⁶, France (nine interviews with nine experts, mostly at DD and MAEDI)⁷, Germany (13 interviews with 18 experts, mostly at BMWi and BMUB, but also including three IEA delegates, two experts from the Permanent Representation to the EU, and the national contact point for the European Commission)⁸, and the United Kingdom (seven interviews with seven experts, all at DECC)⁹, but also at the European Commission (15 interviews with 18 experts, mostly at DG ENER¹⁰) and the IEA (three interviews with five experts; and additionally three interviews with four experts from the Permanent Representations to the OECD from Canada, France, and Germany).

While the study focuses on the IEA and the European Commission as the main supra- and international cases, several interviews were conducted with other administrations to provide context information and additional perspectives and insights on multilevel administrative coordination in the field of energy policy. These include interviews with experts from IRENA¹¹ (two interviews with one expert), the World Energy Council (four interviews with four experts, including two interviews with national subsidiaries in Canada and Germany), the Energy Charter Secretariat (one interview with one expert), the UNFCCC¹² (one interview with one expert), EASME¹³ (one interview with one expert), and ENEA¹⁴ (one interview with two experts). One expert from Germany was also interviewed on his former work as an administrator at the he OECD¹⁵. Finally, interviews with seven academics (six

⁵ The interview questions can be found in the supplementary material available at <https://doi.org/10.1007/s41358-022-00321-7>.

⁶ Natural Resources Canada and Department of Foreign Affairs, Trade and Development: the national ministries in charge the energy and foreign policy in Canada at the time of the interviews.

⁷ Développement Durable and Ministère des Affaires étrangères et du Développement international: the ministries responsible for energy and foreign affairs in France at the time of the interviews.

⁸ Bundesministerium für Wirtschaft und Energie and Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit: the ministries responsible for energy and environmental/climate policy in Germany at the time of the interviews.

⁹ Department of Energy & Climate Change: the ministry in charge of energy policy in the UK at the time of the interviews.

¹⁰ The *Directorate-General for Energy*, the administrative unit responsible for energy policy in the Commission at the time of the interviews. Interviews were also conducted at Directorate-General for Competition, DG COMP (one) and Directorate-General for Research and Innovation, DG R&I (one).

¹¹ International Renewable Energy Agency.

¹² United Nations Framework Convention on Climate Change.

¹³ Executive Agency for Small and Medium-sized Enterprises.

¹⁴ Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile.

¹⁵ Organization for Economic Co-operation and Development.

Table 1 Country selection. (Source: author's illustration)

	Continental European administrative tradition	Anglo-Saxon administrative tradition
Federal state	Germany	Canada
Unitary state	France	United Kingdom

in Canada, one in the UK) without former involvement in the above-mentioned institutions were conducted to provide additional context information. Some of the interviewed experts no longer worked for the administrations above at the time of the interviews, which took place between August 2015 and May 2016.

The four countries were chosen to represent a wide range of state structures and administrative traditions, so interactions resulting from such features are accounted for (see Table 1).

Germany is a (cooperative) federal state with a continental European administration and a mixed energy system currently in transition, with oil having the biggest share in the country's 2016 energy mix, followed by coal and natural gas, then renewable energy and finally nuclear power (for details, see Kemmerzell 2022). France can be characterized as a (somewhat regionalized) unitary state with a continental European administration whose energy system is highly dependent on nuclear energy. The United Kingdom is also a (albeit more strongly regionalized) unitary state in the Anglo-Saxon managerial administrative tradition with a mixed energy system focusing on natural gas. Lastly, Canada is a (dualist) federal state in the Anglo-Saxon tradition whose energy system depends on fossil energy resources such as oil sands and natural gas, but with a significant share in hydroelectric power.

Internationally, the IEA was chosen as the main general-purpose organization in energy, although secretariats from other organizations were also interviewed. Despite focusing on oil and other fossil energy resources in the beginning, renewable energy has since become essential for the organization's work, and it plays an important supporting role for energy transitions in its member states. The European Commission, especially DG ENER as the central department dealing with energy policy, was included as the main channel of administrative interaction beyond the nation state for three out of four nation states. A wide range of topics and policy areas within energy were covered with the interviews to include as many different types and channels of interaction as possible (Seawright and Gerring 2008). For example, interactions in the context of fossil fuel and renewable energy markets, energy security, and energy transitions were important policy areas regarding the IEA, while coordination with the Commission also included research funding (Horizon 2020), electricity and gas, nuclear energy, supply security, energy technologies, and retail markets, to name some examples. Both national and supra-/international administrative sub-units concerned with energy policy coordination and international energy relations were of interest because they cover a broad range of interaction types crucial to multilevel administrative coordination in energy.

The findings are subsumed under the following sections, reflecting the various conditions and influences on the dynamics of coordination mentioned above, after which a synthesis of the results will be presented: complementarity and complexity

of coordination; complexities of layering; intensity of interactions; MLA as a two-way street; context of coordination; personal networks; and high-level changes.¹⁶

3.1 Complementarity and complexity of coordination

First, the *complementarity of coordination instruments* was observed as expected, especially a combination of various cooperative and persuasive instruments. Regarding the IEA, many workshops and conferences organized by its secretariat illustrate the instrument *knowledge transfer* (Benz et al. 2016, p. 1005, p. 1010). Other types of this instrument are the monthly oil and gas surveys (and the IEA's other newsletters) as well as its plethora of (technical) publications. Yet, the underlying process in which these outputs are generated combines different instruments, most importantly different types of knowledge transfer (e.g., publications like the IEA's *World Energy Outlook*), consultations (e.g., regarding the provision of data; in some cases this includes threats to escalate non-compliance), assistance (e.g., related to the IEA's data gathering or organizational aspects of events), and voluntary cooperation (e.g., to reach agreements on an output such as the IEA's country reviews) (Interview 1, 60, 68, 73, 74). The European Commission, which can in principle access compulsory instruments such as policy enforcement through infringement proceedings, instead often relies on a combination of consultations, voluntary cooperation, and assistance in process of coordination required to prepare and implement energy policies. While the IEA is somewhat restricted in its outputs, instruments in the Commission are numerous and heavily depend on the DG and sub-unit, but also the specific structure and policy issue in question (Interview 46, 50, 56, 59).

A related aspect is the *complexity of the underlying interaction processes*. Administrative coordination in the EU has become considerably more complex over time, involving more frequent contacts to a growing number of people from different institutions and administrative sub-units in the member states about increasingly advanced substance matter (Interview 48, 50, 62). This is owed to a variety of conditions, but most importantly enlargement to 27 member states, which has led to the formation of smaller groups of affected national representatives, intended to reach agreements (Interview 32, 36, 38). In turn, the Commission has become less responsive to individual national requests compared to the EU-12, despite its willingness to compromise (Interview 36). At the same time, it becomes increasingly more difficult for member states to assert individual positions because of the higher number of participants (including third parties), which is why alliances of four to five representatives are necessary to effectively communicate certain positions (Interview 36). The Commission has learned from this development by helping establish more selective groups of member state representatives and by pursuing a 'dramatically' more cooperative relationship with EU member states, which is described as administrative learning within the institution (Interview 36, 50, 54, 55, 61). Seemingly paradoxical,

¹⁶ For reasons of simplicity and due to the focus on administrative coordination, other actors involved in these processes are left out in this study. They include, among others, actors from international organizations, consultants and experts from other member states, public actors that provide data, private companies, and interest groups, as well as other societal actors (Interview 1, 73).

this new approach coincides with additional competences and a formally stronger influence of the Commission, including DG ENER (Interview 34, 36, 46, 50, 55). This becomes evident with the introduction of delegated acts, which to some extent replace the existing comitology system, thereby strengthening its position while reducing the influence of national administrations (Interview 31, 34). Against the background of today's complex system of coordination at the European level, the Commission seems to prefer reaching decisions even if they deviate significantly from its original position (Interview 39).

Finally, administrative interactions have become more complex due to the significantly higher importance of energy policy within the Commission compared to 2000, when transport still dominated because both units were part of DG TREN (*Directorate-General for Transport and Energy*; Interview 33, 61). While DG ENER had a marginal position in the 1990s (called *DG XVII [Energy]* until 1999), it has since gained significance partly owed to its growing global role (Interview 47). Establishing the *Energy Union* in the treaty of Lisbon reflects this evolution (Interview 33). The treaty also led to shifts in the number of shared competences, granting the Commission additional competences and enforcement capabilities in energy (e.g., through the European Semester and delegated acts; Interview 42). The establishment of (enforceable) directives in renewable energy and energy efficiency, such as the Renewable energy directive (2009/28/EC) and the Energy efficiency directive (2012/27/EU)¹⁷ facilitated this development (Interview 46). Strong competences already existed in the fields of gas and electricity (Interview 44), although the likelihood of formal interference in the energy mix of EU member states through the Energy Union was deemed low (Interview 46).

3.2 Complexities of layering

Second, institutional layering does not occur empirically in the sense that new coordination instruments are continuously added to existing ones. *Rather, several different instruments available to an administration are used at the same time* within specific policy measures or processes of coordination as outlined above. Therefore, instruments are usually not applied on their own and isolated from one another. Not only are they applied in conjunction with existing policies, but layering is also used to modify policy tools or construct new ones. For example, the IEA secretariat and national administrations involved in producing analytical publications like the *World Energy Outlook* make use of consultations, assistance, and knowledge transfer to reach agreements on the contents of the publication and the policy proposals contained therein (Interview 68, 73, 74). To achieve their goals or fulfil their tasks, administrative actors select coordination instruments from a *given menu* of feasible ones and combine them in a way that helps accomplish their tasks (Benz 2017, p. 13). The European Commission as the only apparent non-national administration embedded in hierarchical MLA systems can in principle access the whole range of instruments including compulsory ones (ibid). For example, the instrument *shadow of hierarchy* (Benz et al. 2016, p. 1005) in conjunction with actual enforcement capa-

¹⁷ See https://eur-lex.europa.eu/summary/chapter/energy.html?root_default=SUM_1_CODED=18.

bilities can be observed when coordination takes place in the context of infringement proceedings, outside of which they are exceedingly rare. One of these exceptions relates to the competences of DG ECFIN (*Directorate-General for Economic and Financial Affairs*), which can fine member states without court decisions (potentially leading to financial bankruptcy) and can request draft budgets (Interview 46, 50, 55). Compulsory instruments such as these are thus limited to specific DGs, units, and particular interaction contexts (Interview 44, 46, 54). In energy policy, DG ENER is also restricted in its use of instruments, and even research funding does not allow for top-down enforcement in most cases (Interview 54, 58).

The administrations of organizations like the IEA, IRENA, the World Energy Council, and the Energy Charter Secretariat are embedded in more decentralized MLA systems, meaning their menu of instruments is more restricted. In these cases, actual layering of instruments in the sense that new instruments are added to existing ones only occurs in the early phases of the organizations' evolution until they use all the tools available to them (Interview 1, 68, 74). Civil servants from national administrations, in contrast, used to be considerably more autonomous 20 years prior to when the interviews took place (Interview 8). It is thus not the autonomy of civil servants that has grown and led to more (combinations of) coordination forms, but rather the growing complexity of administration. This does not mean, however, that such layering cannot be observed at all. Its occurrence is simply restricted to more micro-level contexts like the addition of an instrument to an existing combination of instruments used for a particular policy measure, or the addition of different subsets of a single instrument.

This wider understanding of layering can be observed clearly regarding advances in communication technology as an exogenous influence leading to new forms of consultations and knowledge transfer through electronic means (video conferences, e-mail, internet platforms and databases, and many more) (Interview 1, 48, 53, 55). Given these advancements, day-to-day coordination is now easier, not the least because long-distance phone calls involved considerable financial resources in the 1990s (Interview 21). In addition, the ease of travelling abroad was highlighted as a reason for strengthening and expanding coordination (Interview 31). Combinations of instruments used in some contexts can be enriched by adding a new instrument that helps to achieve the underlying task. For example, as a framework to coordinate economic policies, the European Semester used to be restricted to the publication of documents and fact-finding missions, but now includes the provision of assistance by the Commission (Interview 45). While this tool concerns fiscal policy, its application has direct implications for the Energy Union. Regarding the IEA, additional forms of assistance have been added as a tool to support data requests (knowledge transfer) especially from non-members, reflecting their growing involvement in a changing international energy environment (Interview 68, 73).

3.3 Increasing intensity of interactions

Third, a *continuous increase in multilevel interactions* was identified, leading to more frequent use of persuasive instruments like consultations and assistance over time (Interview 9). This can be linked partly to technological developments involving

cheaper forms of communication, online tools, and databases, making it easier to access to information (Interview 31, 38, 44, 48, 55). For the IEA secretariat, expanded activities since its establishment and its adaptation to external developments were mentioned (Interview 1, 9, 38, 68, 74). The latter include the acceleration of energy transitions in IEA member states, new circumstances arising from the global rebalancing of the energy market (Interview 9), and the response to a changing international environment including an evolving energy agenda and underlying discourses, e.g., regarding energy supply and demand as well as security issues (Interview 11, 12). Additional contacts have also led to a wider use of assistance-type instruments like IEA workshops and trainings, e.g., on energy markets, renewable energy, or technology collaboration. This can be linked to the endogenous development of the IEA and its growing international importance (Interview 1, 9, 68, 73, 74), which goes hand in hand with an expanded role and scope of tasks of its secretariat, as well as a highly cooperative approach towards other organizations, members and non-member states alike (Interview 9, 68). Examples for these dynamics are a steady increase in financial capacities through voluntary contributions (but not in the organization's budget) (Interview 1, 74), the acquisition of expertise, an independent reputation as a provider of comprehensive standardized energy data, and the transfer of specialized knowledge (Interview 1, 11, 12, 74). Connected to these developments is a considerable rise in publications as a type of knowledge transfer (Interview 1, 9, 11, 12, 38, 74). Peer reviews were not conducted in the beginning (Interview 21), but they have become an important part of the *World Energy Outlook*, country reviews, and other undertakings (Interview 1, 31, 37, 73, 74). A significant professionalization of the IEA's approach to data gathering can also be observed, which was based on press articles in the 1990s and has since come to rely on structured national data as the main data source (Interview 31).

The general trend towards more interactions, closer cooperation and coordination also applies to the European Commission and DG ENER. Energy Union programmes are said to have emphasized the importance of cooperation and strengthened the quality of policy proposals (Interview 45), facilitated by the growing energy acquis and increasing demand for project management (Interview 47). These developments are embedded in DG ENER's more reciprocal and cooperative approach, be it in the context of the Energy Union (Interview 45, 46, 55) and the subsequent closer ties between energy and climate policies (Interview 34, 45, 55, 61), or regarding the growing importance of the energy sector and the international energy environment (Interview 33, 55, 61) in general. Finally, the climate change debate has strongly influenced energy transitions and energy policy in general, reflected in a wide range of related publications and technical documents (Interview 35).

Crises also yield more contacts between administrative actors. They constitute situations in which temporary spikes of contacts and additional processes of coordination often occur due to the time constraints involved. However, events such as the 1970s and 2000s energy crises do not necessarily lead to different types of interactions or instruments as they rely on a mixture of persuasion and negotiation about political or policy measures (Interview 33, 40). The distribution of roles among political and administrative actors depends on the topic in question and the competences involved (Interview 33). In rare situations, crises lead to the establish-

ment of new competences in a particular unit and thus make additional instruments or other forms of interaction available, e.g., Commission staff dealing with the 2015 refugee crisis (Interview 32) or DG ECFIN with Greece's government-debt crisis (Interview 46).

3.4 MLA as a two-way street

Fourth, *multilevel coordination constitutes a two-way street* that includes processes of up- and downloading (Bulmer et al. 2007; Jordan and Liefferink 2004) characterized by cooperative and persuasive interactions. The use of specific coordination approaches from the (top-down) perspective of international administrations is generally described as a *back-and-forth process* in which national administrations in turn influence their upper-level counterparts. This also applies to Permanent Representatives (to the EU or OECD), who often assume a diplomatic rather than an administrative function, but day-to-day work includes activities of administrative coordination (Interview 43, 51, 52, 62). Other such processes are interactions between DG ENER, national administrations, and experts (Interview 43, 46, 62), as well as the various channels of coordination between the IEA and national ministries (Interview 1, 73). The number of national representatives in Brussels has increased over time, leading to less travel from the member states (Interview 33). Similar observations can be made for the IEA (Interview 38). As a member-driven organization (at least in a wider sense; Interview 31), national administrators not only dominate the political decision-making within the Governing Board (Interview 1, 68, 74), but they also set the framework of how the secretariat works with its national counterparts, not least by providing voluntary financial contributions for specific tasks (Interview 1, 68, 73, 74). National administrators also advise IEA staff on questions about national energy data and other knowledge-related issues (Interview 1). Although high-level national administrators must be consulted on important questions, the secretariat can still pursue its own interests. From this perspective, the IEA was described as “not member-driven in a narrow sense” (Interview 31).

In the case of the European Commission, these relationships vary according to the institutional setting. New tools such as the European Semester, impact assessment of draft legislation and communications, as well as the growing importance of delegated acts increase the influence of Commission staff and thus the availability of and control over the use of coordination instruments. At the same time, the formal influence of national administrators decreases (Interview 31, 34, 50), although coordination in the Commission's MLA system is still very much a two-way street because it cannot impose its will on the member states as before (Interview 50). The energy sector constitutes an area of shared competences, necessarily requiring cooperation with administrative regulators, companies, and regional groups. Despite these general developments, DG ENER has considerably more competences at the time of the interviews compared to 20 years prior when DG COMP oversaw communitized power supply. This is partly owed to global development and the shift in the importance of energy and energy transitions (Interview 54, 55). Paradoxical only at first glance, the dynamics of the European MLA system have thus led to

more varied and closer interactions between national and supranational bureaucrats despite changing power structures favouring the Commission (Interview 32).

3.5 Context of coordination

Fifth, the *involvement of individuals depends on various context conditions* specific to the national, supra- and international administrations. The IEA secretariat will in general refrain from acting in a demanding or even authoritative manner. Rather, it fulfils its service-oriented functions which are partly driven by voluntary financial contributions of its members (Interview 1, 68, 74). Although European Commission staff have become highly cooperative in their interactions with national representatives (Interview 50, 54) and are overall far less authoritative and more cautious compared to 20 years before the interviews according to one account (Interview 43), they can still be demanding and authoritative in certain institutional contexts (Interview 43, 50). The introduction of delegated acts also created new possibilities for such behaviour, and the Commission makes use of the resulting formal influence and the ability to put additional pressure on its national counterparts when deemed necessary (Interview 31, 34, 50). However, consultations remain essential even in these contexts, especially when issues are politically sensitive (Interview 31).

National administrations, in turn, vary considerably regarding their behaviour and involvement, depending on expertise, the relevant policy or instrument, the administrative sub-unit in question, as well as the specific context at the supra- and international levels (administrative unit, policy, institutional setting, existing relations) (Interview 54, 61, 62 for the Commission; Interview 1, 73, 74 for the IEA). Canada, France, Germany, and the UK are all highly active IEA members, illustrated by their administrations' participation in reviews and their acknowledgement of responsibilities towards the organization (Interview 74). At the time of the interviews, the UK led the list of nominees in the IEA, provided the chair for the Governing Board as well as considerable voluntary financial contributions. France was heavily engaged in the Standing Group on Long-Term Co-operation (SLT), and closely interacted with the IEA secretariat in part owed to the geographical proximity to the organization's headquarters. Interest of France in the IEA has also grown because of the climate conference COP21, to which the IEA has contributed more compared to previous COP summits (Interview 74). Germany provided the chair for the Standing Group on Global Energy Dialogue (SGD) and can be characterized as unique in its commitment to IEA's budget. The dynamics that follow processes of adaptation and learning in reaction to ongoing changes in the international environment are also reflected in the IEA's evolving positions on climate change. This evolution has, according to one account, influenced climate negotiations positively as the secretariat shifted towards promoting the 2°C goal through energy transitions, which made it more receptive to coordinating with members and non-members in this area (Interview 42).

Germany's ties to IRENA contribute to closer cooperation with the IEA in the field of energy efficiency, where the two organizations work together (Interview 74). It was suggested that Germany is much more active in IRENA than France and the UK, potentially owed to its role in establishing the organization (Interview 19, 29).

Coordination between IRENA's secretariat and national administrations has become broader and closer, e.g., the list of contacts with Germany has widened since the responsible administrative unit has moved from the environment to the energy ministry. Additionally, there is now a diplomatic mission in place (Interview 19, 29). In this context, instruments such as consultations and knowledge transfer from the national to the international level go hand in hand with internal learning processes within the IRENA secretariat, which is then fed back to the member states (Interview 19, 29). Canada was not a member of the organization during the interview period and was reluctant to engage under the former conservative administration. Therefore, coordination efforts have been rather scarce, although analysis of Canada has been conducted by IRENA (Interview 9, 19, 29). Yet, the secretariat's interactions and coordination efforts are driven by top management according to one account, characterized as both outside-in (agile, moving towards implementation), and inside-out (avoiding specific activities and being active across technologies). At the same time, international developments have apparently not changed the medium-term strategy of IRENA, and the growing importance of climate change has led to an expansion of its activities and interactions (Interview 19, 29).

Engagement with DG ENER's coordination unit also depends on the interaction context. France has been characterized as a 'very formal' member strictly following established procedures, and French administrators are said to refrain from exerting much influence particularly in informal situations. This, however, does not apply to working parties where the country's representatives are much more active (Interview 45). According to another account, the extent of formality has decreased over time after communication was channelled through the energy attaché (Interview 50). Likewise, French representatives have become more active and committed to renewable energy under former energy minister Royal, illustrated by the country's good implementation record (Interview 43). Yet, it has been noted that French administrators tend to struggle with leaving behind their national perspective, which stands in contrast to German personnel (Interview 38). Representatives from the UK have been described as less active in part due to internal discussions about their relationship with the EU and their lack of a comprehensive energy transition law (Interview 47). In contrast, UK's administrative interactions with DG ENER's coordination unit were described as highly active, representing their official position in a formal fashion while readily discussing any topic, yet rather informal at the margins (Interview 45, 55). However, the UK constitutes a special case due to its isolated position as an island (Interview 32). Germany's administration seems to fall in between—rather formal but not strict or heavily dependent on the person involved in the process in hand (Interview 45). Moreover, German representatives tend to offer personal opinions on a given topic (in addition to their official position), while this is rare in the case of France (Interview 55). According to one interviewee, multilevel coordination in energy has been strengthened overall since energy policy was integrated into the Federal Ministry of Economic Affairs and Energy, while DG ENER's influence was more focused on agenda setting and promoting certain issues (Interview 33). Finally, interactions with member states also depend on national structures and processes. France has been improving internal coordination in the energy sector including processes of communication between different units and

ministries and sending more administrators to Brussels to take part in shaping its energy transition (Interview 47). Both France and Germany have also been increasing their financial and personnel efforts within DG ENER, despite already contributing heavily (Interview 47), while Germany somewhat dominated staff (Interview 76, 77) and policy positions (Interview 75) within the DG.

3.6 Personal networks

Sixth, *personal networks and established contacts are important*, both for the IEA and the European Commission (Interview 53, 54, 60, 61). Subsequently, the fluctuation of staff at the working level sometimes leads to a complete reset of interactions, potentially increasing conflicts due to the lack of routines that form the basis of administrative interactions across governance levels. Staff fluctuation makes coordination more difficult even in the absence of other changes (Interview 61), which depending on the new inter-personal dynamics can affect the use of certain instruments. For one, less interactions in the case of a *problematic* new inter-personal contact can lead to a decrease in consultations, assistance, and voluntary cooperation at the working level. To give an example, a situation was mentioned where cooperation between a European Commission administrator dealing with energy cooperation and their national counterpart was silent for two years because of a personal dispute (Interview 61). For another, an increase in cooperative and persuasive instruments can result from eased interactions where a *good* working relationship has been established after a period of tensions. In the quest to solve problems between administrative levels, people are the last link with whom solutions can be achieved bilaterally (Interview 54, 76), especially in cases where lack of information or understanding stands in the way of reaching agreements. In the latter situation, bilateral talks at the margins and in between meetings become important to clarify positions and problems, subsequently leading to the dissolution of blockages as has been reported for the Electricity cross-border committee as part of the EU's comitology system (Interview 76). Personal links play an important role for coordination as they can fundamentally affect dynamics, at times owed to well-liked personalities (Interview 64).

Even in complex MLA systems like the Commission's, supranational and national staff know each other's list of contacts and specific people to talk about details of relevant issues. Secretariats are thus not usually contacted within existing networks (Interview 54). In addition, coordination with non-member administrations can be more difficult depending on other conditions such as administrative culture (Interview 61). Adapting to this situation requires institutional learning on both sides to reach a common approach to interaction. Broadly speaking, the evolution of administrative coordination includes a learning curve of changing relationships between the individuals involved, thus stressing the importance of the *human component* in processes of incremental change (Interview 21). Relationships between the working and higher levels also depend on personal relationships in conjunction with issue sensitivity. Political escalation in the Commission is therefore usually restricted to important issues and facilitated by good relationships with the contact person. However, bringing issues of concern to higher-level (but non-political) attention can help

administrators when problems are discussed constructively. For example, one interviewee mentioned a working-level case where a Commission coordinator mediated between representatives from France and Spain, involving the head of unit and director (Interview 54). Regarding Commission staff within IEA forums, personalities have become even more relevant because the Lisbon treaty specifies that they represent the EU as a whole and no longer the Commission alone (Interview 60). When it comes to fluctuations within the IEA secretariat and their national counterparts, networks of contacts carry over from a position to another, potentially easing transitions and thereby adding to the internal dynamics of coordination (Interview 1).

3.7 High-level changes

Seventh, *changes at the political (or high-level administrative) level* can exert considerable influence on administrative coordination and lead to immediate differences (Interview 56). A new leadership, e.g., in the context of a new Commission, can implement different approaches and sets of priorities, implying new perceptions and modifications of work structures with the potential to significantly alter the direction of an organization. While member-state interests remain crucial (Interview 9), new approaches to coordination across governance levels may still emerge (Interview 53, 56, 61, 76). The former Juncker Commission serves as an example, illustrated by a focus on “the big picture of the Energy Union” (Interview 62) while at the same time reducing smaller initiatives. Regarding the IEA, the former Executive Director introduced various changes in the 2010s, especially a stronger focus on technology issues while reducing politicization throughout the organization, specifically regarding the secretariat (Interview 36). Furthermore, a strengthened policy of open doors towards non-members was characterized as a natural but iterative policy evolution, fully supported by the secretariat and the member states (Interview 9), whereas relationships with non-members in the 1990s were viewed as *raw* (Interview 21). While their long-term impact is not yet clear, such processes of layering reflect changes both in policy substance and coordination approach, which has already led to additional interaction channels between the IEA and its members (Interview 9, 60).

Problems can arise when difficult personalities in high positions create a problematic working atmosphere at the lower administrative level as has been argued for France (Interview 73), where high staff fluctuation and a lack of replacements have impeded smooth coordination with Commission staff (Interview 75). This points to the importance of individuals and personal contacts in administrative coordination and the influence they can yield in terms of basic availability for coordination efforts as well as the underlying dynamics (Interview 73). Fluctuations of staff members and personnel at all administrative levels can be regarded as the most relevant change in terms of day-to-day work, particularly when experienced staff leave without transition periods. In such cases, files can even be closed or lose their priority if they become the head of unit’s responsibility in case no replacement personnel exist, e.g., due to budget constraints, as was reported by one account for the *Direction générale de l’énergie et du climat* in France (Interview 75).

Changes in government can also revitalize relationships between national and international administrations, subsequently fostering a re-emergence of coordination. Regarding Canada's relationship with the IEA, the change from a conservative to a liberal government in 2015 has led to new and almost daily ad-hoc contacts, renewed engagement in country reviews, IEA staff contacts to provincial administrations, more calls, and visits (Interview 67). The IEA secretariat was asked to comment on Canada's new energy policies, started to act as an adviser on R&D policy and help improve regional and national data reporting. A renewed focus on the provinces has also shifted interactions to some extent because inconsistencies in data structure required new interactions between the IEA staff and regional actors (Interview 74). Due to their strong influence on energy policy, new interactions with the upper government and international level were seen as a likely consequence in case the federal government adopted a new approach (Interview 2). Moreover, government guidelines on how its own administration operates also influences the evolution of coordination and the use of instruments. In Canada, the former administration was said to push the government line down to the staff level, which had a profound impact on involvement and the number of interactions at the working level within NRCAN (Interview 5). Informal coordination types such as consultations and assistance were particularly restricted compared to a more proactive approach to international involvement. Yet, a general trend towards more ad hoc contacts and requests can be observed over time despite these developments. While the situation at the beginning of the 1990s has been characterized as devoid of any ad hoc contacts and as scarce in 2004, they are ubiquitous nowadays (Interview 31). Intergovernmental relations in Canada, i.e., contacts between the regions and the federal government, have thus become less formalized since the 1990s, allowing for greater informal coordination. Overall, municipalities and non-state actors in Canada are involved in a complex MLA system that is accompanied by a great deal of coordination activities and actors whose personalities and evolving role matter, which in turn can lead to regulatory capture (Interview 8; see MacLean 2016).

4 Dynamics of multilevel administration as layering processes

The empirical data show that *different types of layering* constitute one, if not the central mode of change in the dynamics of multilevel administrative coordination in energy (transition) policy. Interactions between administrators across governance levels are embedded in multilevel systems that function as two-way streets with processes of up- and downloading. Their evolution can be tied to at least three distinct types: first through layering of coordination instruments, where new instruments or different forms or variations of instruments are added to existing processes of interaction between administrators as the main change agents in MLA systems. Second, layering could also be observed as an increase in formal and non-formal interactions through an increasing number of channels and complexity of interactions over time. This is owed to the growing importance and complexity of energy policy and energy transition issues as part and in addition to the climate change debate, nationally and beyond the nation state. Moreover, the addition of new member states to the EU and

closer ties of international organizations like the IEA to members and non-members alike further contributed to this type of layering. Third, layering of inter-administrative relationships occurred more specifically through the growing importance of personal networks and the creation of contacts between administrators at different levels. While the establishment of new network connections and the intensification of existing ones constitute additional processes of layering, staff fluctuations and conflicts between individual actors can interrupt, delay, or change administrative coordination. This in turn increases interaction complexity and makes coordination more dynamic over time.

Such processes of layering can be influenced by events in part or fully external to the underlying interactions. Semi-external conditions like high-level administrative or political changes can directly or indirectly affect coordination and alter its dynamics both qualitatively and quantitatively. External shocks and crises (e.g., the 1970s and 2000s oil crises), but also slowly evolving external processes (e.g., technological advancements and the growing importance of renewable energy sources as part of energy transitions) are exogenous influences, which either lead to an (often temporary) increase in interactions or to longer-lasting structural changes that can affect coordination. This happens mainly in two ways: first, substantive shifts in energy policy facilitate layering in several ways, from new networks and interactions to additional (types of) instruments. Second, technological advancements add instruments and other ways of coordination and increase the amount and complexity of interactions.

5 Conclusion

Energy policy beyond the nation state constitutes a highly dynamic area of multilevel governance that has gained traction with the growing importance of transitions to renewable and sustainable energy systems. At the core of multilevel energy governance lie interactions between administrators at different levels and their dynamics. Understanding these processes conceptually and empirically is a crucial part of the wider research on energy (transition) policy. This contribution seeks to gain insights into the underlying processes by asking which conditions account for the change over time in coordination between administrative actors in energy-related MLA systems. Conceptually, multilevel energy administration can be understood as the coordination and dynamics of (sub-)national, supra- and international administrators. Starting from the historic and discursive variants of institutionalist theory, administrative actors are conceptualized as the main agents of endogenous change, i.e., the actors who are mainly responsible to bring about change in their interactions with other administrators across territorial levels of governance. They do so in the mode of institutional layering, i.e., by adding new forms of interaction to their existing repertoire. Administrative change agents, however, do not act in a vacuum. Two types of exogenous influences affect the change of coordination over time. First, external shocks can influence administrative interactions, e.g., changes in leadership of the natural resources ministry in Canada led to a new and more cooperative interaction style at the working level. Second, gradual developments may lead to slow

shifts in systems of multilevel administrative coordination, e.g., the shift in importance of renewable energies that led the IEA to pursue new avenues of coordination, including additional forms of assistance in the context of energy data monitoring.

The findings from the empirical study show that the initial hypothesis as drawn from the theoretical literature, i.e., that institutional layering should occur mainly as a trend towards persuasive coordination instruments, captures only one aspect of how administrative coordination changes over time. Empirically, the evolution of administrative coordination in energy policy can be observed as different types of layering as detailed in the previous section: first, layering of coordination instruments; second, layering as an increase in formal and non-formal interactions; and third, layering of inter-administrative relationships. Indeed, such processes affect all aspects of coordination, most notably the involvement of and relationships between administrative actors at different levels of governance. Various endogenous and exogenous conditions could be identified in the expert interviews, impacting both the (macro-)frame in which coordination happens and the (micro-)context of specific interactions. Legally non-binding cooperative and persuasive instruments play an important role for the dynamics of coordination and the different types of layering. However, their evolution is embedded in MLA systems that depend on several conditions like the complexity and complementarity of coordination instruments, the amount and intensity of interactions as part of a two-way street, the relationships between individual actors, the consequences of policy and technological advancements, shocks and crises, and changes at high administrative or political levels.

This study advances research on multilevel governance of energy policy and energy transitions by providing in-depth empirical insights into how inter-administrative relationships and dynamic processes of coordination change over time, the different forms of institutional layering as the modes in which these developments occur, and the endogenous and exogenous conditions that affect these processes. Future research requires, for one, a detailed investigation of specific multilevel processes of energy transitions (specification) and, for another, cross-policy comparisons of processes of administrative coordination (generalization).

Electronic supplementary material The online version of this article (<https://doi.org/10.1007/s41358-022-00321-7>) contains supplementary material, which is available to authorized users.

Funding Part of the research leading to these results received funding from the *Deutsche Forschungsgemeinschaft* (DFG) under Grant Agreement No BE 1667/13-1.

Funding Open Access funding enabled and organized by Projekt DEAL.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Abbott, Kenneth, Philipp Genschel, Duncan Snidal, and Bernhard Zangl. 2015. Orchestration: global governance through intermediaries. In *International organizations as orchestrators*, eds. *ibid*, 1–36. Cambridge: Cambridge University Press.
- Barcevičius, Egidijus, J. Timo Weishaupt, and Jonathan Zeitlin (eds.). 2014. *Assessing the open method of coordination: institutional design and national influence of EU social policy coordination*. Basingstoke, New York: Palgrave Macmillan.
- Baumgartner, Frank R., and Bryan D. Jones. 1993. *Agendas and instability in American politics*. Chicago, London: University of Chicago Press.
- Benz, Arthur. 2015. European public administration as multilevel system administration—a conceptual framework. In *The European administrative system*, eds. Michael W. Bauer, Jarle Trondal, 31–37. New York: Palgrave Macmillan.
- Benz, Arthur. 2017. Kommunikative Verwaltungsbeziehungen zwischen Staaten und internationalen Organisationen – Zur Konstitution von Verwaltungsherrschaft jenseits des Staates. *dms* 10(2):211–227.
- Benz, Arthur, Andreas Corcaci, and Jan W. Doser. 2016. Unravelling multilevel administration. Patterns and dynamics of administrative co-ordination in European governance. *Journal of European Public Policy* 23(7):999–1018.
- Benz, Arthur, Andreas Corcaci, and Jan W. Doser. 2017. Multilevel administration in international and national contexts. In *International bureaucracy: challenges and lessons for public administration research*, eds. Michael W. Bauer, Christoph Knill, and Steffen Eckhard, 139–166. Basingstoke, New York: Palgrave Macmillan.
- Bulmer, Simon, David Dolowitz, Peter Humphreys, and Stephen Padgett. 2007. *Policy transfer in the European Union: regulating the utilities*. London: Routledge.
- Capano, Giliberto. 2019. Reconceptualizing layering—from mode of institutional change to mode of institutional design: types and outputs. *Public Administration* 97(3):590–604.
- Capoccia, Giovanni, and R. Daniel Kelemen. 2007. The study of critical junctures. Theory, narrative, and counterfactuals in historical institutionalism. *World Politics* 59(3):341–369.
- Cioffi-Revilla, Claudio. 1998. *Politics and uncertainty: theory, models and applications*. Cambridge: Cambridge University Press.
- Egeberg, Morten (ed.). 2006. *Multilevel union administration: the transformation of executive politics in Europe*. Basingstoke, New York: Palgrave Macmillan.
- Florini, Ann. 2011. The International Energy Agency in global energy governance. *Global Policy* 2(s1):40–50.
- Grande, Edgar, and Martina McCowan. 2015. The two logics of multilevel administration in the EU. In *The Palgrave handbook of the European administrative system*, eds. Michael W. Bauer, Jarle Trondal, 48–65. Basingstoke, New York: Palgrave Macmillan.
- Hall, Peter A., and Rosemary C.R. Taylor. 1996. Political science and the three new Institutionalisms. *Political Studies* 44(5):936–957.
- Heidbreder, Eva G. 2015. Multilevel policy enforcement: Innovations in how to administer liberalized global markets. *Public Administration* 93(4):940–955.
- Helm, Dieter. 2014. The European framework for energy and climate policies. *Energy Policy* 64:29–35.
- Hooghe, Liesbet, and Gary Marks. 2001a. *Multi-level governance and European integration*. Lanham: Rowman & Littlefield.
- Hooghe, Liesbet, and Gary Marks. 2001b. Types of Multi-Level Governance. *European Integration online Papers* (EIoP) 5(11):1–24. <http://eiop.or.at/eiop/texte/2001-011a.htm>.
- Jordan, Andrew J., and Duncan Liefferink (eds.). 2004. *Environmental Policy in Europe*. London: Routledge.
- Kemmerzell, Jörg. 2022. Energy governance in Germany. In *Handbook of energy governance in Europe*, eds. Michèle Knodt, Jörg Kemmerzell. Cham: Springer.
- Knodt, Michèle, Marc Ringel, and Rainer Müller. 2020. ‘Harder’ soft governance in the European Energy Union. *Journal of Environmental Policy & Planning* 22(6):787–800.
- MacLean, Jason. 2016. Striking at the root problem of canadian environmental law: identifying and escaping regulatory capture. *Journal of Environmental Law and Practice* 29:111–128.
- Mahoney, James, and Kathleen Thelen. 2010. A theory of gradual institutional change. In *Explaining institutional change. Ambiguity, agency, and power*, eds. *ibid*, Agency, and Power, 1–37. Cambridge: Cambridge University Press.

- Olsen, Johan. 2003. Towards a European administrative space? *Journal of European Public Policy* 10(4):506–531.
- Pierson, Paul. 2004. *Politics in time. History, institutions and social analysis*. Princeton: Princeton University Press.
- Schickler, Eric. 2001. *Disjointed pluralism: institutional innovation and the development of the U.S. Congress*. Princeton: Princeton University Press.
- Schmidt, Vivien A. 2010. Taking ideas and discourse seriously: explaining change through discursive institutionalism as the fourth 'new institutionalism'. *European Political Science Review* 2(1):1–25.
- Seawright, Jason, and John Gerring. 2008. Case selection techniques in case study research: a menu of qualitative and quantitative options. *Political Research Quarterly* 61(2):294–308.
- Shelton, Dinah (ed.). 2000. *Commitment and compliance. The role of non-binding norms in the international legal system*. Oxford: Oxford University Press.
- Steinmo, Sven, Kathleen Thelen, and Frank Longstreth. 2008. *Structuring politics: historical institutionalism in comparative analysis*. Cambridge: Cambridge University Press.
- Streeck, Wolfgang, and Kathleen Thelen. 2005. Introduction: institutional change in advanced political economies. In *Beyond continuity. Institutional change in advanced political economies*, ed. ibid, 1–39. Oxford: Oxford University Press.
- Szulecki, Kacper, Severin Fischer, Anne Therese Gulberg, and Oliver Sartor. 2016. Shaping the 'Energy Union': between national positions and governance innovation in EU energy and climate policy. *Climate Policy* 16(5):548–567.
- Thelen, Kathleen. 1999. Historical Institutionalism in comparative politics. *Annual Review of Political Science* 2(1):369–404.
- Trondal, Jarle. 2015. The European administrative system reassessed. In *The Palgrave handbook of the European administrative system*, eds. Michael W. Bauer, Jarle Trondal, 482–505. Basingstoke, New York: Palgrave Macmillan.
- Trondal, Jarle, and Michael W. Bauer. 2017. Conceptualizing the European multilevel administrative order: capturing variation in the European administrative system. *European Political Science Review* 9(1):73–94.
- Trondal, Jarle, and B. Guy Peters. 2013. The rise of European administrative space: lessons learned. *Journal of European Public Policy* 20(2):295–307.
- Weber, Max. 1980. *Wirtschaft und Gesellschaft. Grundriß der verstehenden Soziologie*, 5th edn., provided by Johannes Winckelmann. Tübingen: Mohr Siebeck.
- Wessels, Wolfgang. 2003. Beamtengremien im EU-Mehrebenensystem: Fusion von Administrationen? In *Europäische Integration*, 2nd edn., eds. Markus Jachtenfuchs, Beate Kohler-Koch, 353–383. Opladen: Leske + Budrich.