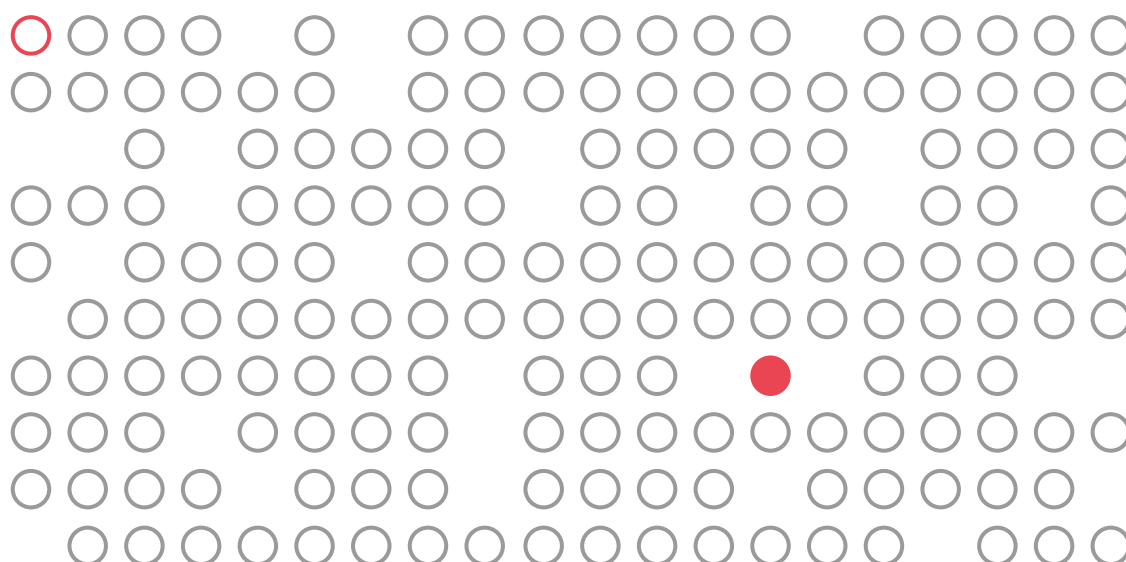

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From Market to Municipality

ELECTRICITY GRID REMUNICIPALIZATION AND
GERMAN LOCAL POLITICS IN THE 2010S

Thorsten Reppert, M.A., University of Bamberg



BAMBERG
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Thorsten Reppert, M.A.

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*In tiefer Dankbarkeit
für meine Mutter
und meine Oma.*

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Abstract

In recent years, the remunicipalization of essential services has gained momentum as a counter-trend to previous privatization efforts. This reversal has been particularly examined in the public and academic debate through the lens of the German energy sector. However, there is ongoing disagreement about the factors driving this supposed shift from private to public ownership. This dissertation contributes to the discussion by contributing three studies focused on Germany's local electricity grids. Their findings suggest that remunicipalization follows a functionally driven and limited trajectory rather than a politically motivated, grassroots-based transformative shift.

In doing so, this dissertation makes several key contributions to the broader research field. By compiling a novel and comprehensive dataset on the ownership of electricity distribution grids in Germany, it enables for the first time a quantitative analysis of public versus private ownership patterns within the country. The results indicate that private ownership remains dominant, with only a cautious return to public control. Additionally, an analysis of the influence of local political party strength shows that institutional, financial, and economic context factors play a more significant role in remunicipalization decisions than political affiliation. This conclusion is further supported by case studies of three municipalities, which highlight cross-ideological compromises as a crucial factor for successful remunicipalization.

By integrating quantitative and qualitative methods, collecting primary data, examining cases beyond major metropolitan areas, and considering both political and contextual economic factors, this dissertation addresses several gaps in prior research. The results suggest that previous interpretations of remunicipalization as a grassroots-driven transformation may stem from these limitations, giving only a limited picture of the overall trend.

Beyond its academic contributions, this research also provides valuable insights for practitioners, offering guidance for future decision-making. Furthermore, it touches on the broader debate about the relationship between state and market, particularly in the context of the energy transition, the aftermath of the global financial crisis, and ongoing disruptions in trade and security. The dissertation remains skeptical about whether local initiatives alone can drive a fundamental shift in the role of the public sector. Instead, it implies that remunicipalization is largely a functional adjustment process, shaped by national and global political developments. As such, it remains open whether current global developments will lead to a sustained pendulum swing back to public ownership at the local level and beyond, necessitating additional research on the topic.

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1 Introduction

The foundation of everyday life—rooted in culture, work, and community—relies on the seamless functioning of essential services like energy and water supply, waste management, and public transportation. Over the last half century, responsibility for many such services has increasingly shifted into private hands, often driven by hopes for greater efficiency and lower costs. Today, however, public services are once again at the center of political and societal debates. Since the turn of the century and especially in the aftermath of the 2008 financial crisis, the remunicipalization of public services—the process of returning privatized services to municipal control—has emerged as the latest trend in the landscape of service provision (Röber 2012, 84; Engartner 2016, 229; Schäfer 2020, 234).

Worldwide, a growing number of cities are reclaiming control over services like electricity and water (Kishimoto and Petitjean 2017, 11–12). This trend is intertwined with ongoing public discussions about climate change, decarbonization, and the energy transition (Kersting and Roth 2017, 1154; Schwarting 2021, 278). Scholars in the field have compared this dynamic to a pendulum swinging between private and public ownership (Hall, Lobina, and Terhorst 2013, 193–95), reflecting changing priorities and responses to evolving challenges in providing essential infrastructure.

However, interpretations of what drives this latest shift from private to public ownership vary widely across academic literature and public discourse. Broadly, two contrasting perspectives persist: one views remunicipalization as a bottom-up paradigm shift away from the neoliberalism of the past four decades (Wagner and Berlo 2015, 560), while the other considers it a primarily pragmatic decision, driven by goals of market efficiency and cost minimization (Clifton et al. 2021, 6). As such, the broader question, explored both in political science literature and public discourse, is what defines this shift back towards municipal ownership and the conditions under which it occurs? In this context, this dissertation seeks to offer a modest yet meaningful contribution to the larger research question:

What factors and dynamics drove the remunicipalization of utilities in the 2010s?

By examining the remunicipalization of electricity grids in German municipalities in the 2010s, this thesis contributes new evidence to this broader discussion, with its findings aligning more closely with the second interpretation of the shift. Specifically, it finds—through both qualitative and quantitative approaches—that financial, economic, and administrative circumstances are key factors influencing remunicipalization. By contrast, the strength of individual political parties is less influential than inter-party cooperation, indicating a more consensual approach to

policymaking. The capacity to find consensus is shaped by agreement on the economic upsides and the administrative capacity of municipalities to remunicipalize their electricity grids. Both of these factors are more helpful in explaining the variation in remunicipalization than differences in partisan ideology and strength of political parties at the local level.

By exploring the drivers of remunicipalization, this dissertation engages with larger questions about the governance of essential services. Generally, the debate about ownership of infrastructure draws attention to the role of state actors, private enterprises, and market mechanisms in the provision of essential goods. Particularly in the context of expanding renewable energy, questions arise about which approach better serves public interests. Proponents of privatization argue that market-driven models are more efficient and cost-effective (Letza, Smallman, and Sun 2004, 159–60). Critics, however, emphasize the need for public accountability and a commitment to the common good, which they see as lacking in private enterprises (Beveridge and Naumann 2014, 281; Sack 2014, 346).

This discussion brings to light a key topic in political economy: the balance between market and state. The conflict over whether public administration or private companies should deliver certain services has long been a subject of political contention. Policy researchers have analyzed numerous factors like functionalism, partisan interests, and globalization to explain the shifts of infrastructure ownership between public and private hands (see Sections 2 & 4).

Yet, as the term suggests, remunicipalization also has a distinct local dimension that has to be considered. Unlike national governance, local politics operates under unique conditions that have been mainly explored by public administration scholars (see Ruge and Ritgen 2021). This means that the financial and institutional framework for political actors, especially political parties, is different from its upper-level counterparts (see Section 5). Yet, the decentralization of energy infrastructure, driven by the rise of renewable energy sources, has amplified the importance of local governments in energy provision (Drewello 2022, 11–12).

While municipalities play a crucial role in delivering the public services essential for everyday life, the ownership of these services at the local level has received comparatively less attention from researchers than at the national level (Fitch 2007, 590; Sack 2019, 101). Similarly, remunicipalization—the return of services to municipal ownership—has been studied far less extensively and rigorously than the opposite swing of the pendulum—privatization (Matecki and Schulten 2013, 12; Gradus and Budding 2020, 540).

As a consequence, the existing research on remunicipalization presents mixed and often inconclusive results. Variations in methodology and definitions have led to divergent interpretations of similar phenomena, including disagreement about whether remunicipalization stems from

different ideological perspectives and partisan goals (Albalade, Bel, and Reeves 2024, 666; Voorn, van Genugten, and van Thiel 2021, 307–8). Within the existing literature, the German energy sector has been a focal point for studying the trend of reversing privatizations at the local level (Clifton et al. 2021, 297). Germany's cities and municipalities played a key role in establishing energy infrastructure during the late 19th and 20th centuries, closing service gaps by constructing municipal power plants (Canzler and Knie 2009, 103; Menges and Müller-Kirchenbauer 2012, 59). This led to a tradition of strong and long-established municipal utility companies—the so-called *Stadtwerke*.

However, its electricity sector has experienced significant privatization and remunicipalization since the 1980s (Sack 2019, 172; Becker 2017, 117)—more so than sectors like water supply or waste management, which have largely remained municipal (Röber 2012, 87). One factor driving this pattern was the energy transition debate that intensified after the Fukushima nuclear disaster in the early 2010s (Fuchs et al. 2012, 24). This coincided with the expiration of many electricity grid contracts, creating an opportunity for municipalities to reconsider ownership and grid operations (Berlo, Schäfer, and Wagner 2022, 97).

However, existing studies on remunicipalization in Germany remain subject to criticism (see Section 4). Much of the research focuses on high-profile cases like Berlin and Hamburg or adopts largely narrative-driven approaches (Voorn, van Genugten, and van Thiel 2021, 312–13; Gradus and Budding 2020, 540). While these studies provide valuable insights into specific examples, they offer less understanding of the processes in smaller towns and rural communities, where policy-making is less professionalized and differs strongly from national-level dynamics. There is also a lack of precise data on the extent of public versus private ownership of local electricity grids and a need for quantitative analyses of the factors influencing remunicipalization in Germany (Lormes 2016, 103).

As on the international level, many questions remain unanswered about the factors driving the remunicipalization of electricity grids in Germany and the nature of this trend. Is it primarily a pragmatic shift within the German municipal economy, or is it shaped by party-political objectives? Furthermore, little is known about the overall number of remunicipalization projects and the specifics of the transition from private to municipal ownership (Sack 2019, 325; Lormes 2016, 103; Matecki and Schulten 2013, 12; Libbe 2021, 304). This dissertation aims to shed light on these issues by examining the remunicipalization of local electricity grids in Germany, offering a focused contribution to the broader understanding of this phenomenon. To this end, this thesis is based on three specific articles, guided by the following questions:

How is ownership of local electricity grids in Germany divided between public and private entities?

Does party ideology at the local level influence the remunicipalization of electricity grids?

Under what local conditions do municipalities in Germany remunicipalize their electricity grids?

By integrating perspectives from political economy, local governance, and public administration, this research enhances our understanding of remunicipalization processes in Germany. First, by introducing novel data, it provides for the first time a complete overview of the extent of privatization and remunicipalization in the electricity sector. This analysis reveals that non-municipal grid operators continue to dominate the market, with public ownership of electricity grids primarily prevalent in larger cities and in the industrialized southwest of Germany.

Second, by examining the influence of political parties, it highlights that party strength and ideology do not significantly influence the likelihood of remunicipalization and instead points towards other factors being more pertinent—such as economic, financial, and institutional circumstances. In doing so, it contributes to the ongoing debate in international literature while also offering fresh insights into Germany, a country-case that has yet to be thoroughly explored through quantitative analysis.

Third, interview-based qualitative studies of smaller cities and towns explore remunicipalization processes, complementing quantitative analysis through a detailed look into decision-making and implementation dynamics while also focusing on medium-sized cities not previously studied. These cases provide valuable insights into the process, highlighting the significant influence of private energy companies as well as the critical role of financial and technical feasibility, as emphasized by the political actors interviewed. Additionally, the findings underscore the necessity of achieving a broad consensus among all stakeholders.

Together, the three contributions complement each other methodologically, providing a comprehensive overview of the remunicipalization of electricity grids. By employing both qualitative and quantitative approaches, they address the methodological divide that has emerged along the different perspectives within international literature, allowing for a more nuanced and well-rounded assessment of the remunicipalization trend discussed in German literature (Voorn, van Genugten, and van Thiel 2021, 307–8). In doing so, this dissertation suggests that previous findings, which, in contrast to this research, point to a more ideological process, could be the result of a disproportionate focus on prominent cases such as Berlin and Hamburg, as well as a lack of reliable and comprehensive quantitative data.

This dissertation demonstrates that remunicipalization is not merely the opposite of privatization but faces unique challenges, especially additional technical and legal hurdles that influence how administrative capacity and financial resources factor into decision-making. While the research reveals many parallels to the factors influencing privatization and state interventionism at higher levels of government, it also highlights a key difference at the local level: a stronger tendency to reach consensus across party lines, which remains more pronounced than in national politics. Finally, by combining a large-N quantitative analysis of German municipalities with qualitative studies of medium-sized cities and smaller communities, this work captures the diversity of contexts across Germany, including differences not only between urban and rural areas but also between East and West Germany.

This research could be especially valuable as Germany approaches the early 2030s. This period will see major transitions as the country plans to phase out coal-based electricity, to rely heavily on renewable energy, to decarbonize industrial processes, to replace combustion-engine vehicles with electric ones, and to warm up buildings using heat pumps (Fraunhofer ISI, Öko-Institut e.V., and Prognos AG 2021). Local electricity grids will play a pivotal role in supporting these transformations (Drewello 2022, 11–12). At the same time, many existing grid contracts will again expire, creating another window of opportunity to revisit the question: Should local electricity grids be operated by private entities or municipal governments?

This research aims to contribute to this debate by providing outlooks into the municipal decision-making processes and offering guidance for policymakers navigating these critical choices. With similar processes unfolding globally and many governments committed to achieving a net-zero economy, this research provides novel insights for practitioners both within and beyond Germany, as well as for scholars interested in public services, energy transitions, and local governance.

2 Private and Public Ownership of Infrastructure

The question of whether infrastructure in modern economies should be organized under public or private ownership is closely linked to its historical development over the past 150 years. Initially, key systems such as electricity and water networks, railways, and telegraph lines were established by private investors. However, in most Western societies, by the start of the 1900s, these infrastructures were soon taken over by the state and expanded nationally (Millward 2009, 15–17; Bognetti 2020, 27). As such, municipal governments quickly assumed a vital role, particularly in the provision of water, electricity, and gas (Wollmann 2020, 48–49; Albaladejo, Bel, and Reeves 2020, 570).

The reasons decision-makers back then favored public ownership of these services were manifold. Fiscal considerations were one factor, but issues of scalability and the promotion of economic development in modern nation-states and industrial economies also played a key role. Urban expansion, driven by industrialization, presented new challenges, necessitating the construction of modern water and electricity grids to support this societal transformation. At the same time, connecting regions through infrastructure such as railways and telegraph systems became a central task in establishing the authority of emerging nation-states across their territories (Millward 2009, 25–30; Bognetti 2020, 28–30; Albaladejo, Bel, and Reeves 2020, 570–71).

Additionally, infrastructure-based services were often regarded as natural monopolies requiring significant capital investment. Especially in Europe, public ownership was extended to reduce reliance on indirect legislative influence, but also to enable direct control of these essential services in critical situations like wartime (Obinger, Schmitt, and Traub 2016, 10–11; Clò 2020, 94). Finally, the rise of the labor movement added an ideological dimension to the issue. Left-wing parties, following socialist theory and committed to the idea of common goods, championed state-owned enterprises (Obinger, Schmitt, and Traub 2016, 17–18). By contrast, advocates of laissez-faire capitalism continued to prefer private ownership as the ideal model for effectively managing such services (Bognetti 2020, 25–26).

State interventionism reached its peak in the aftermath of the Second World War, the so-called *Trente Glorieuses* (Zohlnhöfer, Engler, and Dümig 2018, 535). Under the banner of wartime economies, numerous states significantly expanded their role in the provision of goods, even outside the core areas of public services described above, only to gradually scale it back thereafter (Bognetti 2020, 30–35). From the 1970s and 1980s onwards, however, core areas of public infrastructure—such as energy, railways, postal and telecommunications services, and water networks—were increasingly privatized as part of a broader neoliberal economic shift (Bellini 2000, 27–29).

Yet, the trend was far from uniform across countries and sectors. The shift towards, and the extent of, public ownership was closely tied to the restructuring of local governments, encapsulated by the concept of New Public Management. Its goal was to make local administrations operate more like private enterprises (Andrews et al. 2020, 482). Consequently, numerous municipal services were outsourced to newly established companies outside municipal administrations or even transferred from public to private ownership, a trend that persisted into the 2000s (Albalade, Bel, and Reeves 2020, 571–72).

Arguments against public ownership were largely the inverse of those supporting it. Proponents of privatization viewed public enterprises as inefficient, costly, and fiscally unsustainable (Letza, Smallman, and Sun 2004, 159–60; Bognetti 2020, 35). After the oil price shock and sustained stagflation, public finances were under significant strain, prompting many decision-makers at local and national levels of government to seek additional revenue through the sale of public assets (Bognetti 2020, 36–37).

The collapse of the Soviet Union and the Eastern Bloc provided additional arguments against active state interventionism as a successful model (Obinger, Schmitt, and Traub 2016, 25). Moreover, conservative parties increasingly embraced market-driven solutions, prioritizing policies that emphasized the role of markets over the role of the state (Zohlnhöfer, Obinger, and Wolf 2008, 96; Bellini 2000, 34). Summed up, public ownership was no longer ideologically fashionable, nor did it appear as functionally indispensable as it had been during the initial development of modern public services (Fink 2011, 116; Bellini 2000, 27). Globalization and increasing market integration—particularly within Europe—further amplified this pressure to adapt (Bognetti 2020, 37; Obinger, Schmitt, and Traub 2016, 24–25).

Prime examples of the privatization of infrastructure and crucial services can be seen in sectors such as rail transport, aviation, telecommunications, and postal services—key pillars of the publicly owned infrastructure landscape in the postwar period (Obinger, Schmitt, and Traub 2016, 21). The sale of British Rail and British Telecom, but also the eventual privatization of Royal Mail, serves as a key illustration of this trend (Parker 2009, 240–65, 2013, 434–65, 2014). However, similar privatizations took place beyond the UK, including in Germany during the 1990s. In some cases, this was merely a legal process without control changing hands—such as with Deutsche Bahn—while in others, a majority of shares were sold, effectively transferring control to private entities, as seen with Deutsche Post and Deutsche Telekom (Sack 2019, 158; Zohlnhöfer 2001, 314–64). Variations of these approaches have been implemented in other advanced economies and developing countries as well (see Parker and Saal 2003). In many regions, such as the United States, this shift towards outsourcing and private provision also encompassed a variety of social and healthcare

services as well as security and law enforcement assistances (Morgan and Campbell 2011, 220–24; Verkull 2007, 1–18; Krahmann 2011).

Similarly, privatization was extended to essential utilities, such as water and energy supply, across much of the Western world. One notable example was the gradual sale of water services in France to Veolia and Suez, two private companies with a long-standing tradition of operating utility services in the country (Schiffler 2015, 85–90). In England and Wales, water provision was privatized across the entire country in 1989 (Parker 2013, 161–249).

Privatization in the electricity sector also often took place gradually, as seen in Germany. From the postwar period until the 1990s, federal, state, and local governments steadily sold off their shares in major utility companies. As a result, large portions of local electricity grids were privatized (Richter 2007, 59–60). However, liberalization within the European single market accelerated this trend, as did the reunification of Germany (Matecki and Schulten 2013, 10; Richter 2007, 60; Lormes 2016, 58–59). This led to the dominance of four key players, mostly privately owned: Vattenfall, E.ON, RWE, and EnBW (Berlo and Wagner 2017, 554; Fuchs et al. 2012, 18). However, the sector diversified slightly with the unbundling of electricity transmission networks that were transferred to TenneT, TransnetBW, 50Hertz, and Amprion (Fuchs et al. 2012, 23). While the "Big Four" established numerous subsidiaries, at the municipal level they compete with smaller private providers and the remaining municipal-run companies (Becker 2017, 119).

Because of these developments, research on infrastructure ownership from the 1990s on has focused on this shift from public to private ownership. This body of work has analyzed various factors shaping these transitions, including economic performance, partisanship, institutional constraints, and international influences.

Economic performance is a prominent predictor, with studies suggesting that prolonged weak GDP growth and high unemployment often drive governments to privatize services—mirroring the functionalist arguments used by many proponents. However, evidence concerning the role of public debt and expenditure on privatization remains inconclusive (Obinger, Schmitt, and Traub 2016, 28–35).

Partisanship has also been extensively studied, with early research indicating that left-leaning parties were less inclined to embrace privatization compared to conservative counterparts (Belke et al. 2007, 237; Boix 1997, 841; Hennisz, Zelner, and Guillén 2005, 890)—conforming to the points above. Yet, more recent studies show fewer consistent effects, highlighting the role of economic pressures and global trends in shaping outcomes (Schneider, Fink, and Tenbücken 2005, 720; Fink 2011, 125–29).

Institutional factors such as constitutional limits, veto players, and electoral systems have been examined as well. Majoritarian two-party systems, for instance, have been associated with having a greater predisposition towards denationalization, although this pattern weakens in later periods (Obinger, Schmitt, and Traub 2016, 44–46). Studies also suggest that European integration and global trade often act as catalysts for privatization, though cross-country differences and moderating factors of this diffusion have been less frequently explored (Schmitt 2014, 615–616; Zohlnhöfer, Engler, and Dümig 2018, 546).

Despite this extensive research at the national level, however, the local level remains underexplored. Critical services such as water, energy, and waste management are often organized and delivered locally, yet municipal privatization has received comparatively little attention (Fitch 2007, 590; Sack 2019, 101).

In the 2000s, criticism of this retreat of the state and neoliberalism began to grow. The financial crisis of 2008 and the subsequent global recession marked a pivotal moment, creating mistrust towards the market and large corporations (Bird 2020, 66; Röber 2012, 84). Additionally, dissatisfaction with private providers raised questions about whether they were genuinely more effective than state-owned enterprises (Albalade, Bel, and Reeves 2020, 576–77). Once again, cities and municipalities became key arenas for this debate. In many places, citizens and decision-makers opted to bring previously outsourced infrastructure back into public ownership, particularly in sectors such as water and energy (Kishimoto and Petitjean 2017, 12–13).

This development coincided with the increasing expansion of renewable energy and the aim of many countries to restructure their energy and economic systems towards becoming climate-neutral and phasing out fossil fuel-based power generation (Wagner and Berlo 2017, 398; Kishimoto and Petitjean 2017, 18). This ongoing transformation has often been compared, both in terms of its scope and scale, to the Industrial Revolution (Newell 2019, 25–26; HM Government 2020).

The rise of green parties in many developed economies reflects a shift towards policy priorities aimed at reducing environmentally harmful economic activities and advancing sustainable public solutions (Hughes 2021, 347; Jahn 2022, 491–92). Modern technologies for reducing CO₂ emissions require substantial early investment. In this vein, proponents of a ‘green entrepreneurial state’ view public investments as exemplars that, through crowding-in effects, can initiate widespread systemic change (Mazzucato 2015; Allan, Lewis, and Oatley 2021). However, proponents of market-driven approaches remain skeptical of this state-led approach, warning of potential inefficiencies and crowding-out effects (Cumming and MacIntosh 2006; Forbes 2021; Anderson and Leal 1998).

The pressures facing global systems have evolved very recently. Since the mid-2010s, globalization and international trade have come under increasing strain, especially in the aftermath of the global Covid-19 pandemic (The Economist 2024; World Economic Forum 2023). Alongside this, concerns about the resurgence of widespread wars have intensified again as world tensions grow (Ipsos 2022; The Guardian 2025). This has prompted arguments that industrial politics and state interventionism are making a notable resurgence (Millot and Rawdanowicz 2024).

Many of these developments remain in flux and are far from complete. As such, researchers in the 2010s started to employ the metaphor of a pendulum to describe these shifts (Hall, Lobina, and Terhorst 2013, 193–94). They argue that the pendulum swings between a preference for public and private ownership. Following the Second World War, the pendulum reached one top of its swing with a focus on public ownership before swinging towards private ownership in the wake of the oil crisis and the spread of neoliberal ideas and reaching its peak in the 2000s. Due to recent developments, however, they suggest that the pendulum is now swinging back towards greater public ownership again (Albalade, Bel, and Reeves 2020, 580; Bird 2020, 65–69).

This metaphor is not without criticism. Opponents argue that this representation is overly simplistic. While the periods described reflect certain trends, they do not represent uniform developments. Private provision of certain goods has always coexisted with public ownership. Essential infrastructure, they contend, has long been characterized by hybrid forms of ownership (Letza, Smallman, and Sun 2004, 171; Bel, Hebdon, and Warner 2018, 176). Furthermore, they question whether the recent developments, often discussed under the term "remunicipalization," truly represent a significant turning point (Libbe 2021, 296; Röber 2012, 88).

This critique highlights the need for a more nuanced understanding of remunicipalization as a potential shift towards public ownership. To contribute to this effort, this research examines the remunicipalization of German electricity grids during the 2010s—a frequently cited example of this emerging trend (Kishimoto and Petitjean 2017, 14; Paul and Cumbers 2023, 168).

3 Defining Remunicipalization Through the Lens of Privatization

In this dissertation, remunicipalization is understood as the process through which municipalities regain majority ownership and direct, unmediated control over public services, regardless of the underlying organizational framework.

Given the metaphor of the pendulum swinging between public and private ownership, the debate on how to define remunicipalization is closely connected to how privatization is defined. Just as privatization marked the pendulum's arc toward private ownership, remunicipalization can be conceptualized as the return swing toward public control. However, the situation is more complex in that how remunicipalization is perceived depends on two very different definitions of privatization: formal and material privatization (Obinger, Schmitt, and Traub 2016, 2–3).

Formal privatization refers to the restructuring of former state-owned entities and municipal utilities into private companies, such as limited liability companies or other joint-stock companies. In this case, ownership is less important than the company's legal form. By contrast, material privatization focuses on ownership. According to this perspective, a company is deemed municipal if the municipality holds a majority of its shares, regardless of the legal structure.

This research focuses on the second perspective. As such, it adopts a broader definition based on material ownership and control of essential services. This contrasts with the narrower definition based on a company's legal form, as shown in Table 1. Here, only changes from private- to public-law entities would be understood as an instance of remunicipalization.

One major reason for this decision to focus on the material ownership of companies regardless of their legal structure is how local-level service provision developed in previous decades. Starting in the 1980s, New Public Management (NPM) reforms led to widespread privatization—both in material ownership and also based on the legal form as criteria. In many municipalities, tasks once handled directly by local authorities were transferred to separate companies where cities nevertheless still held majority stakes (Andrews et al. 2020, 483). This transfer of tasks to municipal companies with a private legal form remains a very common choice of delivery to this day. Accordingly, many local authorities that are deciding to provide previously privatized services themselves again are doing so not through public-law entities but by choosing private-law utility companies under their full or majority ownership as a legal model. If one applies only the formal definition, such cases could not be labeled as “remunicipalization,” as due to the advent of NPM reforms (Wollmann 2020, 52), only a relatively few cases could be so defined.

However, using the material definition selected in this dissertation, a more pronounced shift is evident. Here, many cities and municipalities have established private-law companies, such as

limited liability entities, under their ownership to regain control of previously sold assets and thus reclaim privatized services (Matecki and Schulten 2013, 14).

This broader understanding allows for a more extensive consideration of the different hybrid models that have emerged through public-private partnerships since the 1980s. In many cases, municipalities and private investors jointly own shares in utility companies, collaborating on services such as electricity and water provision (Clifton et al. 2021, 296). Therefore, in this research, remunicipalization specifically refers to instances where municipalities regain a majority share and direct, unmediated influence over the management of utility companies. What matters as the main criterion (see Table 1) is whether a company is majority-owned by a municipality and whether it then has ultimate control over its operations.

Consequently, this includes cases where municipal utilities are managed through inter-municipal arrangements or mixed-ownership structures. In these setups, local councils often participate in significant decisions via board representation and through the right to issue directives in local parliaments, though they may not be involved in daily operations (Schwartzing 2021, 285–88). On the other hand, municipal investment companies in which local politicians have no direct or operational influence are not considered as cases of remunicipalization in this research.

Table 1: Definitions of remunicipalization

	Understanding based on legal form	Understanding based on material ownership
Definition of Remunicipalization	Transformation of a private entity into a public-law entity.	Municipality regains majority ownership of a service.
Criteria	Legal form defines public or private status.	Ownership defines public or private status.
Examples	Private utility becomes a municipal department under public law.	City acquires majority shares in a previously privatized utility.
Definition of Privatization	Restructuring public entities into private legal forms	Transfer of majority ownership to private shareholders

To clarify, this research focuses on remunicipalization as a distinct phenomenon with its own dynamics. Nevertheless, since many scholars as well as the public discuss it in direct connection to privatization, and because definitional ambiguities often arise from this relationship, privatization

serves as a helpful reference point for delineating the scope and defining the nature of remunicipalization.

This is especially important, as inconsistencies in the terminology used by researchers to describe the overall trend remain (Clifton et al. 2021, 293–97; Voorn 2021, 442). While some refer to this trend as "remunicipalization" (Hall, Lobina, and Terhorst 2013; Pigeon et al. 2012), others use the term "reverse privatization" (Gradus, Dijkgraaf, and Budding 2024; Demuth, Friederiszick, and Reinhold 2022) to describe it. This preference is based on limiting the definition of "remunicipalization" or "contracting back-in" (e.g. Warner and Hefetz 2020, 229–30) to formal transformations back into public-law entities (Clifton et al. 2021, 295–97). Indeed, Warner (2024, 679) argues that the term "remunicipalization" was explicitly introduced as part of a "political project to reclaim public ownership from privatization" in the 2010s.

So, as can be seen, despite examining the same social phenomenon, researchers have used very different definitions and terminology. This has led to disagreements and misunderstandings about the characteristics of this trend (Voorn, van Genugten, and van Thiel 2021, 307–8). Consequently, it is important to clarify what this dissertation understands by remunicipalization and how it positions itself within these disagreements of terminology and definitions.

As such, it should be emphasized that the choice for a broader definition was not taken with the intent to imply that remunicipalization demonstrates a complete return to the pre-privatization status quo of the 1970s and earlier. Such a characterization would oversimplify the situation and ignore the ongoing trend toward corporatization, as seen in the continued reliance on private-law entities owned by municipalities (Voorn, van Genugten, and van Thiel 2021, 309–310).

In summary, the debate over the definition of remunicipalization reflects differing research perspectives and broader questions about how public services should be managed. Since the 1980s, privatization has fundamentally reshaped the utility landscape, leaving a lasting legacy. Adopting a broader approach allows for a more accurate representation of the resulting hybrid models, enabling a better understanding of the evolving operational environment for municipal utilities while also acknowledging the enduring impacts of prior privatization waves on it.

4 Literature on Local-Level Utility Ownership and Remunicipalization

Until the mid-2000s, studies mostly focused on privatization and the contracting-out of services at the local level. The main emphasis was on analyzing fiscal and economic factors, the political process, and ideological influences. Overall, these studies mainly identified fiscal pressure and economic conditions as key drivers (Bel and Fageda 2007, 519). Particularly in the United States, municipalities facing financial constraints were more likely to privatize services, with scale effects and interest groups also having some influence on the process (Bel and Fageda 2007, 520–22, 2017, 505–7). Studies identifying such fiscal effects as key drivers of privatization in North American municipalities include Brown, Potoski, and van Slyke (2008, 137) or Hebdon and Jalette (2008, 156). However, studies involving European cities and municipalities as well as later studies are somewhat less clear (Bel and Fageda 2007, 520–22, 2017, 505–7). For example, in his study on Danish local governments, Pallesen (2004, 580–84) finds the opposite, indicating that fiscal pressure decreases the likelihood of privatization.

While later studies, such as Sundell and Lapuente (2012, 479–83) or Zafra-Gómez et al. (2016, 298), find a connection between party ideology and privatization, this is not a universal trend. Overall, the connection appears weak, though it is more pronounced in studies on Europe as well as in more recent studies than in studies on the United States (Bel and Fageda 2017, 507–8; Elinder and Jordahl 2013, 44). One reason for these mixed results is methodological differences in study design and case selection as well as challenges in tracking transitions to private providers (Bel and Fageda 2009, 114, 2007, 528).

One notable development accompanying these mixed findings since the mid-2000s is the growing focus on intermunicipal cooperation and the reversal of privatization (Gradus and Budding 2020, 539–40). Since this development, international scholarship has produced a wide range of studies and contributions dedicated to the remunicipalization of essential services. Despite this scholarly activity, key challenges in the study of remunicipalization remain, hindering the development of a shared understanding of the phenomenon (McDonald 2024, 1899–1900). The following section seeks to shed light on these issues.

First, while researchers have analyzed a range of high-profile cases to understand the drivers behind this shift back towards municipal ownership, there is a need for further studies (Bel and Gradus 2018, 17; Clifton et al. 2021, 3). With political science being traditionally focused more on national-level developments, the local level is “chronically understudied” due to a lack of data (Wegschaidt, Gross, and Schmid 2023, 1). Equally, remunicipalization remains less thoroughly examined than the earlier wave of privatization (McDonald 2024, 1913).

Second, as pointed out in Section 3, remunicipalization remains a contested and context-specific concept, lacking a universally accepted definition (Clifton et al. 2021, 293–97). This lack of uniformity complicates efforts to generalize findings or identify clear patterns, leaving critical questions about it unanswered.

Third, the limited availability of comparative and statistical data at the local level has made most existing research reliant on the qualitative analysis of specific cases (Lormes 2016, 103; Matecki and Schulten 2013, 12; Gradus and Budding 2020, 540). These include the Transnational Institute (TNI), which has published a collection of studies, including remunicipalization of water in France (Petitjean 2017) and Catalonia (Planas 2017), social services in Norway (Pettersen and Monsen 2017), and trends towards public ownership in the UK (Hall and Hobbs 2017) and Latin America (Colbert 2017). Other studies include Pigeon (2014, 201–6) or Lobina (2017) on the remunicipalization of water.

What most of these contributions share is that they point to a highly politicized process, often driven by citizens as a bottom-up action, in which different policy visions play a decisive role (McDonald 2024, 1914; Voorn 2021, 447–50). In the cases examined by the TNI, remunicipalization has been influenced by efforts to democratize services, enhance transparency and accountability, address inefficiencies associated with privatization, and ensure more affordable services (Petitjean and Kishimoto 2017, 160–61). This global push for increased public ownership is also seen as a catalyst for advancing climate neutrality in cities and metropolitan areas (Petitjean and Kishimoto 2017, 161–62). Regardless of whether it is primarily understood as a technical or political transformation, according to Petitjean and Kishimoto (2017, 165), both perspectives represent a clear “rejection of the privatisation propaganda”.

However, this qualitative research has faced sharp criticism. These critics argue that it tends to omit broader contextual influences that significantly shape decision-making processes (Voorn 2021, 453) and thus lacks transparency (McDonald 2024, 1911). This poses a challenge to the generalizability of findings derived from its individual case studies. Moreover, existing works tend to focus heavily on successful cases of remunicipalization. Failed processes, on the other hand, remain largely overlooked in qualitative studies—a gap that may lead to overly enthusiastic interpretations of the trend (McDonald 2024, 1919; Voorn 2021, 455). Accordingly, they argue qualitative case studies should explore a wider range of contexts—including those beyond major metropolitan areas like Paris, Barcelona, and Berlin—to avoid bias through case selection (McDonald 2024, 1904; Voorn, van Genugten, and van Thiel 2021, 311–12).

While qualitative accounts frequently highlight a grass-roots backlash against privatization, other scholarly interpretations approach remunicipalization with greater nuance. Utilizing

quantitative methods, they seek to explain the factors driving remunicipalization at the municipal level. For instance, Demuth, Friederiszick, and Reinhold (2022, 244) analyzed waste collection in Germany, and found no evidence that remunicipalization had been driven by left-wing party representation. Instead, structural factors seem to be the key. For example, the proximity to waste incineration plants increases the likelihood of remunicipalization. Market structures also play a crucial role: a weaker presence of private actors in the local market makes the return of waste management to municipal control more likely (Demuth, Friederiszick, and Reinhold 2022, 243–44).

Similarly, in the United States, Warner and Aldag (2021, 328) found no evidence of an ideologically motivated remunicipalization trend. Their research instead points towards more pragmatic reasons for the shift in production mode. In addition to transaction costs, the managerial capacity of municipalities is crucial, closely tied to factors like population size and whether they are urban, suburban, or rural. Remunicipalization is thus seen as an adaptation process led by professional managers in the administration of utilities in larger cities, not a transformative movement driven by political activists at the local level (Warner and Aldag 2021, 326–28).

However, some recent quantitative analyses have reported correlations between political orientation and remunicipalization, suggesting that political factors may still play a role in shaping these decisions (Gradus, Dijkgraaf, and Budding 2024, 3). For example, Campos-Alba et al. (2021, 356–57) noted that incoming progressive governments in Spanish municipalities were associated with a higher chance of moving private service back into municipal hands. Additionally, they also found that public managers were more hesitant towards the private sector as the local elections moved closer, indicating highly opportunistic, vote-seeking behavior. By contrast, socio-economic and fiscal factors did not appear to have any significant effects regarding remunicipalization (Campos-Alba et al. 2021, 355–57).

Similarly, according to Schoute, Gradus, and Budding (2021, 434–35), more left-wing councilors seemed to increase the chances of in-house production and inter-municipal cooperation in the Netherlands. Additionally, they found no consistent socioeconomic or fiscal effects influencing this trend. However, they note that the characteristics of different services significantly influence how municipalities organize their provision. Equally, party fragmentation can negatively impact whether services are outsourced to external municipal-run companies (Schoute, Gradus, and Budding 2021, 434–35).

These mixed findings highlight that quantitative literature also has drawbacks. From a qualitative perspective, its lack of micro-level foundations is particularly problematic. These scholars argue that quantitative research tends to overlook political factors and thus often fails to accurately capture key local dynamics (Paul 2024, 700; Voorn 2021, 453). A wide range of formal and informal

actors are involved in the decision-making process, many of whom cannot be fully captured through quantitative surveys. As a result, such approaches risk underestimating the influence of grassroots movements or public interests, thereby overlooking important proximate causes. These factors need to be given greater consideration in quantitative research to avoid neglecting on-the-ground dynamics influencing decision-making (Paul 2024, 700–701; Voorn 2021, 453–54).

Both sets of criticism point to the fact that research findings on remunicipalization are highly influenced by the choice of quantitative or qualitative methods (Voorn 2021, 450). Generally, quantitative studies tend to find no clear link between political partisanship and the decision to bring services back into public control, while, conversely, qualitative research tends to emphasize the ideological motivations behind these shifts (Albalade, Bel, and Reeves 2024, 666; Paul 2024, 699).

These divergent findings have led some scholars to describe the broader academic debate as fragmented. For example, Voorn, van Genugten, and van Thiel (2021, 312) identify a “disconnect” within the research on remunicipalization. As such, they, and also Lobina and Wegmann (2021, 398–99), Albalade, Bel, and Reeves (2024, 666), and Clifton et al. (2021, 296–97), divide the literature into two distinct traditions, offering different interpretations of the phenomenon:

On the one hand, the “functionalist perspective” views remunicipalization as a managerial, cost-driven process (Warner and Aldag 2021, 326–28; Warner 2024, 689–90; Clifton et al. 2021, 299). Such research often uses quantitative methods and focuses on the United States. On the other hand, the “ideological perspective” views remunicipalization as a politically motivated transformation driven by ideological goals and grassroots initiatives against neoliberalism (Petitjean and Kishimoto 2017, 161–62; Routledge, Cumbers, and Derickson 2018, 83). These studies mostly rely on qualitative approaches and primarily investigate European contexts.

Clifton et al. (2021, 296–97) and Voorn, van Genugten, and van Thiel (2021, 307–8) argue that this divergence stems not only from the aforementioned varying understandings and definitions of remunicipalization (see Section 3) but also from different methodological approaches and geographical focuses. These different approaches have led to considerable confusion and disagreement regarding the factors that promote remunicipalization (Paul 2024, 699; Voorn, van Genugten, and van Thiel 2021, 307–8). Table 2 summarizes the sharp division within the literature, as described by these authors above, by outlining its key features.

According to McDonald (2024, 1914), these misunderstandings have led to biases in the study of the phenomenon. On one side, there are often activist-leaning “proponents” who enthusiastically advocate for remunicipalization, while on the other side, skeptical “antagonists” tend to dismiss the findings of their counterparts as overly eager and incomplete (McDonald 2024, 1915).

Table 2: Divergent perspective in the literature on remunicipalization

	Functionalist Perspective	Ideological Perspective
Methodological Approach	Primarily quantitative	Primarily qualitative
Terminology	Reverse privatization	Remunicipalization
Geographical Focus	Originally U.S.-centered	Predominantly European
Understanding of Process	A managerially driven process of returning to municipal control	A politically driven transformation with clear ideological motivations
Role of Different Partisan Ideologies	Little to no evidence; recent European studies provide initial indications of party effects	More evidence for ideological motivations

However, as described above, recent quantitative studies have begun to blur the clear distinction between the two camps, indicating that political parties may influence the process and thus bridge elements of both perspectives (Campos-Alba et al. 2021, 356–57; Schoute, Gradus, and Budding 2021, 434–35). McDonald (2024, 1900–1901) and Paul (2024, 700) emphasize that this supposed division within the literature should not be overinterpreted. They argue that most research falls somewhere between these two perspectives and that this polarized debate “runs the risk of overlooking potential common ground” (McDonald 2024, 1900).

This is especially true as research on remunicipalization relies heavily on secondary sources. McDonald (2024, 1913) finds that more than half of the studies reviewed in his analysis draw exclusively on prior findings and descriptions, without producing novel empirical evidence. As such, these studies risk reproducing existing biases and offer only limited analytical depth.

As such, McDonald (2024, 1917) suggests that research would benefit from a broader outlook into different cases and mixed-methods designs to bridge the highly polarized academic debate. By combining methodological approaches that have so far contributed to divergent interpretations, this could help to create a more nuanced picture. Moreover, it could address the methodological and interpretative pitfalls of each perspective.

Table 3 offers a summarized and structured overview of the central challenges that continue to shape international literature on remunicipalization. It synthesizes the key conceptual and

methodological issues discussed above, pointing to persistent obstacles that limit our understanding of remunicipalization.

Table 3: Overview of key issues in literature on remunicipalization

Key Issues	Description
Fewer studies than privatization	Field is newer and less explored than privatization. There are also fewer empirical studies.
No universally accepted definition and terminology	Terms like “remunicipalization,” “reverse privatization,” and “contracting-in” coexist and hamper clarity.
Heavy reliance on case study research	Limited quantitative data leads to case-heavy research. This makes generalizing findings difficult.
Selective case choices	The focus is on high-profile cases and successfully completed remunicipalization projects. Little attention has been given to smaller municipalities and failed projects.
Limitation of qualitative studies	Qualitative studies often do not pay enough attention to the specific environmental context in which remunicipalization unfolds
Limitation of quantitative studies	Quantitative studies often lack a focus on political and procedural factors that might influence remunicipalization decisions on the ground
Strong influence of methodological choice	Findings vary based on the choice of quantitative or qualitative approaches.
Fragmented academic debate	There is a disconnect between the "functionalist" (managerial, cost-driven) and "ideological" (politically motivated) views.
High dependency on secondary sources	Most studies rely on existing data and literature. There is a scarcity of original empirical research.

This dissertation addresses these points, focusing on a limited sub-area that has nevertheless attracted a great deal of attention within international research and exemplifies the above-mentioned issues within the literature—the German electricity sector. It stands out as an area frequently discussed in the context of both privatization and remunicipalization (Clifton et al. 2021, 297; Paul and Cumbers 2023, 168; Kishimoto and Petitjean 2017, 14). Most research has examined remunicipalization in this sector via focused case studies, particularly in major cities like Hamburg and

Berlin (Beveridge and Naumann 2014; Blanchet 2014; Pohlmann and Colell 2020; Cumbers and Becker 2018), or within specific regions (Paul and Cumbers 2023).

Most of the findings tend towards the “ideological perspective” described above (Voorn 2021, 450; Warner 2024, 683), portraying privatization as a process where grassroots movements and individual interest groups play a pivotal role (Blanchet 2014; f.e. Hall, Lobina, and Terhorst 2013; Pohlmann and Colell 2020). The authors consistently emphasize how grassroots movements have “repoliticized” the issue through their activities, applying bottom-up pressure to bring it back onto the political agenda and demanding a more inclusive approach to decision-making (Pohlmann and Colell 2020, 10–12; Beveridge and Naumann 2014, 287; Blanchet 2014, 252). However, these findings do not concur with the “functionalist perspective.” Cumbers and Becker (2018, 514), for example, argue that describing remunicipalization in Germany as merely the result of pragmatic decision-making and cost calculations appears “a little too reductionist and over-determined.” Instead, the studies identify clear ideological motives among citizens, such as curbing private monopolies (Pohlmann and Colell 2020, 10) and advancing the energy transition as a broader objective (Blanchet 2014, 251).

Equally, Wagner and Berlo (2017, 405–6) note that local decision-makers increasingly see themselves as key actors in the energy transition. In their study on the establishment of 72 new municipal utilities, they reject the idea that population size or technical expertise are co-determinants of remunicipalization. Similarly, in their study on 80 privatization and remunicipalization initiatives across Germany, Weber, Cabras, and Frahm (2019, 5–9) find that recent years have seen a stronger shift toward public ownership, driven in part by citizen initiatives. Yet, they caution that the pendulum “halted far from its original position, mainly due to weak remunicipalisation initiatives addressing social services like hospitals” (Weber, Cabras, and Frahm 2019, 8). In the same vein, Wagner et al. (2021, 10–12) affirm the growing importance local decision-makers place on public ownership for the common good but stress that collaboration with industry experts can be critical for the success of new municipal utilities. With their more cautious assessment, they serve as an example of the mixed studies mentioned by McDonald (2024, 1910 & 1913), which, however, rely primarily on secondary sources.

As such, observers supporting the more managerial perspective have criticized an over-reliance on anecdotal evidence and case studies, highlighting the need for a balanced approach that incorporates quantitative analyses to better understand the political and economic factors driving remunicipalization in Germany (Gradus and Budding 2020, 540; Voorn, van Genugten, and van Thiel 2021, 312–13). Quantitative research could address this gap, providing a more systematic analysis beyond individual case studies and secondary accounts.

However, due to a reliance on qualitative methods, there is no concrete data on the scope of remunicipalization throughout Germany. Its extent remains imprecisely captured, with only limited data on the phenomenon's full impact within the nearly 11,000 German municipalities (Lormes 2016, 103). Existing studies offer inconsistent estimates without a clear quantification of these trends across municipalities. Studies from Richter, Edeling, and Reichard (2006, 39), Lormes (2016, 105), Berlo, Templin, and Wagner (2016, 115), as well as Berlo, Schäfer, and Wagner (2022, 97) provide only reasoned estimates or limit themselves to individual regions to determine the rate of privatization or re-municipalization, but do not cover the whole of Germany. This lack of reliable data limits the understanding of the remunicipalization landscape and underscores the need for more systematic and comprehensive data to capture its true extent (Matecki and Schulten 2013, 12; Libbe 2021, 304).

Equally, the narrow focus on prominent cases like Berlin and Hamburg further influences the findings (Voorn, van Genugten, and van Thiel 2021, 311–12). These metropolises diverge significantly from typical German municipalities in political, administrative, and economic terms. Large cities benefit from professionalized political structures with more full-time officials and greater economies of scale, conditions that are not representative of smaller municipalities. In most German cities, local governance involves part-time or volunteer officials, smaller administrative capacities, and lower infrastructure density (Bogumil and Ruddat 2022, 122; Egner 2015, 197–98; Diemermeier 2020, 544). Thus, the emphasis on high-profile cities may obscure broader trends, making it crucial to examine cases that reflect the more average German municipality to better understand local debates and stakeholder dynamics in remunicipalization.

5 Political Parties and Local Politics in Germany

The tradition of local self-governance in Germany dates back longer than the establishment of the nation-state and continues to this day (Bogumil and Holtkamp 2006, 15–23). Indeed, the autonomy of municipalities is firmly enshrined in Germany's constitution, and local self-governance remains an essential element of the country's political system and culture (Gehne 2020, 3; Ruge and Ritgen 2021, 123–25). However, the role of the political parties differs greatly from the role of political parties at the national level, depending on specific local factors, in particular the underlying institutional structures, the financial situation of the respective municipalities, and their population size. These characteristics significantly shape the political context in which remunicipalizations are pursued. In the following, the discussion will delve deeper into these individual factors and their potential impact on local political decision-making, as well as the influence of political parties.

First, local governance structures vary regionally. For example, in southern Germany, directly elected mayors have a rich tradition and wield significant authority, serving as both heads of municipal councils and local administrations. By contrast, in states like Schleswig-Holstein or Hesse, local councils elect their own chairpersons, which limits mayoral power. These differences also affect the role of political parties: in regions with more autonomous mayors, party influence may be weaker, while in others, party-driven deliberations dominate (Gross and Jankowski 2021, 216; Holtkamp and Bogumil 2016, 30).

Recent constitutional reforms, such as the introduction of direct mayoral elections and increased citizen participation through referendums, have standardized many governance structures across all states, potentially diminishing the role of political parties in decision-making (Jann and Veit 2021, 154–56; Ruge and Ritgen 2021, 135). However, in some regions the influence of political parties is still substantial. For example, in North Rhine-Westphalia nearly all positions are filled by party candidates, giving political parties considerable influence. By contrast, states like Baden-Württemberg favor independent candidates, resulting in weaker party influence at the local level (Holtkamp and Garske 2020, 41).

Second, the importance of political parties in local policymaking is significantly influenced by the size of cities and municipalities. Particularly in smaller municipalities, local politics in Germany is often conducted on a purely voluntary basis. Consequently, local administrations can have significant influence in decision-making processes, as they are closely involved in preparing and advising on policies, in addition to implementing them, weakening the influence of the established

political parties (Egner 2015, 197–98; Holtkamp 2007, 367; Richter, Edeling, and Reichard 2006, 77).

In larger cities, by contrast, local governance is more professionalized. Councilors and mayors in urban areas typically receive considerable remuneration, which in turn can limit the influence of local administrations on decision-making while strengthening party competition and party organizations within local politics (Bogumil and Ruddat 2022, 121–22; Egner 2015, 197–98). Research by Gross and Jankowski (2021, 217) highlights that local parties in larger cities often align their electoral platforms closely with those of their national counterparts. By contrast, Bogumil and Ruddat (2022, 121–22) argue that local politics, especially in smaller municipalities, is often consensus-driven.

Third, financial resources play a decisive role in whether parties have the fiscal leeway to implement their manifestos. This is especially significant as municipalities are unable to levy their own taxes and heavily depend on tax allocations from the federal states and the national government (Jänchen and Starke 2022, 299–300). However, certain taxes, like property and the business tax, are allocated directly to municipal budgets. Local authorities can even set their own tax rates within a given range (Riedel, Simmler, and Wittrock 2021, 158–59; Färber 2021, 244–45). Yet, as a result of this setup, municipalities with a strong business presence often enjoy greater financial stability compared to those with limited industrial or commercial activity (Bogumil and Ruddat 2022, 128).

Despite these financial limitations, municipalities are central to implementing laws and policies from higher levels of government. They handle mandatory duties like providing childcare, managing schools, maintaining fire departments, and overseeing utilities, alongside voluntary initiatives such as managing cultural institutions and public transportation (Ruge and Ritgen 2021, 128–30; Riedel, Simmler, and Wittrock 2021, 158–59).

However, tensions often arise concerning the financing of mandatory and voluntary services, especially as higher-level governments tend to impose additional responsibilities on municipalities without increasing financial transfers (Bremer, Di Carlo, and Wansleben 2021, 9; Egner 2015, 190). Due to a decrease in population, many voluntary services operate at a relatively increasing financial cost (Jänchen and Starke 2022, 304–5). This often leads to severe indebtedness and difficult decisions on prioritizing expenditures (Neumann 2022, 248). Consequently, fiscal constraints can lead to situations where parties are unable to finance all their political goals—such as remunicipalization. Following this functionalist logic, the influence of the political parties should be weaker in areas where financial leeway is limited due to low tax revenues and poor economic conditions.

Research, therefore, discusses the significance of political parties at the local level in Germany, taking these various factors into account. Some scholars argue that political parties play a

significant role in shaping local politics, often mirroring the platforms of their national organizations (Razin 2013, 59–61). Supporting this view, studies by Stecker (2017, 342) and Remer-Bollow (2017, 247–49) show that local councilors, particularly from CDU/CSU and SPD, tend to vote in a manner consistent with their party's positions, aligning predictably on the left-right political spectrum. Similarly, Riedel, Simmler, and Wittrock (2021, 169–78) demonstrate that council majorities held by these main parties can significantly influence local budget priorities.

However, factors such as open list voting procedures, the smaller number of council seats, and the direct election of mayors amplify the influence of individual actors over party agendas (Gross and Jankowski 2021, 219; Neumann 2022, 251). Most decisions are made unanimously, reflecting a cooperative rather than competitive dynamic, with the day-to-day focus of local politics often centering on administrative tasks and implementing decisions made at higher levels of government, not on partisan politics (Bogumil and Ruddat 2022, 121–22).

Looking at the remunicipalization of electricity grids specifically, local politics are central to public service delivery, a role that has grown amid the shift to more decentralized renewable energy. Germany's 11,000 municipalities oversee low- and medium-voltage distribution grids, now tasked with managing bidirectional electricity flows as renewable energy sources feed directly into local grids (BMW 2020, 1). Generally, local councils decide who operates these grids, with periodic re-assignment through public tenders open to both privately and municipally owned entities (DStGB 2017, 6–14).

Yet, legal ambiguities often lead to lengthy disputes on technicalities connected to this process, hampering the decision-making power of councilors and, by extension, political parties. Incumbent private energy companies exert considerable influence, often challenging municipal efforts and creating legal hurdles by exploiting these ambiguities and instituting proceedings against municipal governments (Berlo and Wagner 2017, 554; Berlo, Templin, and Wagner 2016, 119–20; DStGB 2017, 5). Additionally, technical expertise is crucial for grid operation, giving larger private companies, through economies of scale and skilled and experienced personnel, a competitive advantage—at least at the outset (Kunze 2012, 106–7; Wassenaar, Groot, and Gradus 2010, 17). These legal, technical, and administrative constraints can reduce the scope for political parties to shape remunicipalization efforts, highlighting how external stakeholders often influence decision-making.

To conclude, municipalities differ widely in the conditions under which political parties can exercise their influence, with key factors including financial constraints, population size, and the varying institutional contexts at the state level. Despite their integration into a common multi-level governance framework, this results in diverse municipal decision-making arenas, particularly when

addressing whether to privatize or remunicipalize public services. Depending on the local context, external stakeholders, especially private incumbents, can also have a significant influence on the decision-making process.

This diversity provides a lens through which to analyze the differing approaches municipalities take toward managing their electricity grids. Accordingly, these factors will serve as a foundation for examining whether such diversity helps explain why certain municipalities have opted to remunicipalize their electricity grids, while others have not.

6 Publications

This dissertation includes three research papers that collectively form a cohesive and complementary body of work, each addressing distinct yet interconnected aspects of ownership changes in German local electricity grids. Together, they contribute to understanding the factors and dynamics that have driven the remunicipalization of utilities, such as electricity, since the mid-2000s.

The first paper employs descriptive analysis to present a comprehensive overview of current ownership structures, shedding light on the extent of privatization and addressing a critical data gap regarding the operators of Germany's local electricity grids. To this end, the article uses two data sources. First, it gathers data from the website *Störungsauskunft* that allows electricity customers to report faults by entering their postcode, linking them to their respective grid operators. Second, information from company websites and annual financial statements is used to identify the shareholders of electricity grid operators and the ownership structure. Together, this information allows the study to identify grid operators in each of Germany's nearly 11,000 municipality and to determine whether they are majority-owned by municipalities. Unlike previous studies—often limited by regional scope, reliance on estimates, or incomplete ownership data—this approach establishes a solid empirical foundation to explore trends, dynamics, and patterns in ownership transitions.

The second paper utilizes this dataset, investigating the influence of partisan politics on ownership change in the 2010s using quantitative methods. The data from the previous paper is supplemented by information from the *Bundesanzeiger* concerning the expiration and procurement of electricity grid contracts. Combined, these data sources allow not only an analysis of the status quo, but indicate whether a shift between public and private providers occurred within the decade. Based on this information, the study explores how party alignment and socio-economic contexts have shaped decisions concerning privatization and remunicipalization. In doing so, it serves a dual purpose: first, it addresses the previously mentioned gap in quantitative research on remunicipalization in Germany. Second, by examining a new case, it contributes to the ongoing discussion in international literature on the varying findings regarding the influence of political parties on remunicipalization.

Finally, the third paper in this dissertation builds on the results of the second paper. Based on its findings, cases are identified focusing on factors that made remunicipalization more likely in the 2010s. The results of the quantitative study in this dissertation therefore help in selecting cases for the qualitative study. At the same time, this third paper illuminates prior findings on the connections between socio-economic circumstances as well as the actions of the political parties,

delving deeper into the previously identified connections using three concrete examples. It does so by leveraging interview data from three medium-sized German municipalities to examine how various stakeholders exercise veto power. Each of the three cases faced unique challenges and resulted in different outcomes regarding their remunicipalization journeys. The study, therefore, is in contrast to the previously noted overreliance on large cities and successfully completed remunicipalization processes, aiming for a more nuanced picture of decision-making at the local level.

Together, these three papers offer a comprehensive analysis of the remunicipalization of local electricity grids in Germany. By employing diverse research methodologies, they deliver novel insights and make valuable contributions to the field of utility governance and ownership transformation. While the descriptive analysis seeks to add value primarily through new data, the two subsequent studies build on this foundation and aim to address the research gaps outlined in Section 4. Figure 1 summarizes this, showing the central contributions of each individual study, outlining how they add to the current state of research, how they are interconnected, and how the findings and preliminary work of each paper have influenced the development of the others.

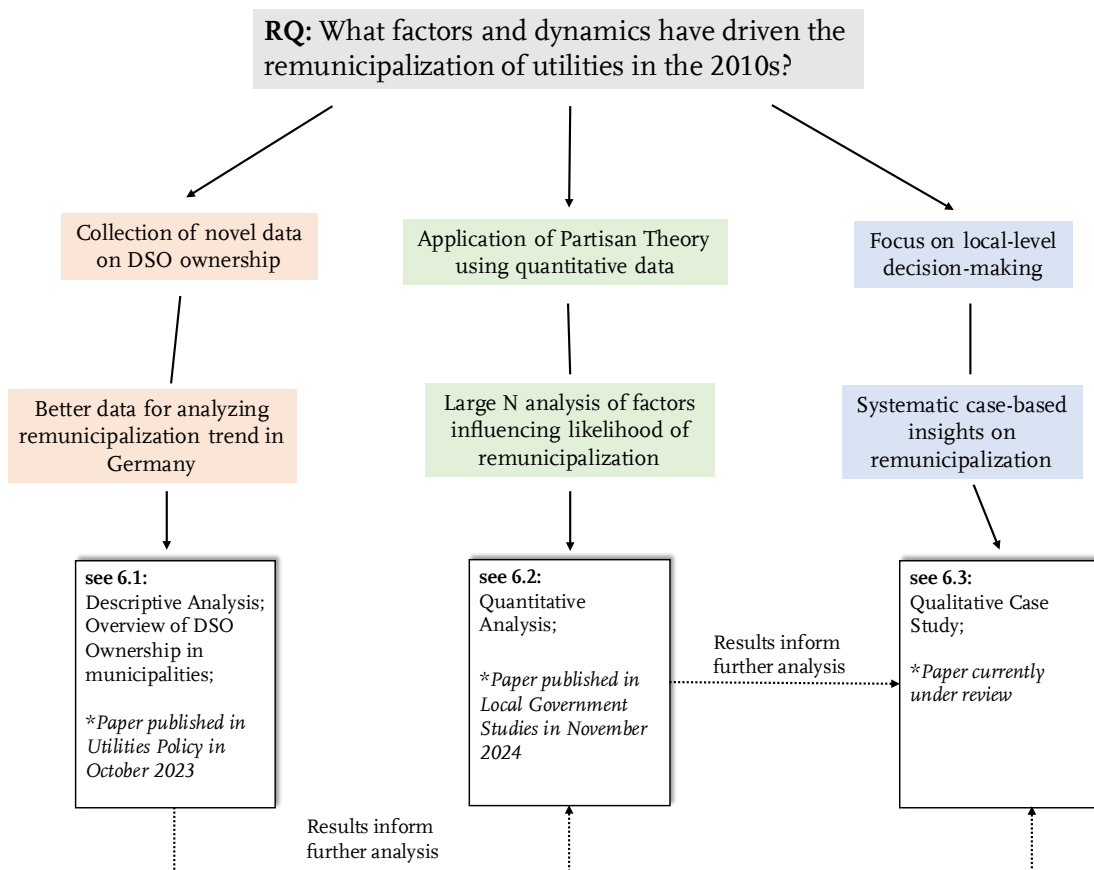


Figure 1: Overview of publications

6.1 “Local-level ownership of electricity grids: An analysis of Germany's distribution system operators (DSOs)”

This study, published in *Utilities Policy* in October 2023, explores the distribution of electricity grid ownership in Germany. The central question it addresses is as follows:

How is ownership of local electricity grids in Germany divided between public and private entities?

The study offers a clearer understanding of the true extent and geographical distribution of privatized and remunicipalized electricity grids across Germany, finding that socio-economic and demographic factors heavily influence ownership patterns.

As mentioned above, its core contribution is the collection of novel data that is more comprehensive than previous assessments. Based on this data, it classifies DSOs across Germany’s nearly 11,000 municipalities into four categories, shown in Table 4. As outlined in Section 3, the study takes care to include hybrid ownership models, such as inter-municipal cooperatives, where multiple municipalities collaborate to operate a shared grid, as well as companies that manage grids in municipalities beyond their original service areas.

Table 4: Classification of DSOs

Category	Description	Examples
Non-Municipal	DSOs not operated by municipal entities but by private or other non-municipal actors.	Westnetz GmbH, Bayernwerk Netz GmbH
Municipal	DSOs owned directly by a single municipality with majority or sole ownership.	Stadtwerke Crailsheim GmbH, Albstadtwerke GmbH
Inter-Municipal	DSOs owned cooperatively by two or more municipalities.	Bonn-Netz GmbH, Elektrizitätswerk Goldbach-Hösbach GmbH & Co. KG
Extra-Municipal	DSOs where one municipality holds a majority stake but operates in a different municipality.	N-ERGIE Netz GmbH, SachsenNetze GmbH

Its findings largely confirm those of previous studies. Germany’s four major electricity companies—E.ON, EnBW, RWE, and Vattenfall—continue to dominate the distribution grid operator market through their subsidiaries. These companies operate electricity grids in more than half of all municipalities, though they serve a smaller proportion of the population. Overall, as Figure 2

shows, nearly four out of five of all municipalities are supplied exclusively by private electricity grid operators.

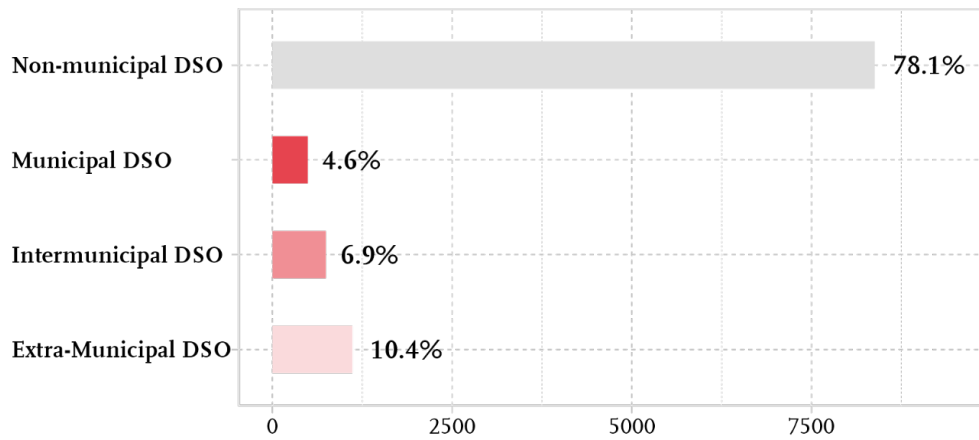


Figure 2: Number of municipalities per ownership category

However, looking into the distribution of private and public ownership, the study reveals notable urban-rural disparities. While private operators dominate in terms of the number of municipalities served, municipal operators are more common in densely populated areas. As such, although non-municipal DSOs serve well over half of all municipalities, these municipalities represent less than half of the population. The reason for this is that the higher the population density, the higher the proportion of municipal electricity grid operators among the municipalities.

Centrality also plays a role: municipalities further from urban centers are less likely to be served by municipal DSOs. Exceptions include regions such as Dresden, Nuremberg, Hanover, and the Ruhr area, where municipal utilities have expanded beyond city limits. Additionally, regional differences between eastern and western Germany persist. Privatization remains more prevalent in former East Germany, reflecting historical shifts following reunification.

Overall, the study identifies a clear urban-rural and southwest-northeast divide in municipal electricity grid ownership. This contrasts with the expansion of renewable energy, which is progressing mainly in the rural northeast. These findings underscore existing socio-economic inequalities relevant to energy policy.

The study therefore refines prior estimates with precise figures and validates many previous assumptions. It also highlights potential procedural and distributional challenges for policymakers amid the energy transition. As the shift toward renewable energy accelerates, requiring greater investment into their grids from distribution grid operators, questions of financing will become increasingly pertinent. Until 2025, electricity customers in the Northeast—where industrial demand

is lower—faced higher grid fees than those in the Southwest, despite lower overall electricity consumption. Since the article’s publication, related debates over electricity pricing zones and grid fee reforms have gained momentum and led to some first adjustments, reflecting the study’s proximity to ongoing policy discussions (BNetzA 2023; MDR 2024; FAZ 2024).

6.2 “Back to the Future? An Analysis of Party Influence on Electricity Grid Remunicipalization in Germany”

This study, published in *Local Government Studies* in November 2024, examines the relationship between party strength and the likelihood of remunicipalization in Germany. It explores whether right- or left-wing parties, based on their ideological differences, influence decisions about whether electricity grids are operated publicly or privately, leading to the following research question:

Do local political parties influence the remunicipalization of electricity grids?

Regression models reveal no statistically significant relationship between party strength and remunicipalization. Only the Greens show a marginally positive effect, which loses statistical significance when control factors are included. These findings are consistent across all robustness checks.

While the descriptive analysis confirms a notable trend towards remunicipalization, which significantly surpasses the share of privatization during the 2010s (see Figure 3), this shift remains modest overall, with stability being the prevailing feature. In over 85% of cases, cities and municipalities retain their existing DSOs, whether private or municipal.

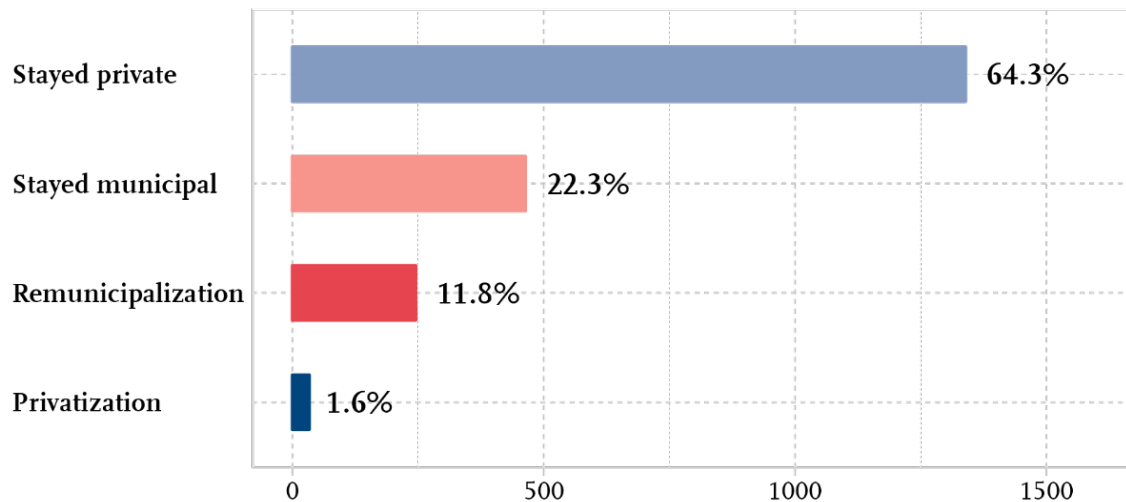


Figure 3: Share of municipalities by decision on DSO Ownership

Similar to its findings in models including parties only, the hypothesized interaction effects between socioeconomic factors and party strength also fail to yield statistically significant results in most cases. While factors like population size or tax capacity align with expected effects in individual

models, these do not extend to interactions with party strength. Some results even contradict the initial hypotheses. The analysis indicates that stronger parties at the local level, and the more intense competition associated with them, could actually decrease the likelihood of remunicipalization. For example, according to its findings, a strong SPD in larger cities reduces the probability of remunicipalization. This suggests that these factors do not exert the expected moderating effect on party strength.

By contrast, the local political system emerges as statistically significant. Municipalities in states with a stronger consensual political tradition at the local level show a higher likelihood of remunicipalization. This is particularly evident in interaction with CDU/CSU strength, where a strong CDU/CSU in consensus-oriented systems increases the probability of remunicipalization compared to more competitive, party-dependent systems—again showing a different connection than initially expected.

Overall, none of the proposed hypotheses are confirmed. Instead, the study suggests that remunicipalization results from cross-party, cross-ideological consensus within individual municipalities. The study highlights that the strength of a single political party is not a sufficient factor for explaining remunicipalization. Conversely, this implies that the shift of electricity grids from private to public ownership is not the result of unilateral party-political projects but is instead driven by other factors like economic circumstances.

While these findings should be interpreted cautiously—especially given the influence of economically strong southern German states with consensus-based local systems—the results remain robust across all models and checks. They also resonate with the qualitative observations detailed in the third paper of this dissertation. Remunicipalization therefore seems to be the result of cross-party collaboration rather than the outcome of actors pursuing their individual party manifestos or engaging in intense policy-making competition with other parties at the local level. Overall, the findings align with studies that do not identify a link between party ideology and remunicipalization.

6.3 “Navigating the Power Shift: A Comparative Study of Electricity Grid Remunicipalization in Medium-Sized German Cities”

This study, currently under review, examines local remunicipalization processes in three medium-sized German cities. Adopting a veto-based framework focused on key stakeholders in local-level decision-making on the road to remunicipalization, the study addresses the following research question:

Under what local conditions do municipalities in Germany remunicipalize their electricity grids?

Based on the factors identified in the two previous studies and the data collected there, three municipalities were selected: Schenefeld, Böblingen, and Bingen am Rhein. At the outset of the discussion, each of the three municipalities appeared to meet the conditions remunicipalization. However, they underwent very different experiences throughout the process, which led to varying outcomes. While Böblingen achieved remunicipalization without major hassle, Bingen faced prolonged legal battles before reaching a settlement with the old DSO, while remunicipalization was rejected via a referendum in Schenefeld.

In all three cases, interviews were conducted with proponents and skeptics of remunicipalization, as well as representatives from the municipal councils and local administrations. Together with media reports and council documents, this data provided a comprehensive look into the processes. Utilizing qualitative content analysis, the analysis reveals four main findings:

First, economic motivations dominated: In all three cases, economic considerations were the primary drivers for all stakeholders. Even municipal council members from parties traditionally more supportive of public ownership framed their arguments around anticipated financial benefits for the municipal budget. Although parties like the Greens and the SPD occasionally cited additional motives, such as increased influence on the energy transition or reducing the influence of private corporations, these were always tied to positive fiscal expectations. Only when parties were convinced of the financial viability of remunicipalization did they advocate for it.

Second, the role of local administrations and mayors was very limited: In all three cases, local administrations and mayors played a relatively passive and neutral role, with few exceptions. By contrast, external consultants assumed a crucial role. Municipal council members frequently relied on their advice and shaped decisions based on their recommendations. Among the stakeholders examined, consultants most closely resembled policy entrepreneurs.

Third, broad cross-party consensus was a success factor: Achieving cross-party support was essential for successful remunicipalization. In both successful cases, there was a broad, cross-party

majority backing the initiative. Böblingen even achieved near-unanimous support, facilitating a smooth process. By contrast, Schenefeld's remunicipalization effort failed despite a narrow majority in the municipal council. The opposition, formed along established ideological lines, mobilized the local population, ultimately leading to the rejection of the project in a referendum. The findings underscore the pivotal role of the CDU/CSU in creating cross-ideological majorities for such decisions.

Fourth, incumbent energy companies and their use of veto power played a decisive role: Established energy companies exercised their veto power when they perceived a strong chance of success in court, using this as leverage to negotiate better outcomes. Early settlements with these companies were more likely when they perceived lower chances of legal success or faced simultaneous pressure in multiple locations. Minority stakes in new municipal grid companies emerged as a common solution to reconcile the interests of incumbent operators and municipal decision-makers.

To conclude, the study portrays a consensus-driven process that does not align with the narrative of a grassroots-driven paradigm shift outlined by previous qualitative studies involving German municipalities. These findings complement the results of the quantitative study presented in this dissertation, which similarly indicate a less partisan-driven shift and instead point to a more consensual process.

Taken together, the findings suggest that the prevailing interpretation of remunicipalization as a transformative project may have been overly influenced by a focus on high-profile cases (Voorn 2021, 455). By first quantitatively analyzing the German electricity grid sector and then enriching this with qualitative observations from less prominent cases, this dissertation offers a coherent alternative interpretation. Rather than a grassroots project, remunicipalization emerges as the outcome of cross-ideological decision-making driven by careful deliberation aimed at maximizing municipal income.

7 Contribution

Together, the three contributions presented in this dissertation offer a meaningful advancement in our understanding of public ownership of local electricity grids in Germany, as well as broader insights into the alleged international trend toward remunicipalization. The research thus makes both empirical and theoretical contributions to a deeper understanding of remunicipalization in recent years.

To begin, this work highlights how the three studies have enriched our knowledge of the specific trend in Germany. The collection of new data on the status quo of public and private ownership is the first major empirical contribution of this research. Unlike earlier analyses that were often restricted to individual states and regions or relied on incomplete data and estimates (e.g. Richter, Edeling, and Reichard 2006, 39; Berlo, Templin, and Wagner 2016, 115), the dataset permits a nationwide evaluation, making it possible to more accurately assess the share of municipal-run electricity grids throughout Germany. As outlined in Section 6.1, this more precise data confirms many previous assessments, in particular on persistent East-West differences as well as divergences between urban and rural communities, providing additional certainty.

Its second major empirical contribution builds on this data collection. By facilitating the quantitative analysis of the shift from private to public ownership in Germany, the dissertation addresses the lack of statistical analysis and overreliance on qualitative research that international observers have frequently criticized (Gradus and Budding 2020, 540; Voorn, van Genugten, and van Thiel 2021, 312–13). This dissertation offers a more comprehensive analysis by analyzing procurement processes from the 2010s, as documented in *Bundesanzeiger*. As Section 6.2 points out, its findings reveal that while there is a clearly visible shift toward remunicipalization, it remains an exception rather than the norm. Stability outweighs change. The quantitative analysis thus paints a nuanced picture: rather than a sweeping transformation, a gradual return to municipal ownership developed over the course of the 2010s.

Equally, conducting interviews and collecting documents from three medium-sized municipalities adds new case-based insights beyond the prominent cases of Berlin and Hamburg, constituting the final major empirical contribution of this research. This allows for the examination of not only successful cases but also a failed attempt at remunicipalization—an aspect largely missing in previous studies (McDonald 2024, 1919). As mentioned above, these observations align well with the quantitative analysis of this dissertation: the observed remunicipalizations were less grassroots-driven transformations and resembled more consensus-oriented decision-making processes involving multiple stakeholders and were characterized by cross-party deliberations.

However, this dissertation also makes a more general theoretical contribution to the debate surrounding private and public ownership. First, by applying partisan theory to a new case, this dissertation tests an explanation that has yielded highly varied results in previous studies on remunicipalization (Albalade, Bel, and Reeves 2024, 666). Here, its findings align with research indicating no clear relationship between the strength of individual political parties and the remunicipalization of public services (e.g. Warner and Aldag 2021, 328; Demuth, Friederiszick, and Reinhold 2022, 244). The quantitative study in particular supports this conclusion, with its qualitative observations further suggesting that parties alone cannot drive remunicipalization. Instead, other factors are more decisive.

Second, by examining political parties at the local level, this research contributes to the broader debate on party competition and professionalization in local politics, as outlined in Section 5. It does so by testing interaction effects, capturing professionalized party competition in the quantitative analysis. However, these fail to reveal the expected connections. Overall, this suggests that factors typically associated with increased professionalization do not strengthen the role of political parties in local-level decision-making for remunicipalization. Fittingly, qualitative observations indicate that local politics remains highly consensus-oriented, as cooperation prevails over party competition, with administrative officials and mayors often assuming neutral, mediating roles. However, whether local politics represents an exceptional case here or is merely a reflection of broader consensus-driven democratic structures that also influence national processes concerning public ownership in Germany and elsewhere (Sack 2019, 118) remains open.

Third, this dissertation addresses a central point of contention in previous research on remunicipalization—whether it is primarily driven by ideology or functional necessity. Utilizing both quantitative and qualitative methods, the findings of this research are consistent with literature that identifies fiscal pressures, local feasibility, and economic or institutional factors as more critical determinants than party competition or ideological positions (Warner and Aldag 2021, 328; Wasseenaar, Groot, and Gradus 2013, 430–31). While parties may hold differing ideological positions, their influence seems to be subordinated to contextual and economic pressures. Rather than framing remunicipalization as a transformative political project (e.g. Petitjean and Kishimoto 2017, 161–62; Routledge, Cumbers, and Derickson 2018, 83), the results of this dissertation interpret it as an adaptation process characterized by cross-party consensus (Warner and Aldag 2021, 326–28; Clifton et al. 2021, 299).

Table 5 summarizes the contributions discussed by briefly outlining the gap in the existing research, describing the approach taken in this dissertation to address it, and highlighting the implications based on the findings.

Table 5: Summary of contributions

	Existing Research	Approaches Taken in This Dissertation	Key Implications / Findings
Empirical	No nationwide data on DSO ownership in Germany	Collection of comprehensive datasets enabling nationwide evaluation	Confirms previous estimates; reveals urban-rural and East-West ownership divide
	Lack of quantitative studies on remunicipalization of German electricity grids	Analysis of remunicipalization in the 2010s and influencing factors using novel data	Gradual return to municipal ownership; stability outweighs changes
	Focus on prominent case studies (e.g., Berlin and Hamburg) and no failed cases	Interview- and document-based study in three small and mid-sized municipalities with different outcomes	Grassroots movements play a smaller role; cross-party consensus is more significant
Theoretical	Mixed findings on partisan theory	Analysis of party influence on remunicipalization decisions	No confirmation of partisan theory; economic and institutional factors are decisive
	Influence of professionalization at the local level	Examination of factors contributing to local political professionalization	Professionalization does not increase the role of parties in remunicipalization decisions
	Unclear whether remunicipalization is functionalist or ideology-driven	Quantitative and qualitative assessment of actor influence	Interpreted as a functional adaptation process rather than an ideology-driven transformation

However, despite these contributions, these findings must be treated with caution. They cannot conclusively determine whether different economic paradigms play a role in the broader shift, whether there even is an overarching trend toward remunicipalization, and whether the pendulum metaphor is adequate. Additionally, it cannot be ruled out that, in specific cases not examined here, political actors and their policies may have a greater influence than in the cases analyzed in this

study. The scope of this research is too specific, and the processes remain in flux. Further research is essential to fully assess these questions, especially as these are limited studies looking into a specific sector within a specific country at a specific point in time.

Yet, by combining both quantitative and qualitative approaches, this dissertation adds depth to the study of remunicipalization in Germany. Despite employing different methodological approaches, its findings align more closely with the more nuanced assessments found in recent studies with broader scopes (Weber, Cabras, and Frahm 2019, 8; Wagner et al. 2021, 10–12; Demuth, Friederiszick, and Reinhold 2022, 243–44). This suggests that earlier discrepancies in the literature may stem more from differences in case selection and methodological design than from fundamentally different empirical realities—something that reflects the critiques by Voorn, van Genuyten, and van Thiel (2021, 311–12) as well as McDonald (2024, 1904–5) pointed out in Section 4.

Besides these contributions to academic literature, the findings of all three studies also offer valuable insights for local politicians and decision-makers. Here, the results underscore the importance of cross-party collaboration in successfully navigating remunicipalization processes.

By tracking decision-making processes both at large and in detail, the study highlights the crucial role of expert advice from industry professionals in shaping outcomes. Due to the complexity of such decisions, municipalities often rely on these experts—especially when the necessary expertise is lacking within the administration and given that local council members are not full-time politicians but rather dedicate their free time to local governance alongside their regular jobs.

It also reveals that procedural hurdles often allow incumbent energy companies to exert significant influence to maintain their current position—something that local decision-makers must be prepared for when pursuing remunicipalization efforts. As the analysis shows, E.ON remains heavily involved in operating local distribution networks and plays a key role through its subsidiaries. Increasing investment has also led to record revenue for companies operating in the sector (FAZ 2025; Energie & Management 2023). As long as the business remains profitable, it is in the major energy companies' interest to defend their position as effectively as possible.

Under these circumstances, partnering with incumbents is a necessity for municipalities trying to regain access to infrastructure operations, a point highlighted by the qualitative study presented here. This may also offer another look into the persistence of public-private hybrid models, which have gained significance since the 1980s.

Yet, as a consequence, many interviewees expressed dissatisfaction with the regulatory framework in which they operate, as it severely hampers their decision-making scope. Due to legal ambiguities, they frequently face significant uncertainty after successful procurement to a municipally run company. In their eyes, state advisory bodies, such as the *Bundesnetzagentur*, provide

inadequate support. Administrative requirements—such as the weighting of individual criteria in the awarding of electricity grids—are also perceived as impractical.

As these local frustrations show, the regulatory environment also plays a crucial role in shaping municipal outcomes. So, for national-level policymakers, the study offers concrete insights into how federal legislation is experienced at the local level. By examining the remunicipalization debate, it reveals how regulations can create uncertainty for municipalities. At the same time, it highlights how a fundamental tension in Germany's energy policy strategy plays out on the ground: the coexistence of a centrally organized system dominated by large private utilities and a more decentralized, community-driven approach (Drewello 2022, 5; Gross 2023, 282–85). If policymakers aim to guide local-level energy decision-making more effectively, they must provide clearer, more consistent frameworks that reflect local realities and offer a stronger orientation toward the preferred model.

8 Summary and Outlook

This dissertation provides evidence that remunicipalization is not driven by transformative political agendas combatting neoliberalism. Instead, it points towards more pragmatic processes, driven by functionalist adaptation towards changing circumstances. Analyzing local electricity grids in Germany reveals no significant partisan effects. Rather, contextual factors play a decisive role, particularly financial viability, sufficient population size, and consensus-based decision-making.

Considering the present findings, only a limited forecast can be made about whether municipal ownership will continue to be pursued within Germany in the near future. In the early 2030s, many cities and municipalities will once again face decisions about the allocation of electricity grids, potentially opening another window of opportunity. Similarities to the 2010s arise, as they have often been identified as a window of opportunity due to the heightened salience of energy issues following the Fukushima disaster. This time, again, important milestones are set for the turn to the next decade—around the point DSO contracts are running out.

The German government has committed to phasing out coal-fired power generation by the end of the 2030s (Gross 2023, 308–9). Within the European single market, the production of CO₂-emitting vehicles is set to end in 2035, paving the way for the expansion of battery-based mobility (Politico 2023b; Deutsche Welle 2023). Furthermore, a larger share of heating is to be provided by heat pumps, a shift that increasingly relies on electricity (Fraunhofer ISI, Öko-Institut e.V., and Prognos AG 2021). Industrial processes will also be decarbonized using electric power (Agora Think Tanks 2024, 31–37). An estimated 650 billion euros will be needed to expand Germany's high- and low-voltage grids to accommodate these transformations, with Kaczmarczyk and Krebs (2025) arguing state-based funding is better suited for these investments than private financiers to keep consumer prices low.

However, the observations made in this dissertation advise caution in assuming a marked increase in the remunicipalization of local electricity grids. The reasons for this include the procedural challenges already discussed, which hinder efforts toward remunicipalization and state involvement, both in terms of technical and legal complexities. Furthermore, local decision-makers face significant planning uncertainties as the energy transition progresses (VKU 2024), making it difficult to foresee a scenario in which public ownership might expand under current conditions.

While local electricity grids in Germany are a vital area for studying remunicipalization (Albalade, Bel, and Reeves 2024, 665–66) and a focal point in international research, cited as reference points for broader transformation processes worldwide (see Becker 2017), one must consider its highly specific nature. While the findings presented here may offer insights beyond this particular

case, they cannot be entirely decoupled from their context. Consequently, further research on other countries and sectors is essential, especially since questions regarding public versus private ownership remain highly topical and controversial (Bernier, Florio, and Bance 2020).

This necessity becomes even clearer as similar processes to those in Germany are happening around the world, caused by economic growth in emerging economies, expansion of renewables, and an increasing shift to electricity in industrial production. The IEA (2023, 86–95) estimates that the length of the global electricity grid will double by 2050, while almost half of existing grids will have to be renewed. In addition to the European Union, the United States, China, and various other economies have invested considerable sums in their electricity infrastructure. Despite this, however, grid expansion is not keeping pace with the rise in electricity production. In order to reach the net-zero target in 2050, countries will have to invest USD 1 trillion worldwide from 2035, more than double the annual amount invested in the early 2020s.

Following the windows of opportunity logic, the expansion of renewable energy sources, such as solar and wind power, may provide opportunities for various stakeholders to redefine their roles within the energy system—including local actors and municipalities. New technologies such as hydrogen and battery storage, for instance, require investments into new infrastructure and novel regulation on their ownership (IEA 2024b, 113–34, 2024a, 126–32). This analysis underscores the importance of these framework conditions, which can be influenced by specific developments at the local level, national legislation, as well as cross-border developments and global disruptions. Together, these changes have the potential to profoundly alter the balance of power between market and state actors.

Equally, operating electricity grids is often just one of the many functions utility companies fulfill and focus on in the context of privatization and remunicipalization. Closely linked issues include electricity generation from local plants and electricity marketing. Local policymakers, consumers, and businesses do not view these tasks in isolation but rather as interconnected functions of the energy system (Wagner et al. 2018, 11–12), contrary to the market-based separation heralded under the banner of unbundling (Wagner and Berlo 2017, 399; Kunze 2012, 101).

Beyond electricity, heating is another crucial segment of the energy sector where municipalities play a significant role. Decarbonization introduces new challenges: heat pumps require increased electricity usage and reinforcement of the grid, while district heating systems demand the expansion of infrastructure, including pipelines and access to new heat sources (Dickel 2024, 21). This shift offers opportunities for new collaborations between private and municipal actors. Additionally, the future of gas networks and the role of municipal infrastructure in hydrogen distribution remain open questions (Oduro and Taylor 2023).

In Europe and elsewhere, these energy-related concerns are negotiated at the local level and are coordinated by authorities also involved in entirely different sectors such as elderly care, public transportation, waste management, and water supply (Wollmann 2016, 1–3). Public services encompass a plethora of tasks that sustain economic, cultural, and social life while also binding substantial resources and employing a significant portion of the workforce in developed economies (Barbera and Jones 2021, 8–10).

Future research should explore the interrelationships among these manifold services and identify the priorities of different actors in providing them (McDonald 2024, 1918). This approach could provide deeper insights into strategic considerations regarding public or private ownership. Moreover, this diversity of locally based services presents both challenges and opportunities for research. Examining the specific characteristics of different sectors would enable researchers to identify commonalities across various public service domains. Electricity grids, for instance, are infrastructure-based monopolies and thus operate differently from social services, energy marketing, or waste management.

By looking into connections between different areas of public service, research can better distinguish sector-specific processes from universally applicable trends, identifying similarities and differences while also fostering a more comprehensive understanding of remunicipalization across diverse contexts.

As debates over the balance between state and market persist, the planned restructuring of established economic and societal structures—away from fossil fuels and toward a carbon-neutral way of life—could indeed necessitate a more coordinated role for public authorities, potentially using public ownership as a means of direct control (Prag, Röttgers, and Scherrer 2018; Benoit et al. 2022, 9–12). Those who draw comparisons between the upcoming transformation processes and the industrial revolution call for greater government action in financing this shift (Mazzucato 2015, 137–39).

However, it remains uncertain whether this transition, presuming it actually continues, will constitute a clear break from previous technologies or merely an evolution of existing infrastructure and energy systems. Depending on the trajectory, we may not witness a renaissance of essential services under public ownership. Instead, the transformation could continue along market-driven lines, expanding public-private hybrid models as private actors drive up demand for sustainable energy (World Bank Group 2024; Tzankova 2020; World Economic Forum 2024).

Yet, another parallel to past eras could emerge in the role of public ownership and state intervention in response to intensified global conflicts. Recent disruptions, such as the COVID-19 pandemic and Russia's war against Ukraine, have highlighted the need to maintain critical

infrastructures and secure essential supply chains (EEAS 2023; The Guardian 2024). Heightened tensions among leading economies have prompted some observers to introduce the term "deglob- alization" (World Economic Forum 2023; The Economist 2024) into the discussion. Others speak of a "global turn away from free market policies" (New York Times 2024) and a "fall of the neoliberal order" (see Gerstle 2022). European leaders talk about the need to enter a "war economy" (Politico 2023a; Le Monde 2022).

Without being able to definitively assess whether these terms accurately describe the current state or are premature, the very fact that they are being discussed creates the possibility for renewed debate about the role of the state and the balance between private and public ownership. To briefly revisit Germany as an example, the federal government nationalized Uniper, a major gas supply company, following the Russian invasion of Ukraine (BMF and BMWK 2022) and discussed state involvement in the transmission system operator TenneT (Tagesschau 2022)—once again under- scoring the strategic importance of critical infrastructure. Electricity grids and energy infrastruc- ture, with energy as the "lifeblood of modern society" (Newell 2021, 16), occupy a central position in these ongoing debates about de-risking and security. As a result, the energy sector is very likely to be central to our understanding of whether or not these developments will be accompanied by a shift towards more public ownership and state involvement or not.

This discussion invites a return to the pendulum metaphor introduced at the beginning of this dissertation: Is it an accurate depiction of the shifts between public and private ownership? Only time and further research will provide a definitive answer. Yet, this dissertation suggests that if a shift toward greater public ownership and state involvement transpires, it will be part of a broader reconfiguration of preferences rather than the result of a single party's agenda or an isolated shift starting at the local level. Functional pressures for adaptation outweigh the ideological predis- positions of individual actors. The findings of this dissertation, however granular in comparison to these larger developments, align well with this greater interpretation. Ultimately, it is the conver- gence of multiple evolving environments that shapes these transformations—a dynamic worth- while continued observation and study.

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Study I:

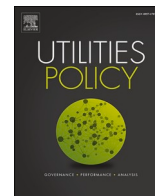
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Full-length article

Local-level ownership of electricity grids: An analysis of Germany's distribution system operators (DSOs)

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ABSTRACT

Electricity grids are crucial for the energy transition. Despite its importance for renewable energy, the literature on grid ownership at the local level in Germany lacks up-to-date knowledge. Existing research does not state the extent to which municipalities own distribution system operators (DSOs). Based on a novel dataset on grid operators in 10,800 German municipalities, this paper can provide for the first time an overview of the current ownership of electricity distribution companies. Although the electricity infrastructure is decentralised, ownership remains centralised in the hands of Germany's leading energy companies and concentrated in affluent population centres.

1. Introduction

The transition to renewable energy sources is changing how electricity grids work and the role of their operators. As the use of renewable energy (RE) resources increases, there is a greater emphasis on the role of medium- and low-voltage grids. This shift has implications for local communities and raises questions about local decision-making in addition to national and international energy policy (Moss et al., 2015, 2, 13).

New public management reforms have changed how local governments operate and have often been accompanied by the privatisation of publicly owned enterprises. While privatisation is debated internationally, there is an often-overlooked movement towards remunicipalisation. In numerous countries and sectors, political and civil society actors are advocating for the return of formerly privatised companies under municipal ownership. The German electricity market is an example (Petitjean and Kishimoto, 2017, pp. 163–165).

Policy analysts have focused mainly on privatisation at the national level. In contrast, according to Sack (2019, p. 174), ownership at the subnational level has received little attention. Libbe (2021, p. 304) notes that reliable information on the extent of remunicipalisation [and, in turn, privatisation] of electricity supply in Germany is mostly missing. Despite insights from Richter et al. (2006), Breimeier et al. (2006), Richter (2007), and Lormes (2016), there is no comprehensive and up-to-date overview of German distribution grid operators (DSOs).

DSOs are key players in our energy systems. Together with Transmission System Operators (TSOs), they manage the input of electricity

and balance supply and demand. This function includes stabilising the grid's voltage to ensure reliable energy delivery to homes, public and commercial buildings, and local factories (Hoicka and MacArthur, 2021, p. 77). DSOs are the last link in this process, operating the power lines reaching most homes and buildings.

Furthermore, distribution grids and their transformation play a central role in the climate-neutral conversion of our energy systems. DSOs are responsible for adapting local-level grid infrastructure in response to the growth of RE generation, making it relevant to know whether municipal actors control local power grids. They are the energy transition's backbone (Bundesministerium für Wirtschaft und Energie, 2020, p. 1).

Despite this importance, there is little social analysis of DSOs and electricity infrastructure, according to Hoicka and MacArthur (2021, p. 91).

This study aims to provide new insights into public utilities at the local level by identifying local ownership of DSOs. By examining whether municipal or non-municipal companies operate DSOs, the study contributes to our understanding of the current state of local-level electricity grid ownership.

The study uses data from the website *Störungs Auskunft* and information from about 900 electricity companies to determine the ownership status of DSOs for around 10,800 individual municipalities in Germany. By combining these two sources of data, the study creates a novel dataset that provides detailed information on the ownership of local electricity grids for all municipalities in Germany. This approach allows for a comprehensive look at DSO ownership based on economic

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and geographical differences between municipalities.

Analysis shows that while electricity infrastructure is becoming more decentralised, ownership remains centralised. Urban-rural and East-West differences are key factors for local ownership of DSOs in Germany. In urban areas and the industrially strong South, municipal ownership predominates, while in the Northeast and rural areas, privately owned DSOs are the primary operators of most grids.

This study provides new insights into the German electricity market and the privatisation of local services. Thus, it adds to the literature on local-level service provision and helps to understand the dynamics of the German electricity market. As such, the study provides insights into the multitude of DSO contracts that will expire in the early 2030s, a critical point in Germany's energy transformation.

2. Local power grids and DSO ownership

Historically, DSOs have been mostly limited to distributing electricity to consumers. However, this is changing with the increasing expansion of renewable energy. The decentralisation of power generation necessitates a grid transformation (Hoicka and MacArthur, 2021, p. 88).

As shown in Fig. 1, with the expansion of renewables, electricity is no longer generated in centralised fossil fuel power plants but increasingly in wind, biogas, or solar power facilities that are decentralised across the landscape or mounted on rooftops.

TSOs cannot feed in this electricity via their large, high-voltage lines that connect regions. Instead, it is primarily the DSOs that must feed this energy into their local distribution grids. They feed in more than 90 percent of renewable electricity (EU DSO Entity), which is not what the distribution grid was originally designed to do.

Additionally, there are other challenges that DSOs face as governments move toward a carbon-neutral economy. The expansion of e-mobility means that local grids need to supply power to EV charging stations and wall boxes. The decarbonisation of residential heating is closely linked to the increased installation of heat pumps. Industrial processes are increasingly being electrified to displace fossil fuels in production (Fraunhofer ISI et al., 2021).

The distribution grid must accommodate all these trends. To this end, grid control must become smarter in feeding in and efficiently distributing electricity, including expanding and modifying existing local power lines, rolling out smart meters, and energy storage (Drewello, 2022, pp. 11–12).

However, this also leads to the potential for DSOs to become bottlenecks in the energy transition. Their investments in grids are the basis for a successful expansion of renewable energy and the decarbonisation of the economy.

As expanding and investing in distribution grids are paramount and in the public interest, it is essential to know whether DSOs are majority-owned by non-municipal actors or municipalities. While municipal companies are subject to local control and must act accordingly, for private companies, such a democratic commitment is, at best, voluntary. They are accountable to their shareholders, who expect them to hit return-on-investment quotas or achieve annual revenue goals (Engartner, 2016, pp. 238–239).

Investments and service quality are subject to these corporate strategies, often leaving consumers unsatisfied with the service (Letza et al., 2004, p. 169). Furthermore, critics argue that municipal authorities do not directly influence grid expansion when DSOs are privatised, depriving municipalities of a tool to steer the local energy transition (Berlo and Wagner, 2017, p. 551).

Although corporate and local interests can align, there is no guarantee that they will in all cases. For example, Wagner and Berlo (2015, p. 562) argue that large DSOs tend to prioritise their grid investments on large-scale offshore wind projects, whereas smaller grass-roots projects are left behind. Drewello (2022, p. 6) similarly argues that incumbents support 'centralised strategies and policies.' As Petitjean and Kishimoto

(2017, p. 160) call it, a 'public ethos' is only guaranteed under public ownership. Therefore, whether DSOs are public or private is relevant to overall energy policy.

Regarding factors connected to DSO shareholding, I expect that urban-rural differences, geographical location, and municipal size are linked to municipal ownership.¹ One reason is the role economies of scale play. Larger (private) companies are assumed to be more efficient than smaller municipal ones (Wassenaar et al., 2010, p. 2). The liberalisation of electricity markets pressures smaller rural municipalities to sell or merge their DSOs. Furthermore, rural infrastructure is typically more expansive (Diermeier, 2020, p. 544). Consequently, larger cities, but also economically strong locations, may counteract pressures to privatise or merge operations, while smaller cities and rural municipalities are more exposed to them (Canzler and Knie, 2009, p. 107).

Likewise, geographical circumstances are essential for renewable electricity. Wind power, for example, can be generated near the coast or in remote mountain regions, while hydroelectric power requires proximity to suitable water reservoirs. Solar power requires steady sunshine (Drewello, 2022, pp. 3–4). Since grid expansion and the development of these renewable energies are interrelated, these geographical factors affect the DSO market.

3. German energy market and local politics

The local level is particularly relevant to public investment and regional development. In Germany, more than half of government spending is administered at the subnational level (Bremer et al., 2021, p. 1). This significance of subnational politics is deeply rooted in German history, with municipal utilities enjoying a rich tradition dating back to the end of the 19th century (Menges and Müller-Kirchenbauer, 2012, p. 59).

Likewise, Germany is an early RE adopter and one of the first countries to introduce a federal feed-in law for solar and wind power at the end of the 20th century. In the 1970s, *Solarförderverein Aachen* pioneered this idea (Jänicke and Quitzow, 2016, p. 58). Local initiatives and citizen participation have played a crucial role in Germany's energy transition, making the local level vital for developing the energy system (Kersting and Roth, 2017, p. 1148).

Germany is not known for widespread privatisation compared to other countries (Garrone and Marzano, 2013, p. 4). Nonetheless, some steps have been taken toward privatisation, particularly in the energy sector (Richter, 2007, p. 60). Market liberalisation and European unbundling, which were intended to create greater competition, led to more centralisation of energy in Germany (Kungl, 2014, pp. 12–14). An example is the so-called "Big Four" companies: E. ON, RWE, EnBW, and Vattenfall. Their dominance was created in the late 1990s and early 2000s due to several mergers and acquisitions of smaller energy companies.

This trend did not continue unabated. After the Fukushima disaster, the "Big Four" faced challenges and had to adapt to the changing energy landscape. They underwent partial sales of the transmission grid and certain subsidiaries (Fuchs et al., 2012, 18 & 23). Nevertheless, the companies remain the prominent players in Germany's energy industry. In the distribution grid subsector, E. ON took over RWE's business, among others (E.ON, 2019); accordingly, E. ON and EnBW dominate it.

Specific to Germany are the East-West differences in its utility markets. After reunification, the DSO market in the West remained unchanged, while in the East, it was reorganised. In 1994, authorities signed a contract with West Germany's leading energy companies, privatising the major segments of the East German electricity market

¹ Since this study focuses on status quo, partisan theory or other approaches would not yield meaningful results. With cross-sectional data, as it is used here, it is not possible to conclude whether the status quo is due to the political situation today or 15 years ago.

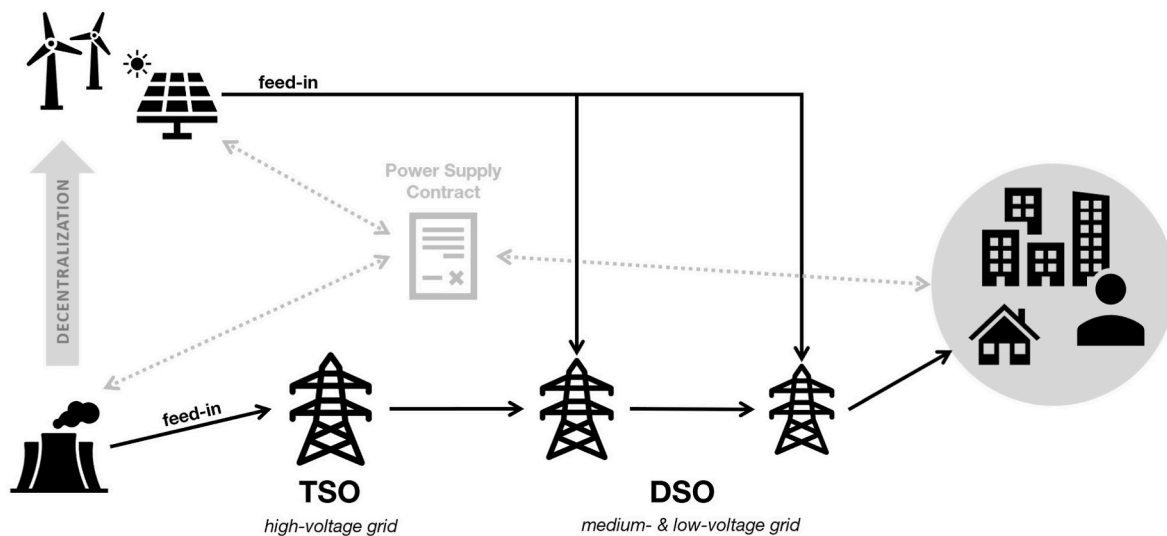


Fig. 1. Decentralisation of energy market and grid operations in Germany.

(Richter, 2007, p. 60). Municipal DSOs have been established only in a few exceptional cases (Lormes, 2016, pp. 58–59). Privatisation of utilities faced fewer obstacles in the former GDR.

At the same time, Germany's geography is significant for its energy transition. The Northeast mainly generates wind energy (Fuchs et al., 2012, p. 28). It has favourable conditions with access to large offshore wind farms, is closer to Germany's coastal lines, and has fewer big-city neighbourhoods (Drewello, 2022, pp. 3–4), making it suitable for large-scale wind power expansion projects. In contrast, the industrially stronger Southwest has higher power demand (Bundesministerium für Wirtschaft und Energie, 2020, p. 1). Accordingly, the regions have different demands on the grid transition and, thus, on DSO companies.

At least every 20 years, municipalities in Germany have to re-tender their power grids. In the early 2010s, this was particularly frequent. In 2013 and 2014 alone, approximately 3000 power grid contracts expired (Menges and Müller-Kirchenbauer, 2012, p. 52). Although there are other ways in which ownership can change, most municipalities use these re-awarding procedures to privatise or municipalise their grid (Lormes, 2016, p. 115).

Consequently, a new wave of local grid procurements is expected in the early 2030s, meaning most grids will be re-awarded at a critical time for German energy policy. The federal government plans to phase out coal for electricity generation within this timeframe, following the phase-out of nuclear power in 2023. Consequently, most of Germany's power grid will need to be upgraded to replace centrally generated coal-based electricity with decentralised renewable electricity by 2035 (VKU - Verband kommunaler Unternehmen, 2023, p. 2).

Germany aims to have over 20 million electric cars on its roads by 2030, install 6.5 million heat pumps in households, and generate almost 80 percent of the electricity consumed renewably. Investing in local-level distribution grids is essential to achieving this goal (Bundesnetzagentur, 2020).

The energy association BDEW estimates that investments of more than 50 billion euros will be needed in the high-voltage transmission grid by 2030, with another 50 billion euros needed for local distribution grids (BDEW - Bundesverband der Energie- und Wasserwirtschaft, 2021). Furthermore, expenditure for grid operations has reached a 10-year peak in 2021 (Bundesnetzagentur and Bundeskartellamt, 2021). Annual total costs amount to 8.7 billion euros. In unison, potential revenue is increasing. E. ON expects that the turnover of its grid operations will grow by 3%–4% annually (Tagesschau, 2021).

4. Previous research

Despite their importance, the literature on DSO ownership in Germany is limited. Previous studies have mainly relied on data from a few regions or cities. Subsequently, we have no information on DSO ownership for all German municipalities or the factors associated with it.

According to the more general literature, the number of private utility companies increased during the 1990s, with the strongest privatisation trend observed locally (Sack, 2019, p. 172). Richter et al. (2006, pp. 71–72) found that more than 95% of the 124 municipal utility companies they studied had undergone formal privatisation of electricity supply. Bremeier et al. (2006, p. 39) stated that more than half of the municipalities that responded to their questionnaire reported having a private operator take over their grid. According to Sack (2019, p. 172), PwC (2002) also notes a share of more than 60% for material privatisation in its *Kommunalstudie* from the early 2000s.

In contrast, Lormes (2016, p. 115) counted 120 cases of energy utility companies being municipalised between 2005 and 2014. Furthermore, Lormes (2016, p. 105) observed an increase in DSOs in the 1990s and toward the end of the 2000s. This trend may be due to European legislation on unbundling and local politics driving the remunicipalisation of public utilities (Wagner and Berlo, 2017, p. 399).

Additionally, research noted a distinct East-West divide. Richter (2007, pp. 98–99) found that Schleswig-Holstein and Bavaria had a higher percentage of public DSOs than Brandenburg and Saxony-Anhalt, respectively.

Researchers have also noted that recent remunicipalisation initiatives occur mainly in West German states such as North Rhine-Westphalia, Baden-Württemberg, and Lower Saxony (Berlo and Wagner, 2015, p. 43). This pattern suggests a significant difference in the degree of privatisation between East and West German municipalities.

In the 2010s, E. ON, RWE, and EnBW, three of Germany's leading energy companies, had a strong market position. Together, they operate more than 50% of all local electricity grids in Germany, according to Berlo et al. (2016, p. 115). Moss et al. (2015, p. 9) confirm this in their study of Brandenburg, where subsidiaries of large energy companies operate 'nearly all regional power networks.'

Despite this, Moss et al. (2015, p. 9) claim that DSOs are known for their diverse ownership. Among the nearly 900 local energy companies are small family businesses, cooperatives, public utilities owned by municipalities, subsidiaries of the major energy companies, and various other mixed-form companies. However, whether the market dominance of the incumbents has passed its peak, as Becker (2017, p. 119) suggests,

remains to be discussed, as they likely still control significant market share.

Furthermore, research suggests that small municipalities are supplied mainly by private DSOs. Garrone and Marzano (2013, p. 21) and Graf et al. (2013, p. 248) found that smaller municipalities are more likely to privatise their DSOs. As mentioned above, economies of scale can improve administrative efficiency and output capacity.

Bremeier et al. (2006, pp. 38–39) identified two groups of municipalities based on their population size. They found that in municipalities with less than 20,000 residents, E. ON, RWE, and EnBW typically operate most municipal power grids. In larger cities with more than 20,000 residents, municipal DSOs are more prevalent.

Scholars have noted that municipalities with populations between 10,000 and 50,000 are particularly likely to establish their own utility companies. In a study of 72 cases of remunicipalisation, Wagner and Berlo (2017, p. 402) found that 42 of these newly founded utility companies were located in towns with fewer than 25,000 residents. Lormes (2016, p. 117) identified 120 new municipal energy companies, 20 of which were inter-municipal, serving 190 municipalities. In a later study, Berlo et al. (2022, p. 97) found approximately 150 municipal utilities. It should be noted that these figures refer to all energy utilities, not just electricity grids.

Both studies highlight that the population alone is not a reliable predictor of privatisation. Small municipalities can overcome the disadvantages of scaling and compete effectively by forming inter-municipal DSOs in cooperation with neighbouring municipalities (Wagner and Berlo, 2017, p. 402).

In summary, researchers have observed that private actors operate most electricity grids in Germany, particularly in East German states and small municipalities. However, these observations are based on limited data, such as figures on newly founded DSOs or small-scale surveys. No comprehensive national analysis of local grid privatisation in Germany has been conducted. This study addresses this gap by providing a complete overview of municipal and private DSOs in Germany using nationwide data, enabling a more reliable assessment of previously theorised trends.

5. Data and operationalisation

At first glance, the distinction between municipal and private DSO ownership seems straightforward. However, it is essential to differentiate between formal and material privatisation. All companies organised in a private legal form are, formally speaking, private companies. Even then, cities and municipalities can be these enterprises' sole or majority shareholders, meaning that they can be formally privatised but still be under complete municipal control. Material privatisation, on the other hand, focuses on the actual transfer of assets between public and private actors (Schmitt and Obinger, 2011, p. 2).

This study follows the material definition of privatisation, focusing on the ownership of corporate assets and not the legal form of DSOs (Sack, 2019, p. 25). For this analysis, 'municipal companies' are defined as municipalities holding an unmediated majority share. In contrast, private ownership is defined as one or more nongovernment investors holding a majority share. Privatisation and remunicipalisation are the transitions of asset majorities between private and municipal investors.

In practice, distinguishing between municipal and private ownership of DSOs can be difficult. DSOs blur the line between purely private and purely municipal ownership. For example, large energy companies and municipal institutions often share the assets of public utility companies (Lormes, 2016, p. 119). Cities may also join forces and establish cooperative ventures (Lormes, 2016, p. 117). Local authorities may be shareholders of private holdings that own shares in utility enterprises elsewhere. There are many different forms of mixed and nested corporate arrangements, also involving national or state actors.

This complex and sometimes convoluted organisational structure of public service corporations is challenging to capture accurately.

Operationalisation must strike a balance between accuracy and simplicity. It should accurately capture different organisational models without becoming overly detailed or impractical to implement. To do so, operationalisation distinguishes between municipal and non-municipal DSOs.

Different studies have used a variety of indicators to measure public ownership in different sectors. For example, Lormes (2016, p. 107) uses data on turnover quotas, capital expenditure, and employment figures to capture the municipalisation of the energy supply. Zohlh ofer et al. (2015, p. 567) mention similar criteria as possible metrics for measuring the share of state-owned enterprises. Sundell and Lapuente (2012, p. 474), Foged and Aaskoven (2017, p. 142), and Elinder and Jordahl (2013, p. 46) use the municipalities' expenditure on private contract services to measure privatisation. These different indicators can be used individually or combined into indices.

However, these approaches typically focus on the national or regional level and would only be suitable for summarising municipalities into regions. This study uses individual municipalities as units. As a result, the transfer of these tactics is not possible. Andrews et al. (2020, p. 485) and Lormes (2016, p. 133) use operationalisations that allow a clear distinction for individual municipalities, which is suitable for this study.

Andrews et al. (2020, p. 485) use available information on British local authorities' websites to classify companies as public or private based on data on company type and stakeholder statistics. Lormes (2016, p. 133) uses data from the German municipal utility association VKU² to identify newly established members as municipalised enterprises. These members are typically majority-owned by local authorities (Richter, 2007, p. 20).

There are disadvantages to both ways of operationalising the classification. Lormes (2016) used only a small database, which excluded municipal utility companies that had not joined the VKU. However, both approaches can be helpful in this study. Using unmediated majority municipal ownership as a criterion allows us to distinguish between municipal and non-municipal enterprises without excluding formally privatised or mixed enterprises. Therefore, examining share ownership can give us a good overview of the extent of municipal DSO ownership.

Although much current attention is on the subject and local electricity grids are relevant to the energy transition, a comprehensive data set is unavailable. Therefore, this study uses a combination of different data sources to provide an overview.

I fill this gap by collecting data on DSOs and their shareholders. First, a list of all DSOs, their names, and some additional information was obtained from the *Marktstammdatenregister*. In the second step, this information was used to conduct primary research on the shareholders of these DSOs. For about 570 companies, information on their websites could be used. About 130 companies are institutions under public law, such as *A R*, *K R*, or *Eigenbetriebe*. For another 170 companies, shareholder information was obtained via the *Bundesanzeiger* and the *Handelsregister*. Fifty DSOs provided information by messaging them via phone or email, as other sources did not provide sufficient data.

In a third step, this information was combined with a list of all municipalities and their DSOs. This list was compiled using the *St rungs Auskunft* website. Here, the current DSO for each municipality can be looked up using the postal code and the municipality's name.

Together, these data sources allow assigning DSOs and shareholders to each municipality.³ The result is a dataset that can be used to determine whether a municipal or non-municipal DSO operates the distribution network for each municipality in Germany.

Municipal ownership is divided into three subgroups.

² <https://www.vku.de/en/>, accessed 13 October 2023.

³ In municipalities where more than one DSO operates the grid, the DSO with the highest percentage of public ownership was used.

1. Inter-municipal ownership includes companies owned by a majority of shares held cooperatively by two or more municipalities.
2. Extra-municipal ownership refers to companies in which one municipality holds a majority stake, but the municipality that holds the shares differs from the municipality where the company operates.
3. Municipal companies include those in which municipal actors are the unmediated majority or sole owners.

Holding companies such as *Thüga Holding GmbH & Co. KGaA*, *TEAG Thüringer Energie AG*, or *EnBW Kommunale Beteiligungen GmbH* are classified as non-municipal. Even if some of these DSOs are majority-owned by municipalities, they are equity holdings that act relatively independently from local politics and administration. Municipalities do not directly hold shares but are indirect shareholders with little capacity to intervene. As mentioned above, such organisational structures can be challenging to capture. Accordingly, this study only covers DSOs with an unmediated municipal shareholder majority as such.

The descriptive analysis offers a general overview based on local and economic differences. It provides a first impression of the factors associated with DSO ownership, where municipal DSOs operate, and their overall share.

In addition to ownership status, the analysis will use variables such as the overall population and the number of unemployed. As mentioned above, these variables are theorised to be connected to ownership and have been used in similar studies by [Bremer et al. \(2006\)](#), [Richter \(2007\)](#), [Lormes \(2016\)](#), and [Wagner and Berlo \(2017\)](#). The analysis should also help to revisit and re-evaluate their findings based on more elaborate data.

Furthermore, the study uses travel time to medium and larger residential centres to more accurately capture urban-rural differences, introducing another control for the location of municipalities ([Diermeier, 2020](#), pp. 551–552). An East-West dummy variable is included. The data is retrieved from the INKAR database ([BBSR - Bundesinstitut für Bau-, Stadt- und Raumforschung, 2021](#)) and *Regionaldatenbank Deutschland* ([Statistische Ämter des Bundes und der Länder, 2022](#)).

6. Analysis

About 740 distribution system operators (DSOs) manage local power grids in Germany. Some DSOs are privately owned, some are publicly owned, and some are a mix of both. However, this study only considers one DSO per municipality and only includes DSOs with the highest municipal ownership share. This approach reduces the total number of DSOs to 718. Of these, 120 are non-municipal, and 583 are municipal. Municipal DSOs often operate only within a single municipality, increasing their overall number. Private and larger DSOs, on the other hand, tend to operate in multiple cities and towns.

Westnetz, an E. ON subsidiary, is Germany's largest distribution system operator (DSO). It is the only DSO in 1381 municipalities with around 5.4 million inhabitants. The leading energy companies in Germany, especially E. ON and EnBW, are majority or minority shareholders in 136 DSOs. 55% of municipalities are supplied by a DSO, with one of these companies as the majority shareholder. Thus, 23.7 million residents in 5999 municipalities receive electricity from a grid operated by one of Germany's leading energy players. When considering the companies' minority stakes in municipal DSOs, this number increases to 35.2 million residents across an additional 422 municipalities. As a result, E. ON and EnBW have the greatest presence among DSOs in Germany.

When looking at the number of municipal grids operated by DSOs, municipal DSOs are responsible for grid operations in about 20% of German municipalities. Thus, 4 out of 5 municipal power grids are run by the private sector and non-municipal DSOs.

[Fig. 2](#) illustrates the density of municipal ownership shares for all municipalities in Germany. Municipal ownership is not found at higher densities, indicating that non-municipal DSOs supply most

municipalities. Additionally, East Germany has a higher density towards 0% municipal ownership than West Germany. West Germany has a cluster of around 50% municipal ownership, with a slight tilt towards less than 50%.⁴ This finding is due to cooperation models such as *Schleswig-Holstein Netz AG*, an E. ON subsidiary, where municipalities hold 49.9% of the shares.

In some cases, the ratio of municipal to non-municipal ownership is 60:40 or 70:30, as shown by the slowly decreasing slopes. For West Germany, there is a final increase towards 100% municipal ownership. In East Germany, the density plot gradually decreases with a final uptick towards 100%.

In terms of population, these proportions change dramatically. Forty-six million people live in municipalities where at least one municipal DSO runs the grid. Non-municipal DSOs, on the other hand, exclusively serve 37 million residents, which is 9 million fewer than municipal DSOs. Although they serve only one-fifth of all municipalities, municipal DSOs provide electricity to more than half of Germany's residents.

Together, both perspectives show the significant impact of population size. The share of non-municipal DSOs decreases sharply as the number of residents increases. More than 75% of cities with at least 100,000 inhabitants have a municipally owned DSO. For small towns with fewer than 5000 residents, this number is less than 17%. Additionally, [Fig. 3](#) indicates a shift toward a lower share of municipal ownership for smaller municipalities. However, the larger the municipality, the more the density curve shifts toward majority municipal ownership. For municipalities with less than 5000 inhabitants, the density is highest at 0% municipal ownership. For municipalities with more than 50,000 inhabitants, the density is highest at around 100%.

[Figs. 4 and 5](#) show that these differences are even more pronounced in East German municipalities. Approximately 25% of West German municipalities have a municipal DSO, compared to around 13% in East Germany. In West Germany, whether Bremen and Hamburg are included or not, most residents live in a municipality with at least one municipal provider. In East Germany, excluding Berlin, most residents live in non-municipally provided neighbourhoods.⁵ However, the gap for the overall population is smaller compared to the overall shares of DSOs.

Saxony is a unique case. When considered together, its share of non-municipally supplied towns and cities is lower than in Bavaria or Baden-Württemberg. This finding is mainly due to Dresden's DSO, which operates power grids in 116 municipalities. It operates in the surrounding region, drastically improving the overall share of municipal DSOs. In total, it supplies electricity to approximately 1.2 million people, more than double the population of Dresden.

Similar business models can be found near many major urban centres, particularly around Nürnberg, Hannover, and the Rhein-Ruhr region. Excluding these cases, the percentage of solely municipal DSOs in Saxony falls notably behind Saarland, Bavaria, Baden-Württemberg, and Hesse (see [Table 1](#)). These findings illustrate the influence that large cities have on public utility ownership.

Intermunicipal DSOs are almost exclusive to West Germany and are particularly common in Hesse ([Table 1](#)). One reason might be the high number of small municipalities ([Bogumil and Holtkamp, 2013](#), pp. 24–29). Additionally, two local districts own two of the main DSOs in Hesse.

North Rhine-Westphalia, with its metropolitan Rhein-Ruhr region, has the highest share of places with municipal DSOs. In contrast, Lower Saxony, which is mainly rural, has the smallest municipal ownership share in West Germany. Mecklenburg-Western Pomerania has the lowest share for East Germany. With its booming cities of Dresden and Leipzig, Saxony has the highest share in East Germany. Brandenburg, Saxony-Anhalt, and Mecklenburg-Western Pomerania have the lowest

⁴ See [Table 2](#), Appendix.

⁵ See [Table 3](#), Appendix.

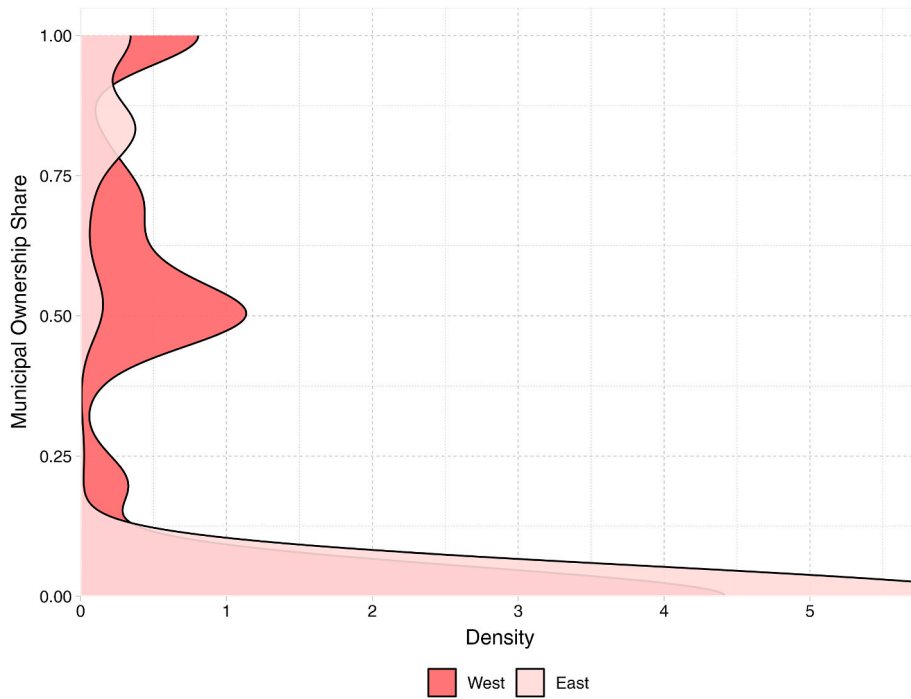


Fig. 2. Density plot for municipal ownership share.

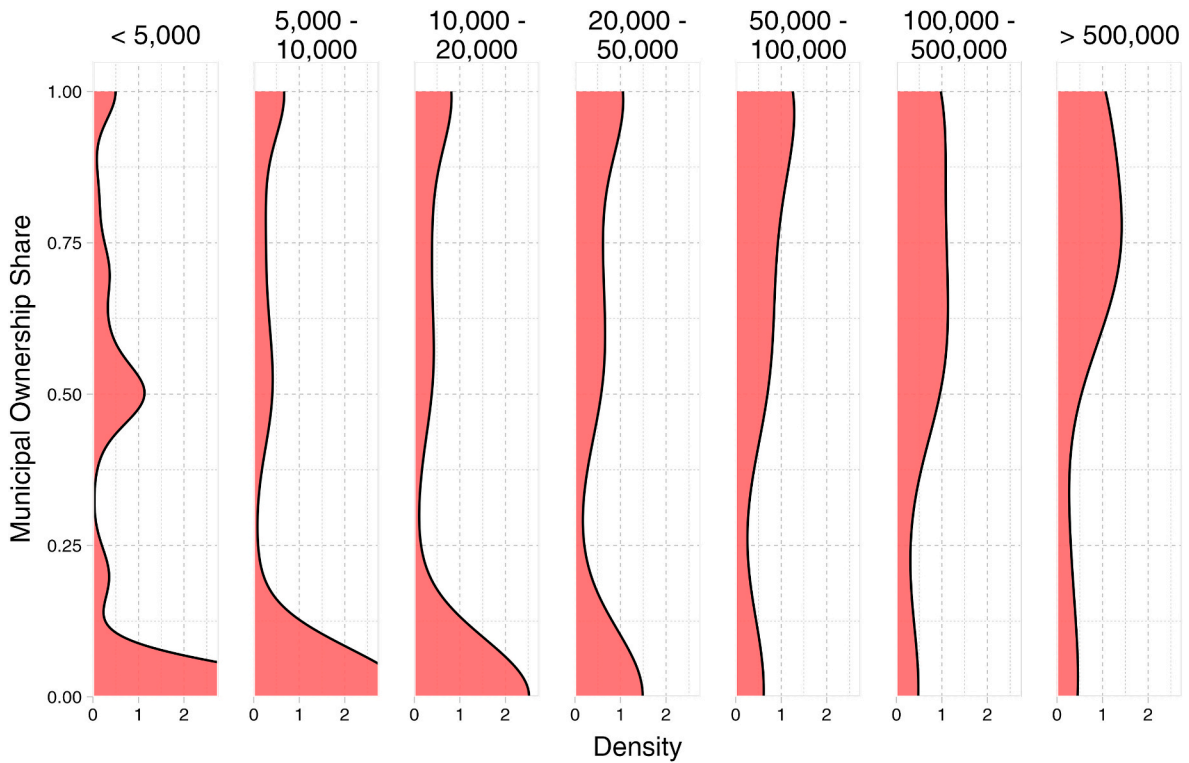


Fig. 3. Ridges plot for municipal ownership share by number of inhabitants.

proportion of municipalities with at least one municipal DSO. Saxony has a higher proportion than Saarland, Bavaria, Baden-Württemberg, Hesse, and Rhineland-Palatinate. Apart from some exceptions, this order is also reflected in the population Fig. ⁶

On the map (Fig. 6), differences between East and West Germany and urban and rural areas are evident. Red spots, representing municipal DSOs, are more common in the Southwest. In addition, extra-municipal DSOs can be seen next to major cities, which are coloured pink. Finally, the light-red areas in the West show a surplus of intermunicipal DSOs. Once again, this is mainly due to their prevalence in Hesse and North Rhine-Westphalia. The grey areas, which represent non-municipal

⁶ see Table 4, Appendix.

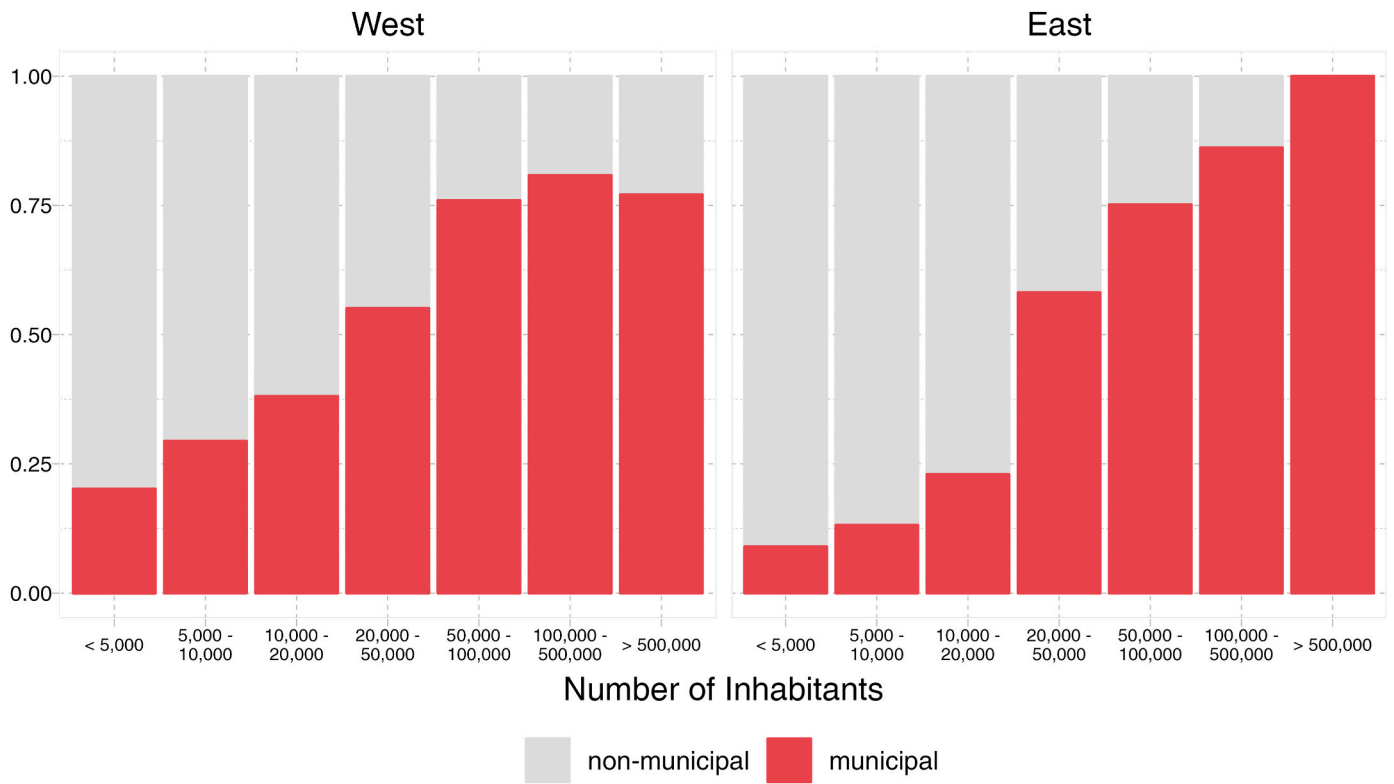


Fig. 4. Share of municipal DSOs by number of inhabitants, by east and west.

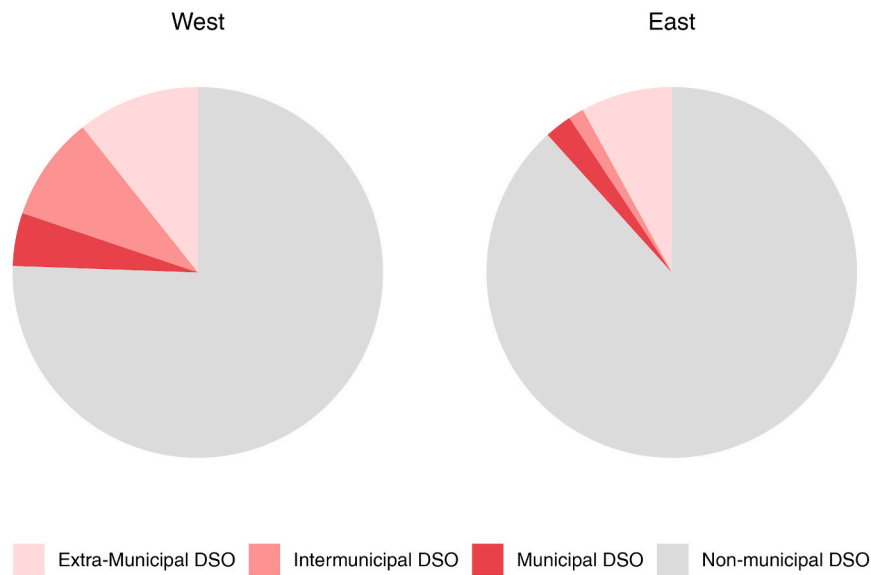


Fig. 5. Pie chart for overall number, by east and west.

DSOs, also reflect urban-rural differences. Here, northern Lower Saxony, large parts of Schleswig-Holstein, and Mecklenburg-Western Pomerania stand out. The map provides visual confirmation of previous observations.

Other indicators further reflect these findings. The distance to large and medium-sized residential centres seemingly influences whether municipalities have a municipal DSO, as shown in Fig. 7. More than three-quarters of major population centres have a city-owned DSO. As distance increases, this share decreases. Suburban municipalities with a travel distance of less than 10 min have a municipal DSO in less than 35% of cases. Municipalities 45 min or farther away from a large

residential centre have a municipal DSO in less than 10% of cases.

7. Discussion

Two patterns emerge: it matters whether municipalities are urban or rural and whether they are in the East or West. In urban regions, municipal DSOs are in the majority. In rural regions, on the other hand, private actors and large non-municipal DSOs are more active. There is a distinct contrast between the South, where municipal DSOs are relatively more common, and the Northeast, where municipal DSOs are less common. These patterns, which can be seen in Fig. 6, are further

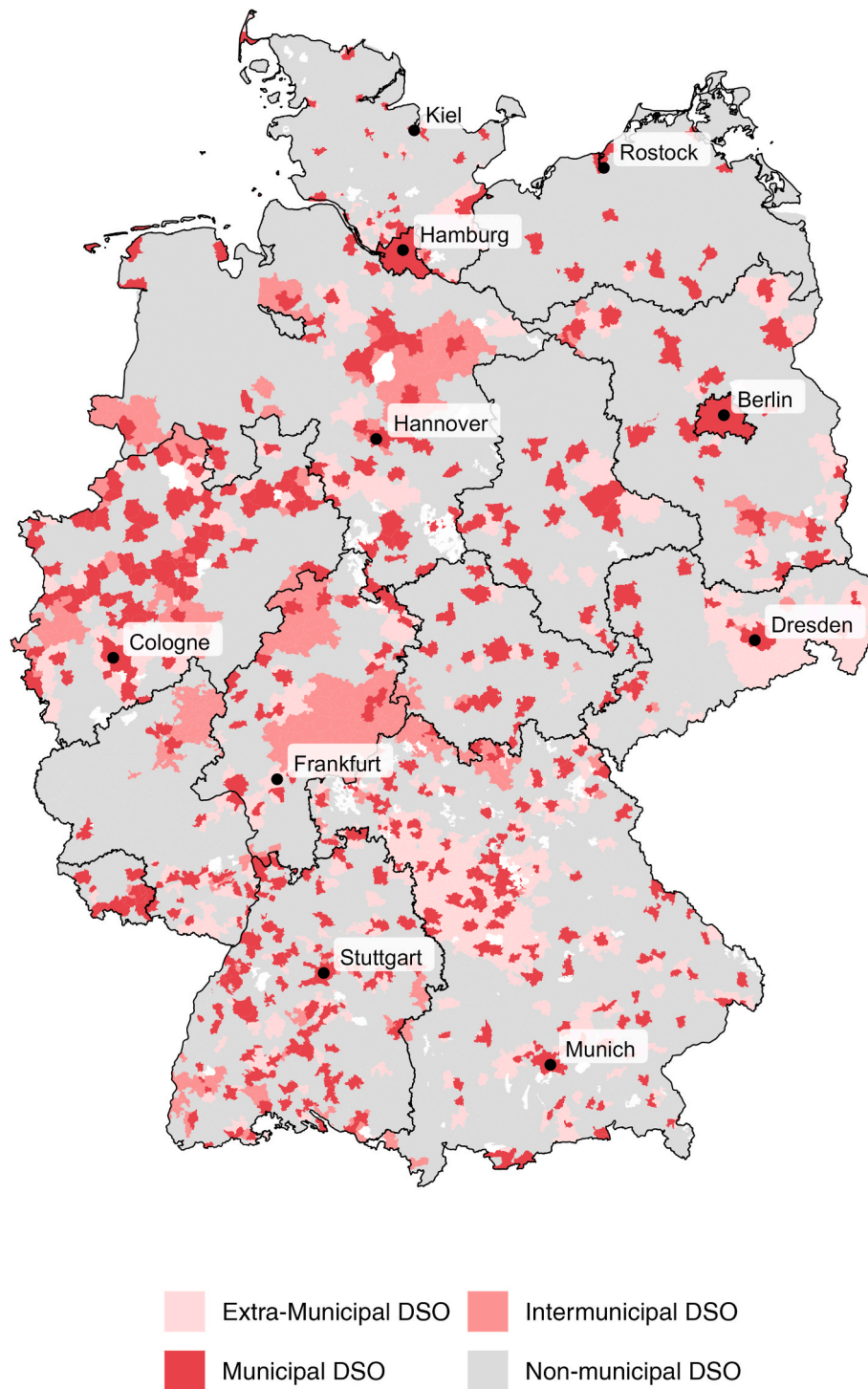


Fig. 6. Map of DSOs by ownership categories.

supported by additional observations.

Hoicka and MacArthur (2021, p. 69) argue that an analysis of electricity infrastructure should understand the word power 'with a double meaning: political and economic power, and electrons that power our lives.' The analysis results show that political and economic power remains centralised, whereas the power of electricity is becoming decentralised. DSO ownership is concentrated, while renewable energy and grid development expansion is dispersed.

Municipal utility companies often extend their economic activities beyond their administrative borders and supply the surrounding area. The same is true for private DSOs, which often serve entire regions.

Approximately 120 non-municipal DSOs supply almost 4/5 of all German municipalities, while more than 580 municipal DSOs serve the remaining fifth. *Westnetz*, *Bayernwerk*, *Avacon*, *Netze BW*, and other subsidiaries of E. ON, EnBW, and Co. Alone supply more than 20 million people.

Overall, the data analysis essentially confirms previous findings in the literature. The outcomes provide evidence for the assumed differences between East and West Germany. The share of power grids held by incumbent energy companies has been accurately assessed. Urban-rural differences are also confirmed. Although it could be debated whether the 20,000 population cut-off point suggested by Bremeier et al. (2006,

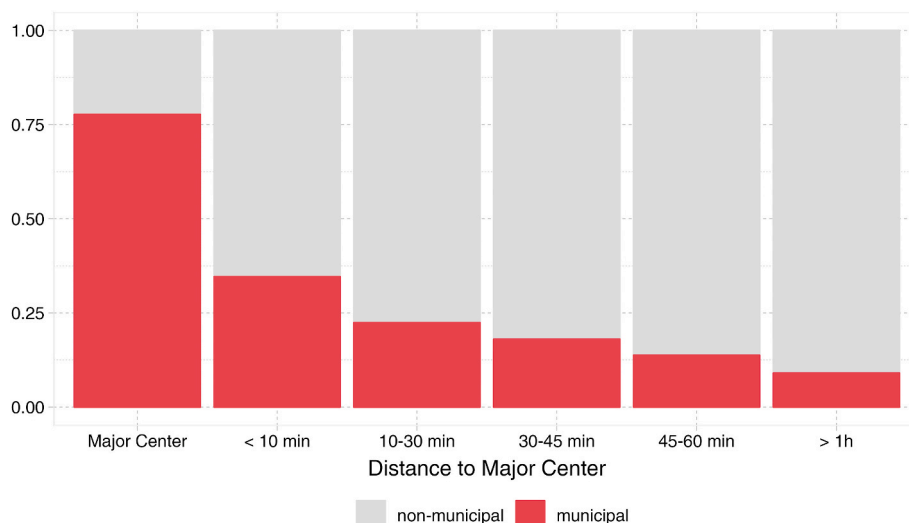


Fig. 7. Share of municipal DSOs by distance to major residential centres.

pp. 38–39) should be higher, all in all, the previous observations are correct despite the lack of data that would have allowed for a more precise picture, as provided in this paper.

Centralisation of ownership and power structures further accentuates the urban-rural conflict in relation to grid expansion. Due to the decentralisation of energy generation, rural areas are increasingly important in securing energy supplies. Cities and industrial centres cannot produce enough green electricity to meet their demand, so they will need to import it from less populous but more spacious municipalities in the countryside, where green energy production, transmission, and distribution grids will be expanded (Czada and Radtke, 2018, p. 66). Urban grid expansion will be mainly driven by demand, while rural grid expansion will be primarily driven by supply.

However, private DSOs or larger cities' utility companies running the grids there are not directly accountable to rural populations but to private shareholders and urban societies. Hall et al. (2016, p. 10) argue that municipalities running their grids are more willing to forgo profits to provide higher-quality electricity infrastructure. As a result, establishing the 'public ethos' described by Petitjean and Kishimoto (2017, p. 160) may be challenging in rural areas.

At the same time, disparities between East and West Germany persist, illustrating how deep the divide remains more than 30 years after reunification, even in the electricity market. Policy decisions made during the 1990s, such as the 1994 privatisation contract, continue to impact current DSO ownership. Thus, path dependence appears to have a significant effect on the overall energy market as well as on DSOs.

Once again, decentralised RE expansion, which has gained significant traction in north-eastern Germany, is at odds with the power and ownership structure. West German energy companies and DSOs from metropolitan regions dominate the East German market.

Ownership differences between urban and rural areas, as well as between East and West Germany, exacerbate existing trends in infrastructure inequality. These inequalities could lead to political conflict. However, there are also opportunities for regional development. For example, RE expansion could reconfigure the energy market to benefit rural areas and East Germany. The industrial South and metropolitan regions are likely to become more dependent on rural areas in the North for energy, which have access to offshore wind and more wind farms.

Consequently, a crucial factor will be how different regions are involved and respond to grid and energy transformation. Citizen participation is crucial (Kersting and Roth, 2017, p. 1148). Corporations need to find ways to include civil actors as essential pillars of grid extension.

Political and economic structures will need to adapt to

infrastructural changes, allowing rural areas and eastern Germany to benefit from renewable energy and grid expansion. Otherwise, distributional and procedural justice concerns may arise from the mismatch between centralised power and decentralised infrastructure, which could hinder the progress of Germany's grid transition.

8. Conclusion

In this study, the ownership structure of German DSOs and the local energy transition were examined. A new data set made it possible to provide a comprehensive overview of where municipal and non-municipal DSOs are active.

Two patterns emerged.

1. Urban and prosperous communities are more likely to be served by municipal DSOs than rural communities with weaker local and economic development.
2. This pattern coincides with a southwest-northeast divide in the overall share of municipal DSOs. Few municipal DSOs operate in rural areas, particularly in former East German states and Lower Saxony.

Additionally, the DSO market remains largely centralised despite the decentralisation of energy infrastructure. Municipal and non-municipal DSO ownership distribution reflects differences between urban centres and rural peripheries. Based on this study, it is unclear whether this mismatch will lead to more communities municipalising their DSOs.

Although there may be some errors in this study due to human error and deviations in the application of criteria, the study still provides an up-to-date overview of German electricity grid ownership. This new data allows for an analysis of the distribution of municipal DSOs based on local-level differences. The study offers a more comprehensive overview of distribution grid ownership than previous research by presenting trends that were previously only theorised based on smaller data sets or indirect measurements. This information is vital for understanding the energy transition and its governance structures.

Finally, this study contributes to a view of energy infrastructure and its owners beyond purely technocratic analyses. The parallels to political conflict between urban population centres and rural regions and continued East-West differences show the need for social science analysis of the energy transition and grid expansion.

DSO ownership could be used as a potential intervening variable to investigate possible links to the progress of local RE expansion. Furthermore, this study only briefly discussed explanatory factors for

ownership change. A longitudinal analysis with additional data could allow us to examine whether and how local political and economic actors influence the decision to sign DSO contracts with private or municipal enterprises. Research into these questions would provide additional explanations for the current results and may be relevant for understanding privatisation and remunicipalisation decisions in the future. As DSO markets will gradually need to adapt to the energy transition and invest more in grid infrastructure, this could be of particular interest in advance of the re-procurement of many German distribution grids in the early 2030s.

Declaration of competing interest

The authors declare the following financial interests/personal

relationships which may be considered as potential competing interests: The website Störungsauskunft allowed me data scraping and scientific usage of its database, but no sharing of unprocessed data. Furthermore, to the best of my knowledge, there are no potential competing interests.

Data availability

The authors do not have permission to share data.

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Appendix

Table 1

Number of Municipalities by Ownership Category

States	Extra-Municipal DSOs	Intermunicipal DSOs	Municipal DSOs	Non-municipal DSOs	Total
Schleswig-Holstein (SH)	137 12.6%	4 0.4%	31 2.8%	919 84.2%	1091 100%
Hamburg (HH)	0 0%	0 0%	1 100%	0 0%	1 100%
Lower Saxony (NI)	43 4.6%	101 10.7%	43 4.6%	753 80.1%	940 100%
Bremen (HB)	0 0%	0 0%	0 0%	2 100%	2 100%
North Rhine-Westphalia (NW)	63 16.3%	46 11.9%	76 19.6%	202 52.2%	387 100%
Hesse (HE)	43 10.2%	120 28.4%	25 5.9%	234 55.5%	422 100%
Rhineland-Palatinate (RP)	124 5.4%	296 12.9%	26 1.1%	1841 80.5%	2287 100%
Baden-Württemberg (BW)	85 7.8%	60 5.5%	83 7.6%	868 79.2%	1096 100%
Bavaria (BY)	410 20%	79 3.9%	124 6.1%	1433 70%	2046 100%
Saarland (SL)	1 1.9%	2 3.8%	13 25%	36 69.2%	52 100%
Berlin (BE)	0 0%	0 0%	1 100%	0 0%	1 100%
Brandenburg (BB)	50 12.2%	19 4.6%	20 4.9%	322 78.3%	411 100%
Mecklenburg-Western Pomerania (MV)	3 0.4%	0 0%	10 1.4%	713 98.2%	726 100%
Saxony (SN)	136 32.5%	3 0.7%	13 3.1%	267 63.7%	419 100%
Saxony-Anhalt (ST)	9 4.1%	0 0%	12 5.5%	196 90.3%	217 100%
Thuringia (TH)	7 1.1%	14 2.2%	14 2.2%	595 94.4%	630 100%
Total	1111 10.4%	744 6.9%	492 4.6%	8381 78.1%	10,728 100%

Table 2

Number of Municipalities by Categorized Ownership Share differentiated by East and West

Municipal Ownership Share	West	East	Total
0%	4806 57.7 %	2083 86.6 %	6889 64.2 %
less equal 10%	50 0.6 %	1 0 %	51 0.5 %
less equal 20%	344 4.1 %	0 0 %	344 3.2 %
less equal 30%	14 0.2 %	8 0.3 %	22 0.2 %
less equal 40%	55 0.7 %	0 0 %	55 0.5 %

(continued on next page)

Table 2 (continued)

Municipal Ownership Share	West	East	Total
less equal 50%	1090 13.1 %	9 0.4 %	1099 10.2 %
less equal 60%	249 3 %	47 2 %	296 2.8 %
less equal 70%	597 7.2 %	9 0.4 %	606 5.6 %
less equal 80%	171 2.1 %	21 0.9 %	192 1.8 %
less equal 90%	62 0.7 %	116 4.8 %	178 1.7 %
less equal 100%	888 10.7 %	110 4.6 %	998 9.3 %
Total	8326 100 %	2404 100 %	10,730 100 %

Table 3

Population Share by Ownership Category and differentiated by East and West (without Berlin, Hamburg, and Bremen)

	Extra-Municipal DSOs	Intermunicipal DSOs	Municipal DSOs	Non-municipal DSOs	Total
East Germany	11.3 %	1.2 %	29.4 %	58.1 %	100%
West Germany	11.6 %	8.2 %	34.2 %	46.0 %	100 %

Table 4

Population Share by Ownership Category and differentiated by States (without Berlin, Hamburg, and Bremen)

States	Extra-Municipal DSOs	Intermunicipal DSOs	Municipal DSOs	Non-municipal DSOs	Total
Schleswig-Holstein (SH)	7.5%	1.8%	30.5%	60.2%	100 %
Lower Saxony (NI)	4.8%	8.0%	23.2%	64.0%	100 %
North Rhine-Westphalia (NW)	12.2%	8.5%	40.3%	39.0%	100 %
Hesse (HE)	20.8%	16.8%	17.9%	44.5%	100 %
Rhineland-Palatinate (RP)	11.2%	11.9%	16.6%	60.3%	100 %
Baden-Württemberg (BW)	8.2%	11.8%	54.9%	25.1%	100 %
Bavaria (BY)	13.7%	2.4%	35.0%	48.9%	100 %
Saarland (SL)	3.7%	3.0%	48.3%	45.0%	100 %
Brandenburg (BB)	7.2%	1.6%	23.7%	67.5%	100 %
Mecklenburg-Western Pomerania (MV)	0.1%	0.0%	30.4%	69.5%	100 %
Saxony (SN)	18.1%	1.4%	35.4%	45.1%	100 %
Saxony-Anhalt (ST)	21.3%	0.0%	17.6%	61.1%	100 %
Thuringia (TH)	1.3%	2.3%	33.9%	62.5%	100 %

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Study II:

“Back to the future? An analysis of party influence on electricity grid remunicipalisation in Germany”

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Back to the Future? An Analysis of Party Influence on Electricity Grid Remunicipalisation in Germany

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Back to the Future? An Analysis of Party Influence on Electricity Grid Remunicipalisation in Germany

The literature on privatisation and nationalisation has presented conflicting results on partisan theory, echoed in studies on local public service ownership. Moreover, there is a notable quantitative research gap on Germany's energy market, the sector most strongly affected by remunicipalisation.

This study addresses this gap by investigating whether party strength impacts the remunicipalisation of local electricity grids in Germany. Using logistic regression on a novel dataset covering approximately 1,800 municipalities in the 2010s, the findings reveal that stronger left-wing or green party representation do not increase remunicipalisation likelihood. Instead, factors such as population size, the local political systems, and municipal finances play substantial roles.

In doing so, it adds valuable insights on a hitherto understudied case and examines the role of partisan theory, whose application has yielded conflicting results. Electricity grids are critical infrastructure for the energy transition, with many contracts in Germany up for renewal in the early 2030s.

Keywords: energy policy, local politics, partisan theory, remunicipalisation, German politics, policy analysis, public policy

Word Count: 8,448

Introduction

Since the 1980s supply-side turn, the privatisation of public services has sparked debate on the state-market relationship. In this context, a lively discussion revolves around whether and how political parties influence the decision to privatise.

Traditionally, privatisation and nationalisation respectively align with right-wing and left-wing party ideologies and their preferences in governments. However, this connection has been examined in various studies and conflicting results have been reported. Studies conducted on state interventionism in the 1980s and 1990s tend to corroborate this connection described by partisan theory, but later studies report contradictory results, indicating that partisan preferences may no longer be relevant or may have shifted (Zohlnhöfer, Engler, and Dümig 2018, 548).

On the local level, a backlash to privatisation has emerged in recent years. Gradus and Budding (2020, 544) find that the trajectory has changed with regard to bringing public services back into public hands. However, the understanding of this trend reversal is limited. The literature on parties at the local level reflects this, as recent studies arrive at different conclusions about whether left-wing and right-wing partisan preferences influence this trend reversal (Gradus, Dijkgraaf, and Budding 2024, 3).

Consequently, this study investigates whether parties impact the remunicipalisation of electricity grids or whether their influence is moderated by local structural and socioeconomic factors. To do so, it places a specific focus on local electricity grids in Germany.

Despite the fact that the energy sector is one of the sectors most heavily affected by remunicipalisation in Germany (Becker 2017, 117), few quantitative studies have been carried out on the subject. Unlike in the UK and other countries, the energy infrastructure in post-war West Germany was organised in a more decentralised manner

(Kuzemko et al. 2016, 103–4). Among other things, Germany’s 10,800 municipalities (*Gemeinden*) are administratively responsible for the distribution grid and, therefore, whether it is operated by the private sector or by municipal companies. They must re-award their electricity grids in a public procedure at least every 20 years. In the early 2010s, this coincided with increased attention on the electricity sector following the Fukushima disaster (Blanchet 2014, 3). According to Becker (2017, 120) as well as Wagner and Berlo (2015, 560), this led to a large number of remunicipalisations, as municipalities took the opportunity to regain their local grids from private providers.

These distribution grids are seen as an important part of the German energy transition (Wagner and Berlo 2017, 398). Many observers argue that, in contrast to established private energy companies such as E.ON or RWE, smaller utilities are driving the expansion of renewable energy (Hughes 2021, 352). Proponents of such a decentralised energy market argue that remunicipalisation can be used as a tool to shape the energy transition accordingly (Blanchet 2014, 6).

To analyse electricity grid remunicipalisation, I use a unique data set based on public announcements made by 2,000 German municipalities between 2010 and 2019 on the procurement of local electricity grids together with information on the shareholder structure of 900 distribution system operators (DSOs). I conduct a logistic regression using data on party strength in each municipality along with institutional, economic, and demographic data, to test the relevance of party influence on decision-making.

Based on partisan theory, I expect that left-wing and green parties in these municipalities increase the likelihood of remunicipalisation, while right-wing parties decrease it. However, the analysis does not show a corresponding correlation, even when considering potential interaction effects between party strength and population

size, local political institutions and fiscal robustness. Instead, the analysis shows that if a larger population, consociational democracy and stronger municipal finances increase the likelihood of such a change, they do so irrespective of the strength of the parties.

This study provides insights that go beyond those gained from analyses of the more prominent cases of electricity grid remunicipalisation in Germany to date. As many grid contracts are set to expire in the early 2030s, the local energy sector's role is crucial for achieving climate neutrality in Germany (Drewello 2022, 2). Remunicipalisation and the decisions made by local politicians will thus shape the roles of local authorities and municipal companies in the energy transition.

At the same time, the study adds to the body of international research on parties' influences on public services ownership, suggesting that structural factors play a greater role in German local politics. In doing so, the study contributes to the debate on the partisan dimension of remunicipalisation, while also providing new data on the German energy sector.

Existing Research on Privatisation and Remunicipalisation at the Local Level

Internationally, there has been extensive discussion on the transition of public services between municipalities and the private sectors. However, this has resulted in many contradictions, as scholars employ different definitions and methodologies (Voorn, van Genugten, and van Thiel 2021, 307). Although it is widely agreed that population size and economic factors like transaction costs, scaling effects or fiscal stress play important roles (Bel and Fageda 2017, 504–7; Clifton et al. 2019, 6), there is conflicting evidence on whether privatisation and remunicipalisation are driven by partisan factors (Gradus, Dijkgraaf, and Budding 2024, 3).

In a meta-study, Bel and Fageda (2007, 529) find that local privatisation is motivated by economic considerations rather than partisan ideologies. Wassenaar,

Groot, and Gradus (2013, 430–31) have noted that pragmatic reasoning and institutional context are highly important. Regarding remunicipalisation, these findings have been echoed by Clifton et al. (2019, 6) and Bel, Hebdon, and Warner (2018, 177) in their overview of quantitative studies. Based on a survey in the United States, Warner and Aldag (2021, 328) corroborate that functional arguments drive remunicipalisation. While unionization does not increase the likelihood of remunicipalisation, transaction costs and service characteristics seem to matter. Likewise, Demuth, Friederiszick, and Reinhold (2022, 244) find no connection between the vote share of left-wing parties and the remunicipalisation of waste collection in Germany.

In an update to their meta-study, however, Bel and Fageda (2017, 507–8) observe that more recent research casts doubt on the finding that pragmatism outweighs ideological factors. For instance, Gradus and Budding (2020, 557) contradict this original presumption in their study on waste collection in the Netherlands, finding that right-wing parties decrease the likelihood of reversing privatisation. Sundell and Lapuente (2012, 479) observe that contracting out in Sweden is more likely when the government's ideology leans economically to the right. This was echoed by Elinder and Jordahl (2013, 50) in their study on preschools and primary schools.

Analysing Spanish municipalities, Campos-Alba et al. (2021, 356–57) find that changing from a conservative to a progressive government increases the chances of returning previously privatized service to municipal hands. Finally, Schoute, Gradus, and Budding (2021, 434–35) note some evidence that larger left-wing representation in Dutch local councils increases the likelihood for both in-house production and intermunicipal cooperation.

Overall, previous authors have arrived at different conclusions about whether partisan ideologies influence the delivery modes and ownership change of public

services at the local level. In contrast, findings for functional arguments such as financial constraints or efficiency gains are less heavily contested (Bel and Fageda 2017, 508). As a consequence, further research on drivers of remunicipalisation is necessary.

For the German context, many studies on remunicipalisation can be identified, especially on energy. However, as Voorn, van Genugten, and van Thiel (2021, 312–13) note, these are mostly non-systematised case studies. Among these is research on remunicipalisation in Berlin and Hamburg (Hall, Lobina, and Terhorst 2013; Pohlmann and Colell 2020; Becker, Naumann, and Moss 2017; Blanchet 2014), as well as contributions concerned with the overall trend (Berlo, Templin, and Wagner 2016; Wagner et al. 2021; Weber, Cabras, and Frahm 2019). In particular, the latter studies placed a strong focus on the electricity market as the sector most heavily affected by remunicipalisation (Becker 2017, 117).

Still, as Gradus and Budding (2020, 540) criticise, many of these studies use anecdotal evidence. As a result, quantitative studies are lacking that examine the remunicipalisation of electricity grid and how party strength influences the likelihood of such a move. This study addresses this gap using novel data on the local electricity grid in Germany.

Despite certain shortcomings, this research provides a first overview of the challenges remunicipalisation faces and the factors that may play a role in the process, giving researchers a useful impression of case- and sector-specific contexts. For example, Hall, Lobina, and Terhorst (2013, 206–7) as well as Paul and Cumbers (2023) find that cost-effectiveness and economic reasons are motives for remunicipalisation. However, municipalities face high financial and administrative hurdles when attempting to take back the local electricity grid, complicating such a move (Berlo, Templin, and

Wagner 2016, 119–21; Paul and Cumbers 2023, 177). In addition, according to Friedländer, Röber, and Schaefer (2021, 304), uncertainty about the efficiency of municipal and private DSOs remains. Incumbents argue that they are better placed to run electricity grids, because they have the necessary expertise (Blanchet 2014, 6).

Overall, by examining the influence of party politics on remunicipalisation, this study adds new insights to this discussion within the literature. By placing a focus on German electricity grids, it fills a research gap in the primarily case study-based literature. Thus, it provides a more thorough analysis of party effects and a more systematic assessment of the remunicipalisation trend in the German energy sector than was previously available.

Partisan Theory and Local-Level Decision-making in Germany

Despite mixed outcomes in the literature on state interventionism, the left-right dimension remains closely linked to privatisation and nationalisation (Obinger, Schmitt, and Zohlnhöfer 2014, 1302, 1314). Particularly from a policy-seeking perspective, left- and right-wing parties can be expected to have different preferences for whether public services should be provided by private or public companies, based on these long-standing ideological differences (Wenzelburger and Zohlnhöfer 2020, 2 & 6). When asked the question of whether DSOs should be remunicipalised, left-wing parties are expected to be in favour of municipal ownership of the electricity grids, while right-wing parties are expected to oppose this.

In addition, some evidence exists that the involvement of the Green Party in the German government has resulted in the implementation of policies that support the development of renewable energy sources (Hughes 2021, 347). Given the significance of electricity infrastructure in renewable energy expansion, I accordingly hypothesise

that green parties advocate for a stronger role of municipalities in energy policy, including the remunicipalisation of electricity grids.

Based on partisan theory, I expect stronger left-wing and green parties to favour remunicipalisation of local electricity grids, while I expect right-wing parties to oppose it:

H1: The more strongly left-wing and green parties are represented in a local council, the more likely the municipality is to remunicipalise its electricity grid.

The more strongly right-wing parties are represented in a local council, the less likely the municipality is to remunicipalise its electricity grid.

However, based on research on local politics and parties in Germany, this study will consider three interaction effects. First, population size might intersect with partisan influence on local politics. Parties have no representation in smaller and rural towns, as independent political groups are more common. In larger cities, however, parties almost always have their own organisations, and often have staff that coordinate the work of their political group in the city council (Bogumil and Ruddat 2022, 122). Councillors receive (higher) financial compensation, enabling them to carry out more autonomous policymaking apart from the administration. Consequently, local politics is more professionalised in larger cities, emulating politics at the national level more closely as the number of city inhabitants increases (Bogumil and Ruddat 2022, 121).

As a consequence, party competition is more likely to unfold in larger cities than in smaller communities (Debus and Gross 2016, 839). This should increase the overall influence of these parties on policy, giving them a crucial role in larger cities. Consequently, the city population might be an important variable that interacts with partisan influence on remunicipalisation:

H2: The positive effects of left-wing and green parties and the negative effect of right-wing parties on the likelihood of electricity grid remunicipalisation increases as population numbers grow.

Second, different institutional contexts in Germany must be considered.

Although direct elections for mayors have been introduced in all 16 states, differences among their local political systems remain, particularly with regard to the council and the role of the mayor (Ruge and Ritgen 2021, 135–37). The electoral system and the nomination process for mayoral and council candidates also vary considerably, giving parties more or less influence, depending on the local constitution and the role it assigns to them.

Accordingly, the influence of parties on policymaking should vary in the different states. North Rhine-Westphalia's local constitution is most strongly oriented towards a competitive democracy among the German states. Here, parties play a more significant role in local politics. Baden-Württemberg, on the other hand, is the state where municipal politics is the least competitive and the most consensual. Based solely on the municipal constitution, party competition should be weakest here (Wollmann 2014, 333; Gross 2023, 151).

Consociational democracy encourages dialogue, consensus, and unanimous decisions, while competitive democracy encourages party conflict and majority decisions. Systems leaning towards competitive democracy emphasise party influence, resulting in more partisan politics and less unanimity (Bogumil and Ruddat 2022, 121–22). The party influence on remunicipalisation decisions should therefore be more likely in states:

H3: The positive effects of left-wing and green parties and the negative effect of right-wing parties on the likelihood of electricity grid remunicipalisation increases as the municipality's local political system becomes more competitive.

Third, municipal finances and local economic strength might intersect with partisan influence. Limited funding may discourage municipalities from pursuing remunicipalisation. Remunicipalisation costs involve acquiring the grid and establishing customer management (DStGB 2017, 31–32). Municipal finances may constrain parties from implementing their preferred policies if they are not financially feasible.

In Germany, the financial scope of local governments depends on the economic strength of the municipality (Bogumil and Ruddat 2022, 128). Here, municipal income is restricted to the local property tax and the business tax (Bremer, Di Carlo, and Wansleben 2021, 13). Local authorities rely on state financial grants, and their budgets are supervised by higher-level officials. The increasing costs of mandatory tasks that are transferred to municipalities from higher levels of government further restrict their financial scope (Bremer, Di Carlo, and Wansleben 2021, 9).

Parties can only advocate for the remunicipalisation of electricity grids if the municipality has sufficient financial resources based on its economic strength. A strong economic and fiscal situation gives left-wing and green parties more financial scope for remunicipalisation, making it more likely that they pursue such a move. Accordingly, their influence might be predetermined by these financial conditions:

H4: The positive effects of left-wing and green parties on the likelihood of electricity grid remunicipalisation increase as the economic and financial situation become stronger.

Data on Local Electricity Grid Ownership in Germany

To examine the influence of parties on remunicipalisation, I collected data from various sources. I used the *Bundesanzeiger*, which contains public announcements made by municipalities, along with information about the ownership structure of distribution system operators (DSOs). I combined both data sources to construct a new dataset, offering a more comprehensive overview of the ownership changes for local electricity grids in the 2010s.

First, I identified municipalities that had to reaward their local power grids in the 2010s. Here, the literature identified an agglomeration of these award procedures (Wagner and Berlo 2015, 560). According to Becker (2017, 120), the expiration of grid contracts provided a window of opportunity for remunicipalisation. While it is also possible for DSOs to change ownership outside of this process by trading shares, the expiration of many contracts in the early 2010s is named in the literature as the starting point for the overarching remunicipalisation trend. For this reason, this study focuses on these changes.

According to the German Energy Industry Act (EnWG), its 10,800 *Gemeinden* are required to renew their electricity grid operation contracts at least every 20 years, publicly announcing contract terminations and new procurement procedures in the *Bundesanzeiger* in accordance with § 46 EnWG (DStGB 2017, 7). Using § 46 EnWG as a search term, I looked for such announcements and identified local authorities who started a procurement procedure in the 2010s. The data set only includes municipalities with a single renewal during the examined years. I documented previous and new grid operators and included announcement and contract termination dates where applicable. When information on DSOs was missing, I filled these gaps using 2020 ownership data

and details from the *Störungsauskunft* website¹. This allowed me to identify for each municipality for which DSO was running its grid in the examined timeframe.

Second, I determined the public or private status of each DSO in 2020 by analysing shareholder data in published annual reports, public websites, and through email and phone communication with the companies. The categorisation was performed on the basis of the material definition of privatisation (Schmitt and Obinger 2011, 2). A company is considered as a municipal company if the municipalities hold an unmediated majority of the shares, regardless of its formal legal status.

By combining these data sources, it was possible to determine when and whether the electricity grid in the municipality was remunicipalised, privatised, or stayed either public or private. Below, a brief descriptive overview of these data will be presented.

When examining the distribution of procurement decisions by year, most municipalities evidently retained a private DSO (Figure 1). Within the study timeframe, these account for more than half of the cases. Even in years when this percentage nears 50%, it is primarily because municipalities chose to remain with public DSOs. In general, the ownership structure is characterised by stability rather than change.

[Figure 1 near here]

However, this does not imply that a significant shift has not occurred from private to public DSOs. Almost 250 cases, i.e. more than 10% of all municipalities studied, remunicipalised their electricity network DSOs (Table 1). This figure is roughly in line with previous estimates reported in the literature (Wagner and Berlo 2015, 561).

¹ see <https://störungsauskunft.de>, accessed 1 March 2024

Most importantly, there are seven times more cases in our data set indicating that cities have remunicipalised rather than privatised their grid. Although less than one quarter of all municipalities had a public DSO at the beginning of the 2010s, this figure increased to about one third by 2019. A brief look at the distribution by federal state reveals that remunicipalisation was more prevalent in the former West Germany. There, 12.2% of local authorities studied had remunicipalised their grids, while only 8.6% did so in former East Germany. Almost three-quarters of all municipalities in former East Germany have either retained their private DSOs or privatised their grids. In contrast, this figure falls below 65% in West Germany.

[Table 1 & Figure 2 near here]

Finally, the size of the individual municipalities and their allocation to the categories is examined (Figure 2). Here, the number of remunicipalisations is lowest in both small towns and highly populated cities. Small municipalities have stayed with their private DSO, while larger cities remained with their public DSO.

The highest share of remunicipalisation is found in cities with 50,000 to 100,000 inhabitants. Here, the share is greater than one quarter of all cases. But even in municipalities with 10,000 to 20,000 inhabitants, the figure is higher than 15%.

Overall, these figures suggest that the privatisation trend has stopped. Instead, a trend towards remunicipalisation gained momentum in the 2010s.

Methods and Operationalisation

The dependent variable in the analysis is whether the newly awarded DSO is municipal. Consequently, the measure serves as a dummy variable for municipal ownership. In the social sciences, logistic models are commonly used to analyse factors that influence such binary variables.

Accordingly, I used logistic regression as a method to test the hypotheses developed in this study. Since I am interested in drivers of remunicipalisation, only cases that had a private DSO in 2010 were considered in the main models. This ensured that only transitions from private to public DSOs were measured².

The key independent variables are party strength, indicating the proportion of seats each party has on the municipal council, which was assessed using election data available via a dataset of Rademacher (2018), and state election offices^{3,4}.

Party strength was measured by using the average of the last three years of data preceding the procurement decision to adequately encompass the decision process, considering that most announcements in the *Bundesanzeiger* are made two years before contract termination and that the concluding vote takes place within the last contract

² To ensure robustness, an alternative model with all cases was run. Additionally, to account for potential selection bias and path dependencies, both a multinomial regression and a Heckman-styled two-step selection model were used. They did not yield drastically different results, meaning that the results of this study should be dependable. The robustness checks are reported in the supplemental material.

³ A comprehensive data set on mayors is unavailable, although they are pivotal figures in local politics. Nevertheless, since all decisions regarding electricity grid remunicipalisation must receive the formal approval of the city council (DStGB 2017, 10), party strength should be a reliable measure.

⁴ As data for Schleswig-Holstein were unavailable for 2013 to 2018, its municipalities were omitted. Parties considered are those represented in the Bundestag, with the AfD being omitted, as it was founded in 2013 and was absent for one third of the observation period. Independents, local groups and Freie Wähler were categorised as *Others* due to their ideological diversity across federal states.

year (DStGB 2017, 13). The same approach was applied to all other time-varying variables.

To assess the institutional context in federal states, the analysis used an index developed by Holtkamp (2003, 25) on local constitutions, but used updated values (Holtkamp and Bogumil 2016, 30). This variable indicated whether the local political system tended towards competitive or consensual democracy. North Rhine-Westphalia, as the German state with the municipal constitution closest to competitive democracy, has the highest score, while Baden-Württemberg has the lowest⁵.

Tax revenue is often used in studies on local politics to monitor local financial and economic conditions (Bremer, Di Carlo, and Wansleben 2021, 13). In this study, I focused on local business tax revenue as the primary indicator for financial framework conditions and its impact on political parties. Unlike other income streams relying on state grants, the business tax is levied directly by the municipality. Simultaneously, it provides a measure for economic strength. Tax data and demographical statistics are provided by the Federal Statistics Office.

Finally, the models include whether a municipality is in former West or East Germany. This distinction remains significant, as East Germany experienced a wave of privatisation after reunification, making private DSOs more prevalent there than in West Germany (Oschmann and Raab 2002, 446–49)⁶.

⁵ Table 7 shows the composition of the index according to Holtkamp and Bogumil (2016, 30).

As we hypothesised that party influence is stronger in more competitive democratic systems, the values were inverted.

⁶ Table 2 gives an overview of all indicators. To accommodate varying data scales, some variables were standardised. In addition, robust standard errors were clustered by state.

Regression Analysis of Party Influence on Remunicipalisation

First, I estimate the model that only includes parties as independent variables (Table 3). Closest to the theoretical expectation is the effect found for the Greens (Figure 3). According to this, the probability of remunicipalisation increases wherever the Greens hold more seats in the city council. This finding is in line with the expectations expressed in hypothesis H₁, fitting both the environmental policy profile and the party's left-wing economic position.

[Table 3 & Figure 3 near here]

However, the share of the SPD and the Left Party councillors are not statistically significant. Therefore, no reliable statements can be made about whether they increase the probability of remunicipalisation. Although this is unexpected based on partisan theory, it echoes the conflicting results found in the international literature. Overall, hypothesis H₁ can be only partially supported based on this party-only model. Regarding the CDU/CSU and FDP, no significant links are found. Taken together, this first model does not provide convincing evidence for partisan theory.

Second, we include business tax, institutional context, and population into the model (Table 3), providing further evidence that undermines support for hypothesis H₁. The Greens' seat share loses its statistical significance, while the effects for the SPD and the Left Party remain statistically not significant. Regarding the CDU/CSU and FDP, the findings also do not change. Overall, Hypothesis H₁ is not supported by these models. The strength of the left-wing parties does not have a significant impact, regardless of the model used. Equally, no statistically significant negative association is found for economically right-wing parties. The hypothesised link is found only for the Greens in the party-only model, but this seems to be context-dependent.

Unlike the party variables, population size and economic strength show the anticipated relationships (Figure 4), but only for business tax at the 10% significance value. The East Germany dummy also shows the expected negative relationship, although this is not statistically significant.

[Figure 4 near here]

Finally, the variable for the institutional context has a clearly negative effect. It is less likely that municipalities with local constitutions that promote more competition between the parties will remunicipalise their electricity grids. This suggests that consociational democracy increases the likelihood of a successful remunicipalisation in the 2010s.

Third, we examine the hypothesised interactions. Here, no effect is found for the interaction between tax and left-wing and Green party strength (Table 4). Instead, the observed positive effect of business tax on the probability of remunicipalisation disappears. Thus, no support for hypothesis H₃ is found. In general, financial strength might have an impact on the probability of remunicipalisation, but it does not moderate the potential effect of the parties as expected.

If the interaction effect between population size and parties is examined (Table 5), the results are similar. The index on local constitutions remains significant, whereas population size shows the expected positive effect in this model on a 5% significance level. This also applies to business tax, albeit at a 10% significance level. Additionally, no positive interaction effect is observed between the SPD and population size. Instead, the model reveals a statistically significant and negative effect. As Figure 5 shows, the effect of the SPD on the probability of remunicipalisation decreases as the number of

inhabitants increases⁷. This applies regardless of whether the SPD is represented above average, at the mean, or below average. Still, a nonlinear trend is observed for the latter two, meaning that the negative effect seems to be stronger in smaller- and medium-sized communities than in larger cities. For the Greens, a similar negative effect is found at a 10% significance level (Figure 6).

[Figure 5 and Figure 6 near here]

These findings are inconsistent with partisan theory and the professionalisation of politics in larger municipalities (Bogumil and Ruddat 2022, 130). Consequently, they raise the question of how much these developments actually influence policymaking at the local level. Although partisanship may be more prominent, unanimity on city councils remains common in medium-sized and larger cities. One potential reason for this seemingly nonlinear effect could thus be that cooperation with other parties and consensus-building are important. This is also supported by the consistently statistically significant indicator for local constitution.

To conclude the analysis, the interaction effects for this indicator were evaluated (Table 6). Again, no fundamentally different picture emerges. Findings for party strength and the influence of population and economic strength remain largely the same. However, a negative effect appears in the interaction with the CDU/CSU. This suggests that the CDU/CSU has a smaller effect in a more competitive setting, meaning that cities with a strong CDU/CSU representation in a consensual setting are more likely to complete remunicipalisation than their counterparts (Figure 7). One reason for this

⁷ Figures 5 to 7 display marginal slopes at the mean and ± 1 SD of the party strength variable, with shading representing standard errors. Figures 5 and 6 include rug plots along the x -axis, while Figure 7 features a density plot to show variable distributions.

could be that the CDU/CSU is more often part of cross-party compromises in the latter municipalities. In a more competitive democratic environment, in contrast, party compromises should be less frequent. Overall, this implies that cross-party agreement may be important for remunicipalisation.

[Figure 7 near here]

In summary, however, this analysis does not provide convincing results for partisan theory. Even the limited assumptions about interaction with other factors do not yield the expected results. Instead, we observe outcomes that are opposite and theoretically unexpected. Based on these results, all hypotheses must be rejected. While the significance of parties should not be dismissed outright, the partisan composition of the local council alone cannot help us to understand why German municipalities remunicipalise. Functionalist arguments and contextual factors under which party competition unfolds must be considered, including the institutional setting for policymaking.

Limited Partisan Influence on Electricity Grid Ownership

The results of this study suggest that party strength has no immediate impact on the likelihood of electricity grid remunicipalisation. Instead, whether the municipality has a good financial situation and enough inhabitants appears to be one factor influencing remunicipalisation decisions. Stability is the norm for grid ownership. And even when a change from a private to a public DSO occurs, this depends on other factors.

Some of the findings imply that wealthier municipalities with more residents are more likely to remunicipalise. Consequently, economies of scale might be important, as it seems to be more difficult for smaller municipalities to establish their own DSO than

for larger cities. This adds to the findings both reported in the international literature (Bel and Fageda 2017, 504–7; Clifton et al. 2019, 6) and from previous case studies on German electricity grids (e.g. Paul and Cumbers 2023, 177) which point to economic lines of arguments. At the same time, this is an indication that large inequalities exist in terms of the policy options municipalities have at their disposal.

Parties are not able to bridge these disparities. Although effects for the Greens can be found in individual models, these are not stable across models. For the Left Party and the SPD, on the other hand, the expected effects do not appear at all. Moreover, neither the party strength of the CDU/CSU nor the FDP has the expected negative influence. The partisan theory, therefore, also cannot be confirmed for the economically right-wing parties. As such, the results are consistent with those of studies showing no evidence for the theoretically expected party influence on public service ownership (e.g. Warner and Aldag 2021, 328; Demuth, Friederiszick, and Reinhold 2022, 244).

The findings on institutional context suggest that local constitutions that promote consensus increase the likelihood of electricity grid remunicipalisation. Furthermore, the interaction effects imply that a stronger CDU/CSU is less likely to be part of such a pro-remunicipalisation coalition in local political systems when more party competition occurs. This indicates that cross-party consensus may precede remunicipalisation decisions, something that is less inherent in majoritarian democratic systems (Bogumil and Ruddat 2022, 121–22).

This finding would also be consistent with the fact that party effects do not even occur in line with theoretical expected interaction effects, as seen by the interaction between leftist parties and higher population. Future case studies should examine whether facilitating broad compromise among parties and persuading other stakeholders are important steps in remunicipalisation efforts.

However, caution in the interpretation of these results is warranted, as financially strong southern states lean towards more consensual local constitutions. Nevertheless, no high multicollinearity or high correlation with other variables is seen⁸. Hence, in municipalities with more competitive local institutions it may be more difficult to agree on remunicipalisation and especially if the city council and the administration have different preferences.

A cross-party consensus might also be necessary for remunicipalisation due to the additional hurdles this presents as compared to privatisation (Berlo, Templin, and Wagner 2016, 119–21). Privatisation provides immediate income for cities, whereas remunicipalisation requires additional investment, with potential income only being generated in the medium- and long-term. Additionally, new personnel must be recruited. Remunicipalisation is thus more challenging for cities to implement both financially and technically and might require more stable political support.

Overall, the findings indicate a restricted role of partisanship within local politics. It is not the attitude of the parties but the local context that determines whether public services are remunicipalised. Adaption to circumstances prevails over partisan lines of argument, which points towards a consensual style of politics that operates across party lines. This has been previously highlighted in the literature on German local politics as local-level institutions increasingly converge across federal states (Bogumil and Ruddat 2022, 122).

Local politics works within set limits and based on local capabilities to create agreement among parties and the administration. However, this also implies that local

⁸ A correlation matrix, assumption checks and regression diagnostics are included in the supplemental material online.

politics has a limited scope for action. Urban-rural differences and financial constraints dictate local municipalities' scope of action, highlighting the role of a functionalised policymaking at the local level.

Conclusion

In this study, the remunicipalisation of electricity distribution companies in Germany was used to test the partisan theory at the local level. Using new data on DSO procurement in the 2010s, it was possible to examine the influence of the party composition of municipal councils on the decision of whether electricity networks are remunicipalised. Using logistic regression, this study yielded three main conclusions:

First, the ownership of DSOs in Germany is characterised by stability. Change is not the norm. However, a trend reversal towards remunicipalisation started to gain ground in the 2010s.

Second, the strength of a party within the local council is not decisive of a higher or lower likelihood for electricity grid remunicipalisation and, indeed, their impact is extremely limited. The context under which the parties operate matters.

Third, as the results imply, population size as well as economic and financial well-being seem to matter, but do not moderate party effects. Additionally, throughout all the specifications and tests, consensual democracy increases the likelihood of remunicipalisation.

There are limitations of this study. These include the study's focus on the 2010s and missing data such as mayoral party affiliation or election results from Schleswig-Holstein. In general, the collection of relevant data relies on whether municipalities providing accurate and reliable information. Nevertheless, they provide the best publicly available sources for tracking DSO ownership changes. Moreover, multiple robustness tests were carried out for further verification. This also applies to lock-in

effects from previous periods, which were not the focus of the study, but which may nevertheless influence the results of the study. Since these effects cannot be ruled out, an attempt was made to control for this as much as possible in the robustness checks.

Overall, the study accounts for a large sample of cases with a considerable variety. Despite the limitations in the data collection, this is a clear strength. This paper provides new insights into the ownership of German local electricity grids. By analysing a novel data set, it finds that the central assumptions of partisan theory do not hold. Instead, contextual factors such as population size, economic strength, and most importantly differences in Germany's local political system matter, whereby the results point towards a more consensual style of politics rather than party competition.

This study both addresses the lack of quantitative studies on utility remunicipalisation in Germany (Voorn, van Genugten, and van Thiel 2021, 312–13; Gradus and Budding 2020, 540) and adds to the international body of literature that contains conflicting results regarding the influence of political parties on public service provision. Here, the results are consistent with those of previous research (e.g. Warner and Aldag 2021, 328; Demuth, Friederiszick, and Reinhold 2022, 244), which found no relationship between political parties and ownership or the in-house-provision of public services.

However, since this study provides an overview of remunicipalisation, theoretically unexpected findings cannot be adequately checked. An approach could be to complement these quantitative findings by conducting systematic case-level research and looking specifically at the interaction between different parties and local actors. This could help us to better understand how remunicipalisation is added to the local political agenda and under which conditions local councils pursue remunicipalisation.

Simultaneously, exploring how local-level policymakers shape the political agenda despite the increasingly limited scope of action would provide valuable insights into how to overcome hurdles in energy policymaking. Given the pivotal role of local politics in driving the energy transition, it is becoming crucial to engage people at the municipal level. And with many electricity grid contracts set to expire again in the 2030s, a point at which the last coal-fired power plants in Germany will be shut down, the urgent need to navigate these challenges becomes even more profound.

Appendix

[Table 2, 4-7]

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Disclosure Statement

The website *Störungs Auskunft* enabled me to perform data scraping and scientifically use its database but not to share of unprocessed data. Furthermore, to the best of my knowledge, there are no potential competing interests.

Table 1: Frequencies of Decisions on DSOs Ownership

Category	Frequency	Percentage
Privatisation	34	1.63
Remunicipalisation	246	11.81
Stayed municipal	464	22.28
Stayed private	1339	64.28

Table 2: Overview of Variables, Measurements and Data Sources

Variable	Measurement	Data Source
DSO Ownership	<i>0 = private; 1 = public</i>	<i>Combined data from Bundesanzeiger, Störungsauskunft and DSOs</i>
Party Strength of SPD, CDU/CSU, Greens, FDP, Left and Others	<i>Seat share in local council (0 - 1; 0= 0%, 1= 100%); average over the last 3 years</i>	<i>Rademacher (2018) and State Election Offices</i>
Population	<i>Number of Residents; standardised</i>	<i>Federal Statistical Office</i>
Index on Local Constitution	<i>Additive Index: higher values indicate more majoritarian democracy; lower values indicate more consociational democracy</i>	<i>Holtkamp and Bogumil (2016, 30)</i>
Business Tax Revenue	<i>Income Surplus of Business Tax per 1000 residents; standardised & lagged by 1 year</i>	<i>Federal Statistical Office</i>
East Germany	<i>0 = West Germany; 1 = East Germany</i>	<i>Federal Statistical Office</i>
Distance to Middle Centre	<i>Travel Time to nearest Middle Population Centre; standardised</i>	<i>BBSR (2021)</i>

Table 3: Logistic Regression – Predictors for Remunicipalisation

	I	II
Intercept	-2.539*** (0.130)	-0.950 (0.668)
SPD Party Strength	0.103 (0.318)	-0.029 (0.285)
CDU/CSU Party Strength	1.204 (0.884)	1.045 (0.811)
Greens Party Strength	4.388** (1.369)	2.332 (2.431)
FDP Party Strength	1.629 (1.581)	1.133 (1.639)
Left Party Strength	-0.609 (1.854)	-1.184 (5.261)
Others	0.290 (0.283)	-0.169 (0.375)
Population		0.356 (0.487)
Business Tax		0.181+ (0.093)
Index on Local Constitution		-0.113** (0.042)
East Germany		-0.246 (0.962)
Num.Obs.	1231	1231

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Standard errors in parentheses;
see Table 2 for data sources

Table 4: Interaction Effects – Business Tax and Party Strength

	Interaction Model
Intercept	-0.920 (0.790)
SPD Party Strength	-0.030 (0.765)
CDU/CSU Party Strength	1.075+ (0.650)
Greens Party Strength	2.485 (2.205)
FDP Party Strength	1.181 (1.631)
Left Party Strength	-1.643 (4.392)
Others	-0.169 (0.595)
Population	0.375 (0.562)
Business Tax	0.117 (0.191)
East Germany	-0.243 (0.594)
Index on Local Constitution	-0.116** (0.042)
SPD x Business Tax	0.533 (0.657)
Greens x Business Tax	-0.989 (2.512)
Left x Business Tax	-3.148 (4.852)
Num.Obs.	1231

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Standard errors in parentheses;
see Table 2 for data sources

Table 5: Interaction Effects – Population and Party Strength

	Interaction Model
Intercept	-0.496 (0.462)
SPD Party Strength	-0.859* (0.385)
CDU/CSU Party Strength	0.669 (0.550)
Greens Party Strength	0.891 (2.646)
FDP Party Strength	0.350 (1.447)
Left Party Strength	-2.677 (5.262)
Others	-0.231 (0.301)
Population	2.468* (1.252)
Business Tax	0.148+ (0.083)
Index on Local Constitution	-0.105* (0.043)
East Germany	-0.123 (0.980)
SPD x Population	-5.295** (1.956)
CDU/CSU x Population	1.527 (1.970)
Greens x Population	-6.887+ (3.748)
FDP x Population	-0.765 (4.914)
Left x Population	-1.946 (2.740)
Num.Obs.	1231

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Standard errors in parentheses;
see Table 2 for data sources

Table 6: Interaction Effects – Local Constitution and Party Strength

	Interaction Model
Intercept	-5.509* (2.583)
SPD Party Strength	4.081 (4.294)
CDU/CSU Party Strength	9.647** (3.455)
Greens Party Strength	3.856 (9.268)
FDP Party Strength	6.535 (8.527)
Left Party Strength	-17.680 (16.103)
Others	0.875 (0.698)
Population	0.298 (0.365)
Business Tax	0.191* (0.083)
East Germany	-0.298 (0.913)
Index on Local Constitution	0.242 (0.198)
SPD x Index on Local Constitution	-0.331 (0.355)
CDU/CSU x Index on Local Constitution	-0.708* (0.286)
Greens x Index on Local Constitution	-0.069 (0.783)
FDP x Index on Local Constitution	-0.411 (0.743)
Left x Index on Local Constitution	1.762 (1.350)
Num.Obs.	1231

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Standard errors in parentheses;
see Table 2 for data sources

Table 7: Index on Institutional Context by Holtkamp and Bogumil (2016, 30)

	BW	SN	ST	RP	TH	BY	BB	MV	SH	NI	SL	HE	NW
<i>a. Electoral System</i>	1	1	1	1	1	1	1	1	2	1	3	1	3
<i>b. Nomination Process Mayoral Candidates</i>	1	2	2	2	2	3	2	2	2	2	2	2	2
<i>c. Joint Election and Mayoral Term of Office</i>	1	1	1	1	2	3	1	1	1	3	1	2	3
<i>d. Everyday Business</i>	1	1	1	1	1	1	3	1	1	3	1	2	3
<i>e. Competences of Elected Deputies</i>	2	2	1	2	2	1	1	2	2	1	3	3	3
<i>f. Collegiality within the Administration</i>	1	1	1	2	1	1	1	1	1	1	1	3	1
<i>g. Chair and Voting Rights in Council</i>	1	1	2	1	1	1	2	3	3	2	2	3	1
Overall	8	9	9	10	10	11	11	11	12	13	13	16	16

Translated and adopted from Holtkamp and Bogumil (2016, 30), individual values were inverted

BW = Baden-Württemberg, SN = Saxony, ST = Saxony-Anhalt, RP = Rhineland-Palatinate, TH = Thuringia, BY = Bavaria, BB = Brandenburg, MV = Mecklenburg-Western Pomerania, SH = Schleswig-Holstein, NI = Lower Saxony, SL = Saarland, HE = Hesse, NW = North-Rhine Westphalia

- a. 1 = vote-splitting and cumulative voting, 2 = mixed system (dependent on population number), 3 = closed party lists
- b. 1 = only independent candidates, 2 = independent and party candidates, 3 = only party candidates
- c. 1 = no co-joint election of council and mayor, mayoral term of office seven years or more, 2 = no co-joint election, term of office five to six years, 3 = co-joint election of council and mayor, term of office five to six years
- d. 1 = sole responsibility of mayor, 2 = transferred to *Magistrat* (administrative cabinet, only Hesse), 3 = delegated by the municipal council / control by councillors
- e. 1 = determined solely by mayor, 2 = determined co-jointly by mayor and council, 3 = determined solely by council
- f. 1 = monocratic administrative head with unlimited authority, 2 = collegial administrative, administrative head with limited authority, 3 = *Magistrat*, administrative head with no authority
- g. 1 = mayor is council chair and has voting rights, 2 = mayor is either council chair or has voting rights, 3 = mayor is neither council chair nor has voting rights

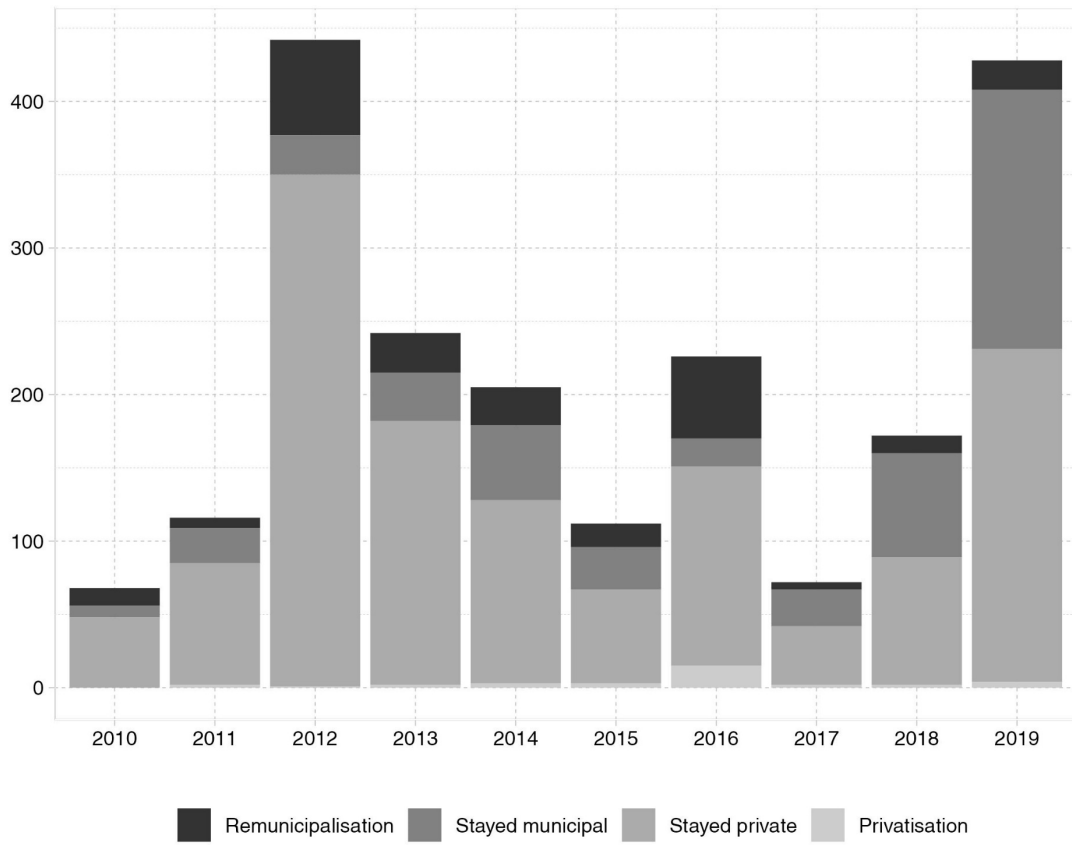


Figure 1: Overall Number of Decisions on DSOs Ownership by Year

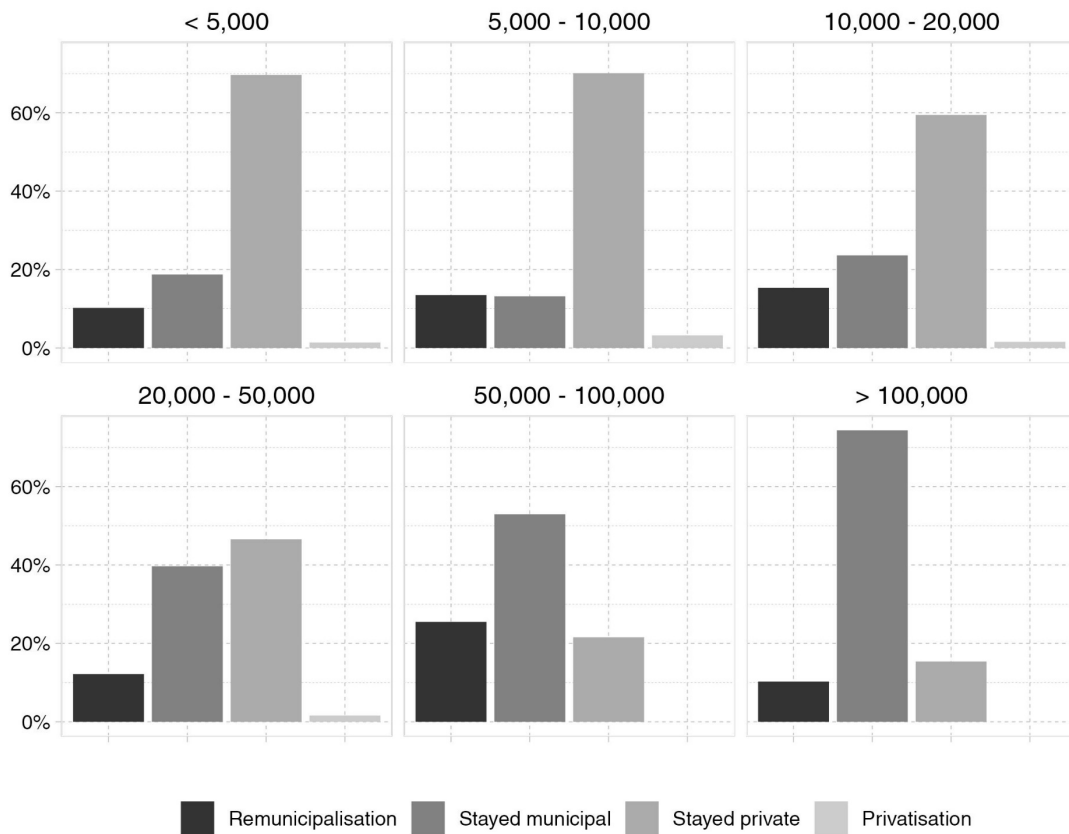


Figure 2: Percentage of Decisions on DSOs Ownership by Population Numbers

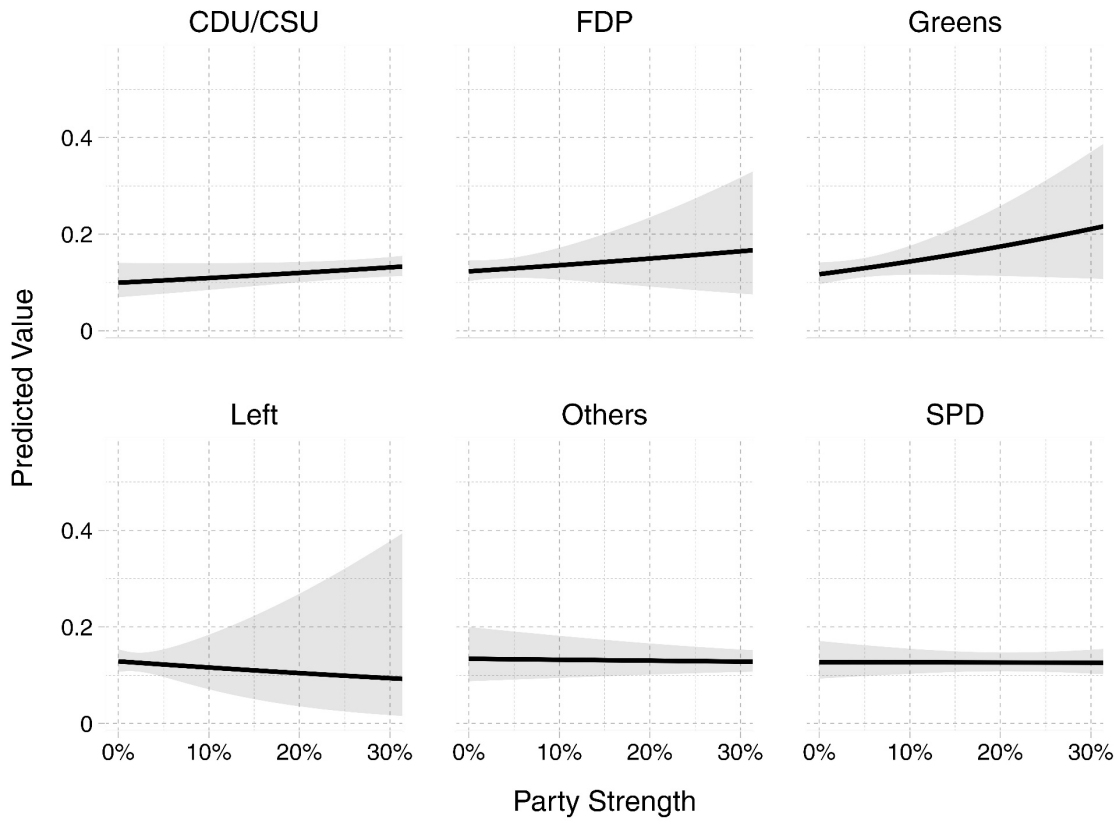


Figure 3: Predicted Values for Party Strength using Model II

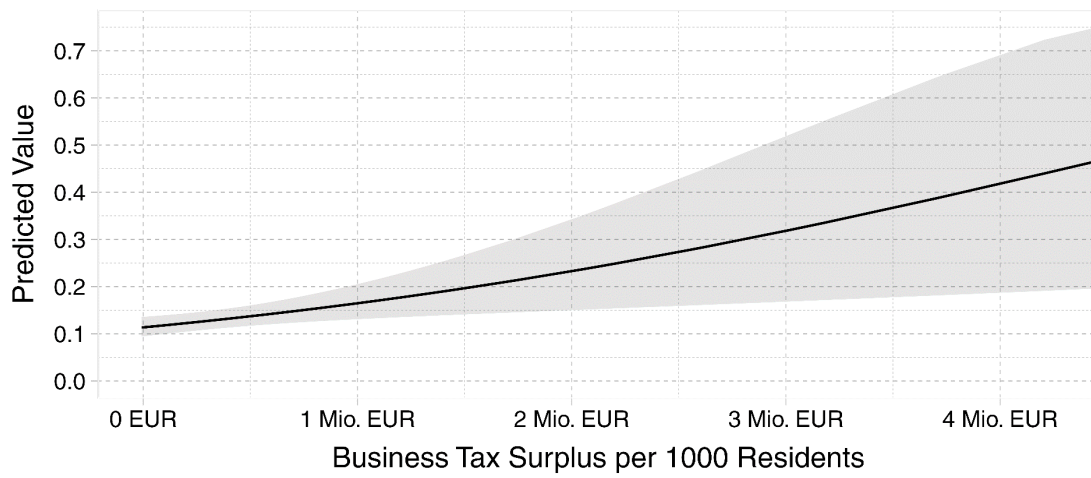
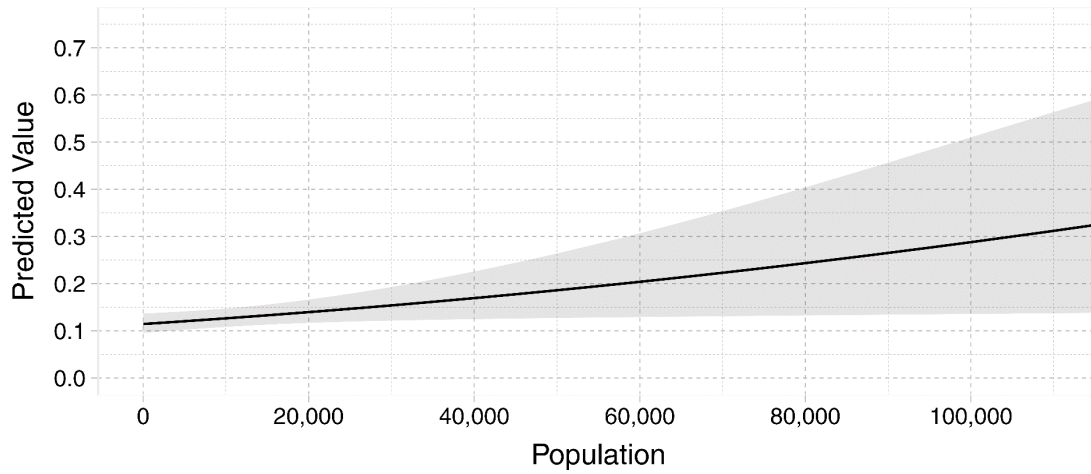


Figure 4: Predicted Values for Population and Business Tax Surplus

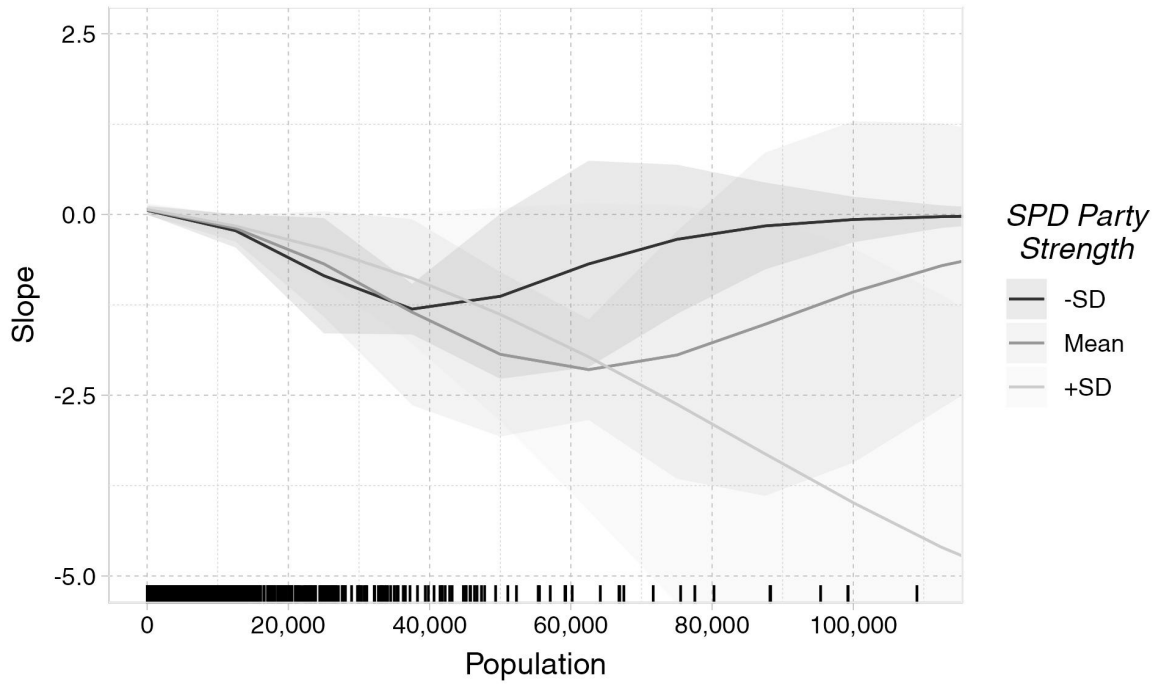


Figure 5: Marginal Effect: Interaction of Population and SPD Party Strength

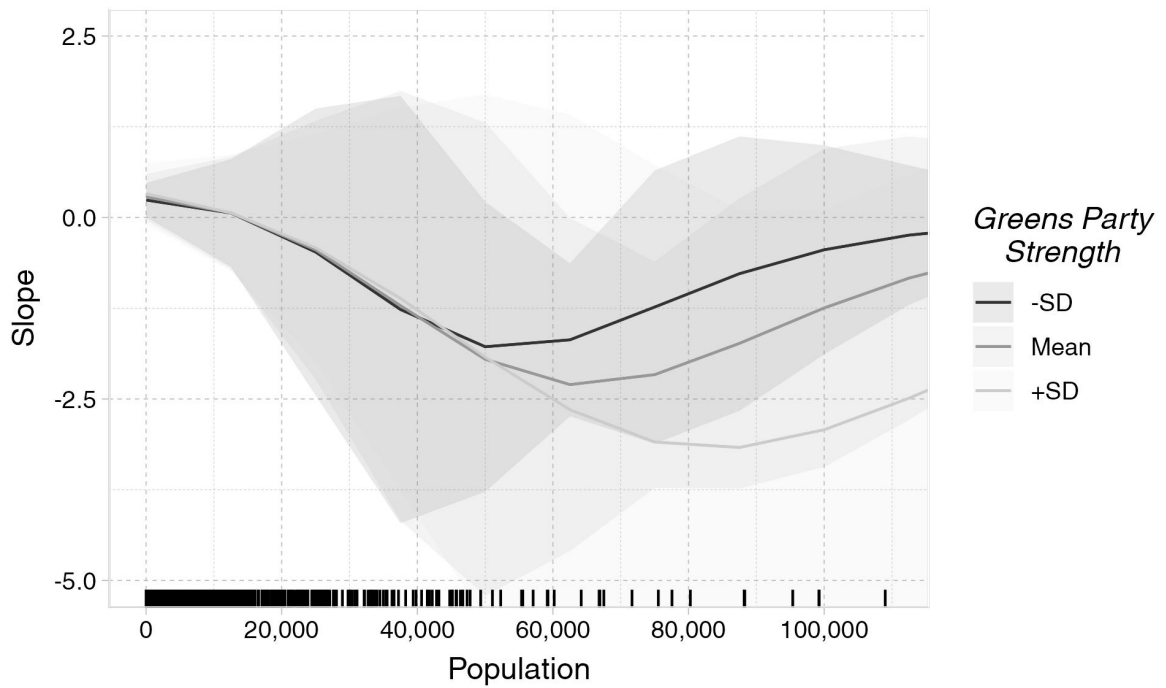


Figure 6: Marginal Effect: Interaction of Population and Greens Party Strength

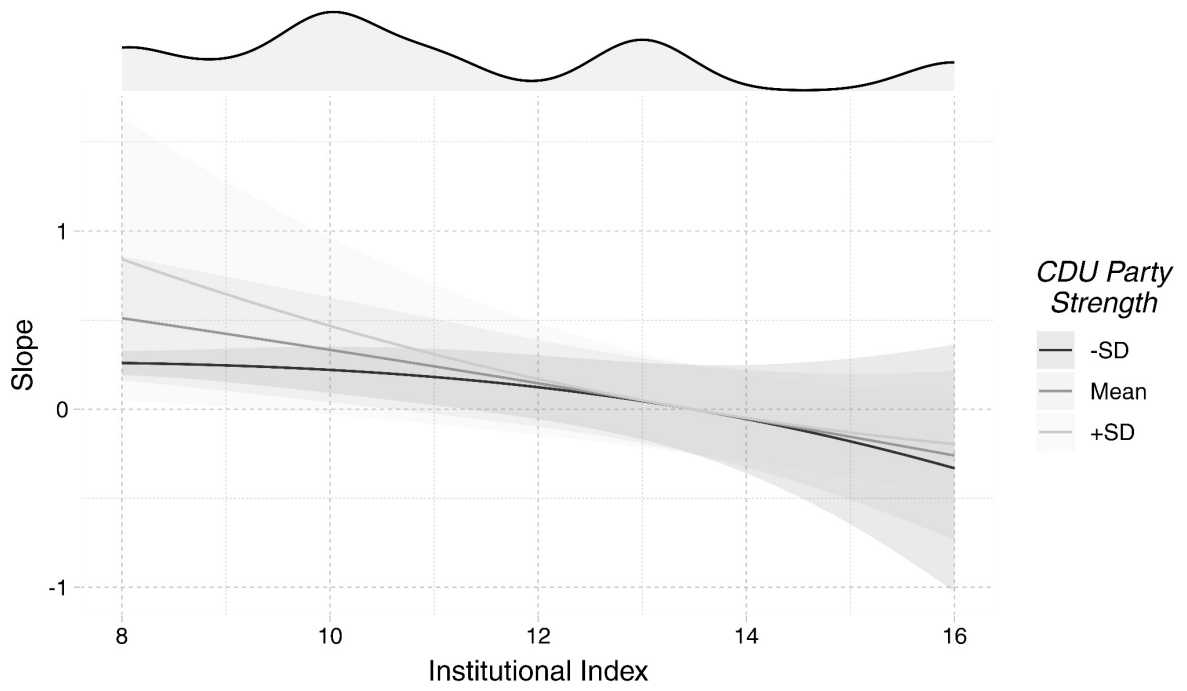


Figure 7: Marginal Effect: Interaction of Institutional Index and CDU/CSU Party Strength

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Supplemental material

Regression Diagnostics

For both models, there are no outliers detected (Cook's $d < 1$) and low correlation between the different variables ($vif < 5$).

For the model without controls, about 93% of the residuals are inside the error bounds. For the model with controls, about 89% of the residuals are inside the error bounds.

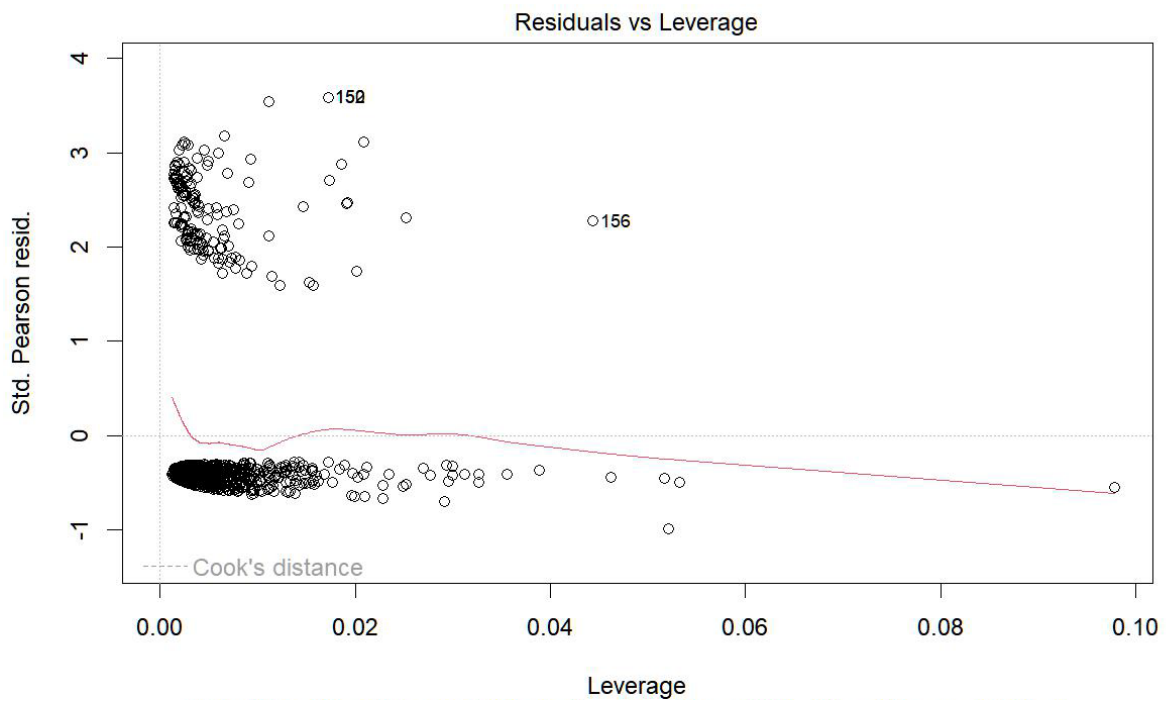


Figure 1: Influential Observations in Regression Model without Controls

Collinearity

High collinearity (VIF) may inflate parameter uncertainty



Figure 2: Multicollinearity for Regression Model without Controls

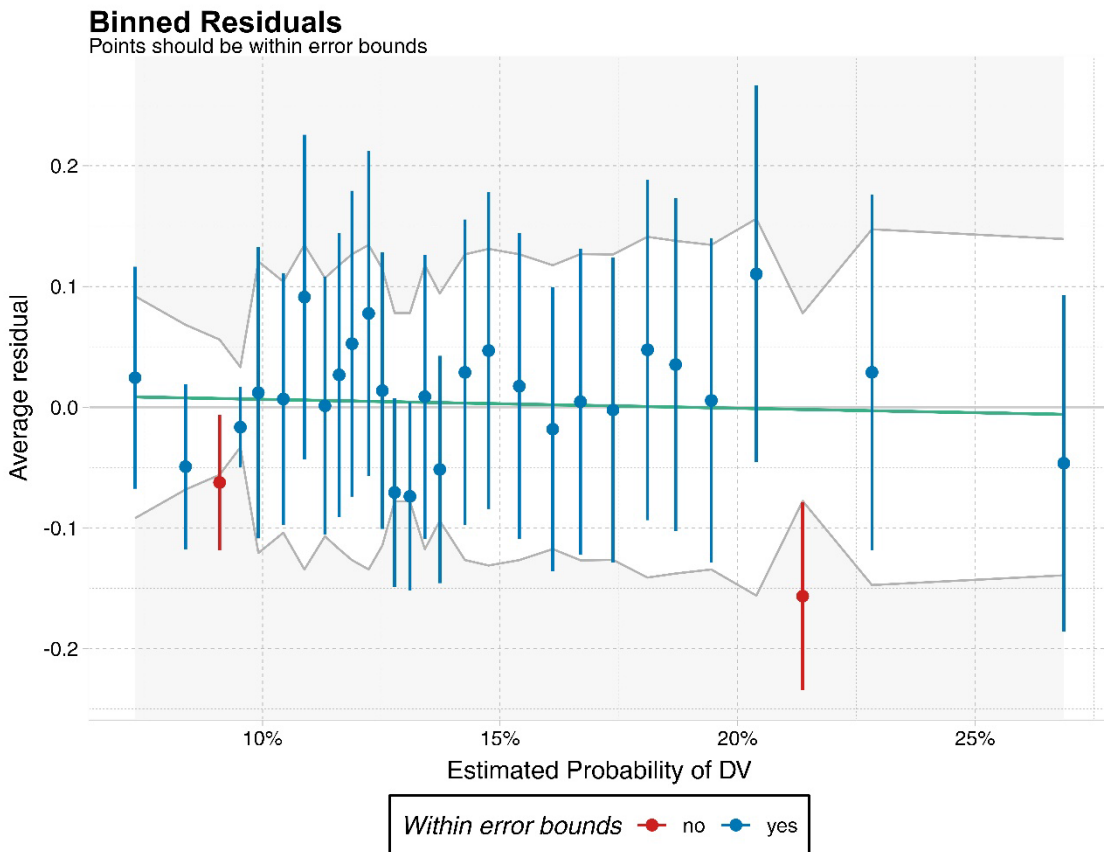


Figure 3: Binned Residuals Plot for Regression Model without Controls

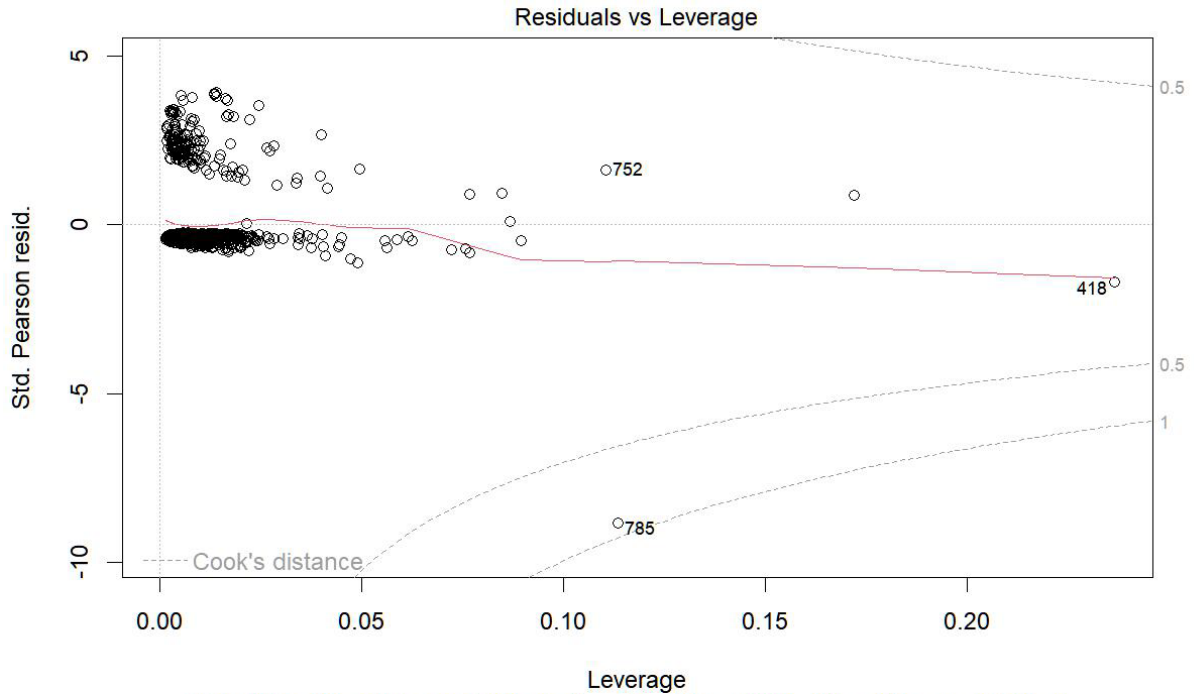


Figure 4: Influential Observations in Regression Model with Controls

Collinearity

High collinearity (VIF) may inflate parameter uncertainty

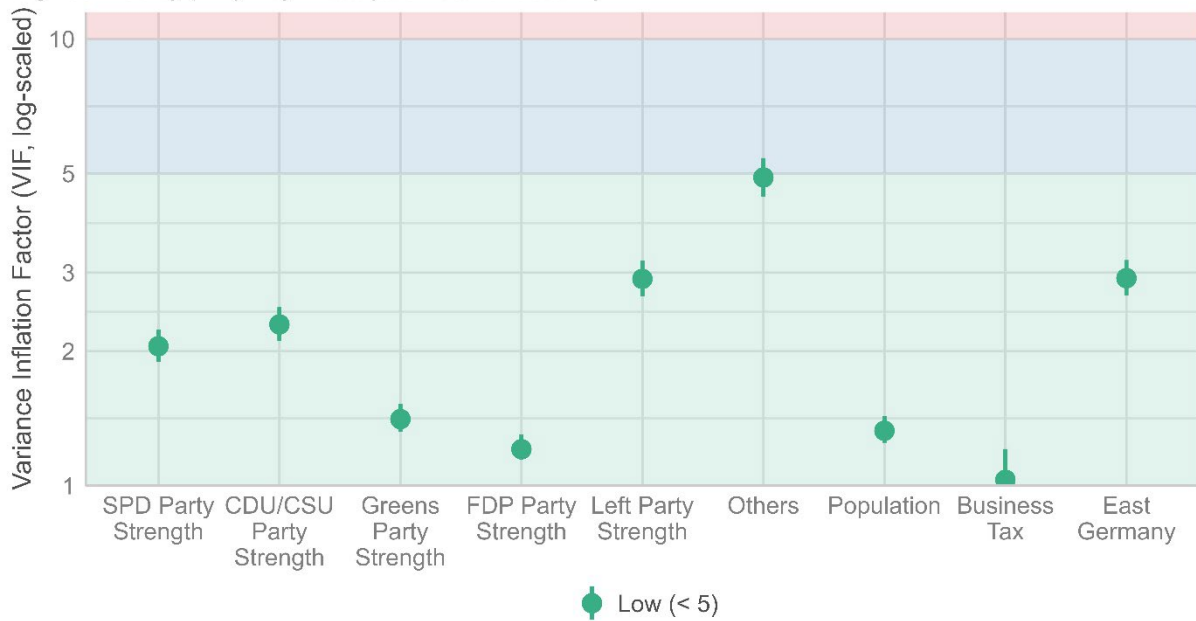


Figure 5: Multicollinearity for Regression Model with Controls

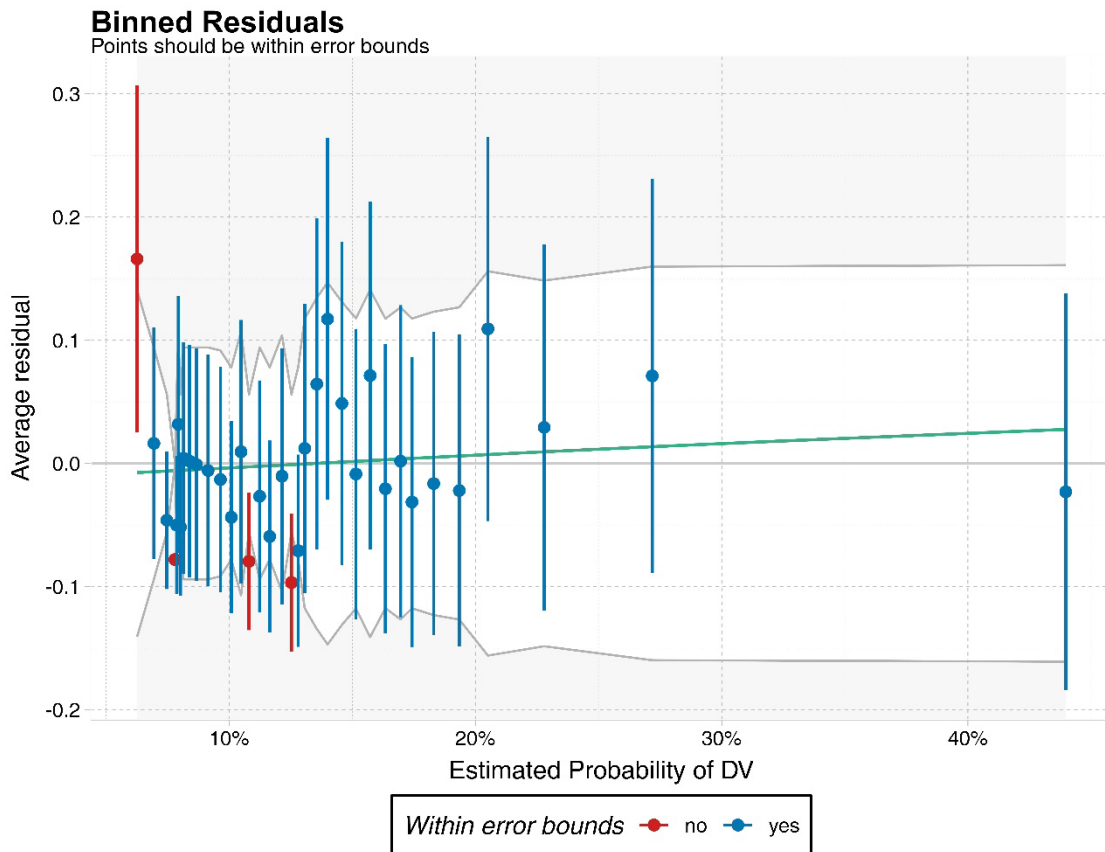


Figure 6: Binned Residuals Plot for Regression Model with Controls

Robustness Checks

First, the original regression is repeated, adding single, squared and cubed time variables to the model (Table 1).

Second, an alternative model (Table 2) with all cases is run – irrespective of whether DSOs were public or private at the beginning of the 2010s. To account for this, a dummy variable on DSO ownership status in the 2010s is included instead of dropping out the cases.

Third, the selection models (Table 3) are calculated using the `sampleSelection` package in R (Toomet and Henningsen 2008). For the selection equation, 2010s DSO ownership status is used as dependent variable. As an additional independent variable within the selection equation, urbanity is included, using travel distance to middle centres as indicator. Previous research indicates this is a factor connected to DSO ownership (Reppert 2023, 7–9).

Finally, the multinomial regressions (Table 4) are run, using ‘Stayed private’ is used as reference category.

Table 1: Robustness Check - Logistic Regression with time-variables

	I	II
Intercept	-3.109*** (0.820)	-1.198 (0.987)
SPD Party Strength	-0.397 (0.495)	-0.492 (0.463)
CDU/CSU Party Strength	1.087 (0.859)	0.886 (0.840)
Greens Party Strength	3.721** (1.185)	1.881 (2.317)
FDP Party Strength	1.325 (1.577)	0.818 (1.619)
Left Party Strength	0.599 (1.744)	-0.370 (5.031)
Others	0.017 (0.249)	-0.455 (0.351)
t	0.531 (0.569)	0.321 (0.605)
t ²	-0.067 (0.124)	-0.022 (0.132)
t ³	0.001 (0.009)	-0.002 (0.009)
Population		0.367 (0.562)
Business Tax		0.170* (0.081)
Index on Local Constitution		-0.118** (0.039)
East Germany		-0.132 (0.923)
Num.Obs.	1231	1231

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Table 2: Robustness Check - Predictors for Public Ownership after Procurement in 2010s

	I	II
Intercept	-2.514*** (0.142)	-0.733 (0.794)
SPD Party Strength	0.060 (0.285)	-0.198 (0.300)
CDU/CSU Party Strength	1.081 (0.833)	0.905 (0.711)
Greens Party Strength	4.000* (1.589)	1.441 (2.589)
FDP Party Strength	1.917 (1.523)	1.483 (1.652)
Left Party Strength	-2.370 (1.777)	-2.215 (3.193)
Others	0.448+ (0.261)	-0.014 (0.397)
Old DSO public?	5.125*** (0.531)	5.199*** (0.538)
Population		0.660 (0.734)
Business Tax		0.174+ (0.095)
Index on Local Constitution		-0.118* (0.052)
East Germany		-0.530 (0.783)
Num.Obs.	1681	1681

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Table 3: Robustness Check - Heckman Model

		I	II
Selection	Intercept	0.549*** (0.063)	0.549*** (0.063)
	East Germany	0.364** (0.117)	0.364** (0.117)
	Distance to Middle Center	0.012** (0.004)	0.012** (0.004)
	Business Tax	0.000 (0.000)	0.000 (0.000)
	Population	-0.003*** (0.001)	-0.003*** (0.001)
Outcome	Intercept	-0.177* (0.070)	-0.201 (0.247)
	SPD Party Strength	-0.053 (0.075)	-0.057 (0.077)
	CDU/CSU Party Strength	0.123+ (0.067)	0.083 (0.068)
	Greens Party Strength	0.241 (0.178)	0.272+ (0.164)
	FDP Party Strength	0.142 (0.191)	0.103 (0.200)
	Left Part Strength	0.301 (0.267)	-0.230 (0.422)
	Others	0.018 (0.050)	-0.057 (0.055)
	Population		-0.060 (0.066)
	Business Tax		0.004 (0.024)
	Index on Local Constitution		-0.014*** (0.004)
	East Germany		0.156 (0.116)
	invMillsRatio	0.612*** (0.119)	1.076* (0.510)
Sigma	0.536	0.807	
Rho	1.141	1.333	
Num.Obs.	1681	1681	

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Table 4: Robustness Check - Multinomial Regression

		Privatization	Remunicipalization	Stayed municipal
I	Intercept	-5.174** (1.623)	-2.565*** (0.511)	-3.431*** (0.680)
	SPD Party Strength	0.337 (2.300)	0.022 (0.743)	1.301 (0.802)
	CDU/CSU Party Strength	1.915 (1.985)	1.261+ (0.651)	2.761*** (0.747)
	Greens Party Strength	5.281 (4.101)	4.617** (1.404)	6.089*** (1.209)
	FDP Party Strength	-2.366 (6.240)	1.743 (1.611)	2.335 (1.432)
	Left Party Strength	5.196* (2.105)	-0.785 (1.821)	1.523 (1.305)
	Others	0.187 (1.759)	0.334 (0.538)	2.811*** (0.685)
II	Intercept	-12.467*** (3.532)	-0.863 (0.742)	-5.151*** (0.752)
	SPD Party Strength	2.275 (3.717)	-0.238 (0.760)	0.357 (0.787)
	CDU/CSU Party Strength	3.831 (3.252)	1.002 (0.663)	2.810*** (0.717)
	Greens Party Strength	8.157 (4.972)	1.101 (1.531)	1.151 (1.383)
	FDP Party Strength	-2.828 (7.349)	0.915 (1.648)	-0.220 (1.723)
	Left Party Strength	8.743* (4.033)	-1.749 (2.937)	5.904** (2.155)
	Others	2.812 (3.148)	-0.135 (0.567)	3.274*** (0.651)
	Population	-1.367 (1.431)	0.950*** (0.196)	1.051*** (0.191)
	Business Tax	0.174 (0.329)	0.197** (0.074)	0.183** (0.066)
	Index on Local Constitution	0.390** (0.137)	-0.105** (0.040)	0.177*** (0.030)
	East Germany	1.522+ (0.856)	-0.163 (0.441)	-1.195*** (0.344)

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Num. Obs. 1681

Table 5: Correlation Table for Main Models

	Public DSO	SPD	CDU/CSU	Greens	FDP	Left	Others	Business Tax	Population	Index on Local Const.	East Germany
Public DSO		0.035	0.085**	0.116***	0.056	-0.010	-0.069*	0.123***	0.161***	-0.032	-0.033
SPD	0.035		0.384***	0.205***	0.162***	-0.024	-0.656***	0.057*	0.094***	0.363***	-0.161***
CDU/CSU	0.085**	0.384***		0.234***	0.184***	0.065*	-0.694***	0.093**	0.109***	0.290***	0.001
Greens	0.116***	0.205***	0.234***		0.219***	-0.003	-0.362***	0.146***	0.314***	0.237***	-0.122***
FDP	0.056	0.162***	0.184***	0.219***		0.119***	-0.328***	0.091**	0.130***	0.170***	0.075**
Left	-0.010	-0.024	0.065*	-0.003	0.119***		-0.145***	-0.029	0.115***	-0.117***	0.761***
Others	-0.069*	-0.656***	-0.694***	-0.362***	-0.328***	-0.145***		-0.099***	-0.164***	-0.504***	0.025
Business Tax	0.123***	0.057*	0.093**	0.146***	0.091**	-0.029	-0.099***		0.115***	0.013	-0.058*
Population	0.161***	0.094***	0.109***	0.314***	0.130***	0.115***	-0.164***	0.115***		0.091**	-0.002
Index on Local Constitution	-0.032	0.363***	0.290***	0.237***	0.170***	-0.117***	-0.504***	0.013	0.091**		-0.212***
East Germany	-0.033	-0.161***	0.001	-0.122***	0.075**	0.761***	0.025	-0.058*	-0.002	-0.212***	

Computed correlation used pearson-method with listwise-deletion.

Table 6: Descriptive Statistics for Party Strength

	Mean	SD	Min	Max
SPD	20.34%	17.63%	0.00%	73.63%
CDU/CSU	25.76%	20.43%	0.00%	100.00%
Greens	3.71%	5.95%	0.00%	31.61%
FDP	2.72%	5.53%	0.00%	54.30%
Left	1.78%	5.04%	0.00%	36.06%
Others	40.04%	36.44%	0.00%	100.00%

Table 7: Step-by-Step Addition of Control Variables to Main Regression Model

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
Intercept	-2.539*** (0.130)	-2.441*** (0.186)	-2.534*** (0.125)	-1.076 (0.701)	-2.535*** (0.126)	-2.447*** (0.175)	-0.880 (0.732)	-2.441*** (0.185)	-1.165+ (0.667)	-2.530*** (0.121)	-1.009 (0.662)	-0.976 (0.702)	-2.448*** (0.173)	-0.851 (0.698)	-1.103+ (0.631)
SPD	0.103 (0.318)	0.031 (0.334)	0.097 (0.329)	0.089 (0.344)	0.047 (0.265)	0.034 (0.341)	-0.002 (0.358)	0.011 (0.287)	0.091 (0.337)	0.048 (0.281)	0.007 (0.270)	0.009 (0.352)	0.017 (0.297)	-0.045 (0.289)	0.017 (0.268)
CDU/CSU	1.204 (0.884)	1.200 (0.880)	1.186 (0.865)	1.047 (0.823)	1.237 (0.884)	1.187 (0.865)	1.024 (0.821)	1.214 (0.882)	1.041 (0.805)	1.214 (0.865)	1.088 (0.820)	1.023 (0.807)	1.198 (0.867)	1.049 (0.825)	1.077 (0.803)
Greens	4.388** (1.369)	2.670 (2.242)	4.037** (1.370)	4.378** (1.618)	4.234** (1.355)	2.500 (2.070)	2.555 (2.712)	2.638 (2.185)	4.025** (1.524)	3.904** (1.354)	4.163** (1.603)	2.392 (2.521)	2.471 (2.018)	2.491 (2.631)	3.834* (1.505)
FDP	1.629 (1.581)	1.301 (1.462)	1.350 (1.710)	1.607 (1.532)	1.706 (1.579)	1.086 (1.599)	1.252 (1.573)	1.336 (1.448)	1.353 (1.630)	1.421 (1.704)	1.735 (1.525)	1.061 (1.645)	1.115 (1.581)	1.332 (1.579)	1.473 (1.616)
Left	-0.609 (1.854)	-1.796 (2.423)	-0.348 (1.831)	-1.622 (2.042)	1.180 (4.094)	-1.478 (2.398)	-2.832 (2.505)	-1.088 (4.940)	-1.312 (2.002)	1.217 (4.135)	0.995 (4.645)	-2.482 (2.472)	-0.895 (4.916)	-1.360 (5.282)	1.023 (4.645)
Others	0.290 (0.283)	0.305 (0.277)	0.290 (0.243)	-0.191 (0.390)	0.325 (0.300)	0.303 (0.242)	-0.210 (0.383)	0.319 (0.286)	-0.164 (0.370)	0.321 (0.251)	-0.165 (0.407)	-0.184 (0.365)	0.315 (0.244)	-0.193 (0.397)	-0.140 (0.382)
Population		0.378 (0.524)				0.331 (0.459)	0.418 (0.532)	0.370 (0.526)				0.369 (0.491)	0.326 (0.458)	0.402 (0.534)	
Business Tax			0.212* (0.083)			0.195* (0.091)			0.201* (0.086)	0.210* (0.083)		0.182+ (0.094)	0.194* (0.091)		0.198* (0.086)
Local Constitution				-0.111* (0.048)			-0.117** (0.045)		-0.104* (0.046)		-0.116* (0.046)	-0.111* (0.044)		-0.120** (0.043)	-0.108* (0.044)
East Germany					-0.353 (0.865)			-0.134 (0.816)		-0.309 (0.864)	-0.517 (1.026)		-0.111 (0.817)	-0.278 (0.967)	-0.463 (1.016)
Num.Obs.	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

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Study III:
**“Navigating the Power Shift: A Comparative Study of
Electricity Grid Remunicipalization in Medium-Sized
German Cities”**

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Navigating the Power Shift:

A Comparative Study of Electricity Grid Remunicipalization in Medium-Sized German Cities

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Ethical and informed consent statement

Interviewees provided written consent for participation, recording, and transcription of their interviews. Transcripts were used solely for research analysis. Participation was voluntary, and interviewees were informed of their right to withdraw at any time. We thank the participants for their valuable contributions to this study.

Data availability

To protect the anonymity of the interviewees, full interview data cannot be shared publicly, as participants did not provide written consent for open data sharing. Instead, only selected and anonymized individual quotes are used in the research to illustrate key insights while safeguarding participant privacy.

Abstract

This study examines the remunicipalization of local electricity grids in three medium-sized German municipalities. In contrast to previous research on remunicipalization in Berlin and Hamburg, its findings lean more towards a primarily quantitative-based interpretation, viewing remunicipalization as a managerial-driven adaptation process rather than a transformative political project.

Using a veto-based framework, it examines interactions between such as incumbent energy companies, political parties, citizens and local authorities through official documents, press releases, and interviews. Findings reveal financial arguments overwrite ideological motivations, with external consultants playing a crucial role in facilitating remunicipalization. By contrast, administrations and mayors remain in the backseat. Incumbents often pose substantial obstacles but are willing to compromise if resisting remunicipalization grows too costly.

As many electricity grid contracts are set to expire in the early 2030s — coinciding with major shifts in Germany's broader energy transition — these findings offer valuable insights for policymakers. They underscore the necessity of early planning to ensure that remunicipalization is both cost-effective and strategically sound. Additionally, the study contributes to ongoing academic debates by addressing the disconnect between qualitative and quantitative perspectives on remunicipalization, suggesting that the differing conclusions of previous studies may stem, in part, from variations in the cases analyzed.

Navigating the Power Shift:

A Comparative Study of Electricity Grid Remunicipalization in Medium-Sized German Cities

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Keywords: Remunicipalization, Local Politics, German Municipalities, Electricity Grids, Political Parties, Energy Transition

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Research Highlights

- Interview-based research on local stakeholders in medium-sized cities
- Financial gains outweigh ideological motivations in remunicipalization debates
- Findings align with managerialist interpretation more than transformative agenda
- Case selection may explain disconnect in previous research on remunicipalization
- Insights for policymakers as grid contracts expire in the 2030s

1. Introduction

Since the late 2000s, the topic of remunicipalization has garnered increasing attention from both researchers and the public. Internationally a trend has emerged in which previously privatized public services are being transferred back into municipal control (Gradus and Budding, 2020, p. 544; Wagner et al., 2021, pp. 1–3). Qualitative research in this area often focuses on metropolitan regions such as Paris (Hall et al., 2013; Pigeon, 2012) or larger cities like Oslo (Pettersen and Monsen, 2017, pp. 69–72). In Germany, much of the attention has been on Berlin and Hamburg, where the remunicipalization of energy services has been widely studied (Becker et al., 2017; Becker, 2017; Pohlmann and Colell, 2020).

However, the dynamics shaping remunicipalization remains a topic of debate in scholarly discussions. While aforementioned qualitative case studies focusing on key actors tend to portray remunicipalization as a transformative political project, quantitative studies tend to reject this view, instead attributing remunicipalization to predominantly managerial decision-making (Albalade et al., 2024, p. 666; Clifton et al., 2021, p. 296; Paul, 2024, p. 699). This study aims to bridge this divide by examining medium-sized municipalities beyond the well-known German cases that have been the focus of previous research (Voorn et al., 2021, p. 311).

Looking at such cases is particularly valuable, as these municipalities play a crucial role in expanding electricity infrastructure and driving the energy transition—both closely linked to the broader debate on remunicipalization (Hoicka and MacArthur, 2021, p. 87). Therefore, it is essential to understand the political decision-making processes in these municipalities.

To achieve this, this study applies a framework utilizing veto perspective and qualitative content analysis to reconstruct how local communities navigate remunicipalization efforts, focusing on the role of pivotal actors throughout the process. The analysis draws on three German municipalities with medium-sized populations, each of which reached different outcomes within the remunicipalization process despite facing similar political conditions.

German municipalities provide a particularly relevant context for this study, given their long tradition of self-governance and their historical involvement in electricity infrastructure development. Electricity grids in Germany are decentralized, with nearly 11,000 local authorities responsible for their management (Canzler and Knie, 2009, p. 103; Kuzemko et al., 2016, pp. 103–104). In recent years, electricity grids have gained increased attention due to the energy transition (Hoicka and MacArthur, 2021, pp. 70–71). At the same time, the German energy sector has been a focal point of the supposed shift back to the public hand in international research (Albalade et al., 2024, pp. 665–666; Voorn et al., 2021, p. 308).

This study utilizes data from newspaper reports, council minutes, and interviews with councilors and municipal officials. The data is organized using a flexible coding scheme that

identifies the positions and interactions of local actors. By distinguishing the roles of the energy industry, local authorities, and political parties, the study provides a comprehensive overview of the dynamics in the three cases examined.

The findings suggest that remunicipalization is more of a managerial adaptation than a transformative political project. In the three cases examined, grassroots initiatives do not act as agenda-setters. Instead, stakeholders in administration and politics primarily focus on potential financial gains and budget maximization, with ideological positions on sustainability, markets, and public ownership playing only a secondary role in their decision-making. As utility-maximizing actors, incumbent private energy companies can pose a significant—though not insurmountable—obstacle to the remunicipalization process.

As many electricity grid contracts are set to expire in the early 2030s, during a critical phase of Germany's energy transition, this study offers valuable insights for local decision-makers, showing that cross-party consultation can be beneficial for remunicipalization. It also provides a novel perspective on medium-sized municipalities, implying that the “disconnect” (Voorn et al., 2021, p. 312) in the interpretation of remunicipalization might partly stem from the different cases analyzed by earlier studies.

2. Previous Case Studies on Public Utilities in German Cities

International research on remunicipalization offers varying conclusions regarding the dynamics that drive such processes. Most studies fall between two distinct interpretations of the remunicipalization trend (Albalade et al., 2024, p. 666; Clifton et al., 2021, p. 296; Paul, 2024, p. 699). On one hand, remunicipalization is seen as a transformative project, where key actors seek to reverse previous privatization reforms heralded by neoliberal policies to regain control over public services (McDonald, 2018, pp. 53–55; Petitjean and Kishimoto, 2017, pp. 161–162). On the other hand, it is viewed as the outcome of purely managerial decision-making at the local level, where actors act pragmatically to maximize benefits, regardless of their political or ideological stance (Warner and Aldag, 2021, pp. 326–328).

While these two perspectives represent opposing extremes in the research, a pattern emerges: qualitative studies tend to fall closer towards the first, more transformative interpretation, whereas quantitative studies align more with the second viewpoint (Albalade et al., 2024, p. 666; Paul, 2024, p. 699). For example, using survey data from US local governments, Warner and Hefetz (2020, pp. 244–246) find support for such a “pragmatic management” approach. Yet, recently quantitative findings have produced mixed findings, especially on partisan ideology. Campos-Alba et al. (2021, pp. 356–357) and Schoute et al. (2021, pp. 434–435) have found such an effect in Spanish and Dutch local government, while

Demuth et al. (2022, pp. 243–244) and Warner and Aldag (2021, pp. 326–328) cannot corroborate this connection between partisanship and remunicipalization in their studies on German waste management and US local governments.

However, as Paul (2024, p. 700) points out, quantitative analyses lack micro-level insights, largely overlooking the role of individual actors on the way towards remunicipalization, especially of non-managerial stakeholders with indirect influence. This more in-depth insight is provided by the rich set of qualitative case studies that shed light on this shift by looking at public services in different cities and regions. For example, Pigeon (2012) and Hall et al. (2013) examine the remunicipalization of Paris' water supply based on a more detailed look into the process, describing it as a 'highly political move" (Pigeon, 2012, p. 37), while also acknowledging financial and economic motivations. In Norway, Pettersen and Monsen (2017, pp. 69–72) attribute the remunicipalization of waste collection in Oslo and elderly care in Bergen to shifts from center-right to center-left governments.

The most prominent example within this case-based literature is Germany's energy sector (Albalade et al., 2024, pp. 665–666; Voorn et al., 2021, p. 308). Especially case studies on remunicipalization in Hamburg and Berlin provide valuable insight into the decision-making process. A key strength of these contributions is their focus on grassroots movements and citizen participation. For instance, Beveridge and Naumann (2014) examine the buy-back of Berlin's water supply, while Blanchet (2014) investigates the remunicipalization of the city's electricity grids. Both studies focus on grassroots movements involving Berlin's citizens. Pohlmann and Colell (2020) compare community energy projects in Berlin and Hamburg, with a focus on citizen participation. Becker et al. (2017) also highlight the evolving public perception of utilities, as citizens become more engaged in the energy transition.

That said, Berlin and Hamburg are exceptions in the broader German context, with the majority of remunicipalization decisions taken in small and mid-sized cities. So, in contrast to the aforementioned research, studies such as Wagner et al. (2021) and Weber et al. (2019) give a broader outlook into remunicipalization in Germany. Through surveys and focus group interviews, they find that concerns for public welfare and climate change are key drivers of remunicipalization efforts. Wagner et al. (2021, p. 12) also highlight the desire among supporters for local authorities to engage in the local value chain and cooperate with local businesses. Hall et al. (2013, pp. 206–207), based on research in the French water sector and German electricity grids, point to policy learning and cost-effectiveness as significant factors. Equally, in their study of the inter-municipal de-privatization of the Thuringian energy supplier TEAG, Paul and Cumbers (2023) underscore the importance of generating local revenue as a motive.

Despite these valuable insights, this case-based strand of literature has faced sharp criticism from researchers. Gradus and Budding (2020, p. 540), for example, argue that many studies rely heavily on anecdotal evidence. Equally, Voorn et al. (2021, pp. 311–312) suggest that “these cases were selected to demonstrate political aspects of the transformation”. Consequently, they contend that these studies have yet to offer compelling evidence against the more managerial interpretation of remunicipalization.

Overall, this highlights the continued need for case studies that provide insight into remunicipalization processes (Bel and Gradus, 2018, p. 17). This study aims to contribute to this need. Through comparative analysis of new cases, it seeks to bridge the “disconnect” (Voorn et al., 2021, p. 312) between quantitative and qualitative research, contributing to a better understanding of whether remunicipalization is primarily a managerial adjustment or rather a transformative project in response to the energy transition.

By examining three medium-sized German municipalities, it shifts the focus beyond the already well-researched major cities and sheds light on a sector and a country case that has been central to the academic debate. At the same time, it enables a micro-level analysis of remunicipalization that is not possible through quantitative approaches, allowing for a more detailed assessment of dynamics that unfold within this process.

In doing so, the study also helps clarify how municipalities position themselves within the ongoing transformation toward sustainable energy systems. The local level in Germany has been integral to the development of grid infrastructure since the inception of the electricity industry (Canzler and Knie, 2009, p. 103). Today, municipalities again play a crucial role in the energy transition, particularly in the expansion and integration of wind and solar power into the electricity grid (Hoicka and MacArthur, 2021, p. 87). As such, case studies on smaller and medium-sized municipalities are essential for understanding how various motivations unfold, how local stakeholders navigate the process, and the specific conditions under which remunicipalization is achieved.

3. Local Stakeholders and Electricity Grid Remunicipalization in Germany

Scholars suggest that contract expirations in the 2010s, along with Germany's energy policy shifts post-Fukushima, acted as a focusing event, triggering discussions about remunicipalization (Berlo et al., 2016, p. 117; Blanchet, 2014, p. 3). This is in line with Kingdon (2013, pp. 165–170) and his concept of a window of opportunity, bringing the issue to the political agenda and setting the stage for remunicipalization in many municipalities. However, while this offers potential explanations for the start of discussions, it does not clarify why some

communities succeeded in pursuing this goal while others did not. Consequently, this study focuses on decision-making processes or the so-called politics stream, helping us to understand how to build majority support for remunicipalization efforts (Herweg et al., 2018, pp. 31–32).

Yet, a major limitation of frameworks like the Multiple Streams Approach is their lack of attention to institutional constraints on policymaking. Scholars addressing this often use a veto-based perspective to better understand how these constraints affect policy outcomes (Herweg et al., 2018, pp. 32–33). Veto players and veto points are two well-established frameworks for analyzing this influence. Equally, a veto-based lens is helpful to identify the important local shareholders that shape the decision-making process.

The veto player theory, as outlined by Tsebelis (2002), emphasizes institutional and partisan actors who restrict policy options through formal vetoes. By contrast, the veto points framework, developed by Immergut (1992), identifies opportunities within the policymaking process where informal actors, such as interest groups, can block policy changes, thereby expanding the scope of potential influencers to non-formal participants (Immergut and Orłowski, 2013, p. 208). Both frameworks, despite their differences, suggest that the presence of multiple veto opportunities decreases the likelihood of policy change, largely because of differences in actors' preferences (Immergut and Orłowski, 2013, p. 213; Tsebelis, 2002, p. 5).

This study integrates these approaches to examine electricity grid remunicipalization in Germany. To do so, it must define key local decision-makers and their veto opportunities along the remunicipalization process, as well as make assumptions about their preferences, forming the analytical frame for further investigation (Ganghof, 2017, 52 & 55). Taking a local state perspective, as suggested by Paul (2024, p. 701), highlights the complex interplay between municipal officials, private grid operators, local consumers, and legal frameworks governing electricity distribution, especially on energy issues. Local councils oversee grid allocation, yet their decisions are shaped by regulatory constraints, legal disputes, and lobbying efforts from businesses. Additionally, consumer interests and citizens initiatives might influence decision-making. Together, this makes remunicipalization a highly contested process. Figure 1 shows how these diverse stakeholders can leverage several veto opportunities, pointing out both formal and informal veto powers along the way towards public ownership of electricity grids.



Figure 1: Overview of Veto Opportunities in Remunicipalization Process

Firstly, in contrast to Germany's national politics, local governance follows a mixed model, combining presidential and parliamentary elements while integrating plebiscitary tools like referenda and stronger citizen initiatives. Many local policymakers are volunteers, with administrative officials playing a greater role than at the national level. Mayors, council members, and bureaucrats act as agenda-setters and veto players (Bogumil and Ruddat, 2022, pp. 121–123).

Partisan motivations could be influential (Wenzelburger and Zohlnhöfer, 2020, 2 & 6), with left-leaning parties favoring public ownership of energy infrastructure and conservatives resisting it. Following Partisan Theory, Social Democrats and Greens should support remunicipalization, while Conservatives and Liberals oppose it. However, municipalities might prioritize financial gains over ideology, with councilors focusing on local budgets rather than partisan goals (Andrews et al., 2020, pp. 489–490). This would be in line with the more consensus-focused policymaking approach typically associated with German local politics (Neumann, 2022, pp. 250–251).

If driven by ideological preference for state involvement, decision-makers will focus on pursuing their partisan goals of public ownership and sustainability, making a left-leaning council majority essential. Conversely, if financial motives dominate, they will prioritize budget optimization and cost savings, assessing remunicipalization of electricity grids based on economic benefits rather than political ideology on public provision of goods. For a pro-remunicipalization majority in the council, traditional party positions would be less decisive then.

Secondly, remunicipalization decisions face uncertainty and legal hurdles (Berlo et al., 2016, pp. 119–121). Associations such as the DStGB (2017, 25 & 31) recommend seeking external advice, saying the process is not feasible to manage for smaller communities without it. Both these external advisors and local bureaucrats might act as ‘policy entrepreneurs’ (Kingdon, 2013, pp. 122–124), using their expertise to shape decisions. Since local politics relies on semi-professional party structures, bureaucrats and advisers can wield significant influence (Bolukbasi and Yıldırım, 2022, p. 523).

Thirdly, another layer of complexity arises from the role of incumbent DSOs, who hold strong veto power in the remunicipalization process. With privatization becoming entrenched in Germany’s energy system over time, their position has become stronger, giving them major sway against remunicipalization (Bolukbasi and Yıldırım, 2022, p. 520). German law requires non-discriminatory contract awards, allowing private companies to compete with municipal utilities and challenge decisions in court (Berlo et al., 2016, p. 119). Councils set award criteria but must legally select the best offer (DStGB, 2017, p. 21). If an incumbent DSO loses, they may appeal, leading to lengthy court battles (DStGB, 2017, pp. 11–13). Legal ambiguities, especially on procedural errors and award criteria, allow incumbents to contest decisions (Berlo et al., 2016, p. 117). After a contract is awarded, the transition requires purchasing the existing grid. However, valuation disputes arise as necessary data on the electricity grid is controlled by the incumbent DSO. This lack of transparency lets incumbents delay information-sharing, prolonging negotiations and prompting further legal action (Berlo et al., 2016, p. 119; DStGB, 2017, p. 35).

Together, these legal complexities give incumbents significant leverage. However, successful remunicipalizations may set precedents and encourage others. Such spill-over effects (Bolukbasi and Yıldırım, 2022, p. 521) increase risk awareness among private DSOs, especially as many contracts were renewed simultaneously in the early 2010s, following a heightened debate on energy policy after the Fukushima disaster (Fuchs et al., 2012, p. 18). As profit-driven entities, incumbents base their decisions on risk assessments, using veto points to negotiate or protect their interests. If they foresee losses, they maximize veto mechanisms to block remunicipalization. If cooperation is beneficial, they may negotiate mutually favorable terms with municipalities.

Finally, German local politics is highly participatory. Citizen initiatives can significantly shape decisions and use referenda to bypass council proceedings (Bogumil and Ruddat, 2022, p. 123). At the same time, public support and participation is essential to help expand renewables (Drewello, 2022, 8; Fuchs et al., 2012, p. 26). This influence of non-partisan voices is further reflected in the numerous independent political groups that emerge based on local

interests and do not easily fit into traditional party classifications, although they tend to lean more conservative (Gross and Jankowski, 2021, p. 217). As a result, local interests—shaped by residents and consumers—are central to both energy policy and remunicipalization decisions. While hard to predict, they significantly shape these processes.

In conclusion, analyzing remunicipalization in Germany requires understanding political motivations and institutional barriers. By taking a veto-based look into decision-making process, this study illustrates how various actors of the local state—councillors, mayors, bureaucrats, citizens and private DSOs—navigate remunicipalization.

4. Cases, Data Collection, and Codebook for Analysis

Using *Bundesanzeiger* data on electricity grid procurement, I compiled an initial list of municipalities, narrowing it down to 20-30 cases. Selection criteria included location in West Germany, above-average business tax revenue, proximity to a metropolitan area, and strong Green Party support—factors considered favorable for municipal ownership (Becker, 2017, p. 127; Hall et al., 2013, p. 207).

This final selection was refined using press reports, focusing on three cities with accessible documents, media coverage, and willing interviewees. Here, I sought variation in outcomes and processes. In all three cases, remunicipalization was actively discussed from the 2010s onward, yet played out entirely differently (see Table 1). This provides helpful insight into how decision-making processes can unfold based on the actors' interactions.

Data collection involved searching the Nexus Uni and GBI-Genios databases for local newspaper reports and municipal announcements¹. Additionally, I gathered council minutes and meeting documents from municipal council information systems. I conducted 12 interviews with councilors, city officials, and other stakeholders, ensuring representation from both supporters and skeptics of remunicipalization².

¹ Press reports were sourced primarily from local newspapers. For Bingen, 66 articles (2012–2019) were reviewed, mainly from *Allgemeine Zeitung*. Böblingen's 25 articles (2008–2022) came mostly from *Stuttgarter Zeitung*, with three from *Energie & Management* and *Zeitung für kommunale Wirtschaft*. For Schenefeld, 39 articles (2017–2023) were included, largely from *Hamburger Abendblatt*, with additional pieces from *Barmstedter Zeitung* and *Energie & Management*.

In total, 15 council documents for Bingen (2009–2020), 14 for Böblingen (2010–2013), and 113 for Schenefeld (2013–2022) were reviewed, detailing council committee discussions and, where available, specific political group motions and queries. Schenefeld's records were particularly comprehensive.

² Through newspaper and archive research, I identified and interviewed councilors, officials, energy industry representatives, and mayors from the three municipalities. Conducted in German via video call between December 2023 and February 2024, the interviews lasted 20–30 minutes. In advance, I developed a list of guiding questions. These questions (translated to English) are in the supplement material.

Interviews formed the core of the analysis, supplemented by council documents and press reports to mitigate bias. Analysis followed a mixed coding approach to examine decision-making dynamics and actor preferences, based on the approach outlined by Mayring (2022, pp. 93–94). Initially, actor categories were predefined, while subcategories for motives and procedures emerged iteratively. Rather than simply counting codes, the goal was to reconstruct decision-making processes by mapping sequences of events, actor interactions, and preferences (Figure 1). Given that interview responses often overlapped in themes, individual words and phrases were used as coding units, ensuring a nuanced interpretation (Schreier, 2014, 171 & 178).

Table 1: Overview of Cases

	Bingen am Rhein	Böblingen	Schenefeld
Population (2021)	25,757	50,470	19,402
Employment Rate (2021)	62.2%	68.9%	65.5%
Income Tax per person (2021)	506€	711€	618€
Green Seat Share	2009: 11,1 % 2014: 11,1 % 2019: 16,7 %	2009: 14,7 % 2014: 15,8 % 2019: 22,7 %	2008: 0.0 % 2013: 22.3 % 2018: 28.3 %
State	Rhineland-Palatinate	Baden-Württemberg	Schleswig-Holstein
Neighboring urban areas	Mainz, Wiesbaden	Stuttgart	Hamburg
End of DSO Contract	2016	2012	2023
Pitfalls	Lengthy Legal Disputes	---	Referendum against <i>Stadtwerke</i>
Outcome	Remunicipalization	Remunicipalization	No Remunicipalization

The main coding categories include actors, motives, and procedures. *Actors* captures the various stakeholders involved. *Motives* identifies recurring themes in the arguments used by these actors for or against remunicipalization. *Procedures* cover legal and administrative steps in the remunicipalization process. While the actor categories were predefined, subcategories

for motives and procedures were refined through an iterative process. The coding scheme is described in detail below (Figure 2)³. Before applying the coding scheme to the full dataset, it was tested on a subset of the material and modified as necessary (Schreier, 2014, p. 179).

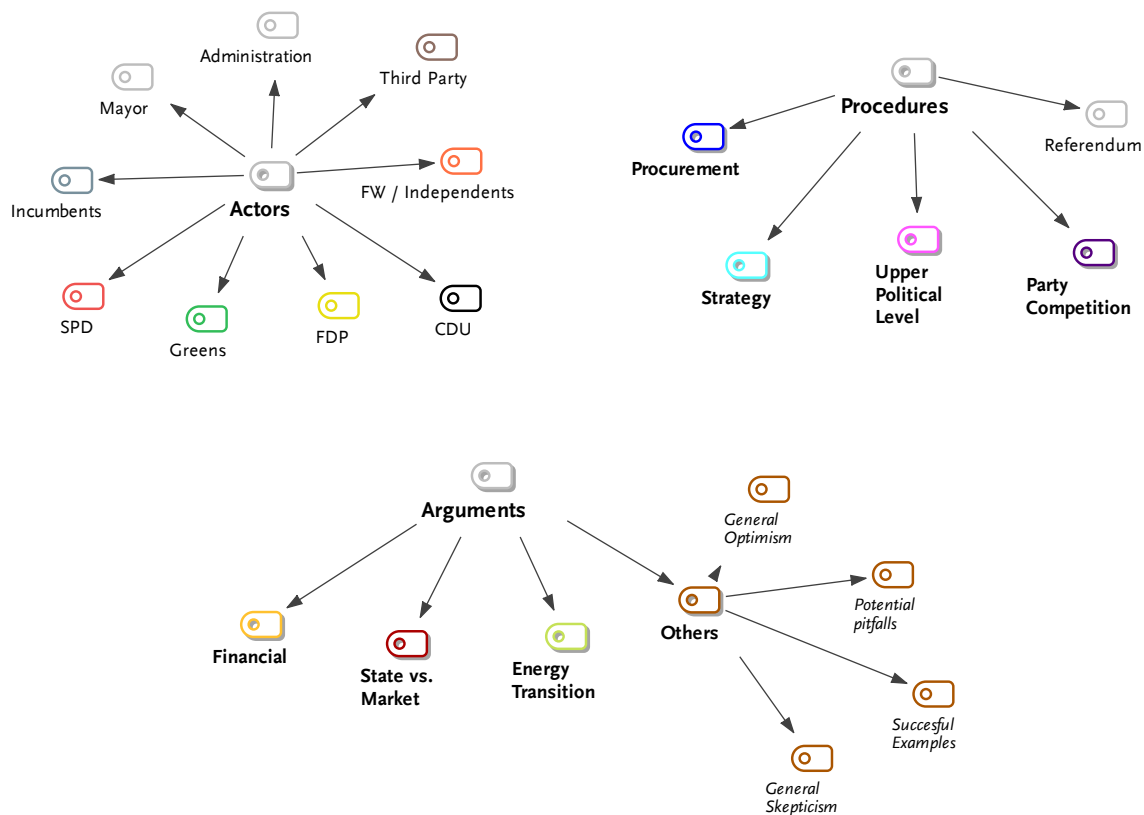


Figure 2: Coding Scheme for Qualitative Content Analysis

5. Analysis of Cases

5.1 Böblingen

Böblingen is a city of approximately 50,000 residents in the German state of Baden-Württemberg, which lies about 20 kilometers southwest of Stuttgart. Here, the process of remunicipalizing its electricity grids did not start out from a single initiative pushing for it but gradually gained momentum in the latter half of the 2000s. The expiration of Distribution System Operator (DSO) contracts across the region played a significant role in intensifying these discussions. While both the Greens and the Social Democrats later claimed to have spearheaded the efforts, no neutral sources confirm a single political driving force.

Initial discussions centered on whether Böblingen should continue its participation in the Neckar-Elektrizitätsverbund (NEV)—a subsidiary of EnBW, one of Germany’s four major

³ A more detailed codebook is featured in the supplemental material.

energy companies—or establish its own DSO and expand the operations of the municipal utility company (*Stadtwerke*). To explore these options, the city council established an energy subcommittee in November 2009. Composed of council members and administrative staff, the subcommittee sought external expertise, bringing in Gerhard Jochum, a consultant with a senior background at EnBW.

Two key personnel changes in the administration also occurred during this phase. In 2009, a new treasurer was elected who was open to expanding Böblingen's *Stadtwerke* operations. Then, in 2010, the Lord Mayor's office changed hands. The outgoing mayor, who had not sought re-election, had leaned towards the NEV option, largely due to his role on EnBW's supervisory board, yet remained largely neutral with his tenure ending. However, the same was true for his predecessor as he started his time as Lord Mayor. As one interviewee described:

Mr Vogelgsang [Ed: outgoing Lord Mayor] was skeptical because he was a representative on the EnBW committees and therefore did not think much of the municipalities remunicipalizing. However, he did not block it at the end of his term of office but accompanied the process neutrally. And with Mr Lützner [Ed: incoming Lord Mayor], he was also neutral, open, and listened to the arguments (Interview, bw010324)

Initially, Conservative, Independent, and Liberal councilors expressed skepticism about the feasibility of remunicipalization, particularly regarding the city administration's technical and managerial capabilities. However, as discussions progressed, financial and ecological benefits became more apparent, gradually securing widespread support among all decision-makers. As one councilor remarked:

"And it was not until people realized: 'Oh, they [Ed: other municipal DSOs] are all earning a lot of money, we want a piece of the cake too' that the conservative parties slowly got on board." (Interview, bw020824)

Mr Jochum, the external consultant, played a crucial role in explaining the complexities of the transition to councilors. Additionally, the presence of successful examples of remunicipalization in neighboring towns and a unified stance within the administration further strengthened the case for moving towards a majority-municipal DSO:

"On the one hand, the fact that we had a good consultant who was able to explain this complex issue well. Second, there were also successful examples in the neighborhood that showed the potential of such a project. And finally, the fact that the administration spoke with one voice." (Interview, bw010324)

By October 2010, after extensive deliberations, Mr. Jochum recommended establishing a new DSO company with a minority-owning partner. The city council endorsed this proposal with a clear majority. Skepticism among some council members was gradually addressed through detailed discussions:

"Overall, skepticism, but openness, which then changed in the course of the process through persuasion and argumentation, ultimately leading to very broad support." (Interview, bw012624)

Financial prospects and the opportunity to expand *Stadtwerke* operations were central motivations across all parties, though each framed their support differently. The Greens emphasized environmental sustainability, while the Conservatives prioritized economic returns.

Several entities, including the private incumbent EnBW and the neighboring town of Sindelfingen, submitted bids to participate in the joint venture as minority shareholders to Böblingen. EnBW ultimately prevailed, offering the most economically favorable terms. Notably, its offer granted Böblingen a larger stake in the new DSO company than Sindelfingen had proposed. Some interviewees speculated that EnBW's decision was influenced by Sindelfingen's own successful remunicipalization, which may have encouraged EnBW to negotiate more favorable terms with Böblingen.

Overall, criticism from councilors towards EnBW as the private incumbent was limited, and most decision-makers viewed the step to partner with the company pragmatically:

"But then we simply said for very pragmatic reasons: well, EnBW knows its stuff, EnBW has been the partner so far. We are just going to stay with EnBW." (Interview, bw012224)

Equally, rather than opposing remunicipalization outright, EnBW opted to remain involved as a minority shareholder in the new municipal DSO. This decision facilitated a smoother transition, allowing Böblingen to complete the ownership transfer by the end of 2012. The process unfolded with minimal administrative and technical challenges, concluding within three years with little conflict among stakeholders. At the same time, this smooth top-down process of remunicipalization minimized citizen participation. It played no decisive role in the process.

Summed up, the remunicipalization of Böblingen's electricity grid proceeded smoothly, supported by a large cross-party majority which saw financial and energy transition benefits in this move. During this process, conservative parties were gradually won over, aided by favorable conditions and administrative support, particularly from an experienced industry

consultant. The change in the mayoral office coincided with but did not impact the decision-making process.

Meanwhile, EnBW, the previous DSO, agreed to cooperate with Böblingen, recognizing that regional remunicipalization efforts posed risks to its broader position.

5.2 Bingen

With about 25,000 inhabitants, Bingen am Rhein is in Rhineland-Palatinate, about 30 minutes from the state capital, Mainz, and its Hessian neighbor. Discussions about full remunicipalization of the electricity grid began in 2012, following the partial remunicipalization of some grid areas. Interviewees and press report widely agree that the expiration of the previous DSO contract prompted these discussions. However, the origins of the initiative remain debated: while some sources attribute it to a Liberal deputy mayor, most interviewees concur that the Social Democrats and Greens were the primary driving forces.

The city council initially commissioned an expert feasibility report from a law firm specializing in energy law. This report marked the beginning of diverging party positions. While Independents and Liberals, the two smallest political groups in the council, were initially open to remunicipalization, their skepticism grew over time. One Liberal councilor expressed concern over the financial risks

"And that is where I said to myself, well, I do not want to take that risk for the €50,000 a year". (Interview, rp122223_1)

Liberals and Independents raised doubts about financial viability and questioned the impact on the energy transition. Conversely, the Social Democrats and Greens strongly supported remunicipalization, with the Greens particularly emphasizing environmental goals in conjunction with financial goals:

"Of course, we want to work profitably, but we are not looking to maximize profits, we were interested in moving towards a CO2-free municipality." (Interview, rp021324)

Social Democrats argued that remunicipalization would retain profits within the city. They criticized privatization while advocating for stronger regional cooperation with neighboring towns such as Ingelheim. Meanwhile, Conservative representatives supported the initiative, citing financial benefits for the municipal treasury and strengthening Bingen's utility company (*Stadtwerke*), which they viewed as beneficial for local customers. Consequently, together with Social Democrats and Greens, the Conservatives formed a substantial and coherent majority in favour of remunicipalization within the city council.

As the Conservative mayor maintained a cautious stance, councilors took the lead in advancing the process. Following his election in 2014, a Green deputy mayor gained influence, solidifying support for remunicipalization within the administration. To formalize the transition, the administration, with guidance from the law firm, issued a public announcement that the DSO contract was ending and launched a single-phase procurement process for a joint venture, seeking a cooperation partner. *Rheinhessische*, a municipal utility company from neighboring Ingelheim, won the contract for this cooperation agreement in setting up a new municipal DSO company, a decision particularly favored by the Social Democrats. Proponents viewed this approach as a way to reduce financial risks, address technical knowledge gaps, and maintain local control.

Yet, legal challenges emerged, as the incumbent private DSO, an RWE subsidiary, along with another private energy provider, EWR, which operated a smaller grid segment, contested the decision. Neither company had been consulted prior to the award, prompting unsuccessful legal attempts to retain control. After these legal proceedings concluded in 2016, Bingen formally established its new DSO company together with Ingelheim's utility company and began negotiations to purchase the electricity grids from RWE and EWR. The mayor and administration publicly hailed this as a historic step.

However, these negotiations were prolonged, triggering further legal disputes. Bingen insisted on access to documents concerning the grid's valuation, with the incumbent DSOs withholding this key data. During this phase, divisions within the city council widened. Independents and Liberals publicly criticized the legal costs, high grid purchase price, and revenue losses. A significant point of contention involved the supervisory board composition of the new DSO company, as Liberals and Independents were excluded from board seats.

In 2019, Bingen reached an out-of-court settlement with EWR, securing control over a smaller grid segment. However, negotiations with RWE subsidiary and its successors companies continued. At one point, the mayor suggested reconsidering the city's approach, but especially Social Democrat councilors swiftly rejected this idea:

"The matter has now progressed so far that there is no going back, which is no longer considered an outrageous idea in parliamentary circles". (Allgemeine Zeitung, 2021/08/31).

Criticism and frustrations also emerged from within the council and administration regarding the lack of political support at higher levels and the legislative framework governing remunicipalization:

"As I said, the law is badly drafted, the Bundesnetzagentur let us down, there was no consultation, there was no support". (Interview, rp011924).

By 2023, *Rheinhessische* withdrew from the joint project, reportedly due to the energy crisis and mounting legal costs. In response, Bingen sought an alternative resolution. Without much public controversy, the city reached an out-of-court settlement with RWE's successor, *Westnetz*, to establish a new DSO. Under this agreement, Bingen secured a narrow majority stake in the new utility company, while *Westnetz* retained a minority share. Social Democrats and Greens remained skeptical about continued private sector involvement, whereas opponents questioned the entire remunicipalization process, arguing that, despite years of legal battles, the former DSO still maintained a stake in the grid.

Overall, Conservatives, Social Democrats, and Greens were the primary advocates for remunicipalization, with a Green deputy mayor playing an increasingly active role as the mayor remained hesitant. Proponents prioritized strengthening *Stadtwerke*, emphasizing financial incentives over energy policy concerns, which ultimately helped secure Conservative backing. Despite opposition from Independents and Liberals, supporters remained committed throughout the lengthy legal disputes. However, incumbent energy companies prolonged the process through legal challenges and ultimately managed to retain a foothold in the grid. With the withdrawal of the preferred municipal partner, Social Democrats and Greens only partially succeeded in reducing private sector influence. While consumer interests were repeatedly cited as a justification for remunicipalization, the general public remained largely excluded from the decision-making process, even after the planned cooperation with Ingelheim's utility company fell through.

5.3 Schenefeld

Schenefeld, a town of around 20,000 residents in Schleswig-Holstein, borders Hamburg, Germany's second most populous city, and started discussions around remunicipalizing the electricity grids in the mid-2010s. This gained momentum following the 2016 local elections, which resulted in a narrow Green and Social Democrat majority in the local council. Interviewees widely agree that the initiative was primarily led by the Greens. From the outset, party positions were divided equally confirmed by interviews, press reports, and council minutes, with little change over the course of consultations.

The process of exploring remunicipalization began in 2013 when a municipal energy concept was developed. By 2016, the local energy committee had accelerated discussions, consulting with other municipalities and energy experts. Meanwhile, the Social Democrats began organizing public information events. Following a series of presentations in the energy committee, the Greens proposed a feasibility study, which passed narrowly in a 15-13 council vote. By this stage, positions had become so entrenched that cross-ideological compromise

was impossible. This polarization is highly unusual for Schenefeld's typically cooperative local politics. One proponent noted:

"Normally, there is a very constructive and peaceful co-existence in local politics in Schenefeld. But this was a phase in which—I think—we hit rock bottom in terms of interpersonal relations." (Interview, sh121323)

The Greens and Social Democrats championed the initiative, arguing that it would generate additional revenue for the city's budget, given the grid's favorable financial conditions. Their criticism of private operators remained sporadic. Instead, they framed remunicipalization as a means to secure cost savings for consumers and financial benefits for the municipality. Though the energy transition was a secondary issue in their arguments, proponents linked it to broader financial and ecological considerations.

Conversely, the Conservatives, Liberals, and Independents raised concerns about the financial viability of the proposal, questioning whether projected profits were realistic. They also emphasized competing spending priorities, given the municipality's numerous ongoing projects:

"On 14 June, the people of Schenefeld will decide whether their tax money will be spent on nurseries, schools and the town center, or the risky purchase of the grid and loans for the newly founded municipal utility". (Hamburger Abendblatt, 2020/06/13).

Opponents also criticized the proponents' reliance on external experts, arguing that their profit estimates were overly optimistic and unrealistic. One interviewee remarked that proponents appeared out of touch with recent energy market developments, stating they were 'still living in the world of 10 years ago'. Notably, arguments about the energy transition played only a minor role among opponents as well. The central point of contention remained whether remunicipalization was financially sound.

In December 2018, the Greens and Social Democrats formally proposed establishing *Stadtwerke*, which again passed by a narrow vote of 14-13. By 2019, *Stadtwerke* had been officially founded, and preparations for procurement, including discussions with potential cooperation partners, were underway.

Opponents quickly mobilized. Initially, the Conservatives proposed a referendum on remunicipalization in the council, but the Green-Social Democrat majority rejected the motion. However, three months later, the Liberals—backed by the Conservatives—successfully gathered enough citizen signatures to trigger a referendum, scheduled for June 2020.

Studying the mayor and the administration, both interviewees and press reports characterize them as open to the proposal of remunicipalization but largely neutral within the process, not spearheading the effort for or against it. Equally, the incumbent grid operator played a minimal role in these consultations and largely remained uninvolved, as this highly divisive issue unfolded, and the situation remained unclear as opposition organized within the population. One interviewee speculated that, given the intense political disputes, the operator was probably 'amused' by the discussions.

As the referendum approached, tensions escalated between supporters and opponents, exacerbated by logistical challenges caused by the COVID-19 pandemic. The debate grew increasingly hostile, with each side accusing the other of misinformation and bias. One opponent criticized the initiative as ideologically driven and argued:

'I believe that we have looked into the matter much, much more deeply than the protagonists who have said it is a great idea. And at the end of our deliberations, we concluded that Stadtwerke Schenefeld and the operation of the grids is not advisable. (Interview, sh122223)

Supporters, in contrast, accused opponents of misleading the public and likened the situation to Brexit. Ultimately, the referendum met the required quorum. A total of 2,983 voters supported dissolving Stadtwerke, while 1,236 voted to keep it. With this outcome, the remunicipalization effort officially ended.

Following the referendum, discussions about remunicipalization ceased. By 2023, the original DSO contract expired, and the local council re-awarded the contract to the incumbent grid operator without further debate. Opponents of remunicipalization felt validated by this decision, viewing it as confirmation that the project had been ill-conceived. Supporters acknowledged strategic mistakes but remained convinced that remunicipalization had been the right choice:

'We were too sure of ourselves; I think that's the main reason why we failed'. (Interview, sh121523)

Summed up, the remunicipalization effort in Schenefeld ultimately failed. Driven by a coalition of the Greens and Social Democrats, it was narrowly approved in the local council in 2018. However, opposition from the Conservatives, Liberals, and Independents led to a successful mobilization of the local population. This unusually divisive issue for Schenefeld culminated in a referendum in 2020, effectively reversing the decision. Financial concerns, rather than energy transition policies, were the central point of contention. By 2023, the city

formally extended its contract with the original DSO, ending the debate on remunicipalization for the foreseeable future.

6. Comparison and Implications for Remunicipalization

The analysis of three cases reveals notable similarities despite differing processes, offering limited conclusions on remunicipalization in Germany's energy market. The findings align more with the pragmatic-managerial interpretation (Warner and Aldag, 2021, pp. 326–328) than earlier qualitative studies that read remunicipalization as a transformative political project (McDonald, 2018, pp. 53–55; Petitjean and Kishimoto, 2017, pp. 161–162). The next section explains this conclusion by examining key stakeholders, their interactions and their use of veto options (see Table 2).

First, some observations support Partisan Theory. In Bingen and Schenefeld, the Greens and Social Democrats initiated remunicipalization and backed it in all three cases. However, deviating from its assumptions, Conservatives in Bingen and Böblingen, typically pro-market, also supported it, as did Liberals in Böblingen. The reason for this becomes clearer when examining the arguments employed by different parties. All parties in the examined cases appear to be driven less by ideological ideals regarding the balance between public and private ownership and more by financial considerations. Conservatives in Bingen and Böblingen supported remunicipalization based on the expectation of financial gains, while they opposed it in Schenefeld under the opposite assumption. Similarly, Social Democrats and Greens consistently justified their stance by pointing to the anticipated benefits for the municipal budget. Reducing private sector involvement in public infrastructure or taking a more active role in local energy policy, played only a secondary role here.

This is particularly true as remunicipalization ended up successful in the two cases where cross-ideological majorities could be formed within the city councils — united by the shared expectation of financial gains for their city's coffers. The only exception was Schenefeld, where, despite a pro-remunicipalization majority, the project failed due to differing assessments by the councilors on the financial feasibility.

Yet, power dynamics may have also played a role here: interviews suggest that the Conservatives felt increasingly sidelined by the Green-led majority and used the issue to challenge their political dominance within the council. Following this line of argument, strong party polarization within the decision-making process may have ultimately hindered the remunicipalization effort. As such, this reflects descriptions of local politics as a more consensus-driven arena, where party competition is less pronounced than at higher levels of government (Bogumil and Ruddat, 2022, pp. 121–123). While certain patterns align with

Partisan Theory, the findings do not fully support its broader assumptions. Yet, with decision-making in the two other cases being in closer conjunction to the 2008 financial crisis than in Schenefeld, this might be a limitation towards applying this interpretation to other cases.

A second important aspect is the engagement of the public, which remained minimal, except in Schenefeld through a referendum on remunicipalization. However, this referendum mainly served as an expansion of the existing conflict within the city council rather than genuine bottom-up activism. This contrasts with high-profile cases like Berlin and Hamburg, where grassroots movements were instrumental in agenda-setting (Becker, 2017, p. 123; Blanchet, 2014, p. 7). In the three cases examined here, no comparable citizen-driven initiative was evident. Instead, the exploration of remunicipalization remained within the councils, with selective public engagement. This contradicts the view of remunicipalization as a transformative movement.

Third, interviews and press reports lead us to conclude that mayors and administrations maintained a largely neutral role, facilitating the council's decisions rather than actively shaping them. Only for Bingen did the deputy mayor and mayor play a more active role throughout the prolonged legal process, so after the initial decision had already been taken by the council. Overall, key figures within the administration remained passive players, professionally overseeing the decision-making process. While they did not act as proactive transformative agents, neither did they assume an explicit managerial role based on expertise.

In contrast, external consultants played a more decisive role, particularly in Böblingen, where the recommendation from a former industry insider was pivotal in the council's decision-making process. Summed up, they resemble 'policy entrepreneurs' (Kingdon, 2013, pp. 122–124) most closely in the processes of remunicipalizing electricity networks examined in this study.

Finally, the role of incumbent DSOs: based on the legal framework and their scope for action, private energy companies hold a strong position as veto players, which is particularly evident for Bingen. However, this case, and Böblingen, show that this power has its limits. In Böblingen, the incumbent DSO compromised as multiple municipalities discussing remunicipalization simultaneously threatening their business model within the same region. Similarly in Bingen, both parties ultimately reached a co-joint solution after prolonged legal battles. These cases suggest that while DSOs can obstruct remunicipalization, they are ultimately utility-maximizing actors willing to negotiate when resistance becomes too costly.

While the three cases show little evidence of a transformative agenda, the interpretation of remunicipalization as a purely managerial-driven adaptation also fails to fully capture the reality. Nevertheless, especially considering the clear focus on maximizing financial benefits

compared to other concerns as well as the lack of bottom-up initiatives, a pragmatic-managerial view characterizes these cases better.

Table 2: Comparison of Cases

	Bingen am Rhein	Böblingen	Schenefeld
Arguments	primarily financial, energy transition secondary	financial, ecological, and more general concerns	financial arguments dominated discussions
Agenda-Setting Parties	Social Democrats, Greens	not clear	Greens
Parties supporting remunicipalization	Conservatives, Social Democrats, Greens	Conservatives, Independents, Social Democrats, Greens, Liberals	Greens, Social Democrats
Parties opposing remunicipalization	Liberals, Independents	---	Conservatives, Liberals, Independents
Cross-Ideological Consensus	Yes	Yes	No
Administration	cautious, but more initiative-taking during prolonged process	neutral but close supervision of the process	cautious
External Advisors	primarily legal council	close supervision by an industry expert	early consultation with officials from other municipal utilities
Incumbent Grid Operators	RWE (and successor companies), EWR	EnBW	SH Netz AG / E.on
Co-operation with Incumbent(s)	after prolonged judicial procedures	during procurement procedure	---
Outcome	Remunicipalization	Remunicipalization	No Remunicipalization

So, this research suggests that one possible reason for the disconnect in remunicipalization studies—particularly regarding electricity grids in Germany—may stem from case selection, as Voorn et al. (2021, pp. 311–312) propose. Unlike Berlin and Hamburg, where anti-incumbent grassroots movements drove remunicipalization, the medium-sized cities examined here, which make up the bulk of cases in large-N studies, lacked such transformative agenda-setting. As such, this study finds that the specific local context in which remunicipalization unfolds is a major point of contention, needing greater attention in future studies.

7. Conclusion

This paper offers new case-based insights into remunicipalization processes in Germany, examining three medium-sized municipalities that faced different challenges and came to different outcomes. Unlike previous case-based research on larger cities, this study finds no transformative agenda for remunicipalization, instead pointing towards budget-maximizing motives followed by the parties. Administrations and mayors take a largely backseat role, with incumbent DSOs presenting the major obstacle towards completing such a move.

Accordingly, the findings more closely align with previous, mainly quantitative studies emphasizing managerial decision-making (Warner and Aldag, 2021, pp. 326–328), rather than qualitative research framing remunicipalization as a political movement against neoliberalism (Petitjean and Kishimoto, 2017, pp. 161–162). Beyond different methodologies, this suggests that results of previous research may also differ because of whether medium-sized cities are included in the analysis (Voorn et al., 2021, pp. 311–312).

Despite similar settings—three medium-sized West German municipalities in the 2010s with above-average business tax revenue and strong Green Party support—limitations remain. Contexts, such as the different exposure to the aftermath of the financial crisis and individuality of policymakers and stakeholders, affect outcomes. For this reason, the implications beyond the individual case should be treated with caution. Additionally, further research could more thoroughly explore regional cooperation and strategies involving multiple public services, offering a broader understanding of the interconnections between electricity, heating as well as other utilities.

Nevertheless, by collecting and analyzing interview data, press reports, and council minutes, this study allows a detailed look into electricity grid remunicipalization in German municipalities, addressing the “disconnect” (Voorn et al., 2021, p. 312) within the literature and offering a potential explanation for the diverging interpretations of remunicipalization. In doing so, it adds to the academic debate by scrutinizing how different stakeholders interact in more typical German municipalities while also informing the practical debate on remunicipalization.

Germany’s planned phase-out of coal in the mid-2030s as well as decarbonization of energy usage present major transformations for its energy policy (Gross, 2023, pp. 308–309). These shifts coincide with another round of expiring DSO contracts at the turn to the next decade. Here, German municipalities exploring to remunicipalize their electricity grid as part of 2030s renewals need to prepare early and involve all relevant stakeholders, deeply evaluating whether such a move is cost-effective and – under the supervision of industry experts – find a common strategy to pursue it.

However, these calculations will be highly dependent on federal and state politics setting the framework conditions under which remunicipalization can unfold. In the interviews, councilors and administrative officials repeatedly expressed frustration with the existing legal framework and the lack of decision-making support from federal authorities. They particularly highlighted the conflicting signals sent by higher-level policymakers to local stakeholders regarding their role in the evolving energy transition, resulting in a lack of clear direction.

To address this, state and federal policymakers must clarify their strategies and provide municipalities with a clear framework, addressing whether future energy systems should prioritize a decentralized grid with more municipal DSOs or maintain a model dominated by larger DSOs operated by incumbent energy companies (Drewello, 2022, pp. 5–6; Fuchs et al., 2012, p. 18; Hughes, 2021, p. 353). So long as the tasks of *Stadtwerke* in this and related energy supply issues are not firmly settled, their role in the local energy transition will be ambivalent, leaving local actors treading an uncertain path.

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Supplemental Material

List of Questions for Interviews:

- **Introduction:**
 - What is your view on the role of local politics in electricity supply?
 - Could you describe your view on the role local politics plays in the provision of public goods?
- **Agenda-Setting:**
 - When was the idea of remunicipalising the electricity grid first discussed?
 - Who put forward this idea?
 - Who was the first to talk about remunicipalisation?
- **Procedure after initial idea:**
 - How did the discussion continue after the idea was put forth?
 - Who had the lead in developing the idea further?
 - Which actors were involved at this stage?
- **Administration & Mayor:**
 - What role did the city administration and / or *Stadtwerke* management play in this? What was their position?
 - What role did the mayor play in this? What was her / his position?
- **Parties:**
 - How did the parties and political groups in the local council position themselves on this issue?
 - What role did individual city councillors play in this?
- **Finding consensus:**
 - Has a unanimous solution been found between the administration and within the local council?
 - How was this consensus reached? / Why could no consensus be found?
- **Old DSOs:**
 - How did the old DSO react to the discussion?
 - How was the old DSO involved in the discussion?
- **Decision-making:**
 - When and how was the final decision made?
 - What was the decisive factor / were the decisive factors?
- **Hurdles during the process:**
 - Were there roadblocks on the way to the re-municipalisation of the electricity grid?
 - What pitfalls have appeared during the process?
 - [Why did no remunicipalisation take place?]

Codebook:

All subcategories for arguments and procedures were not theoretically deducted but generated and adapted based on the data as I progressed with the test coding.

For actors, they were largely predefined.

Category	Code	Subcode	Definition	Example (in German)
Procedure	---	---	Comments about legal and political framework as well as strategic deliberations and decision-making.	---
Procedure	Strategy	---	Comments made discussing strategy, including long-term planning and overall goals, adherence to previous decision and regional cooperation.	---
Procedure	Strategy	No Long-Term Planning possible	Comments made about the difficulties of long-term planning in the highly volatile economics and politics of energy.	Ja, und die Verteil...die Netzbetreiber hätten wahrscheinlich auch nicht zu dem Preis sind verkauft, bei den jetzt gestiegen Zinsen, also...ich weiß es nicht, also schwierige Angelegenheit. (sh122223_transcript, Pos. 55)
Procedure	Strategy	Change of Strategy / U-turns	Comments made about discussion on a potential change of strategy during the remunicipalisation process.	Die Begeisterung hielt sich nicht nur in Grenzen, es wollte erst gar keine aufkommen. Vielmehr hat der Aufsichtsrat der Binger Netz GmbH den Vorschlag seinen Vorsitzenden, Oberbürgermeister Thomas Feser, ziemlich verschupft aufgenommen. Feser hatte gegenüber der AZ angekündigt, die jüngste Sitzung des Gremiums nutzen zu wollen, um auf eine Kursänderung hinzuwirken. (2018_12_18 - Allgemeine Zeitung, Pos. 11)

Category	Code	Subcode	Definition	Example (in German)
Procedure	Strategy	No U-turns	Comments made by actors involved that do not argue pro or contra remunicipalisation but urge everyone to push through the process or follow decisions made previously.	"Wir dürfen nicht beim ersten kleinen Widerstand gleich in die Knie gehen." Es sei nicht vernünftig, eine Grundsatzentscheidung wie jene der Rekommunalisierung infrage zu stellen, "bloß weil es ersten Gegenwind gibt". (2017_02_23 - Allgemeine Zeitung, Pos. 11)
Procedure	Strategy	Corporatisation of <i>Stadtwerke</i>	Comments about turning <i>Stadtwerke</i> or other municipal companies into private legal form, f.e. LLC. and expanding their operations.	Nachdem die Stadtwerke bis dahin ein Teilstadtwerk war, das sich noch mit Wasser, Abwasser und mit Fernwärme beschäftigt hat...hat man gesagt, wenn wir dann ein Vollstadtwerke haben, haben wir über die eigene Möglichkeit, das zu gestalten, auch eine große Chance, an dem wirtschaftlichen Erfolg teilzuhaben. (bw020824_transcript, Pos. 21)
Procedure	Strategy	Long-term planning	Comments pointing to long-term goals in developing municipal companies and public service ventures.	Dr. Till Müller-Heidelberg (SPD) schaute bereits in die fernere Zukunft. "Das Fernziel ist die Produktion und der Vertrieb." (2015_11_07_1 - Allgemeine Zeitung, Pos. 8)
Procedure	Strategy	Cooperation with regional partners	Comments made about potential or real cooperation with partners within the region, mostly other municipal enterprises, or neighbouring towns.	„Wir hätten immer einen Partner uns gesucht, hatten ja auch schon Kontakt aufgenommen zu umliegenden Stadtwerken“. (sh121323_transcript, Pos. 34)
Procedure	Referendum	---	Comments made about potential referendums, administrative procedures towards referendums as well as the actual outcome of referendums.	MdR Harms spricht sich aufgrund der Bedeutung und der finanziellen Auswirkungen für die Durchführung eines Bürgerentscheides aus. Er teilt mit, dass er gegebenenfalls ein Bürger-begehren initiieren werde, so dass weitere Beschlüsse zu Punkt 7.2 und 7.3 der Tagesordnung unterbleiben sollten. (2019_06_20 - Protokoll, S. 5)
Procedure	Referendum	Self-Reflection / Criticism	Proponents of remunicipalisation talking about their mistakes during	Wir waren uns zu sicher, das ist, glaube ich, der Hauptgrund, warum wir gescheitert sind. (sh121523_transcript, Pos. 35)

Category	Code	Subcode	Definition	Example (in German)
			the process and doing self-reflection about what they could have done otherwise.	
Procedure	Party Competition	---	Comments made discussing party competition, looking at discussions in the council, highlighting persuasion, cooperation, voting and conflicts among local councillors.	---
Procedure	Party Competition	Convincing Doubters	Comments made about convincing council members who were sceptic about remunicipalisation to pursue it.	Die wesentlichen Bedenkenträger sind wie eigentlich immer in solchen kommunalen Themen die Freien Wähler, die aus, ja, großen Teilen der CDU und auch Teilen der FDP dann gestützt waren - die sich aber dann im Laufe des Prozesses allesamt der Mehrheit angeschlossen haben. Und ich glaube, das war sogar weitgehend einstimmig, nachher, am Schluss, die Beschlussfassung zur Übernahme - nach einem längeren Prozess des Überzeugens. (bw020824_transcript, Pos. 35-36)
Procedure	Party Competition	Cooperation within Council	Comments made about cooperation or agreement between local parties within the council.	Es gab eigentlich nie strittige Diskussionen. (bw012224_transcript, Pos. 24)
Procedure	Party Competition	Majority Decision	Comments made about a majority vote in the local council or related subcommittees.	Das ist Demokratie. Also ganz, ganz kurz...also, da kann ich nicht viel mehr zu sagen, als dass es eine Mehrheit von Rot-Grün gab, und die ist durchgekommen und damit war die Entscheidung gefallen, Stadtwerke zu gründen. (sh012624_transcript, Pos. 44-45)
Procedure	Party Competition	Conflict within Council	Comments made about conflict or (severe) disagreement between councillors and local parties.	MdR Becker vertritt bezüglich der beiden vorherigen Tagesordnungspunkte die Auffassung, dass es befremdlich sei, dass von Seiten der Fraktion DIE GRÜNEN Schlussanträge gestellt

Category	Code	Subcode	Definition	Example (in German)
				worden seien, da ihnen eine Diskussion unangenehm sei. (2019_06_20 - Protokoll, S. 8)
Procedure	Procurement		Comments made discussing remunicipalisation procedures, pointing to the overall framework, including formal and informal requirements and transparency.	---
Procedure	Procurement	Smaller Council Working Group on Remunicipalisation	Comments made about (sub)committees or smaller working groups discussing and making recommendations about remunicipalisation, involving both political and administrative actors.	Ende November 2009 lädt dann Oberbürgermeister Alexander Vogelgsang Vertreter aller fünf im Gemeinderat vertretenen Parteien zur ersten Sitzung der Arbeitsgruppe (AG) Energie ein. Geleitet wird das beratende Gremium von Gerhard Jochum, einem ehemaligen Topmanager aus der Energiewirtschaft. (2013_02_11 - Zeitung für kommunale Wirtschaft, S. 1)
Procedure	Procurement	Transparency	Comments pointing out that DSO procurement was conducted in a transparent, fair, and open manner.	„Also...ja, ich glaub, was besonders auch mit einer Erfolgsfaktor war, dass wir halt ein wettbewerbliches Verfahren gewählt haben und nicht nur mit einem möglichen Interessenten bilateral verhandelt haben. Ich denke, das war sicher – alles in allem – auch für das Verhandlungsergebnis positiv. Ja, genau “. (bw010324_transcript, Pos. 58)
Procedure	Procurement	Expert Advice / Legal Council	Comments made about legal advice and expert council by external actors and administration during remunicipalisation process.	„Also für mich war ganz arg wichtig, dass ich klar verständliche Unterlagen bekommen habe. Ich bin kein Energiefachmann. Ich bin zwar Handwerker und kenne mich da ein bisschen mit aus mit dem Thema, das man erst Geld verdienen muss, um es auszugeben. Aber es war einfach sehr hilfreich, dass wir eine gute Beratung und Unterstützung bekommen haben, die uns in diesem Thema entsprechend begleitet hat“. (bw012224_transcript, Pos. 59)

Category	Code	Subcode	Definition	Example (in German)
Procedure	Procurement	Administrative Process	Comments made about the administrative process behind remunicipalisation.	Bürgermeisterin Küchenhof und die Verwaltung erklären, dass im Aufsichtsrat keine Mitglieder des Ausschusses für Energie, Wasser und Abwasser vertreten sein sollten, da der Fachausschuss sich mit dem Konzessionsverfahren befassen werde. Der Vorsitzende fügt ergänzend an, dass es auch Konflikte bei den Mitgliedern des Aufsichtsrates der Wärmeversorgung Schenefeld GmbH geben würde. (2019_09_24 - Protokoll, S. 5)
Procedure	Procurement	Finding Compromise with Incumbents / Out-Of-Court-Settlement	Comments made about municipal officials and incumbent energy companies compromising or cooperating.	Der bisher zuständige Versorger EWR gibt die Stromnetze für die Stadtteile Dietersheim, Dromersheim und Sponsheim an die Bingen Netz GmbH & Co KG heraus. Nach eingehender Erörterung der Sach- und Rechtslage und auf Vorschlag des Gerichts haben sich die Parteien vor dem Landgericht Mainz dahin gehend geeinigt. (2019_04_06 - Oeffentlicher Anzeiger, Pos. 5)
Procedure	Procurement	Grid Contract running out	Comments made about the DSO contract of the respective municipality running out.	"Die Konzessionen laufen mittelfristig aus", so Feser. Zeit, um neu zu justieren. (2012_09_04 - Allgemeine Zeitung, Pos. 6)
Procedure	Procurement	Legal Procedures / Negotiations / Court Rulings	These are comments made about legal procedures and price negotiations during the remunicipalisation process. These include complaints about the procurement process, suing others, court rulings and negotiations about acquiring the electricity grid.	Im ersten Schlagabtausch zwischen David und Goliath heißt der Sieger: Goliath. Das Mainzer Landgericht gab am Freitag dem Antrag von RWE Deutschland statt, mit einer einstweiligen Verfügung die Vertragsverhandlungen zwischen der Stadt Bingen und der Rhein Hessischen zu stoppen (2016_01_09 - Allgemeine Zeitung, Pos. 5)
Procedure	Upper Political Level	---	Comments made about legislation passed by upper political levels as well as comments about support or	Nur muss ich Ihnen sagen, das Gesetz, was dazu gemacht worden ist in Berlin, ist sehr schlecht, ist nicht ausreichend, ist nicht nur kompliziert, sondern auch schlecht gemacht. (rp011924_transcript, Pos. 12)

Category	Code	Subcode	Definition	Example (in German)
			lack of support by higher level officials and politicians.	
Arguments	---	---	Reoccurring themes and arguments in favour or against remunicipalisation.	---
Arguments	Energy Transition	---	Comments made regarding energy transition, highlighting customer benefits or downsides, and remunicipalisations effect on local energy control.	---
Arguments	Energy Transition	Higher Electricity Prices or No Benefits for Customers	Comments made about potential downsides for customers as a consequence of remunicipalisation, for example higher electricity prices or worse customer service.	Vergleicht man mit der Stadt Hamburg, die im vergangenen Jahr einen Millionengewinn erreicht hat, muss man ganz genau hinschauen, warum dies so ist. Nur durch eine massive Erhöhung der Netzentgelte um 15 Prozent in 2018 und nun wieder um neun Prozent in 2020 werden diese Gewinne erreicht und ausschließlich durch den Stromkunden bezahlt. Eine Erhöhung der Strompreise wollen wir den Schenefeldern ersparen. (2020_06_13_2 - Hamburger Abendblatt, Pos. 6)
Arguments	Energy Transition	Lower Electricity Prices or Benefits for Customers	Comments made about potential benefits for customers as a consequence of remunicipalisation, for example lower electricity prices or better customer service.	CDU-Fraktionschefin Elisabeth Gräff hob hervor, auch die Binger werden durch das Kooperationsmodell mit der Rhein Hessischen profitieren. Allein weil sich die Abstimmung mit dem Netzbetreiber vereinfache. (2015_11_07_1 - Allgemeine Zeitung, Pos. 8)
Arguments	Energy Transition	Limited / No Influence on Energy Transition	Comments made about remunicipalisation having only a limited effect or no effect on the local energy transition as well as comments voicing scepticism or doubts about the feasibility of	Auch den viel beworbenen Klimawandel, der eintreten soll, wenn die Stadtwerke Schenefeld GmbH die Netze besitzen, wird es nicht geben, Die Stadtwerke Schenefeld haben keinerlei Einfluss darauf, welcher Strom durch die Netze fließt und welcher nicht. (2020_06_13_2 - Hamburger Abendblatt, Pos. 7)

Category	Code	Subcode	Definition	Example (in German)
			energy transition in connection with remunicipalisation or municipal energy policy.	
Arguments	Energy Transition	Influence on Local Energy Transition	Comments made about potential influence gained on the local energy transition by remunicipalisation, for example increased influence on electricity feed-in, grid expansion and modernisation, grid control and energy generation.	Aber uns war es wichtig, einfach Zugriff auf unser Netz zu haben. Also das Netz wäre dann in dieser Gesellschaft gewesen und damit auch bei uns. Wir hatten die Mehrheit in der Gesellschaft, diese berühmte 51-49-Aufteilung und wir konnten bestimmen, was mit unserem Netz passiert, und konnten auch bestimmen, wie die Richtlinien sind, zum Beispiel Aufnahme von Erneuerbaren, etc. pp. (rp021324_transcript, Pos. 31)
Arguments	Financial	---	Comments pointing to financial and economic up- and downsides of remunicipalisation.	---
Arguments	Financial	Highly Competitive Energy Market	Comments made about the competitiveness of the energy market and/or pointing out the difficulties in setting up a competitive energy company.	Wir sehen es aber als sehr problematisch an, wenn eine Stadt wie Bingen als Teil eines stark umkämpften Marktes auftritt und hierbei wohl kaum als konkurrenzfähig angesehen werden kann. (2014_09_23_Bingen_Stellungnahme_FDP, S. 1)
Arguments	Financial	Low Asset Value of Grids / High Infrastructure Cost	Comments about the technical state of the electricity grid, pointing to high infrastructure cost into and potentially low asset values of electricity infrastructure.	Zudem prophezeit Harms, dass die zu übernehmende Netze ("Da wurde jahrelang nichts investiert") einen hohen Sanierungsbedarf aufweisen werden, der dann ebenfalls zu Lasten der Stadt ginge. " Am Ende zahlt jeder Schenefelder die Zeche für die unabsehbaren Folgen und waghalsigen Risiken, die die rot-grüne Mehrheit in der Ratsversammlung eingehen", so der FDP-Mann. (2019_09_23 - Hamburger Abendblatt, Pos. 14)
Arguments	Financial	Other Investments / Priorities	Comments pointing to other necessary municipal investments	Am 14. Juni treffen die Schenefelder/innen die richtungweisende Entscheidung darüber, ob ihre Steuergelder in Kitas, Schulen und Stadtkern fließen oder in den riskanten

Category	Code	Subcode	Definition	Example (in German)
			taking precedence over remunicipalisation.	Netzankauf und Kredite der dafür neugegründeten Stadtwerke (2020_06_13_1 - Hamburger Abendblatt, Pos. 4)
Arguments	Financial	Financial Benefits & Stronger Municipal Utilities	Comments made about potential financial benefits and stronger municipal utilities based on remunicipalisation, for example additional revenue, a stronger asset base or lower cost for municipal operations.	Wirtschaftliche Aspekte habe eine Rolle gespielt...also...und die Stadtwerke haben ja auch quasi einen Teil defizitäre Sparten, das Parken oder die Bäder, und da quasi...auch wenn es keine direkte, vertraglich geregelt, eine direkte Gegenfinanzierung gibt, aber dann doch quasi über die Rendite...quasi zu einer „Gegenfinanzierung“ beizutragen als Stadtwerk. (bw012624_transcript, Pos. 44)
Arguments	Financial	High Costs / Low Revenues	Comments made about potential higher cost due to remunicipalisation as well as lower revenues than forecast.	Und wenn man sich die Entwicklung der Ergebnisse der der Verteilnetzbetreiber anschaut, über die letzten Jahre ist es deutlich zurückgehend. Und die Befürworter lebten noch in einer Welt von vor 10 Jahren, wo es relativ üppige Ergebnisse der Verteilnetzbetreiber gab. Und das ist eben von Jahr zu Jahr zurückgegangen. (sh122223_transcript, Pos. 51)
Arguments	State vs. Market	---	Comments voicing criticism or support for privatisation or the involvement of (incumbent) private actors in public service delivery.	---
Arguments	State vs. Market	Against Privatisation / Incumbents	Comments made criticising incumbent energy companies and private actors involved in public service delivery.	Und zum zweiten, das habe ich auch mehrfach erwähnt, wir wollten dadurch auch schlicht sagen: Warum sollen die Konzerne an unseren Konzessionen Geld verdienen durch die Netzentgelte? Das wollen wir lieber selbst. (rp122223_2_transcript, Pos. 63)
Arguments	State vs. Market	Pro Privatisation / Incumbents	Comments made supporting incumbent energy companies and private actors involved in public service delivery.	Wir bleiben auf unserem Standpunkt: macht weiterhin Konzessionsverträge mit RWE, mit denen sind wir über 100 Jahre lang oder damals 90 Jahre lang gut gefahren, haben eine gutes Verhältnis mit denen, die auch sonst in der Stadt Bingen

Category	Code	Subcode	Definition	Example (in German)
				viel getan haben, so sozial, und so weiter; großer Konzern, (rp122223_1_transcript, Pos. 49)
Arguments	Others	---	Other arguments made about pros and cons of remunicipalisation, not clearly or exclusively falling into the aforementioned subcodes.	---
Arguments	Others	Favourable Conditions / General Optimism towards Remunicipalisation	Comments about the feasibility of grid remunicipalisation, the overall situation of the grid and an overall trend towards remunicipalisation within Germany.	Also Schenefeld ist eigentlich als Gemeinde hochattraktiv für jeden Netzbetreiber, weil wir auf sehr dichter kleiner Fläche, sehr dichtes Netz haben, das sehr viele Haushalte abdeckt. (sh121323_transcript, Pos. 51)
Arguments	Others	General Scepticism / Risk Aversion towards Remunicipalisation	Comments voicing general concerns about remunicipalisation or showing risk aversion towards taking such a step.	Er zeigt auf, dass von Seiten der Politik darüber entschieden werden müsse, ob Stadtwerke gegründet werden sollen und das unternehmerische Risiko von der Stadt getragen werden soll. MdR Plewnia teilt mit, dass die CDU-Fraktion sich dagegen entschieden habe. (2017_12_07 - Protokoll, S. 6)
Arguments	Others	Technical and Administrative Challenges	Comments made about technical challenges and administrative pitfalls running electricity grids as a municipal DSO as well as comments made about the lack of administrative and technical expertise within the municipality to run an electricity grid.	MdR Rüpcke spricht sich gegen eine Gründung von Stadtwerken aus und zeigt auf, dass das technische Wissen fehle. (2018_12_13 - Protokoll, S. 5)
Arguments	Others	Successful Examples	Comments pointing to successful examples of municipality-led energy transition or grid remunicipalisation elsewhere.	Dann, dass eben auch Erfolgsbeispiele im Landkreis gab, die einfach auch gezeigt haben, welche Chancen in so einem Projekt drinstecken. (bw010324_transcript, Pos. 53)

Category	Code	Subcode	Definition	Example (in German)
Actors	---	---	Comments made by or unambiguously pointing to specific stakeholders in the remunicipalisation process including political parties, municipal officials, incumbent energy companies and external actors.	---
Actors	Administration	---	Comments made by administrative staff or comments mentioning local administration	Eigentlich kann man da kaum von Positionierung sprechen. Die hat das gemacht, was der Rat beschlossen hat. Und dann eben das Formale auch abgewickelt, die Anwälte beauftragt und die Sitzung einberufen, aber sonderliches Herzblut, würde ich sagen, hat sie da nicht reingesteckt. (rp122223_2_transcript, Pos. 40)
Actors	CDU	---	Comments made by local CDU members or comments mentioning local CDU (members).	Die CDU wiederum äußert Zweifel, dass die entstandenen politischen Gräben " absehbar wieder überwunden werden können". Im Rat sei die Chance, über politische Grenzen hinweg ein Zeichen zu setzen, vertan worden. (2020_03_31 - Hamburger Abendblatt, Pos. 8)
Actors	FDP	---	Comments made by local FDP members or comments mentioning local FDP (members).	Und wir, die Freien Demokraten, und die vierte Gruppe, das war die Freie Wähler Gemeinschaft, haben wir in Bingen noch im Stadtrat, die waren auch vehement dagegen, also die die marktorientierten Parteien waren dagegen. (rp122223_1_transcript, Pos. 29)
Actors	FW / Independents	---	Comments made by FW / Independents members or comments mentioning Freie Wähler / Independents (members).	MdR Pfitzner erklärt, dass die BfB-Fraktion den vorliegenden Antrag ablehnen werde, da Schenefeld mit den jetzigen Versorgern gut aufgestellt sei. (2017_12_07 - Protokoll, S. 5)

Category	Code	Subcode	Definition	Example (in German)
Actors	Greens	---	Comments made by local Green Party members or comments mentioning local Green Party (members).	Ja, eigentlich durch unsere Initiative. Wir waren uns sicher, dass einfach Stadtwerke als nächster logischer Schritt nach der WVS ein Thema ist, [...]. (sh121523_transcript, Pos. 30)
Actors	Incumbents	---	Comments made by representatives of incumbent energy companies or comments mentioning incumbent energy companies.	RWE warf der Stadt daraufhin ein intransparentes und diskriminierendes Verfahren vor. (2016_01_09 - Allgemeine Zeitung, Pos. 8)
Actors	Mayor	---	Comments made by the mayor or comments mentioning the mayor.	Ja, das ist...ist verhalten, sagen wir einmal so, der Oberbürgermeister ist dann irgendwann umgeschwenkt, dass er gesagt hat, okay, wir machen das aber. Sagen wir einmal, so richtig Feuerwerk gebrannt hat nicht. (rp021324_transcript, Pos. 24)
Actors	SPD	---	Comments made by local SPD members or comments mentioning local SPD (members).	Ich glaube, aber eher, sie kam einfach...ja, wahrscheinlich sogar aus unserer Fraktion, der Sozialdemokratie. (rp122223_2_transcript, Pos. 18)
Actors	Third Party / External Actors	---	Comments made by third party actors involved or comments mentioning third party actors involved. Third party actors include representatives of cooperation partners for remunicipalisation, attorneys and other legal professionals, energy consultants and higher-level officials.	So auch in Böblingen. Dort staunten die Gemeinderäte in der Arbeitsgemeinschaft Energie nicht schlecht, als ihnen Berater Gerhard Jochum als Ex-EnBW-Vorstand zur Entwicklung eines Voll-Stadtwerks riet, obwohl Hausherr Alexander Vogelgsang für seine Stadt das NEV-Modell favorisiert. (2010_10_02 - Energie & Management, Pos. 22)

