



SCHOOL OF
ECONOMICS AND
MANAGEMENT

Between Intention and Integration

Stakeholder Coordination and Energy Resilience: A Comparative Case Study of Copenhagen and Stockholm

by

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5th June 2026

Master's Programme in International Strategic Management

BUSN09 – Degree Project Spring 2026

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*“If you don't have a seat at the table,
you're probably on the menu.”
~ Elizabeth Warren*

Abstract

This thesis investigates how the roles, relationships, and coordination mechanisms among stakeholders influence the integration of energy resilience in urban development (UD) projects, a challenge increasingly recognised as governance-related rather than technical. Drawing on stakeholder and resilience theory, the thesis explores how stakeholders interpret their positions and influence within UD projects through 15 semi-structured interviews and a comparative case study of Copenhagen and Stockholm.

The findings reveal that most professional contributors operate in advisory roles without decision-making authority, while investment authority is concentrated among private actors and executive management. Coordination proceeds along two complementary tracks: formal mechanisms ensure accountability, while informal mechanisms provide the flexibility that formal structures cannot offer, with trust as the fundamental condition for the informal layer to function. The timing of stakeholder involvement is a critical determinant: engagement before the master plan is finalised enables co-creation, whereas late entry structurally shifts actors from partners to suppliers. Institutional barriers, such as the lack of a mandate, budget, and authority for resilience functions, mean that financial considerations typically take precedence over resilience considerations, regardless of individual motivation. A key finding is that resilience is not lost primarily at the moment of trade-off, but earlier, when organisational goals are set, roles are assigned, and coordination structures are established. These findings are summarised in a revised empirical framework that outlines the relational and institutional conditions influencing whether resilience is integrated or overlooked in UD projects.

Keywords: Energy resilience, Urban Development, Stakeholder Coordination, Timing of Involvement, Decision-making Authority, Trust, Institutional Barriers, Copenhagen, Stockholm

Acknowledgements

First and foremost, we would like to express our sincere gratitude to our supervisor, Thomas Kalling, for his continuous support, guidance, and encouragement throughout this process - and for the good humour that made it considerably more enjoyable.

We are deeply grateful to all the respondents across Denmark and Sweden who generously shared their time and insights. Without their openness and expertise, this research would not have been possible. We also thank everyone who responded to our outreach and helped connect us with new respondents.

On a more personal note, we extend our gratitude to our fellow students, friends, and families, whose support carried us through the more demanding moments of this journey. Finally, we thank our faculty of LUSEM for the academic foundation and guidance that made this research possible.

Thank you,

Nina Bogunović and Frances Victoria Nienhuis

Lund, 5th June 2026

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List of Abbreviations

BR18	Bygningsreglementet 2018 (the Danish Building Regulations)
CapEx	Capital Expenditure
CSR	Corporate Social Responsibility
E.ON	Energy company operating in Sweden and Denmark
EV	Electric Vehicle
HILP	High-Impact, Low-Probability
PBL	Plan- och bygglagen (Sweden's Planning and Building Act)
PM	Project Manager
ROI	Return on Investment
SDGs	Sustainable Development Goals
SDEWES	Sustainable Development of Energy, Water and Environment Systems
UD	Urban Development
UI	Urban Infrastructure

1. Introduction

1.1 Background

Geopolitical shocks causing global-scale struggles are becoming more frequent than ever. Apart from market stagnation, inflation, and volatility (Yang et al., 2023; Enescu & Răileanu Szeles, 2026), the increasingly frequent global catastrophes are taking a detrimental toll on society. They disrupt demographics, erode social cohesion and trust, and amplify inequality (Parenteau et al., 2023; Jewett et al., 2021). As a consequence, the ability to respond to and bounce back from incoming disasters, such as climate change, wars, pandemics, recessions, or supply-chain problems, has become vital. The concept of resilience has been applied across multiple domains, including ecological systems (Holling, 1973; Meerow et al., 2016; Suárez et al., 2024), infrastructure networks (Monstadt & Schmidt, 2019; Wang et al., 2019; Pregnolato et al., 2024), and urban governance (Bixler et al., 2020; Kapucu et al., 2023; Long et al., 2023). What was once used to describe an ecological system's capacity to absorb disturbances (Holling, 1973) is now integral to interdisciplinary sustainable practices. In the context of urban infrastructure (UI), Meerow et al. (2016) define resilience as the ability of an urban system and its constituent networks to maintain desired functions, rapidly recover from disturbance, adapt to change, and transform aspects that restrict adaptive capacity. Energy systems play a particularly vital role in this context. As our reliance on electricity continues to grow, especially with climate policies encouraging a shift away from fossil fuels (Clarkero et al., 2022; IRENA, 2026) and an increased desire for self-sufficient power generation, we can see that any disruptions to energy supplies might have notable economic and societal impacts (Mishra, 2026; Zambrano-Monserrate, 2026). Recent research, therefore, emphasises the importance of resilient energy infrastructure in increasingly uncertain environments (Jasiūnas et al., 2021; Wang et al., 2019). However, implementing energy resilience in UI appears to be fundamentally a governance challenge rather than a technical one. Wang et al. (2019) argue for resilience being incorporated early in the process, during planning and design, instead of being added after disruptions happen. This approach requires coordination among governments, infrastructure providers, planners, and citizens, who often work across organisational boundaries without a clear client. When contributions and benefits are perceived as unfair, cooperation may break down (Suárez et al., 2024), causing resilience efforts to be delayed, inadequate, or abandoned entirely.

1.2 Challenges in Urban Development

Cities developing energy-resilient infrastructure face two structural challenges that consistently undermine progress, namely, the disagreements over whose interests should guide decisions, and the difficulty of coordinating among the many different actors whose participation resilience requires. In the following section, we examine both carefully.

1.2.1 Shareholder primacy and the subordination of public value

One of the key concerns in stakeholder theory relates to authority, specifically, when there are multiple actors involved in a project or organisation, whose interests should guide decision-making? For years, corporate governance has operated on the assumption that only one principal has decision-making authority, known as shareholder primacy, and this model remains the predominant norm to this day (Stoelhorst & Vishwanathan, 2024). When the interests of shareholders and other stakeholders diverge, as they often do on resilience, shareholders' interests prevail by default. In most cases, corporate social responsibility (CSR) initiatives are pursued only when they can be justified as long-term financial investments rather than as fundamental obligations to society (Denis, 2024). Infrastructure investments that integrate resilience (e.g., distributed energy systems, community microgrids, redundant grid architecture) typically entail higher upfront costs and diffuse, long-term public benefits that are difficult to quantify and evaluate. Such investments are systematically undervalued when assessed using shareholder-primacy logic. Stakeholders with the greatest financial leverage (e.g., energy utilities, real estate developers, private infrastructure operators) are also stakeholders whose interests are the least aligned with energy systems that generate public value.

1.2.2 Multi-actor cooperation and the coordination problem

On the other hand, resilience theory uncovers an opposite yet critical challenge: decision-making authority is dispersed among too many stakeholders with differing interests, rather than too much power being concentrated in a single stakeholder. Resilient urban energy systems require coordination among stakeholders, including public entities, grid operators, urban planners, community groups, private investors, and end users. As the number of stakeholders increases, coordination costs rise, and these can become large enough to outweigh the project's benefits entirely (Warneryd et al., 2020). With project size and complexity, decision-making authority shifts in favour of stakeholders with greater technical expertise and larger financial resources, leaving less powerful stakeholders to gradually lose decision influence (Berthod et

al., 2023). As a result, resilient outcomes become fragmented and insufficient to create change. While stakeholder theory views the challenge as an obstacle to strategic decision-making and resilience theory considers it in terms of operational execution, both challenges reach the same conclusion. Technical innovation is not enough to improve urban energy resilience; there is a need for new governance structures that can balance concentrated financial interests with the coordination demands of multi-actor systems.

1.3 Problem Statement and Research Gap

Existing research continues to treat resilience primarily as a technical matter, exacerbating the two challenges outlined above. Studies examine how infrastructure systems recover from disruptions or adapt to changing conditions once operational (Wang et al., 2019), thereby framing resilience as a characteristic of physical systems rather than an outcome of governance processes. This framing overshadows the reality that resilience is determined upstream, during planning and design, through the decisions, negotiations, and power dynamics among stakeholders. Therefore, incorporating resilience into urban development (UD) is more than just an engineering challenge.

Urban development projects require municipalities, developers, design professionals, grid operators, and community organisations to work cohesively (Ansell & Gash, 2008; Allen et al., 2023; Berthod et al., 2023), even though each operates under different institutional mandates, timescales, and definitions of value (Lawrence et al., 2011; Klijn & Koppenjan, 2015). A single stakeholder rarely determines how resilience decisions are made. On the contrary, these decisions are distributed (Carlisle & Gruby, 2019), disputed (Méndez et al., 2023), and often subject to financial logics, which treat risk-prevention and public value as unaffordable overhead (Moore, 2013; Flyvbjerg, 2014). The core problem this thesis addresses is as follows: energy resilience in UD faces governance challenges that remain poorly understood, specifically, how the concentration of financial power among a small group of stakeholders and the fragmentation of coordination across many stakeholders with misaligned interests play out during planning and design phases, and what determines whether resilience is embedded or sidelined as a result.

Despite growing recognition of resilience as a strategic goal in urban planning, empirical research on how these coordination dynamics unfold during project development remains limited. Little is known about how the timing of stakeholder involvement, the balance between formal and informal coordination mechanisms, and the distribution of decision-making

authority shape resilience integration in practice. This gap is particularly significant for organisations entering resilient UI markets, where the ability to navigate coordination processes may prove as valuable a competitive advantage as technical expertise. Addressing this gap is the primary aim of this thesis.

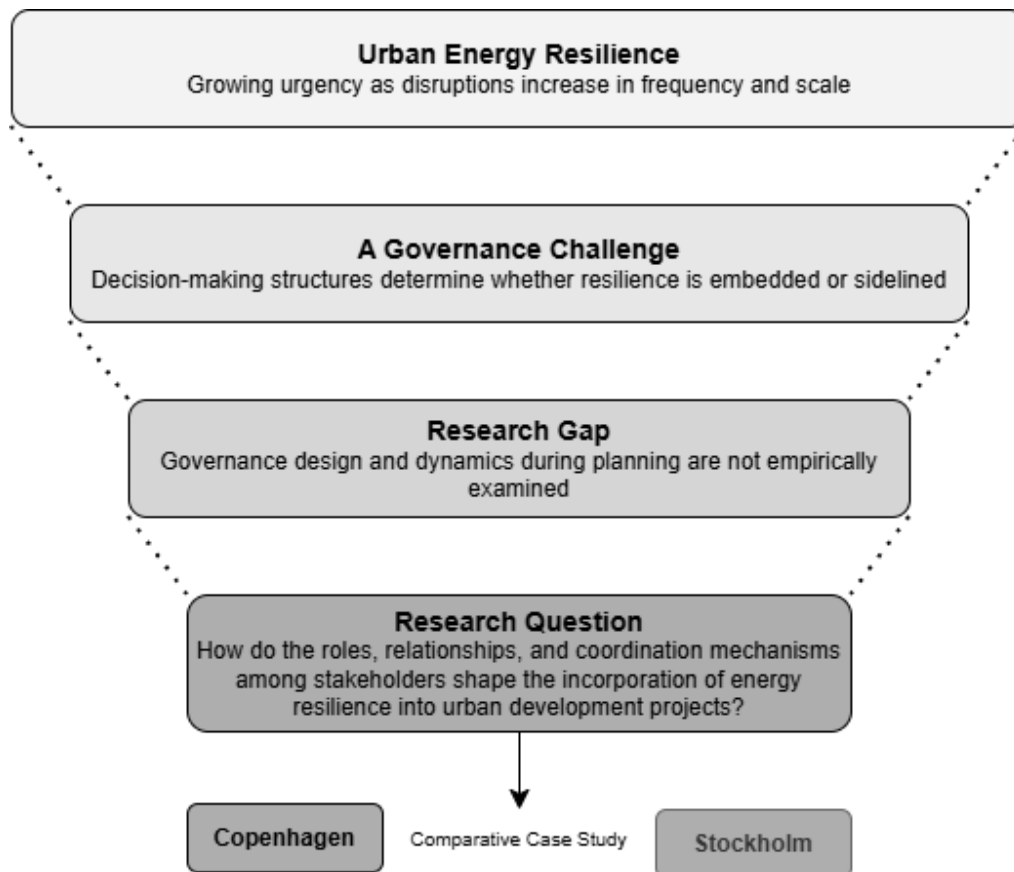


Figure 1 Research Funnel: From Urban Energy Resilience to Comparative Case Study

1.4 Research Purpose and Research Question

This thesis seeks to address this gap by exploring how coordination structures influence the translation of energy resilience from a strategic objective into concrete design decisions. Building on the theoretical challenges identified in section 1.2, the analysis centres on stakeholder interactions across the UD value chain, encompassing actors from the early planning and design stages through procurement and delivery, where overlapping and sometimes misaligned roles shape the prioritisation of resilience considerations throughout planning and design.

The thesis is guided by the following research question, examined through a comparative study of Copenhagen and Stockholm:

How do the roles, relationships, and coordination mechanisms among stakeholders shape the incorporation of energy resilience into urban development projects?

This is addressed through four sub-questions:

1. *How do stakeholders perceive their own authority and influence over energy resilience decisions, and whose interests tend to prevail when trade-offs arise?*
2. *At what stages of urban development projects is energy resilience introduced, and how does the timing of stakeholder involvement shape whether resilience is embedded or sidelined?*
3. *What formal and informal coordination mechanisms do stakeholders use, and which of these most effectively facilitate the integration of resilience considerations?*
4. *What structural and institutional barriers most consistently prevent energy resilience from being prioritised, and how do these differ between the Copenhagen and Stockholm contexts?*

1.5 Thesis Structure

The thesis is organised into six chapters. Chapter 2 develops the preliminary theoretical framework, drawing on stakeholder theory, which addresses trade-offs, public value, and coordination failures in infrastructure systems, and on resilience theory, tracing its development from ecological origins to urban applications and culminating in a preliminary analytical framework structured around six sensitising dimensions. Chapter 3 describes the methodology, covering the comparative case study design, case and interviewee selection, data collection, the abductive thematic approach to analysis, and considerations of validity, reliability, and ethics. The comparative case investigates the cities of Copenhagen and Stockholm, two cities that consistently rank among Europe's most sustainable urban environments (Kılıkış, 2019; Özekenci, 2025; Arcadis, 2024) and that have each made clear institutional commitments to energy transition. Chapter 4 presents the empirical findings, organised thematically around the background and roles of interviewees, coordination and collaboration, the influence on decisions, energy resilience in practice, trade-offs and barriers, patterns and outcomes, and a

cross-comparison of Copenhagen and Stockholm. Chapter 5 discusses these findings in relation to the theoretical framework, examining how the six sensitising dimensions are confirmed, refined, or complicated by the data, and presents a revised empirical framework. Chapter 6 summarises the theoretical and practical contributions of the research and outlines directions for future research.

2. Literature Review

The literature review is guided by a primary theoretical framework and complemented by an additional theory that provides the lens through which the thesis examines the fundamental concepts. Stakeholder theory forms the core of the review, shedding light on stakeholder interactions and their influence on decision-making. Resilience theory provides the necessary context, narrowing the focus to the same relationships that affect decisions about energy resilience within the UI environment. Together, these theories focus on the same core issue that this study aims to examine through empirical methods.

2.1 Stakeholder Theory

2.1.1 Stakeholder theory lens

Stakeholder theory provides a foundational framework for understanding decision-making in environments characterised by multiple actors with competing interests. First articulated by Freeman (2010), the theory challenged the traditional view of the firm as an entity primarily accountable to shareholders, instead conceptualising organisations as embedded within a network of relationships with various stakeholders. These stakeholders, defined broadly as any group or individual that can affect or be affected by organisational objectives, include employees, customers, governments, communities, and financial institutions. Subsequent developments in stakeholder theory have refined both its descriptive and normative dimensions. Donaldson and Preston (1995) distinguish between stakeholder theory as both an empirical explanation of organisational behaviour and a normative argument for considering stakeholder interests. Bridoux and Stoelhorst (2022) further highlight that stakeholder theory has evolved into a core model for analysing strategic decision-making, emphasising value creation through stakeholder relationships rather than one-sided value extraction.

Despite its broad applicability, stakeholder theory is not without internal tensions. One of its most persistent challenges is defining which stakeholders “count” and how their claims should be prioritised. Mitchell et al. (1997) address this through their stakeholder salience framework, arguing that stakeholder influence depends on attributes such as power, legitimacy, and urgency. This framework is particularly relevant to complex governance settings, such as UD, where stakeholders differ significantly in their ability to shape outcomes. In the context of urban energy resilience, stakeholder theory offers a critical analytical lens. Urban development projects involve a dense network of actors, including municipalities, developers, infrastructure

providers, regulators, and communities. These actors operate under different institutional logics, time horizons, and definitions of value. For instance, municipalities may prioritise long-term public benefits such as sustainability and resilience, whereas private developers often operate within financial constraints that favour short-term returns. Energy providers, in turn, may prioritise system efficiency and reliability, while communities may emphasise affordability and inclusivity. This diversity of perspectives makes stakeholder theory particularly useful for structuring the analysis of energy resilience. Rather than treating resilience as a purely technical attribute of infrastructure systems, stakeholder theory places resilience within a broader governance context shaped by negotiation, power, and trade-offs. As Wagner Mainardes et al. (2011) argue, stakeholder theory remains an evolving framework because it balances unresolved tensions, particularly when stakeholder interests diverge.

2.1.2 Trade-offs

While stakeholder theory advocates the inclusion of multiple perspectives, it offers limited guidance on resolving conflicts between competing interests. This limitation is particularly evident in decision-making contexts where trade-offs are unavoidable. As Pies and Valentinov (2024) argue, stakeholder theory involves trade-offs because not all stakeholder claims can be satisfied simultaneously. The critical question, therefore, is not whether trade-offs occur, but how they are structured and which interests ultimately prevail. In practice, these trade-offs are rarely neutral. A substantial body of literature shows that decision-making processes tend to favour stakeholders with greater economic power and institutional influence (Mitchell et al., 1997; Smith & Rönnegard, 2016; Denis, 2024; Stoelhorst & Vishwanathan, 2024). This is closely linked to the persistence of shareholder primacy, a governance model that prioritises shareholders' interests over those of other stakeholders. Stoelhorst and Vishwanathan (2024) describe shareholder primacy as a deeply institutionalised norm that shapes corporate governance structures, performance metrics, and resource allocation. Even as alternative governance models gain traction, the primacy model continues to define how organisations assess success and make decisions. Denis (2024) reinforces this argument, noting that CSR initiatives are pursued only when they align with long-term financial performance, rather than as independent ethical commitments.

The dominance of shareholder primacy has significant implications for stakeholder trade-offs. When financial returns are prioritised, other forms of value, such as social wellbeing, environmental sustainability, or long-term resilience, are often treated as secondary. Smith and

Rönnegard (2016) argue that this prioritisation is not a reflection of organisational preferences but is reinforced by educational systems, regulatory frameworks, and market expectations. As a result, the exclusion of non-financial stakeholders' interests becomes a built-in aspect of decision-making. This structural bias is further reinforced by institutional frameworks that shape how trade-offs are perceived and evaluated. Valentinov (2023; 2025) examines stakeholder theory through an institutional lens, arguing that stakeholder interactions are governed by broader economic and social systems that prioritise certain forms of value. From this perspective, trade-offs are shaped by the rules and norms that define what counts as legitimate value, rather than being an outcome of individual decisions. These insights reveal a key limitation of stakeholder theory when applied in real-world situations. While the theory promotes inclusivity, it operates within systems that systematically prioritise financially motivated actors. Consequently, when conflicts arise, the interests of these actors are more likely to prevail, often to the detriment of broader societal goals.

2.1.3 Public value

Although stakeholder theory originated in corporate governance, its influence extends beyond the corporate domain. In recent years, researchers have increasingly used stakeholder perspectives to analyse public-sector governance and infrastructure growth, taking into account both financial results and societal well-being. In these contexts, the concept of public value is essential. Moore (2013) defines public value as the collective benefits for society, including improved quality of life, social equity, and long-term sustainability. Unlike shareholder value, which is typically measured in financial terms, public value encompasses a broader range of measures that are often difficult to quantify. Infrastructure projects, specifically those related to energy systems, are critical sites for the creation or erosion of public value. These projects shape the physical and social fabric of cities, influencing everything from economic productivity to environmental sustainability. However, they also involve complex stakeholder structures that bring together public authorities, private investors, technical experts, and local communities (Pickett et al., 2014; Ragheb et al., 2017; Warneryd et al., 2020).

This complexity often leads to conflicts between financial and public value objectives. Flyvbjerg (2014) highlights that large-scale infrastructure projects, or “megaprojects,” are frequently characterised by overrun costs, benefit shortfalls, and strategic misrepresentation. These issues are often linked to misaligned incentives among stakeholders, especially when private actors prioritise financial returns over long-term societal benefits. Similarly, Herzog et

al. (2022) demonstrate that urban planning processes often entail spatial conflicts over competing values, such as environmental protection, economic development, and social equity. Resolving these conflicts is challenging due to the fundamentally different priorities of the stakeholders. Geneletti (2015) further argues that environmental considerations, such as ecosystem services, are often under-represented in strategic decision-making, despite their importance for long-term sustainability. The tension between financial and public value is notably pronounced in energy infrastructure. As Mazzucato (2018) argues, addressing societal challenges such as climate change requires mission-oriented innovation policies that prioritise long-term public goals. However, achieving these goals often requires substantial upfront investment and coordination among multiple stakeholders, which can conflict with the short-term incentives of private actors.

These dynamics indicate that conflicts among stakeholders in infrastructure are fundamental issues rooted in governance structures, rather than merely ethical concerns. When financially motivated actors have disproportionate influence, public value considerations, such as resilience, are often subordinated. This results in a systemic tendency to prioritise decisions that favour immediate financial gains at the expense of long-term societal benefits.

2.1.4 Stakeholder complexity and coordination

In addition to the primacy problem, infrastructure projects are characterised by high levels of stakeholder complexity, posing significant coordination challenges. Unlike corporate settings, where decision-making authority is usually centralised, infrastructure development involves multiple actors operating across organisational and institutional boundaries. Cuppen et al. (2016) show that stakeholders in energy infrastructure projects often have fundamentally different perspectives on risks, benefits, and trade-offs. These differences reflect diverse worldviews, making consensus difficult to achieve. Díaz et al. (2017) further demonstrate that unaddressed stakeholder conflicts can pose significant risks to policy implementation, notably in renewable energy projects.

The complexity of stakeholder interactions is further compounded by the institutional systems that govern infrastructure. Warneryd et al. (2020) highlight that community microgrids, often considered as a key solution to enhance energy resilience, require coordination among a wide range of actors, including regulators, grid operators, technology providers, and local communities. Each actor operates under different rules and incentives, creating barriers to effective collaboration. Uddin et al. (2023) provide empirical evidence of these coordination

challenges through a network-based analysis of stakeholder engagement. Their findings indicate that public-private partnership projects, often used in UI, show highly variable and unstable engagement patterns. This variability highlights the challenge of coordinating the interests of diverse stakeholders within hybrid governance frameworks.

Collaborative governance models have been proposed to address these challenges. Sørensen and Torfing (2017) argue that metagovernance, in which higher-level actors coordinate and steer collaborative processes, can enhance innovation and problem-solving within complex governance networks. However, the success of these approaches hinges on balancing inclusion with efficiency, a challenge often faced in practice. Berthod et al. (2023) offer a critical perspective on collaborative governance in energy systems, drawing on an analysis of “energy democracy” initiatives. While these initiatives aim to promote inclusive, participatory decision-making, the authors find that they often struggle to maintain engagement over time. As projects scale up, decision-making tends to shift towards more centralised, technocratic forms, thereby reducing the influence of less powerful stakeholders. This centralising tendency is worsened by the structural differences among actors that Cuppen et al. identify in energy infrastructure projects. These differences in stakeholder views on risks and benefits make sustained inclusive engagement challenging, even prior to considering scale. Warneryd et al. further show that the different rules and incentives guiding each actor lead to coordination barriers that become more pronounced as more participants join, speeding up the disengagement described by Berthod et al. Allen et al. (2023) reveal that at the governance level, this dynamic leads to policy incoherence and diminished accountability rather than cohesive action. Bixler et al. (2020), from a network perspective, show that this fragmentation undermines trust and information flows essential for collective action. Collectively, these studies illustrate a self-reinforcing cycle: as scale increases, centralisation intensifies. This marginalises less powerful stakeholders and, as a result, hampers the engagement needed for inclusive governance.

These findings highlight another challenge alongside shareholder primacy: stakeholder complexity. The first point shows how resilience is often sidelined in projects due to the dominance of financial interests. The second explains that the division of authority among many actors makes implementing effective resilience measures structurally challenging, even when stakeholders are willing to coordinate. Combined, these factors create conditions in which resilience is ignored and systematically disadvantaged by the very institutions responsible for urban decision-making.

2.1.5 Proposed solutions and shortcomings

Recognising the shortcomings of current governance structures, scholars have suggested methods to improve stakeholder coordination and decision-making. These include enhanced stakeholder engagement processes, multi-stakeholder initiatives, and value-based decision-making frameworks. Bahadorestani et al. (2020) propose structured methods for managing conflicting stakeholder interests, emphasising systematic engagement and conflict assessment. Similarly, De Bakker et al. (2019) highlight the potential of multi-stakeholder initiatives to address complex sustainability challenges by bringing together actors across sectors. Raha and Kazemi (2025) introduce value-based decision-making frameworks to make stakeholder trade-offs more transparent and equitable. By explicitly considering different forms of value, these frameworks aim to prevent financial considerations from dominating decision-making.

While these approaches offer valuable insights, the literature also highlights their limitations. A recurring critique is that they do not fundamentally alter the power structures that shape stakeholder interactions. As Lawrence et al. (2011) argue, creating institutional change requires “institutional work”, or the active effort to reshape the rules and norms regulating organisational behaviour. Without these changes, new governance mechanisms may simply operate within existing structures, restricting their ability to bring about change. Mayer (2018) likewise calls for redefining corporate purpose to align business activities with societal goals. However, he acknowledges that achieving such a transformation requires significant changes to deeply entrenched legal, financial, and cultural systems. Thus, while existing approaches can improve stakeholder engagement and coordination, they often yield incremental rather than systemic change. They may enhance transparency and inclusivity, but they do not eliminate the structural bias towards financial value. As a result, trade-offs between financial objectives and public value, particularly regarding resilience, persist.

2.1.6 The structural trade-off

The reviewed literature shows a clear pattern - stakeholder theory highlights the need for inclusivity, but actual decision-making is influenced by structural factors that focus on financial gains and make coordination more difficult. These conditions create a persistent trade-off between short-term financial objectives and long-term societal goals. In the context of urban energy infrastructure, this trade-off has direct implications for resilience. Resilience measures, such as redundancy, decentralisation, and adaptive capacity, often require significant upfront investment and deliver benefits that are distributed over time and across stakeholders. These

characteristics make them difficult to justify within decision-making frameworks that prioritise immediate financial returns. Consequently, resilience is frequently treated as optional rather than essential. It is incorporated when it aligns with financial incentives but deprioritised when it does not. This dynamic points to a structural constraint that is inherent in the stakeholder governance system, and not to a lack of awareness of the underlying issues.

This insight provides a bridge to the next section of the literature review. While stakeholder theory explains how decisions are shaped by power and coordination dynamics, resilience theory addresses what is at stake when these dynamics lead to underinvestment in resilience.

2.2 Resilience Theory

2.2.1 Resilience definition

The derivation of resilience is drawn from the 1620s, from the Latin word *resiliens* (“act of rebounding or springing back”), present participle for *resilire* (“to rebound, recoil”), as a compound of *re-* (“back”) and *salire* (“to jump, leap”) (Harper, n.d.). The concept started to gain popularity after ecologist Holling (1973) used it to define the capacity of ecological systems to absorb disturbances while maintaining their core functions. Although foundational, this definition remains broad and does not fully capture how resilience is conceptualised in modern research. Field et al. (2012) extend the concept, describing it as the ability of a system to anticipate, absorb, adapt to, or recover from the aftermath of a perilous event. Ouyang et al. (2012) synthesise resilience as the joint ability of an infrastructure system to resist, absorb, and recover to normality after experiencing hazards. Aldrich and Meyer (2015) define community resilience as a neighbourhood’s or geographically defined area’s collective ability to overcome stress and efficiently continue daily life through cooperation. The concept varies widely across contexts, as argued by Jasiūnas et al. (2021), who emphasise that the most common critique of resilience research is its vagueness. Given the range of analogous interpretations in the literature, we narrow the definition of resilience in the context of the urban environment as the ability of an urban system and its constituent networks to maintain or rapidly recover desired functions in the face of disturbance, adapt to change, and transform aspects that restrict adaptive capacity (Meerow et al., 2016). Drawing on Ouyang et al.’s and Aldrich and Meyer’s definitions of resilience as a joint effort to resist, adapt, and bounce back, and Meerow et al.’s definition of resilience as an attribute of an urban system and its constituents, we discern that resilience is achieved through interactions among multiple stakeholders in an urban environment.

2.2.2 Energy resilience

Building on the definition of urban resilience, its application to energy systems requires further specification. Energy resilience is defined as the ability of an integrated energy system to withstand, absorb, recover from and adapt to disruptions caused by climatic, economic, technological, and social factors (Sharifi & Yamagata, 2016; Hu et al., 2024). Whilst general resilience encompasses overall system integrity, energy resilience specifically emphasises the sustainability and stable performance of energy production, supply, and services under exceptional circumstances (Sharifi & Yamagata, 2016; Nik et al., 2021). In this context, energy resilience refers to a system's ability to maintain a stable, reliable energy supply whilst proactively managing disruptions caused by high-impact, low-probability (HILP) events, such as unprecedented climatic extremes that exceed standard design thresholds (Zhou, 2023; Zhou, 2024). To be resilient, an urban energy system must demonstrate four core capabilities: planning and preparation for likely disruptions, absorption of initial shocks to minimise service degradation, timely restoration of functionality, and adaptation by learning from events to improve future performance (Sharifi & Yamagata, 2016; Hu et al., 2024).

This iterative process supports the continuity of four essential dimensions of sustainability: the physical availability of energy supplies, equitable access to energy services, affordability for consumers, and the social acceptability of the energy system (Sharifi & Yamagata, 2016). Unlike traditional technical approaches that prioritise reliability and address known, highly probable threats, energy resilience is designed to manage complex, uncertain and potentially exceptional challenges through system-wide flexibility and survivability (Zhou, 2023; Nik et al., 2021). Ultimately, energy resilience conceptualises the energy system as a complex adaptive system comprising heterogeneous actors and multi-layered interactions (Basu et al., 2019). Rather than aiming for a return to the pre-disaster equilibrium, it adopts a 'bounce forward' approach, allowing the system to self-organise after each disruption and evolve towards a more advanced and robust configuration (Sharifi & Yamagata, 2016; Basu et al., 2019).

2.2.3 Complexity of urban systems

Urban resilience research further frames cities as complex socio-ecological systems in which ecological processes, infrastructure, and social dynamics interact (Pickett et al., 2014). Building on this, Ragheb et al. (2017) examine resilience through a Resilience Alliance framework that links metabolic flows, social dynamics, governance networks, and the built environment, highlighting the intertwined components that shape urban system resilience. Evidently,

implementing resilience often depends on the coordination and interaction of multiple actors in complex social, ecological, and technical systems, which can lead to goal misalignment and inefficiencies (Meerow et al., 2016; Pickett et al., 2014; Warneryd et al., 2020). Expanding on this line of thinking, Vandergert et al. (2016) identify emerging challenges in transitioning to urban resilience, including aligning multiple scales and institutions, as well as enabling a social-ecological systems approach. In a case study of Madrid, Spain, Suárez et al. (2024) observed that, due to the Madrid City Council's governmental structure, interdepartmental collaboration on green infrastructure policies was exacerbated. The scale of the project necessitates the involvement of multiple stakeholders. Larger, more innovative or creative projects, often needed to build resilience, require cross-collaboration among actors across the value chain as project complexity increases. In her study of water conservation measures in Spain, Schütze (2025) identified cross-sectoral and cross-level coordination as essential. Although water irrigation is heavily influenced by government regulation, often hampered by bureaucratic inefficiencies that complicate processes, the concept can be extended to situations where governments and municipalities play a smaller role, and the project's scale and scope drive its complexity. In UI design, we envision public institutions playing both small and large roles in shaping it.

2.2.4 Resilience in urban environments

The transformation of UI towards more sustainable and resilient solutions requires social, technological, and policy innovations, implemented across systemic, geographic, and temporal scales (Long et al., 2023). To achieve this scale of transformation, close collaboration among public institutions, urban planners, architects, developers, and local communities is essential, thereby increasing complexity. Stakeholder interactions that cross sectors and dimensions inevitably lead to coordination and cooperation problems in UI (Monstadt & Schmidt, 2019; Zhang et al., 2025). Another impediment emerges, namely, the skill set needed to respond to unexpected or catastrophic events clashes with the pattern-based knowledge that urban planners require daily (Monstadt & Schmidt, 2019). Stakeholders are constrained by their experience and lack the necessary information and knowledge to apply their skills to resilience. Although the literature identifies the need for stakeholder collaboration, these efforts are not equally emulated across all stakeholders who can affect resilience. Kapucu et al. (2023) observe that implementation efforts rely on individual contributions rather than on multi-level and cross-sectoral collaboration. Likewise, Pregnolato et al. (2024) corroborate that urban resilience is

still approached in isolation, thereby limiting the transformative significance needed to challenge goals such as resilience.

In Monstadt and Schmidt's (2019) research in selected German cities, the authors identify that once-integrated network infrastructures, including electricity generation, transmission, distribution and sales, are now fragmented. Paired with tight, performance-related budgets, new public management concepts, and public-private partnerships, these developments create highly complex, diversified institutional structures. Consequently, implementing integrated risk management for connected failures across institutional and territorial boundaries in different municipalities is hindered. Owing to these institutional structures and their failures, a failure in one part of the system that forms the urban area creates a ripple effect that brings down the whole system. In the past, we have often seen failures in energy systems lead to city-wide or neighbourhood-wide blackouts. We infer that when the scale of the event becomes too large for a single part to bear, fragmented institutional structures crumble, leading to the failure of entire systems.

Empirical evidence increasingly confirms that governance arrangements tend to weaken and, in some cases, collapse under the pressures of scale, complexity, and multi-actor coordination. Allen et al. (2023), in their review of case studies on the transformation to the SDGs, demonstrate that as initiatives expand across scales (local, regional, national) and involve more actors, coordination challenges intensify because of misaligned institutional mandates, fragmented authority, and competing priorities. Instead of fostering cohesive action, multi-level governance frequently leads to policy incoherence and diminishes accountability. This pattern is reinforced by Bixler et al. (2020), who show through network analysis that effective urban resilience governance depends on "network closure", i.e., dense, well-connected relationships among actors. However, as governance networks grow in size and diversity, they tend to become more fragmented, reducing trust, information flow, and capacity for collective action. Similarly, Kapucu et al. (2023) highlight that while network governance is essential for building UI resilience, its effectiveness depends heavily on sustained coordination across sectors and levels of government, conditions that are difficult to maintain as systems scale. Schütze (2025) arrives at a similar conclusion in the context of polycentric water governance in Spain, where coordination failures between actors at different levels of governance lead to delays, inefficiencies, and, in some cases, complete breakdowns in implementation. Across these studies, a consistent pattern emerges: as the scale, scope, and number of actors involved in

governance increase, the likelihood of coordination failure rises, often eroding collective capacity to manage complex challenges, such as resilience.

2.2.5 Proposed solutions and shortcomings

In response to these challenges, a substantial body of literature proposes governance models to better manage complexity and facilitate coordination, yet these solutions are often criticised as insufficient in practice. Ansell and Gash (2008) propose collaborative governance, arguing that inclusive, consensus-oriented decision-making can improve outcomes in complex policy environments. However, they also acknowledge that such processes are highly sensitive to initial conditions, including power imbalances, trust deficits, and institutional asymmetries, which can undermine their effectiveness from the outset. Similarly, Carlisle and Gruby (2019) also suggest polycentric governance as an approach for handling complex systems, highlighting the advantages of having several overlapping decision-making centres that can respond to local needs. While theoretically appealing, polycentric systems often struggle with coordination across levels and jurisdictions, particularly when stakeholder interests are misaligned. Chaffin et al. (2014) extend this discussion through the concept of adaptive governance, which emphasises flexibility, learning, and iterative decision-making. Yet they note that adaptive governance requires institutional capacities, such as trust, information sharing, and long-term commitment, that are often lacking in practice. Hölscher et al. (2019) highlight that, while cities like Rotterdam have developed innovative governance capacities, scaling these approaches remains difficult due to entrenched institutional structures and conflicting stakeholder priorities. Klijn and Koppenjan (2015) further argue that governance networks, while effective in theory, are inherently complex and prone to coordination problems, particularly when actors have diverging goals and unequal resources. Overall, these studies indicate that although collaborative, polycentric, and adaptive governance models provide valuable frameworks for managing complexity, they do not completely solve core problems such as stakeholder misalignment, institutional fragmentation, and power imbalances. Consequently, governance efforts tend to improve marginal processes but often do not accomplish the systemic change needed for true resilience.

This persistent gap between governance goals and resilience results highlights a dimension often neglected in solutions literature: the strategic and relational factors that influence actors to adopt resilience as a deliberate and collective goal instead of merely following procedural compliance.

2.2.6 Strategic resilience

Prior discussion has framed resilience mainly as a technical aspect of infrastructure, often in relation to climate change or as a building block of public value, that is constantly undermined by coordination failures, institutional fragmentation, and competing stakeholder interests. However, there is a strand of literature that reframes resilience as a strategy, a capability to be deliberately developed (Bhamra et al., 2011; Ducheck, 2020).

One of the first to reposition resilience as strategic resilience, Hamel and Välikangas (2003) described it as the continuous capacity of an organisation to anticipate, adapt to, and recover from disruptions, ingrained in the organisation's core strategy. This definition distinguishes strategic resilience from its traditional view in risk management. While in risk management, resilience is a capability that responds to known, quantifiable threats; strategic resilience is an organisation's or system's capability to navigate uncertainty, absorb shocks, and reconfigure itself without halting all functions (Burnard & Bhamra, 2011; Boin & Van Eeten, 2013). In urban environments, this distinction becomes especially important. Treating it as risk mitigation as a city or infrastructure actor most often means investing in resilience selectively, reactively, and, in probability, insufficiently. Treating it as a strategic capability allows for the opportunity to integrate it from the very start into planning timeframes, resource allocation, and governance design, which can generate long-term organisational and competitive benefits that responsive approaches cannot replicate (Ortiz-de-Mandojana & Bansal, 2016; Carvalho et al., 2016).

Teece et al.'s (1997) dynamic capabilities framework only strengthens this argument. Those organisations that develop capabilities to anticipate disruptions, seize opportunities, and reconfigure assets are better equipped to maintain performance in changing environments (Burnard & Bhamra, 2011; Boin & Van Eeten, 2013). In UI, dynamic capabilities refer to the institutional and organisational ability to continuously align resilience goals with evolving technological, regulatory, and environmental factors. Framing resilience this way requires a focus on flexibility and adaptive capacity rather than on efficiency alone (Golden & Powell, 2000; Reinmoeller & Baardwijk, 2005). This, naturally, is not a one-off investment but a continuous strategic commitment that requires actors to detect and respond to weak signals of disruption before they turn into crises (Ansoff, 1975; Beinhocker, 1999).

Strategic resilience is rarely built spontaneously, and Mintzberg's (1994) distinction between deliberate and emergent strategy is imperative here. In complex, multi-actor environments, strategy is often developed through a series of decisions, not by being consciously designed. In

the urban energy resilience sector, this means that without clear and early strategic intent, resilience will develop only partially, inconsistently, and at the margins of decision-making (Hermann, 1963; Herbane, 2010). Mazzucato (2018) extends this by arguing that addressing systemic challenges, such as climate resilience, requires mission-oriented strategies that deliberately align public and private actors around long-term goals. Without the necessary alignment, individual actors revert to their own institutional logics, and resilience becomes no one's priority even when it is supposedly everyone's concern. Additionally, resilience often has a relational aspect that is frequently overlooked. It is developed through continuous relationships, trust networks, and shared organisational norms, which enable actors to coordinate effectively in uncertain conditions (Home & Orr, 1997; Coutu, 2002; Gittell et al., 2006).

The previous sections have demonstrated that governance alone cannot foster systemic resilience due to structural and institutional limitations, as well as the lack of a shared strategic commitment among actors. Even well-designed governance structures will falter if the involved actors do not regard resilience as a strategic priority, leading to a lack of coherence. Consequently, strategic resilience must be regarded as a collective effort that all stakeholders in urban energy systems intentionally develop. The emergent, relational, and strategic nature of resilience is embodied in the preliminary framework introduced in the next section.

2.3 Preliminary Framework

Stakeholder theory claims the firm or organisation is accountable to all stakeholders, with value being created through stakeholder interactions (Freeman, 2010; Bridoux & Stoelhorst, 2022). Resilience is positioned as the value stemming from those same interactions, as many definitions of resilience frame it as a joint effort or as being achieved through interactions of multiple stakeholders (Ouyang et al., 2012; Aldrich & Meyer, 2015; Meerow et al., 2016). Each of those stakeholders holds different power and authority in decision-making, and, in the context of complex socio-ecological systems such as cities, the different stakeholders have varying degrees of influence, which affects how decisions are made and priorities set in an urban context (Mitchell et al., 1997; Pickett et al., 2014). Further, stakeholder theory acknowledges multiple perspectives but fails to provide guidance on how conflicts between competing perspectives are resolved (Pies & Valentinov, 2024). In essence, stakeholder theory remains embedded in a system that prioritises a financially motivated perspective above all others (Stoelhorst & Vishwanathan, 2024; Denis, 2024). Compounding the issue, resilience

theory suggests that resilience efforts cannot be achieved successfully in isolation, underscoring the importance of multiple stakeholders collaborating effectively (Kapucu et al., 2023; Pregnotato et al., 2024). The outcome is a perpetual trade-off of resilience efforts for financial returns. It does not help that public value, often described as the collective benefits to society and closely related to resilience (Moore, 2013), is not easily measured. Public values require efficient yet complex stakeholder structures, each with varying degrees of influence and operating under different institutional structures (Warneryd et al., 2020; Monstadt & Schmidt, 2019). As a result, public values and resilience efforts are crowded out due to systemic bias favouring financial returns (Smith & Rønnegard, 2016; Valentinov, 2023). Although stakeholder theory addresses the limitations of governance structures, it does not alter the institutional structures that shape interactions (Lawrence et al., 2011). We have seen how institutional dysfunction thwarts UD and resilience efforts (Allen et al., 2023; Bixler et al., 2020). Without the appropriate institutional changes and effective coordination, resilience solutions will continue to be systematically disadvantaged from the very start. Compounding this further, even well-designed governance structures will lack directional coherence if the actors within them have not embedded resilience as a deliberate strategic commitment, treating it instead as a reactive response to known threats rather than as an ongoing organisational and relational capability (Hamel & Välikangas, 2003; Mazzucato, 2018; Gittel et al., 2006). The timing and order of stakeholder invitations into the decision-making process determine their influence (Ansell & Gash, 2008; Flyvbjerg, 2014). Stakeholders involved early will have more impact on the decisions, whereas latecomers will encounter a finalised deal, reducing their chances to influence or change the outcome.

This thesis, therefore, examines resilience integration through the following six interrelated dimensions (Institutional Context, Power and Authority, Trade-offs, Timing of Involvement, Complexity, and Coordination), which together capture both the power dynamics identified by stakeholder theory and the coordination failures described by resilience theory. These six dimensions are treated as sensitising starting points rather than fixed categories. Consistent with the abductive logic of the study, they are expected to be refined in dialogue with the empirical material. The dimensions and their relationships are visualised in a preliminary framework (Figure 1).

For each dimension, we aim to explore the following:

Institutional Context: Is financial logic the primary barrier, or does institutional fragmentation play an independent role? Do Copenhagen and Stockholm show different

patterns in how barriers operate? Do regulations affect resilience outcomes independently of coordination quality? Do actors within projects frame resilience as a deliberate strategic priority, or does it emerge incidentally?

Power and Authority: Which actors hold formal decision-making authority over resilience? Which actors hold investment authority? Do mandate and authority align or diverge?

Trade-offs: What are the main trade-offs emerging? Whose interests prevail when trade-offs arise, and under what conditions does that change?

Timing of Involvement: At what project stage are different actor types typically brought in? Does early entry correlate with resilience being embedded versus added later? What governance structures determine entry timing? Does late entry shift actors from partners to suppliers? Is early involvement accompanied by strategic intent, or does it remain procedural?

Complexity and Coordination: What formal mechanisms are used, and what do they achieve? What informal mechanisms emerge and why? How does scale affect the balance between formal and informal? Does interpersonal trust substitute for or complement formal structures? What role do intermediary organisations play? Do trust networks function as carriers of strategic resilience commitment across organisational boundaries?

Taken together, the six dimensions and their specific components will yield conditions that explain how the roles, relationships, and coordination mechanisms affect energy resilience in urban development projects.

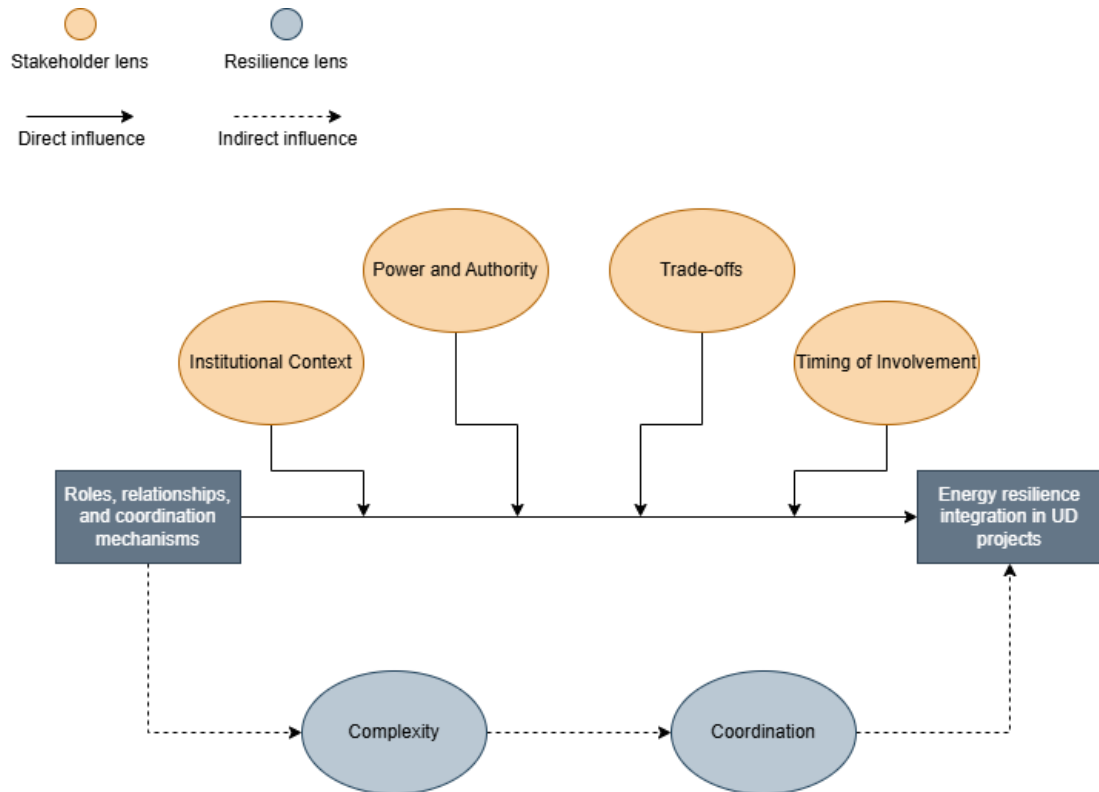


Figure 2 Preliminary Framework

3. Methodology

This chapter outlines the research design and methodological choices that guide the empirical investigation of this study. It explains the research approach, the case selection rationale, the data collection strategy, and the analytical procedures employed. Together, these decisions reflect a coherent and internally consistent design that is suited to the exploratory and interpretive character of the research question.

3.1 Research Approach and Design

This study adopts a qualitative research design. Qualitative approaches are particularly suited to investigating complex social phenomena that cannot be adequately captured through numerical measurements or statistical analysis (Bryman, 2016). The central aim of the thesis is to understand how coordination structures between key stakeholders influence the integration of energy resilience into UD projects. This requires close attention to processes, relationships, meanings and context, dimensions that demand in-depth and interpretatively sensitive inquiry research rather than the standardisation and measurement characteristic of quantitative methods.

This research is exploratory in nature. Existing literature on energy resilience focuses primarily on the performance of technological systems and adaptation following disruption, meaning that the processes through which resilience is integrated during the design and planning phases of UD have received relatively little attention (Wang, et al., 2019). In situations where the theoretical understanding of a phenomenon is still evolving, exploratory research is particularly well-suited, as its aim is to gain insights and refine conceptual understanding rather than test pre-established hypotheses (Stebbins, 2001).

This study is situated within a theoretical context in which no existing framework can fully explain the governance dynamics under examination. Although stakeholder theory and resilience theory each shed light on certain aspects of this process, neither of these approaches is sufficient on its own to explain how the concentration of financial power, the fragmentation of coordination powers, and the timing of stakeholder involvement interact with one another and thus determine whether resilience plays a central role or, conversely, recedes into the background during the planning and design of UD projects. A purely deductive approach would require testing hypotheses derived from a single framework, thereby risking the suppression of precisely the cross-framework dynamics this study seeks to uncover.

To bridge this gap, and for the reasons outlined above, the study follows an abductive research logic (Dubois & Gadde, 2002). Abduction differs both from pure induction, in which theory arises entirely from observations, and from pure deduction, in which hypotheses derived from existing theory are tested against data. Instead, abductive reasoning involves a creative inferential process triggered by surprising or anomalous findings that existing theories cannot fully explain (Timmermans & Tavory, 2012). The abductive researcher operates as a deliberate theoretical agnostic, drawing on stakeholder theory and resilience theory, using each as a lens to uncover what is truly new in the data, without feeling compelled to force findings into a predetermined framework (Timmermans & Tavory, 2012). In this study, the theoretical frameworks of stakeholder and resilience theories form the basis for the initial research design and the development of the interview guide (Appendix B). As empirical material is collected and analysed, these frameworks function as sensitising lenses that are refined in dialogue with the data, rather than as fixed templates. Dubois and Gadde (2002) describe this as a systematic combination, a non-linear and path-dependent process of aligning theory with reality, in which both the research questions and the analytical framework can be adjusted when confronted with the empirical world.

This process of adaptation is clearly reflected in the structure of this thesis. The preliminary analytical framework developed in Chapter 2 organises the theoretical terrain around six dimensions: Institutional Context, Power and Authority, Trade-offs, Timing of Involvement, Complexity, and Coordination. When the empirical data were collected and analysed, these dimensions did not align seamlessly with individual themes; instead, some merged, others were subsumed into broader patterns, and new emphases emerged that the preliminary framework had not anticipated. The empirical findings in Chapter 4 are therefore organised around themes that reflect the structure of the data rather than the framework. This is not a deviation from the research design, but a direct expression of it: systematic combination presupposes that the analytical framework will evolve and treating that evolution as a methodological failure would contradict the abductive logic that the study explicitly employs. Abduction is therefore not merely a methodological preference, but the condition that allowed the analysis to remain open to whatever emerged from the data, rather than being limited to what the theory had predicted.

The general research design is a comparative case study, following Yin (2018). The case study method is suitable when the aim is to thoroughly investigate a contemporary phenomenon within its practical context, particularly when the boundaries between the phenomenon and its context are not clearly defined. A case-based approach enables a nuanced and contextually

grounded investigation into how coordination structures shape the integration of energy resilience in practice. The comparative design with two cases follows a replication logic rather than a sampling logic (Yin, 2018), in which the two cases are treated as multiple experiments that either aim for literal replication, whereby comparable results emerge in both cases, or for theoretical replication, whereby contrasting results arise for predictable institutional reasons. This supports analytical generalisation, whereby findings are generalised into theoretical principles rather than to a broader population (Yin, 2018), whilst the contextuality of each case is preserved (Dubois & Gadde, 2002).

The empirical data are analysed using an abductive thematic approach, as developed by Thompson (2022). Rather than allowing themes to emerge passively or imposing a purely deductive coding scheme, the analysis follows a structured process that begins with an open exploration of the data, proceeds through iterative coding, and culminates in the development of latent themes. These themes draw on theory to explain the identified coordination patterns conceptually, rather than merely describing them. The technical implementation is based on Vila-Henninger et al. (2024), whose approach utilises Timmermans and Tavory's three stages of abduction for qualitative coding practice. The coding process involves the creation of an abductive codebook that combines theoretically grounded deductive codes with inductively derived codes documenting anomalous findings, reducing data through code comparisons that operationalise complex phenomena transcending individual codes, and conducting an in-depth qualitative analysis of the reduced cases (Vila-Henninger, et al., 2024). Code comparisons are particularly well-suited to this research, as they enable the identification of how various institutional and structural factors within coordination structures interact in ways that individual codes cannot adequately capture.

3.2 Case Selection

The two case studies selected for this research are UD contexts in Copenhagen (Denmark) and Stockholm (Sweden). As empirical research shows, both cities are frontrunners in the field of sustainable UD within various independent frameworks: Copenhagen and Stockholm rank first and second in the Sustainable Development of Energy, Water and Environment Systems (SDEWES) index (Kılıkış, 2019), consistently rank among the top three in multi-criteria analyses of the sustainability of European capitals (Özekenci, 2025), and feature among the leading cities in the environmental category of the Arcadis Sustainable Cities Index (Arcadis, 2024). Both cities have translated this status into concrete institutional commitments: in

Copenhagen's case, through the CPH 2025 Climate Plan (City of Copenhagen, Finance Administration, 2024), and in Stockholm's, through the strategy for a fossil-free city (City Executive Office, 2024). These commitments have led to intensive administrative activities concerning energy systems, making them highly informative case studies for this research.

The selection of case studies is based on a purposive sample (Bryman, 2016), with a preference for contexts where collaboration among local authorities, project developers, and designers in the field of energy resilience is visible and accessible. Furthermore, the two cities show considerable differences at the institutional level. Copenhagen is characterised by a strong municipal planning authority, though in practice the city has increasingly relied on land disposal and private development to finance public goals, creating a tension between formal municipal ambition and fragmented private implementation, a dynamic that the report 'The Copenhagen Way', drawn up by actors linked to the sector, both reflects and highlights. Stockholm employs a more collaboration-oriented governance model, in which intermediary platforms such as Viable Cities, a national programme that has facilitated Climate City Contracts, and learning forums at the urban, national and European governance levels, play a formal role in linking policy with practice (Pereverza et al., 2025). This represents a system design with the greatest similarity: two Nordic cities with ambitious climate targets and comparable profiles, but with divergent institutional coordination arrangements, enabling the study to identify both common patterns and context-specific variation.

In each city, participants are selected from four stakeholder groups: local government representatives, intermediary organisations, design professionals, and clients or industry representatives. This selection from multiple groups ensures that the empirical data reflects perspectives from across the entire coordination chain.

3.3 Data Collection

3.3.1 *Primary data*

As this study is exploratory and interpretative in nature, semi-structured interviews are used as the primary method of data collection. This method enables systematic addressing of key themes whilst also allowing exploration of unexpected or context-specific information as it arises (Bryman, 2016). Unlike structured interviews, which can function as 'verbal questionnaires' (DeJonckheere & Vaughn, 2019) that may limit the depth and spontaneity of participants' responses, semi-structured interviews take the form of evolving, iterative

interactions that allow the respondent to lead the conversation rather than being purely transactional (Elhami & Khoshnevisan, 2022). To ensure consistency across interviews whilst maintaining flexibility, data collection is guided by an interview guide (Appendix B) comprising core questions directly related to the research objectives, supplemented by both planned and unplanned follow-up questions (DeJonckheere & Vaughn, 2019). The interview questions, which employ techniques such as pausing, repeating the participant's own words, or asking for clarification and elaboration, ensure that the conversation is led by the respondent, whilst systematically addressing the various dimensions of the analytical framework (DeJonckheere & Vaughn, 2019). The interview guide is divided into four thematic sections: Background and Role, Coordination and Collaboration, Energy Resilience in Practice, and Reflections on Patterns and Barriers. This structure is based on the analytical dimensions of the preliminary framework, ensuring that each interview systematically covered the key areas of research while leaving room for topics not anticipated in the framework. The questions are open-ended, and during the interview, respondents are encouraged to answer them based on their personal work experiences and specific projects, rather than providing abstract answers.

Prior to the analysis phase, interviews will be conducted with participants from both Copenhagen and Stockholm. Purposive sampling will be used to select key stakeholders whose specific roles and practical experiences will provide the information needed to answer the research question (DeJonckheere & Vaughn, 2019). Each interview lasted between 45 and 60 minutes. When the participants agreed, the interviews were recorded and transcribed verbatim, so that the participants' exact words served as the primary data for the analysis. If recording is not possible, detailed notes and memos will be taken during and immediately after the session to capture both the content and the process. All data will be anonymised using pseudonyms for analysis, and participants will be informed of their right to withdraw at any time, in accordance with the ethical procedures described in section 3.6.

3.3.2 Secondary data

Secondary qualitative data are used to place the primary interview material in a broader context and to triangulate it, drawing on existing research material to explore new questions or verify findings (Heaton, 2008). In line with the above analytical model by Heaton (2008), the secondary data should serve purposes that go beyond the original reasons for which they were collected, thereby enabling the research to place the participants' narratives within a broader institutional and policy context.

Secondary sources are selected from publicly available documents relevant to the research focus on energy resilience and coordination between stakeholders. These include municipal climate and energy strategies from Copenhagen and Stockholm, UD masterplans, sustainability frameworks, and publications by intermediary organisations mentioned by the interviewees. To ensure the usability and quality of the data, the material is evaluated according to the structured selection method described by Cheong et al. (2023), whereby sources are screened for relevance, credibility and contextual alignment with the research question.

Secondary data are not subjected to the same systematic coding procedure as interview transcripts. Instead, they are used analytically to verify factual claims, situate interview accounts within their institutional context, and identify similarities or tensions between formally articulated governance objectives and the coordination practices described by the participants. This combination of primary and secondary sources enhances the overall reliability and methodological rigour of the findings, as it allows different types of evidence to be compared (Cheong et al., 2023).

3.4 Interview Participants

The interview participants were selected from four stakeholder groups in the two cities studied: municipal actors, intermediary organisations, design professionals, and clients or actors from the sector. This multi-group selection ensures that the empirical data reflect perspectives from across the entire coordination chain, from governance and strategy to design practice, and infrastructure implementation.

#	Identifier	Function	Organisation Type	Sector	City Context
1	R1	Planning Architect	Architecture & Urban Design Firm	Private	Stockholm, SE
2	R2	Head of R&D	Architecture & Urban Design Firm	Private	Malmö, SE
3	R3	Head of Sustainability	Architecture & Urban Design Firm	Private	Malmö, SE
4	R4	Urban Architect	Architecture & Urban Design Firm	Private	Malmö, SE
5	R5	Architect & Quality Manager	Architecture & Urban Design Firm	Private	Malmö, SE
6	R6	Environmental Advisor	Municipality	Public	Gothenburg, SE
7	R7	Management Consultant	Strategy & Energy Consultancy	Private	Stockholm, SE
8	R8	Researcher	University / Research Institute	Research	Stockholm, SE
9	R9	Product Manager	Energy Infrastructure Supplier	Private	Sweden
10	R10	Partner	Mobility Consultancy	Private	Copenhagen, DK
11	R11	Partner & Chief Economist	Management Consultancy	Private	Copenhagen, DK
12	R12	Real Estate Finance Specialist	Public-Private Finance Institution	Semi-public	Copenhagen, DK
13	R13	Publications & Network Lead	Urban Innovation Network	Intermediary	Copenhagen, DK
14	R14	Climate Strategist	Regional Climate Platform	Public	Stockholm, SE
15	R15	Project Manager, Strategic Partnerships & City Development	Energy Company	Private	Malmö, SE

Table 1 Overview of Interview Respondents by Function, Organisation Type, Sector, and City Context

This diverse selection is based on the understanding that different stakeholders possess complementary knowledge crucial to developing context-specific solutions. As Nzimande (2023) demonstrates, meaningful stakeholder involvement requires actors from the public sector, civil society and the private sector, as each group contributes specific forms of institutional intelligence and local expertise that cannot be matched by a single actor. Furthermore, this multi-actor approach is intended to highlight the various governance ‘games’ that different participants may play within governance processes, and which inherently shape their beliefs and perceptions. Källström et al. (2021) demonstrate that politicians, public sector managers, and citizens each interpret the same participation process through fundamentally different lenses, shaped by their respective institutional roles and professional motivations. This diversity of perspectives is essential for uncovering the full complexity of coordination dynamics.

Participants are selected through targeted sampling and snowball sampling, with in-depth insight taking precedence over representativeness (Bouncken et al., 2026). When participants recommend additional relevant contacts, snowball sampling enables the identification of even more informants. Sampling continues until theoretical saturation is reached; in other words, until additional interviews yield fewer new insights (Bryman, 2016), with specific attention paid to meaning saturation rather than merely code saturation (Bouncken et al., 2026).

Although not statistically representative, the combination of stakeholder groups in Copenhagen and Stockholm reflects a range of institutional positions and levels of governance relevant to the research, within a Scandinavian context characterised by a high degree of local autonomy, transparency and stakeholder participation.

3.5 Data Analysis

This study adopts an abductive research logic, which recognises that data analysis does not occur in a theoretical vacuum. Following Van Hulst and Visser (2025), the analysis started with predefined sensitising concepts derived from the literature on collaborative governance and urban resilience. This theoretical backdrop was a guiding concept rather than a strict analytical framework, which allowed the analysis to remain open to the empirical findings that could surprise, challenge, or expand current expectations. To implement this abductive inquiry, a multi-layered qualitative framework was developed. The analysis was guided by Strauss and Corbin’s (1990) grounded theory coding approach, employing open, axial, and selective coding to produce localised, emerging concepts. The raw interview transcripts were systematically

divided into segments based on Tesch's (1990) framework to identify 'meaning units' within the context. To ensure interpretative rigour, Braun and Clarke's (2006) six-phase thematic analysis was used as an audit trail, systematically comparing candidate themes with the extracted text and the existing literature. By combining an abductive approach with Strauss and Corbin's structural analysis, Tesch's methodology, and Braun and Clarke's transparency, this study effectively captures local insights and connects them to broader governance and resilience theories. The analysis is carried out in four phases as follows.

Aligned with Tesch's Phase 1 and Braun and Clarke's Phase 1, **the first phase** included open coding applied to each interview transcript. The transcripts were read carefully, and short, descriptive labels were assigned to relevant passages, remaining as close as possible to the participants' own words. This phase was deliberately inductive, with labels being derived from the data rather than imposed by a theory. To ensure a systematic approach, codes were retained based on their realism, richness and frequency in the dataset (Naeem et al., 2023). Examples include *preference for early-stage involvement*, *municipality sets resilience requirements*, *costs as a consideration*, and *lack of trust = failing coordination*. A total of 282 unique open codes were identified in the 15 interview transcripts.

The second phase merged Tesch's Phase 2 with Braun and Clarke's Phase 2, meaning the open codes identified during axial coding were organised into second-order categories according to their conceptual similarities and relevance to the theory (Strauss & Corbin, 1990). Based on the coding paradigm described by Vollstedt and Rezat (2019), categories were linked by focusing on the circumstances, contexts and consequences associated with each phenomenon. The paradigm was modified to focus on coordination structures and institutional contexts instead of the action-interaction sequences typical of sociologically grounded theory, aligning with adaptations noted in the literature. (Vollstedt & Rezat, 2019). Examples of axial codes include *'timing of involvement'*, *'formal coordination mechanisms'*, *'degree of influence'* and *'barriers to resilience'*. A total of 25 axial codes were identified, each of which is anchored in the theoretical framework. Notably, reducing from 282 open codes to 25 axial codes involved intentional consolidation: codes addressing the same underlying phenomenon across different respondents or contexts were combined, focusing on conceptual consistency rather than maintaining superficial differences in phrasing. A representative sample of the coding scheme is included in Appendix C.

In **the third phase**, corresponding to Tesch's Phase 3 and Braun and Clarke's Phases 3 and 4, the axial codes were summarised into seven overarching themes that structure the analysis in

Chapter 4: Background and Role, Coordination and Collaboration, Influence on Decisions, Energy Resilience in Practice, Considerations and Barriers, Patterns and Results, and Context: Copenhagen versus Stockholm. The themes were assessed for their alignment with the research objectives and their ability to provide a coherent analytical narrative (Naeem et al., 2023). The findings were first analysed separately by theme within each city, allowing the institutional and coordination patterns of Stockholm and Copenhagen to be characterised on their own terms, after which they were compared across the cases to identify similarities, differences and explanations for variation, in line with the logic of the comparative case study design (Yin, 2018).

In **the fourth phase** (Tesch's Phase 4; Braun & Clarke's Phases 5 and 6), the themes were interpreted in relation to the research question and the theoretical framework, with the emphasis shifting from description to explanation. Abductive logic is most evident here: the interpretation was an iterative process in which empirical surprises were reconciled with existing theoretical knowledge, rather than testing pre-established hypotheses (Van Hulst & Visser, 2025). This explained why certain coordination patterns lead to stronger or weaker resilience integration, and which institutional conditions promote or hinder effective coordination.

To ensure transparency and traceability, all coding was carried out using a structured Excel matrix in which the respondent, the verbatim quote, the open code, the axial code, the theme, the dimension, and the reference to the interview question were recorded. To enhance reliability, the coding decisions were cross-checked by the two researchers. The value of this process lay in the dialogue it sparked: by discussing differences in coding, conceptual boundaries were clarified, and the coherence of the analytical framework was strengthened (O'Connor & Joffe, 2020). Throughout the process, a coding log and an audit trail were maintained, in which analytical decisions were documented to ensure the transparency and verifiability of the findings (O'Connor & Joffe, 2020).

3.6 Validity and Reliability

In qualitative research, validity and reliability have a different meaning than in quantitative research. Instead of applying quantitative standards, qualitative researchers reframe these criteria around the broader concept of trustworthiness, which encompasses four dimensions: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985, as cited in Creswell, 2009, p. 196).

Credibility refers to the accuracy of the findings as assessed by the researcher, the participants and the readers. This is supported by triangulation of multiple sources of evidence, semi-structured interviews and secondary documents, and by member checking, whereby key interpretations are shared with selected participants to verify that the analysis reflects their perspectives. There is one important caveat regarding the credibility of the interviewees' answers on the definition of resilience. The definition was left to the interviewees for interpretation, with a broad introduction to energy resilience before the interviews began, resulting in interviewees often equating resilience with sustainability practices. The subjective interpretations might have influenced their answers, skewing them towards sustainability rather than resilience. However, all findings and quotations were checked to ensure they were mentioned in the context of resilience; otherwise, it was explicitly stated that they were not. Additionally, involving multiple stakeholder groups in both case cities further reduces reliance on a single actor's perspective (Creswell, 2009).

Transferability refers to the extent to which findings can be applied to other contexts. A rich, detailed description of both case cities, their institutional context and the participants' accounts enable readers to assess the applicability of the findings to their own context, which supports analytical generalisation to theoretical propositions rather than to populations (Creswell, 2009; Yin, 2018).

Reliability refers to the consistency of the research process. This is supported by a formal case study protocol, a structured interview guide applied consistently across all participants, and a coding log and audit trail documenting analytical decisions (Creswell, 2009; Yin, 2018).

Confirmability refers to the extent to which findings are shaped by the data rather than by the researcher's biases. Reflexivity is maintained throughout the process, with the researcher actively documenting instances where empirical material challenges theoretical expectations. This is reinforced by the abductive logic of the research, which sustains an ongoing dialogue between theory and empirical material rather than imposing a predetermined interpretation on the data (Creswell, 2009).

3.7 Ethical Considerations

Research ethics should be regarded as an ongoing consideration throughout the entire research process, rather than as a formal procedure (Bryman, 2016). This research was conducted in accordance with the *Guidelines for the Processing of Personal Data in Student Projects at*

LUSEM (LUSEM, 2023) and adhered to four core ethical principles at all stages: avoidance of harm, informed consent, protection of privacy, and prevention of deception (Bryman, 2016).

To prevent harm, all reasonable precautions were taken to ensure that participants were not exposed to stress, pressure, or adverse consequences as a result of their participation. Prior to each interview, participants received a written information sheet explaining the purpose of the research, the nature of their participation and the use of the data. Participation was entirely voluntary, and participants were informed that they could withdraw at any time without consequences.

Informed consent was obtained from all participants prior to the interview, requiring participants to make a fully considered and voluntary decision regarding their participation (Bryman, 2016). Where audio recordings were used, explicit consent for recording was obtained separately, distinct from the general consent for participation.

To protect privacy, all interview data were anonymised prior to analysis, with participants being assigned pseudonyms or role-based identification codes. The raw recordings and transcripts are stored securely, are accessible only to the researchers, and will be deleted upon completion of the project, in accordance with applicable data protection regulations (Bryman, 2016; LUSEM, 2023).

Finally, the principle of non-deception was upheld throughout the process by ensuring that all data were reported transparently and accurately, and that no information was withheld that might have influenced participants' willingness to take part (Bryman, 2016).

3.8 Artificial Intelligence Contribution Statement

In preparing this thesis and in accordance with Lund University's (2025) policy on the use of generative artificial intelligence, the researchers used artificial intelligence tools, in particular ChatGPT and Claude. These tools assisted with the initial brainstorming phase, the structuring and drafting of the text, the refinement of the academic language, and the transcription of recorded interviews, which were subsequently reviewed and corrected by the authors to ensure accuracy. A sample of the prompts used can be found within Appendix A. All substantive analytical and interpretative work, including formulating the research question, developing the theoretical framework and research methodology, conducting interviews, coding and thematically analysing data, and drawing conclusions, was carried out by the authors. All AI-

generated text has been reviewed, edited and compared with relevant academic sources before being included. The authors take full responsibility for the content of this thesis.

4. Empirical Findings

Based on the literature review in Chapter 2, the study developed a preliminary framework that used six key dimensions to explain the research's theoretical foundation. As described in the research design in Chapter 3, this study's abductive approach expected that these dimensions would develop in interaction with the empirical data. Consequently, by pairing empirical findings with the preliminary framework, the third phase of the thematic analysis yielded seven distinct themes: Background and Role, Coordination and Collaboration, Influence on Decisions, Energy Resilience in Practice, Trade-offs and Barriers, Patterns and Outcomes, and Context: Copenhagen versus Stockholm. Although the themes do not map one-to-one to the six initial dimensions, each dimension is addressed across one or more themes. The connections are discussed in greater detail in Chapter 5, where the empirical findings are integrated with prior research from the literature review. The comparative analysis of the two cities is presented in a synthesised review at the end of this chapter, covering comparisons across all themes. Some details about each city may appear within the themes themselves, as this is unavoidable during analysis.

4.1 Background and Role

4.1.1 A diverse value chain

The fifteen respondents represent the entire UD value chain, from design and governance to energy infrastructure and financing. The sample deliberately includes both those who shape projects from the inside, such as architects, consultants, financiers, and energy specialists, and those who influence the broader system from the outside. This distinction is important because an actor's position in the value chain determines not only which decisions they can influence, but also when and how that influence can be exercised, a dynamic reflected in the following findings.

4.1.2 Roles within and beyond the value chain

A striking pattern among the respondents is the distinction between actors directly involved in projects and those who exert influence from the outside. Most respondents work within project teams and influence decisions through design, advice, funding, or technical specifications.

Two respondents, however, occupy a fundamentally different position. They seek to positively influence the value chain from an external position. Respondent 13, who works as a publications

and network manager collaborating daily with actors and knowledge across the UD value chain, describes their organisation as active even before projects are initiated. It connects actors in the value chain, facilitates roundtable discussions, serves as an online knowledge platform, and publishes knowledge to create the conditions for launching projects.

At the same time, there is a similar organisation active in Stockholm, a regional collaboration platform aimed at jointly increasing resource efficiency and reducing the climate impact in Stockholm County. Respondent 14 is a climate strategist in the organisation's unit for climate questions, which contributes to accelerating the climate transition in the Stockholm region. They state that the organisation is active in the building and construction sector, where its influence is strategic and diffuse rather than project-specific. The focus is on sharing knowledge, organising knowledge-sharing events, and connecting professionals. According to Respondent 13, these platforms are characterised not by their presence within projects, but by their capacity to ensure that *"the right people are at the table"* before decisions are made. Observations of the respondents' diverse backgrounds and roles show that influence in the UD value chain does not depend solely on presence in a project. Still, that influence can also depend on the moment an actor becomes involved in the process, which side of the public-private divide they are on, and whether they have access to those with decision-making authority.

4.2 Coordination and Collaboration

4.2.1 Formal and informal coordination

A recurring pattern among respondents is that coordination in UD projects proceeds along two parallel tracks: a formal layer comprising structured meetings, contracts, and documented processes, and an informal layer comprising smaller working sessions, phone calls, and relationship-based communication. These two layers do not replace one another but are seen as complementary and both necessary for projects to function effectively.

The degree of formality is primarily determined by two factors: the scope and complexity of the project, and the maturity of the working relationship between the stakeholders. Larger projects with higher budgets and more parties involved require a documented decision-making process, steering committees, and formal reporting lines. As one respondent notes, with larger projects, it is crucial to convey the same information to many different people and to verify why certain decisions were made. For smaller projects with established relationships, coordination can be as simple as a phone call. Respondent 2, working as the head of R&D of an architecture

and urban design firm, describes a client relationship in which almost all information is shared informally:

I have a client in Malmö whom I assist, and we simply call each other, that's how we share most of the information. It's very informal. We have a contract, but the coordination is just very loose.

However, several respondents warn that over-formalisation brings its own set of problems. When meetings become too large and too structured, the informal layer of work, where issues are resolved quickly, disappears. As the head of sustainability of an architecture firm who splits their time equally between leading projects and managing, Respondent 3 explains: “[...] if you get too formal and you lose the informal meeting, it gets really slow. I mean, you need the informal way of getting things done in a faster way.” This tension between necessary structure and necessary flexibility emerges in many of the stories. The informal layer is forged by trust. Several respondents cite trust as the fundamental prerequisite for effective coordination, not something that's 'nice to have', but what determines whether collaboration can go beyond the transactional. Respondent 2 describes this explicitly: “There needs to be a lot of trust, so that we can investigate and explore things together”, adding that innovation depends on the willingness of actors to be vulnerable and openly acknowledge what they do not know. A related observation concerns a shared language: when actors with different professional backgrounds collaborate, considerable time must first be invested in building a common understanding before productive collaboration can begin.

In addition, the project leader emerges as a crucial coordination mechanism in and of itself. Several respondents independently mention that strong project management is the single most important factor for the effectiveness of coordination. Respondent 1, a planning architect who often enters projects at very early stages, notes that projects work much better when there is a good project leader who has an overall view of everyone. A chief economist at a Danish management consulting firm (Respondent 11) corroborates that the key to a good project is to prioritise the project management for the benefit of all parties involved. Respondent 7, a management consultant with experience in energy project management, adds a related point: that leadership and project teams must be actively aligned, since “[...] you cannot send up a

very technical engineer to have a budget discussion with the CFO - they are going to talk on so different levels."

4.2.2 Timing of involvement

Virtually all respondents agree that earlier involvement in a project leads to better results. This reflects a structural logic that runs throughout the data: the earlier a stakeholder is involved in the project, the more decisions remain open, and the more influence they can exert, rather than merely reacting to what has already been decided.

Design professionals describe early involvement as the prerequisite for meaningful influence. As Respondent 1 puts it, getting involved earlier creates *"[...] bigger chances that we can actually make more of an effect on the project idea, but also in how we shape the project"*. They continue by noting that late entry creates an information gap, knowledge about the site, the project history, and the collaborative team that simply cannot be recovered: *"[...] the later you come into a project, the more information tends to get lost"*. The management consultant with experience in energy project management describes the consequence in more operational terms. Rather than anticipating problems, late entry forces actors into a reactive position, as the respondent puts it: *"If you're coming too late, and always playing sort of a catch-up game, it's harder when difficult things happen to react. It's like you need to put out this fire, and then there's another fire"*.

The supplier's perspective adds a dimension that is missing from the reports of design and consulting firms. A product manager at a Swedish energy infrastructure supplier (Respondent 9) notes that suppliers are typically not brought in until about 60 to 70 per cent of the project duration has elapsed, well after their expertise could have had a significant impact on the results:

"[...] I would say that the utilities, or the end users, are missing out on lots of good, like free knowledge. If they were to bring us in at an earlier stage, they would gain so much more intel - we can tell them pretty early that the solution you are looking for is way more costly than this solution."

The same respondent notes that early involvement transforms the relationship entirely: *"Once you're being brought in at a late stage, you are just a supplier"*. From a financial perspective,

a real estate finance specialist experienced in financing UI projects in later stages (Respondent 12) makes a similar point: by involving financiers at an earlier stage, the terms for private market investments can be structured from the outset rather than adjusted retroactively to decisions already made.

The consequences of late entry are most clearly visible when decisions have already been finalised. A partner at a mobility consultancy (Respondent 10) describes urban planning processes as a series of phased decisions, each of which limits the remaining options:

If you come into a strategy once basically all the decisions have been made about who, what, and where, it's very hard to affect change from that point. You're more trying to reduce problems rather than set targets and a vision from the start.

This observation shows that even when there is a will to integrate resilience into broader project goals, stakeholders who joined late are constrained in their ability to effect change and can only follow pre-set targets rather than ambitious resilience goals.

Figure 3 provides an overview of the overall timing logic identified in both cities, demonstrating how the timing of stakeholder involvement influences their contribution at different project stages.

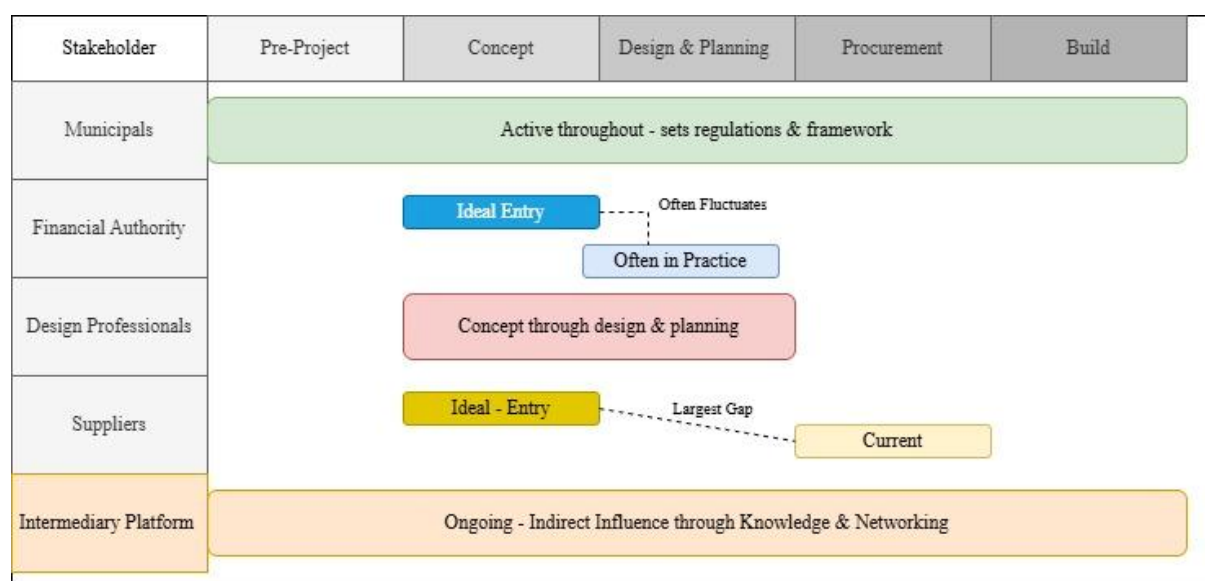


Figure 3 Timing of Stakeholder Involvement Across the Urban Development Project Lifecycle

4.3 Influence on Decision

4.3.1 Advisory roles without final authority

In the UD value chain, expertise and decision-making authority rarely go hand in hand. Architects, consultants, and mobility experts develop ideas and make recommendations, regardless of their seniority, but the final decisions invariably rest with those who hold the financial or political power, as explained by the mobility consultant, Respondent 10:

If I'm giving recommendations I'm essentially drawing up the plan, but you don't have the ability to say yes or no at the end. Someone else - either the property owner or the political body, whatever level that is - is going to say yes or no.

Architects make a similar observation, noting that while clients and municipalities listen to their expertise, the final decisions never rest with them. Particularly when it comes to energy systems and infrastructure, one architect notes that their influence is especially limited. They can set goals and determine what results need to be achieved, but are rarely involved in the actual selection of systems. Where influence does exist, it often depends on trust: the stronger the relationship with the client, the more leeway the consultant is given.

However, not all respondents readily accept the purely advisory role. Respondent 1, a long-time planning architect, illustrates how the design process is not always transactional: *"It's not only advisory. We come with ideas and solutions to the client, and then we collaborate together in order to make the ideas come alive."* This tension between the advisory and co-creative self-image of design professionals appears across different accounts, suggesting that the line between influence and decision-making is often blurred. However, the conditions that make co-creation possible are not arbitrary; they appear to be consistently linked to the strength of the working relationship and the level of trust built with the client. Where trust is strong and the relationship is mature, advisory actors are given more leeway to shape decisions rather than merely informing them. When this is lacking, influence remains transactional, and the line between advice and authority remains firmly in place. Consequently, considerations regarding resilience become particularly vulnerable; while they can be raised and advocated for, they cannot be enforced if they conflict with the financial priorities of those who hold the ultimate decision-making authority.

4.3.2 Public goals, private decisions

A recurring tension in the data concerns the disconnect between those who set targets and those who have the authority to make investment decisions. While government agencies can set planning requirements and sustainability goals, the actual investment decisions depend on the institutional relationship between those responsible for spatial planning and the private investors. Key factors include infrastructure ownership, capital control, and who makes the final decision on the prioritisation of resilience objectives.

This dynamic is most clearly illustrated by a respondent who has worked on both sides of the divide. As a project manager (PM) in sustainable UD, working closely with UD and energy development in cities, Respondent 15 was able to set goals and ambitions for the energy system, but noted that the municipality neither owned nor controlled the infrastructure needed to achieve them. When they made the switch to an energy company, the authority to make investments became immediately clear:

[...] [the energy companies] are the ones with the investment decisions. In the end they can decide whether they would like to do a demonstration plant or be heavily involved in a development project in the energy system in a specific neighbourhood, or if they don't want to do that.

The situation in Copenhagen illustrates a related yet distinct consequence. Respondent 12, the real estate finance specialist, describes how the city of Copenhagen's decision to sell land in small parcels rather than adopting a holistic approach has led to a fragmented landscape for the integration of resilience:

[...] [the municipality has] just been selling off land plot after land plot, and each land plot has needed to find its own ways and methods for both sustainability and resilience and environmental protection.

This fragmented approach meant that the integration of resilience became a project-by-project matter rather than a coordinated municipal strategy, illustrating how institutional financing

decisions at the city level can directly determine what coordination between actors looks like in practice.

At the project level, financial authority ultimately lies with the executive branch, regardless of the city's context. As Respondent 10, a mobility consultancy partner, put it directly:

The decision is probably made by the CEO of the real estate company, because at the end of the day it's going to go up to them. There are people who are going to make recommendations, but eventually there'll be a person that makes a decision.

Respondent 1, a planning architect who often enters projects at an early stage, adds that this financial authority determines what is practically feasible; when material costs rise, or market conditions change, projects are suspended or halted entirely, regardless of the quality of the design or the resilience objectives. A pattern emerges from the various reports in which planning authority lies with government agencies, investment authority with private actors, and final financial decisions with executive management, meaning that most design professionals operate in the space between these decision points with an influence that is meaningful but limited.

Figure 4 illustrates this structural divide, with bubble sizes reflecting the degree of influence each actor type exerts on resilience integration.

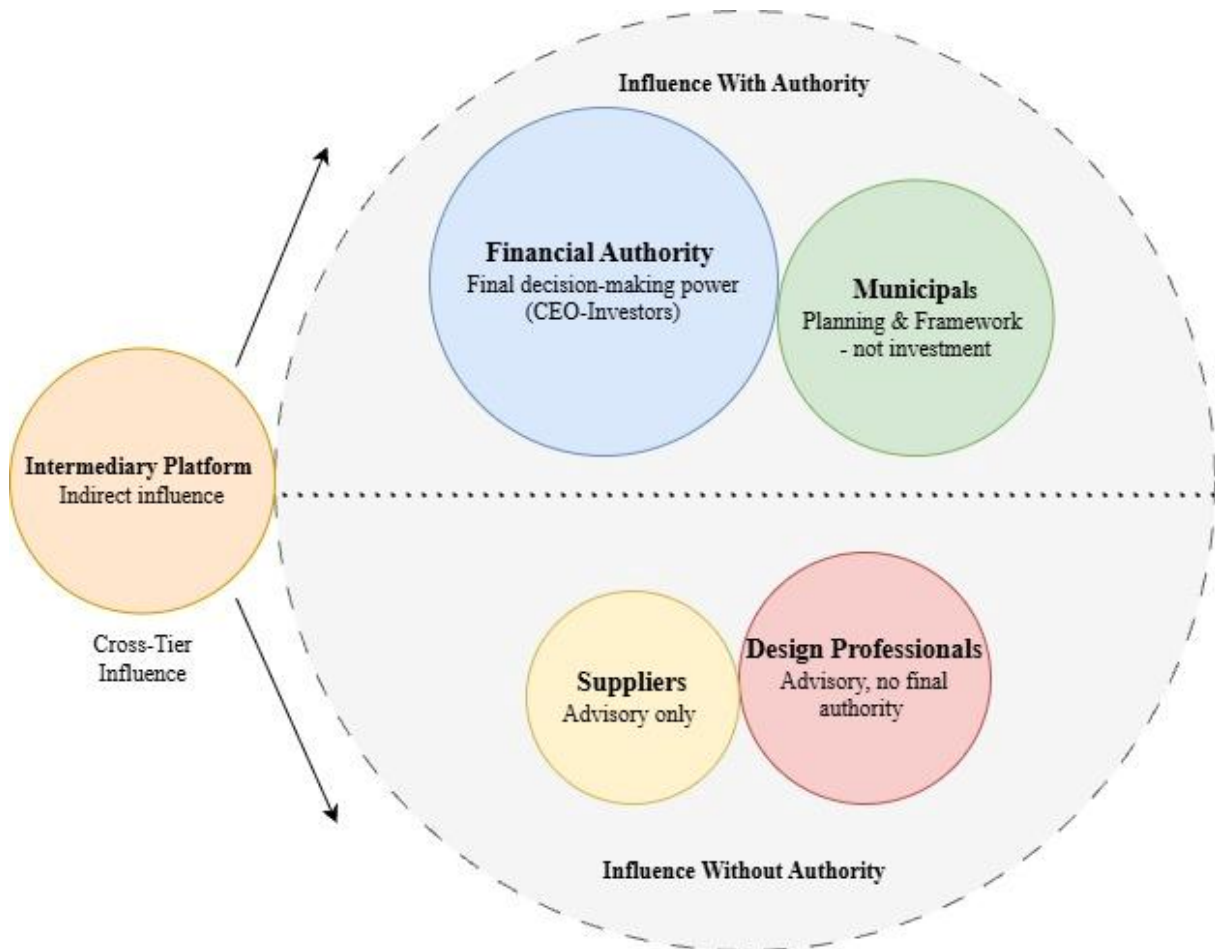


Figure 4 Decision-Making Authority and Advisory Influence in Urban Development: The Structural Divide Between Authority Holders and Advisory Actors

4.4 Energy Resilience in Practice

4.4.1 Whether and how resilience gets onto the agenda

The visibility of energy resilience features in UD projects varies significantly across organisational roles and strategic orientations. For design professionals, it became something closer to a standing expectation, framed by another urban architect as part of the status quo. Respondent 15, a Swedish PM, confirms that energy resilience has been on the agenda for a decade and continues to grow. Similarly, the head of sustainability at a Swedish architecture firm reports that while resilience was not a priority a few years ago, the macroeconomic and geopolitical environment has pushed it up the agenda, with climate adaptation now entering the agenda at an early stage.

Other respondents paint a more ambiguous picture. Respondent 7 argues that resilience is not on top of the agenda because the executives who approve budgets are far removed from the

project and do not share the same objectives. Respondent 12, who has experience with financing sustainability and resilience projects, is more direct:

From an investment manager's perspective – sustainability and resilience [are] a pain.

However, this position is not universal, and the difference does not follow city or sector lines straightforwardly. The chief economist at a Danish management consultancy reports:

[Climate resilience] is a priority almost in every major infrastructure project now. [...] [in the beginning of last year (2025)] climate resilience was actually the top of the list when we asked CFOs and CEOs what were the biggest concern for them when it comes to the financial performance of the organisation.

The two opposing views imply an asymmetry in how resilience is viewed within an organisation by those with investment authority and those in an advisory-only position. For financial authority, resilience becomes a burden when it sits outside core organisational strategy, and a priority when it is connected to financial exposure. After working with stakeholders across the UD sector, Respondent 13 offers a more direct explanation:

The more a company has resilience as a strategic goal within the company – not as an addition to something – the more chance it has of succeeding.

When resilience is treated as a strategic goal, it can shape planning and resource allocation from the start. When it is treated as an add-on, it competes with already established project logics, and the data suggest it rarely wins that competition. Empirics show that for financial authority, strategic resilience was never a concern or a part of their agenda, unless backed by financial logic. This implies that efforts to integrate resilience down the line are futile, as their importance was never substantial to decision-makers, even when they are incorporated into design plans.

Resilience considerations raised by advisory actors only gain traction when the organisation's leadership has already made resilience a core goal rather than an optional improvement.

4.4.2 Who raises resilience issues, and when

Resilience enters projects through varied channels, but who initiates it and when depends heavily on the institutional context. Municipalities are those that set resilience objectives drawing on national guidelines or local policy, though respondents note that following the objectives is time-consuming. The observed difference between Denmark and Sweden provides useful insights. In Denmark, private actors take the lead in integrating sustainability, though they often encounter specific regulatory barriers. In Sweden, the opposite picture is painted, where regulatory requirements are the primary forcing mechanism that requires architects to conduct area screenings and answer resilience questions as a matter of procedure. This imbalance is most evident when commercial demands threaten resilience. As a result, in Denmark, where integration is more a product of voluntary private commitments, the regulatory pressure counteracts a purely market logic, whereas Sweden's procedural requirements are ineffective at fending off financial primacy, making resilience more susceptible to being compromised or sacrificed. Still, geographic vulnerability issues, such as wind and extreme rainfall, are independently cited for both Sweden and Denmark as triggers for incorporating resilience into design discussions, suggesting that climate exposure creates a baseline demand that carries over institutional contexts.

Another pattern relates to timing. The architects who are questioned argue that resilience is addressed very early in such conversations, possibly because they themselves are included early in the process, as observed in 4.2.2. This is a significant observation; early framing means resilience can shape fundamental design decisions rather than being retrofitted onto them.

A third and less visible pattern relates to language. A recurring finding is that resilience is often not named as such in those conversations. Respondent 10 notes that resilience considerations seldom appear in planning unless framed as sustainability or liveability. The absence of a shared taxonomy reflects a deeper disagreement over how resilience should be understood and applied in practice. Professionals well-versed in the subject are more likely to raise resilience issues. However, if their partners are not, there is pushback, and resilience becomes sustainability for the sake of easier communication. The risk is that this reframing weakens the concept, as sustainability and resilience are related but not identical, and merging them hides the specific demands that energy resilience places on design and infrastructure decisions.

4.4.3 How resilience manifests in concrete design decisions

Where integration is successful, resilience tends to take forms that double as public value or commercial return. Respondents with experience in urban design describe rain gardens and multi-use landscape designs that manage stormwater while serving as attractive urban features; walking streets that reclaim space for green areas and biodiversity; and a solar-powered, self-sufficient parking hub that meets its electricity needs from April to October. Copenhagen's harbour regeneration illustrates the principle most clearly: underwater reservoirs built to prevent sewage overflow simultaneously cleaned the harbour to the point where it is now swimmable, allowing it to become a defining element of the city's identity. Additionally, electric vehicles (EVs) are emerging as new energy reserves at the building scale, with housing companies exploring EV fleets for backup storage.

The examples reveal two different ways through which resilience becomes embedded in practice. In some cases, as with the Copenhagen harbour, resilience was not the primary driver, and it succeeded because it generated public and commercial co-benefits that made it impossible to trade away. In others, resilience was deliberately implemented from the outset as a functional requirement. Both suggest that resilience becomes most sustainable when it aligns with the interests of decision-makers, either through deliberate governance structures or co-benefits that make its removal politically or commercially costly. When neither condition is satisfied, resilience stays vulnerable despite its technical value, and when it can satisfy multiple interests at once, it becomes significantly harder to trade it away.

4.5 Trade-offs and Barriers

4.5.1 Trade-offs

4.5.1.1 The cost of resilience

Cost was named as the key trade-off, though how it was perceived varied depending on the actor's role. Respondents indicated that whether a project is developed to sell or to own shapes the approach. Owners have longer time horizons and are more likely to absorb upfront resilience investments. Financial capacity also has a significant role; private clients with greater financial means are less likely to view resilience as a significant risk, while those with tighter budgets deprioritise it when finances are not in good shape. However, if resilience is cost-neutral, it is more likely to be implemented, as CapEx decisions almost always favour the less expensive option. Drawing on their work experience with actors in UI projects, Respondent 13 elaborated:

*[...] resilience becomes part of the project when it provides a clear financial uplift.
[...] [developers] do it when there is either a zero-sum, where the investment case is the same, or when the investment case is better.*

It is not odd, then, that return on investment (ROI) was identified as carrying the highest weight in decision-making, while acknowledging that societal value is increasingly influencing decisions. Companies are increasingly seeking documentation that a project will increase societal value to justify investments. Respondent 9, a product manager at a large energy infrastructure supplier, however, points out possible changes in future reasoning:

[...] we are on the tipping point, because in many ways I can do a calculation for a lot of our customers where I can actually prove that the more sustainable solutions will be better for them, if they just use a time frame that's long enough. But that time frame is also getting shorter and shorter.

Across the data, a tentative pattern emerged that suggests that the financial reasoning surrounding resilience is changing. Although no single respondent explicitly named this change, several observations point in the same direction, including the shortening of time horizons to justify investments, the growing municipal demand for resilient infrastructure, and the geopolitical pressures that make energy independence a real business concern. The findings suggest it is becoming easier to make an investment case for resilience, however, the data do not clearly show whether this trend is due to a fundamental shift or a short-term alignment of positive factors.

4.5.1.2 Other trade-offs

Apart from cost, three further trade-offs emerge consistently across the data, each of which ultimately leads back to financial pressure. Time is named as the most immediate; longer timelines demand larger budgets, and deadline pressure frequently results in resilience measures being cut as projects are adjusted to stay on schedule. Time, therefore, is rarely an independent constraint, rather it is effectively another form of cost.

Space presents another related trade-off. Urban resilience solutions, such as rain gardens and water management infrastructure occupy land that could otherwise generate revenue, creating direct competition between resilience and commercial return. Opinions on technical feasibility are divided; some respondents argue the necessary technology is already available, while others contend it is not yet ready for deployment at scale. Nevertheless, even when technology is available, its novelty raises insurance costs and construction uncertainty that increases the financial burden of UD projects. Risk and uncertainty, therefore, are observed to be more of a multiplier of all other trade-offs than a standalone one.

Essentially, the trade-offs are united by their cumulative effect. As Respondent 10 puts it:

If it's not a requirement – as part of the local plan – it's on the chopping block and potentially lost.

This applies equally to cost, time, space, and technical risk. Any one of these pressures is sufficient to remove resilience from a project when there is a clear lack of regulatory protection. Overall, they make voluntary integration structurally unstable.

4.5.2 Institutional and structural barriers

4.5.2.1 Structural barriers

The interviews show that resilience barriers are primarily coordinative and financial rather than technical. Respondent 13 makes an important observation: resolving coordination failures would, in itself, reduce financial burdens by distributing risk among actors. The barriers described below are, therefore, better understood as consequences of governance failure than capacity constraints, which has direct implications for how they should be addressed.

As several respondents described, Stockholm's restricted city layout means implementing resilience measures often requires sacrificing other elements, a trade-off less immediately faced by Copenhagen due to its more open land. Regulatory frameworks further exacerbate this issue. Sweden's Planning and Building Act (*Plan- och bygglagen*, PBL; Riksdagen, 2010) establishes a municipal planning monopoly, where regional plans are only advisory (Riksdagen, 2010; Boverket, 2020). When national and local priorities clash, projects can be completely halted. For example, Respondent 8, a researcher focusing on the electrification of private vehicles,

reports that the electrification of an entire district was halted for this reason, aligning with documented grid capacity issues in Stockholm (Energimyndigheten, 2022). The *Länsstyrelsen*, Sweden's regional government authority, introduces an additional veto layer (Boverket, 2020), constituting a regulatory framework that has no direct Danish counterpart in the data.

Denmark has advanced its regulatory stage: the Danish Building Regulations 2018 (*Bygningsreglementet* 2018, BR18) was updated in 2023 to set binding limits on embodied carbon (TBST, 2023), whereas Sweden's *klimatdeklaration*, a mandatory report that details the greenhouse gas emissions associated with the construction of a new building, remains solely for reporting (Riksdagen, 2021; Boverket, 2022). Respondent 14, a climate strategist at a Swedish regional collaboration platform, clearly highlighted this difference, noting that Copenhagen is “braver” by implementing stricter regulations for issues that Stockholm has yet to address. Regarding cultural heritage regulations, Respondent 1, a planning architect with years of experience in Sweden, observes that *kulturmiljö* restrictions, the restrictions on physical environments and landscapes shaped by human interaction over time (Riksantikvarieämbetet, 2022), are notably more rigid in Stockholm, leading to longer timelines and higher costs, which are constraints that reduce the practical space available for retrofitting resilience measures into existing urban fabric.

4.5.2.2 Institutional barriers

Both cities demonstrate firm commitments to resilience, but the challenge is in putting these into practice. A common issue, identified by Respondent 14 from their work as a climate strategist, is that resilience functions are often situated far from the organisation's core activities:

They often sit quite far out in the organisation, they often have no mandate to tell other parts of the organisation what to do, and they often do not even have a budget.

Without a mandate or budget, resilience lacks clear ownership. An environmental advisor for a Swedish municipality (Respondent 6) noted that resilience requirements are often considered extras outside of job roles, neither actively pursued nor sustained once established. Knowledge remains siloed, transfer is slow in expanding organisations, and decision-makers with limited knowledge hesitate to take action. These patterns create a self-reinforcing cycle: teams working

in isolation produce fragmented information, which leads to poorly informed decisions, which, ultimately, feed the conditions that keep resilience at the margins of the organisation.

Goal misalignment operates at a more fundamental level. The respondents report a common tension that concerns the basic framing of a project: whether its purpose is to construct a building or to develop a resilience solution. When organisational leadership fails to communicate a clear vision, both downward to project teams and upward to clients, the default purpose is building construction, and resilience becomes an add-on competing for resources that were never allocated. Without a shared strategic commitment among leadership, even well-meaning resilience advocates within project teams lack the organisational support necessary to maintain their efforts amid the pressures of trade-offs.

4.6 Patterns and Outcomes

The previous sections examined individual factors shaping resilience integration. This section identifies the overarching patterns that emerge when those factors interact, revealing the conditions under which coordination either enables or undermines resilience outcomes.

4.6.1 Scale and the fragmentation of coordination

A consistent pattern across the dataset is that coordination quality declines as the number of actors increases. Findings show that this is a structural trend that is directly linked to project size, rather than an incidental feature of specific projects. As established in section 4.3, larger projects adopt more formal mechanisms specifically to handle this complexity, but formalisation alone is insufficient to address the fundamental fragmentation.

An aspect of this challenge that touches upon both coordination and decision-making is clarity about who makes decisions, and on what grounds. Respondent 5, a Swedish architect, explained this succinctly:

I think the lack of clear decision-making is often something projects suffer from – you don't really know who is taking the decision and why, and it's not clear.

Respondent 7, experienced in the project management of energy projects, points out a subtler yet equally significant aspect of the issue. Even when financial and technical barriers appear

solvable in theory, the decision's nature can hinder progress if decision-makers do not have the necessary contextual understanding to take appropriate action:

Technical and financial [barriers] you can solve – you can always shake out more money, you can always find a technical solution. But if the decision makers don't understand what type of decision it is being asked for, they would not take the decision.

This emphasises a key insight that spans both coordination and knowledge: effective coordination relies on including the right individuals with a mutual understanding of the problem. Without the shared understanding, even well-funded projects struggle to leverage their collective expertise.

Stakeholder knowledge-sharing was noted as a key enabler - when participants are more aware of each other's constraints, priorities, and technical realities, decision-making becomes both quicker and stronger. Several respondents also emphasised the importance of maintaining stable teams across projects; having the same group from one project to the next minimises knowledge loss and accelerates rebuilding shared understanding. Additionally, short communication lines within project structures were recognised as factors that improve efficiency by lowering informational friction, which can impede decision-making in complex, multi-actor environments.

4.6.2 Project managers as coordination pivots

Across both cities and stakeholder groups, PMs proved to be essential coordinators, a finding that was not anticipated by the preliminary framework and that emerged inductively from the data. The PM's responsibilities go beyond administration. The skill level of PMs determines if the combined expertise of the team is effectively utilised or left unused, as illustrated by Respondent 2 from their work as the head of R&D in an architecture firm:

A good project manager makes sure that knowledge is used in a good way [...] Whereas if you are in a project where there is a very insecure project manager [...] then you never get to use the minds and the brains of the people in the room in a good way.

A compliance-focused PM minimises informal coordination methods described in 4.2.1, limiting interactions to procedural checklists and removing opportunities for resilience issues to emerge. This means that the PM's orientation, not just their presence, is a determinant of resilience outcomes.

4.6.3 Trust, relational climate, and the partner-supplier distinction

Trust is fundamental to the informal coordination layer described in 4.2.1, and its influence reaches even further. In large-scale projects with crowded and highly structured formal meetings, the effectiveness of information sharing depends on whether participants feel safe enough to openly discuss risks, uncertainties, and constraints.

The relational aspect of trust also influences how procurement functions. Many respondents pointed out that distinguishing between partner-style and transactional client relationships significantly impacts what can be achieved. When clients are open about their priorities and relationships with suppliers develop gradually, project teams can identify resilience issues early and uphold them even under budget constraints. On the other hand, transactional relationships, which are marked by late engagement, fixed scope, and limited shared responsibilities, mimic the supplier dynamic described in 4.2.2, in which parties focus on delivering predefined outputs rather than co-creating solutions.

The respondents highlighted an important caveat: forming partner relationships should not undermine accountability. Situations where some actors reap the benefits of partnership proximity without meaningful contribution, essentially free-riding within the project network, may lead to coordination issues caused by unclear responsibility. Trust is, therefore, observed to be a precondition for governance structures. Without trust, formal structures become compliance exercises, and without a governance structure, trust becomes a vulnerability.

4.6.4 Culture, motivation, and organisational positioning

A common observation in both case cities is that, although technical and financial obstacles to resilience are real, they often play a smaller role than motivational and cultural challenges. Many respondents pointed out that individual efforts alone are not enough: without the whole organisation prioritising resilience, especially its leadership, committed individuals lack the necessary support to maintain resilience amid trade-offs.

This pattern reflects the data observation that when resilience is seen as an add-on rather than a core goal, the stakeholders responsible for it are often marginalised within the organisational structure. They are placed outside the main decision-making processes that determine project priorities, thus lacking influence over the most important decisions. The key implication is that the positioning of resilience within the organisational hierarchy is as important as its formal presence in project documentation.

The rapid development across much of Europe amplifies this cultural challenge. High project volumes and fast-paced work often result in staff turnover, risking the loss of valuable institutional knowledge as new team members replace experienced personnel. Staff turnover severs the ongoing relationship on which trust-based coordination depends, resetting the informal network that resilience integration relies on. The reinduction process following each employee departure consumes coordination resources and can disrupt the continuous effort required to maintain resilience initiatives effectively.

The motivational aspect also relates to outcomes. When well-designed resilience solutions fail to achieve expected goals, be it investment, replication, or wider adoption, the failure reduces motivation among the most dedicated actors. Therefore, governance frameworks should prioritise visible success stories and feedback mechanisms, as these are essential for maintaining the cultural conditions that support resilience.

4.6.5 Early and inclusive participation and goal alignment

Early and inclusive stakeholder involvement emerged as the most consistently cited enabling condition across the dataset. This finding supports the timing aspects discussed in 4.2.2 but adds further depth. When participation occurs early and includes a wide range of actor types, it facilitates collaborative procurement methods that are proven to be more effective than traditional tendering, especially for new or complex resilience strategies. Additionally, it helps distribute risk: the sooner actors are involved, the sooner potential failures can be foreseen, allowing for shared financial responsibility.

More importantly, early and inclusive participation emerged as the primary means of developing shared goals. When stakeholders collaboratively create a common vision instead of working within a pre-set framework, coordination becomes smoother, and resilience is more likely to be maintained through subsequent trade-offs. Misalignment of goals was repeatedly

noted as a key factor in poor processes and outcomes, exemplified by Respondent 12 from their experience in financing projects:

There was a discrepancy between stakeholders in the value chain; they were not able to meet in that way. There wasn't an understanding of each other's priorities, and no way was found to mitigate it before things actually went wrong.

Several respondents suggested a concrete mechanism: the pre-masterplan roundtable. Respondent 12 describes the master plan like a 'black box': once established, it determines the framework for all subsequent coordination, making it hard to reassess fundamental assumptions. Holding roundtables before this formalisation provides an opportunity for open negotiation of resilience priorities.

From their work within sustainability projects, Respondent 14 observed that roundtables work best when they involve people with real decision-making power, such as project leaders, procurement specialists, and business development managers, rather than just sustainability experts. Although these experts have valuable knowledge, they often lack the organisational influence needed to turn roundtable agreements into actual project commitments. This point connects directly to the advisory-without-authority pattern outlined in 4.3.1 – the composition of early coordination forums is as important as their timing.

4.6.6 Observed outcomes

The patterns above outline two distinct paths for integrating resilience. When the enabling conditions are in place, and project scale is controlled through strong management rather than excessive formalisation, trust is fostered through informal coordination. Actors are involved early to develop shared goals, and procurement includes technical and financial stakeholders before the master plan is finalised. In this approach, resilience is regarded specifically as a design element, not an additional feature. Examples from section 4.4.3, such as rain gardens that handle stormwater and enhance public spaces, infrastructure designed to be future-proof at voltage levels needed years ahead, and Copenhagen's harbour regeneration as an integrated effort for resilience and public value, demonstrate what this path can achieve.

When these conditions are absent, a different and more common pattern emerges. Late entry turns actors from co-developers to suppliers, as described in 4.2.2. Excessive formalisation removes the informal space where resilience is discussed and developed. Siloed resilience functions, outlined in 4.5.2, lack the authority and funding to impact decisions that determine project priorities. Consequently, resilience is only applied when it is cost-effective or financially justifiable, and omitted otherwise.

These two paths are not equally likely to occur. The data consistently show that the conditions producing the first path (early engagement, trust, shared goals, competent project management, etc.) are fragile under commercial pressure, while the conditions producing the second path are structurally embedded in how UD projects are currently financed, procured, and governed. Changing the path outcomes, therefore, requires changing the structural conditions under which they are formed.

4.7 Cross-comparison: Copenhagen and Stockholm

The main comparative question across the thematic findings is whether the city context affects resilience integration or whether the observed patterns reflect broader Scandinavian UD practices.

The interviews show that both cities share similar core dynamics. This includes the balance between formal and informal collaboration, the significance of trust and a shared language, the vital role of the project leader, and a preference for early involvement. The respondents report very similar coordination issues and working approaches, suggesting that these patterns likely reflect typical multi-stakeholder UD processes in Scandinavia rather than unique city-specific factors.

Advisory influence across both cities lacks final decision-making power over resilience decisions. The respondents describe the same fundamental dynamics, where public actors set the framework, private actors hold the investment authority, and most professional participants operate between these two positions without direct decision-making authority.

Furthermore, both cities show strong institutional commitments to resilience but differ greatly in implementation. The key difference lies in the regulatory framework. Denmark's higher regulatory standards mean fewer resilience decisions are driven by finance. BR18, revised in 2023, sets binding embodied carbon limits that establish a floor below which resilience cannot fall, regardless of commercial pressure. Sweden's *klimatdeklaration* remains a reporting

requirement only, with implementation relying on organisational culture and individual motivation. Respondent 10's earlier note that anything not required in the local plan is vulnerable seems especially true for Stockholm. Respondent 14 affirms that Copenhagen is 'braver', producing stronger frameworks for problems that Stockholm has yet to experience. However, Stockholm also faces structural constraints: limited urban space and *kulturmiljö* restrictions that slow progress and increase costs (Riksantikvariedämbetet, 2022). In addition to heritage restrictions, Sweden's PBL features veto mechanisms that can directly cause conflicts between national and local planning priorities. Respondent 8 cited an example where the electrification of an entire district was completely halted for this reason (Energimyndigheten, 2022). This is qualitatively different from simply requiring less: Denmark's framework establishes a floor, whereas Sweden's can actively block projects that attempt to go further.

At the institutional level, Copenhagen's regulatory tools are the ones driving action, whereas Stockholm relies on organisational factors (e.g. shared vision, clear mandates, early stakeholder involvement) that are hard to sustain under lower urgency. As Respondent 14 noted, Sweden remains comparatively naïve about climate risk compared with Denmark, which diminishes the sense of urgency for action and, consequently, reduces internal pressure to build resilience. Simultaneously, resilience is also described as an attractive addition valued by both municipalities and clients, suggesting that regulatory compulsion and market appetite reinforce rather than replace one another.

This regulatory asymmetry directly affects how the relational patterns outlined in sections 4.2 to 4.6 are interpreted. In Stockholm, factors like shared goals, robust project management, early engagement, and trust networks play a more significant role compared to the regulatory framework, which is less focused on enforcing resilience, as detailed in 4.5.2. Without regulation setting a minimum standard, the quality of coordination and organisational culture are the main factors determining whether resilience is integrated. On the contrary, in Copenhagen, enforceable regulatory standards such as BR18 establish a baseline for resilience. This means that these patterns mainly enhance an existing standard rather than replace or raise it.

The patterns found in this study are less stable in Stockholm than in Copenhagen. Stockholm's success relies on the voluntary maintenance of trust, early engagement, and shared goals, which are constantly undermined by commercial conditions lacking the necessary regulatory protection. In contrast, Copenhagen has a guaranteed regulatory minimum that protects

resilience efforts from the dominant market logic and creates a viable opportunity for resilience integration.

5. Discussion

This chapter interprets the empirical findings in light of the theoretical framework developed in Chapter 2, examining how the six sensitising dimensions (Power and Authority, the Timing of Involvement, Complexity, Coordination, Institutional Context, and Trade-offs) interact to determine whether energy resilience is an integral part of UD projects or is instead systematically sidelined. In the discussion chapter, each theme from the third phase of the thematic analysis is addressed according to a three-part structure: a summary of the main findings, a theoretical interpretation, and implications for practice. Following the thematic discussion of the fourth phase of the analysis, Chapter 5 returns to the six sensitising dimensions and examines what the empirical findings confirmed, complicated, or expanded in each. This synthesis leads to the revised empirical framework, which retains the structure of the preliminary framework while grounding it in patterns that emerged from the data.

5.1 Background and Role

The findings reveal a structural distinction between actors who exert influence within project teams and those who influence outcomes from outside the value chain. Most respondents hold integrated positions such as architects, consultants, energy specialists, and financiers, while two intermediary platforms in Copenhagen and Stockholm operate differently: they exert strategic influence by creating the conditions under which resilience considerations are placed on the agenda before formal project structures take effect. This distinction has direct implications for how, when, and by whom influence can be exerted.

This aligns directly with the dimensions of Power and Authority, and the Timing of Engagement, in the preliminary framework. For embedded actors, mandate and authority consistently diverge; professionals possess legitimacy through their expertise but lack the decision-making authority to translate their input into binding outcomes. For external platform actors, the timing dimension takes on an entirely different character: their influence precedes the project lifecycle and occurs during the agenda-setting phase, before formal structures are activated.

Interpreted through the salience framework of Mitchell et al. (1997), embedded actors confirm the framework's core logic: design professionals and technical specialists possess high legitimacy and urgency but consistently lack the power dimension needed to make their salience definitive. Without power, legitimacy leads to advocacy rather than results, and salience proves

to be non-additive in practice. However, the finding regarding intermediary platforms reveals a more fundamental limitation: Mitchell et al.'s typology assumes an existing network, whereas these platforms exert influence before such a network has been formed. This suggests that the framework lacks a temporal dimension that accounts for pre-project agenda-setting as a distinct mode of stakeholder influence. Freeman's (2010) definition is also put to the test: intermediary platforms influence project outcomes through knowledge exchange and agenda-setting without themselves being influenced in conventional ways, as they have no financial stake, design responsibility, or regulatory authority. Freeman's definition implicitly highlights a mutual dependence that intermediary platforms do not possess, indicating the necessity for a wider view of stakeholder influence that includes actors who influence the environment for value creation but are not directly involved in it.

Theoretically, salience frameworks must be expanded to include a temporal dimension that distinguishes influence on pre-project agenda-setting from decision-making authority during the project. The convergence of similar platforms in two institutionally distinct cities suggests that this is not a local anomaly, but a recurring structural response to a gap in how resilience is integrated into the development process. In practice, governance frameworks should treat intermediary platforms as a deliberate structural feature; if external platforms can embed resilience considerations before formal project structures are activated, ignoring this pre-project layer means missing out on a meaningful lever for change.

5.2 Coordination and Collaboration

Coordination in UD proceeds along two complementary tracks: formal structures that ensure accountability and traceability, and informal mechanisms, such as working sessions, phone calls, and relationship-based exchanges, that resolve issues that fall between the formal frameworks. The balance between them is determined by the project's scope, the working group's size, and the degree of relational maturity. Trust is the fundamental condition that makes the informal layer functional; without trust, coordination remains transactional. The PM is the key player in maintaining this balance, and early stakeholder involvement consistently leads to better results by keeping decisions open. These dynamics are strikingly similar in both cities, reflecting the general nature of multi-stakeholder UD in a Scandinavian context.

These findings align directly with the dimensions of Complexity, Coordination, and Timing of Involvement in the preliminary framework. Informal mechanisms are not supplementary but foundational; it is here that considerations regarding resilience are most likely to be raised,

discussed, and sustained. Over formalisation is therefore not only an operational risk but also a substantive risk; the data suggest that when the informal layer disappears, so does the space in which resilience considerations can be raised and maintained against the pressure of other trade-offs. In line with the “timing” dimension, earlier involvement has a direct positive effect on the integration of resilience; late entry structurally shifts actors from partners to suppliers.

Interpreted through Ansell and Gash’s (2008) collaborative governance model, trust, dialogue, and shared understanding are confirmed as prerequisites for collective problem-solving, but the data add a crucial caveat. Trust does not arise from a good governance design; it is actively built through the informal layer itself, through working sessions, phone calls, and ad-hoc exchanges that formal frameworks often eliminate. A governance design that prioritises formal structures at the expense of informal ones, therefore, undermines its own conditions. Rather than merely confirming the necessity of a central coordinating actor, the data show that the quality and orientation of that actor are equally decisive; a compliance-oriented PM neutralises informal mechanisms, even when formal structures remain intact. The argument by Warneryd et al. (2020) that coordination costs can exceed project benefits finds direct empirical support here, with over formalisation as the specific causal mechanism. The finding by Bixler et al. (2020) that resilient governance depends on close-knit, well-connected networks is also confirmed: staff turnover and late entry degrade the quality of coordination by disrupting relational continuity.

Governance frameworks must regard the informal layer as foundational and invest as much in building trust, a shared language, and stable teams as in formal process design. Conventional procurement schemes, in which technical and financial actors are engaged only during 60-70 per cent of the project lifecycle, are structurally incompatible with the integration of resilience and must be revised.

5.3 Influence on Decisions

Most professionals in the UD value chain play an advisory role: they shape ideas and make recommendations, but have no decision-making authority. Final decisions rest with formal governing bodies or private investors, and, where advisory influence exists, it depends heavily on relational trust rather than on an institutional mandate. There is a constant tension between those who set goals and those who hold investment authority: government actors establish planning ambitions that private actors are not obligated to follow. Intermediary platforms offer

an additional pathway, creating conditions to put resilience on the agenda before formal decision-making authority is exercised.

This ties directly into the Power and Authority dimension of the preliminary framework, which asked whether mandate and authority align in practice. The data consistently show that this is not the case, and that this divergence is institutionally caused rather than coincidental. As illustrated by a respondent who has worked on both sides of the public-private divide, municipal actors can set resilience goals for the energy system, but when the infrastructure is in private hands, as in the case of a major private energy company, which owns both the district heating system and the electricity grid in Malmö, investment authority rests entirely with the private actor, meaning that municipal ambitions are only as binding as that actor chooses to make them.

Interpreted through the salience framework of Mitchell et al. (1997), the position of “advice without authority” confirms that salience is non-additive in practice: a high degree of legitimacy and expertise without power leads to advocacy rather than results. Trust partially compensates for this structural powerlessness; the stronger the relational trust with a client, the more leeway an advisory actor gains, but this makes influence relational rather than institutional, and therefore vulnerable. The argument by Stoelhorst and Vishwanathan (2024) that shareholder interests are structurally embedded finds direct empirical support here: investment authority concentrated at the level of the CEO and executive management consistently takes precedence over advisory input, regardless of its quality or focus on public value. Denis’ (2024) argument that sustainability is pursued only when it aligns with financial performance is also confirmed: resilience remains discretionary as long as the investment case does not support it. This means that governance interventions that do not alter the underlying financial logic are unlikely to effect systemic change.

These findings have direct implications for the design of governance. Bridging the gap between planning ambition and investment authority requires structural changes in ownership and financing arrangements, not merely better coordination among existing actors. The finding regarding the land parcels in Copenhagen extends Flyvbjerg’s (2014) argument about misalignment of incentives: the municipal financing strategy is not a precondition for resilient governance, but a constitutive part of it, which directly determines what coordination is structurally possible at the project level. In practice, this means that the integration of resilience cannot rely on voluntary commitments from private actors whose institutional logic prioritises financial returns.

5.4 Energy Resilience in Practice

Resilience enters a project through various channels. Depending on the stakeholder, it may enter as a regulatory requirement, client demand, or professional norms, but is rarely named as such. The taxonomy varies by stakeholder, and it seems that framing resilience efforts in terms of sustainability or liveability is more common. The UD sector lacks a clear, universal taxonomy to facilitate integration. Between Copenhagen and Stockholm, Danish private actors are pushing for more resilient solutions, while regulations play a more central role in Sweden. Ultimately, it comes down to how the organisation has positioned resilience in relation to its strategic goals, determining whether it views it as an organisational goal or an add-on.

These findings mainly address the Institutional Context and Trade-offs dimensions of the preliminary framework, while also touching on Power and Authority. The finding that resilience is better integrated when treated as a strategic goal rather than an add-on aligns closely with Hamel and Välikangas' (2003) framing of strategic resilience as a core organisational capability. Respondent 13's earlier observation in 4.4.1 on framing resilience as a strategic goal aligns with the literature's assumptions. Where resilience is embedded in strategy, it shapes planning, resource allocation, and design from the outset; where it is not, it competes retrospectively against already-established project logics and almost invariably loses.

This pattern is further illuminated by Mazzucato's (2018) argument that systemic goals require a deliberate alignment of public and private actors around a shared mission. The finding that resilience is deprioritised when executives are "far removed from the project" and do not share the objectives of those working closer to the actual project illustrates what happens in the absence of that alignment: individual actors revert to their institutional logics, and resilience becomes, effectively, everyone's concern and nobody's priority. The two interpretations reinforce each other. Strategic resilience, in Hamel and Välikangas' sense, assumes exactly the kind of mission-level alignment Mazzucato describes. Without it, resilience remains secondary to financial measures, is structurally disadvantaged from the very start of project development, and is unlikely to survive the trade-off decisions that follow.

The most significant implication is that resilience is not lost primarily at the moment of trade-off, but even earlier. Resilience is removed from the project at the stage when the project's governing purpose is established, and organisational roles are assigned. Unless financial authorities align on resilience as a core project goal before foundational decisions are made, the conditions for its exclusion are already in place. Governance prescriptions from the literature

highlight improved coordination and trade-off management as valuable mechanisms for integration (Ansell & Gash, 2008; Bahadorestani et al., 2020; Raha & Kazemi, 2025), but these efforts are misdirected if resilience is already excluded by decision-making authority before trade-offs arise. Any governance interventions that target trade-offs are destined to fall short unless resilience becomes a part of a shared strategic vision at the leadership level and is subsequently translated into core project goals.

5.5 Trade-offs and Barriers

The barriers to integrating resilience are not primarily technical. Cost emerges as the dominant trade-off across all respondents, with time pressure ultimately translating into cost. Meanwhile, space constraints, technical feasibility concerns, and risk uncertainty all add to the financial burden. At the institutional level, resilience functions are still not part of the organisational core, meaning they have no mandate, budget, or positional authority. The contexts of Copenhagen and Stockholm differ significantly. In Denmark, the updated BR18 sets binding embodied-carbon limits, whereas in Sweden, the *klimatdeklaration* is still only a reporting requirement, leaving more choices open to financial considerations.

Respondent 13's observation that resolving coordination failures themselves would ease the financial burden by distributing risk reframes the cost trade-off as a secondary consequence of governance failure rather than a primary constraint, a distinction that the preliminary framework anticipated in its Institutional Context and Trade-offs dimensions. The pattern of institutional barriers sustains itself: isolated teams create missing mandates, leading to fragmented knowledge, uninformed decisions, and ongoing goal misalignment that maintains resilience as nobody's direct responsibility. Valentinov's (2023) institutional lens explains why this loop resists change. These failures are products of the rules and norms that define what counts as legitimate value. Resilience, whose benefits are spread out and long-term, will be systematically disadvantaged, regardless of individual motivation, because financial logic is the institution's primary measure of value.

Lawrence et al.'s (2011) discussion of institutional work highlights that incremental governance changes alone cannot overcome structural barriers unless there is an intentional effort to reshape the norms that create them. The Copenhagen and Stockholm asymmetry illustrates this directly. Respondent 10's point that anything not included in the local plan is at risk is even more relevant in Stockholm, where the regulatory system does less to translate stated commitments into concrete project actions. When trade-offs become unavoidable, a genuine cultural commitment

to sustainability does not replace official obligations. This connects to the Power and Authority dimension of the preliminary framework: when mandate and investment authority are not aligned, resilience goals tend to be ambitious rather than practical.

5.6 Patterns and Outcomes

The findings clearly point to a relationship between project scale and fragmentation; as project scale in terms of the number of actors involved, the coordination between said actors becomes more fragmented. An interesting finding is that PMs are cited as coordination enablers, resolving the issues arising from fragmentation. However, strong preconditions for resilience integration are creating shared goals supported by a common resilience culture. Early and inclusive participation is the most consistently cited enabling condition, while trust serves as a transversal condition that underpins all of them. Finally, discovered patterns are largely consistent across both cities.

Aligned with the Complexity dimension of the preliminary framework, stakeholder complexity directly affects resilience integration through fragmentation, thereby impeding it. Trust, an informal mechanism identified by respondents as a facilitator of better coordination, is negatively affected by fragmentation, thereby reducing stakeholders' collective action capacity. Bixler et al.'s (2020) network closure argument supports this narrative, arguing that trust sustains coordination over time. Building on this, we see evidence in other authors' work that trust is an underlying factor in creating strategic resilience, as it is a structural requirement for coordinating under uncertainty (Home & Orr, 1997; Gittell et al., 2006). An unexpected finding is that there is an alternative to resolving fragmentation by employing a competent PM to coordinate the overarching processes. PMs emerged as metagovernors (Sørensen & Torfing, 2017) who successfully support and guide collaboration in UD projects, leaving resilience and sustainability experts to focus on promoting resilience efforts.

Building on section 5.4's argument for shared goals, which is supported by Mazzucato's (2018) mission-oriented alignment, the pre-masterplan roundtable emerged as a project-level mechanism for aligning goals even before projects begin. This finding aligns with the Coordination dimension of the preliminary framework and with Ansell and Gash's (2008) collaborative governance model. However, a caveat is important. The roundtable mechanism is insufficient without the appropriate stakeholders at the table. Empirical evidence shows that resilience silos and the actors working within them operate on the periphery of the organisation, lacking the power or financial capacity to influence resilience integration. Ultimately,

roundtable participants should have actual decision-making authority, not merely substantive knowledge.

Consequently, three implications stand out as necessary. First, the PM finding suggests that governance design is not solely about structure; instead, individual competence and role setup within project teams significantly influence outcomes, directly impacting procurement and team composition choices. Second, in the absence of PMs, design professionals like architects are absorbed into project management, losing their resilience advocacy capacity, which is a structural cost that procurement practices currently overlook. Third, the roundtable finding suggests that the makeup of early coordination forums is just as important as their timing. This detail refines the argument that early involvement is crucial, a theme that runs throughout the thesis.

5.7 New Framework

This chapter revisits the six sensitising dimensions of the preliminary framework (Institutional Context, Power and Authority, Trade-offs, Timing of Engagement, Complexity, and Coordination) and examines what the empirical findings have confirmed, nuanced, or expanded in each dimension. Together, these adjustments form the basis for the empirical framework presented in Figure 5.

The Institutional Context was viewed as a structural condition that determines how resilience is approached within organisations. The findings suggest that this framework is valid but needs refinement. Rather than focusing solely on whether a formal institutional context is present, the research demonstrates that the nature of that context is what shapes resilience outcomes, and specifically, whether resilience is positioned as a core organisational objective or treated as an add-on. This expands the dimension beyond formal frameworks by emphasising strategic positioning as a key factor in resilience outcomes.

Power and Authority were described as the way in which influence is distributed among stakeholders. The findings make this more complex: most contributors operate in advisory roles, whose influence is relational rather than institutional, and depends on trust rather than a formal mandate. As a result, investment authority is structurally favoured when trade-offs occur. This points to a distinction that was not explicitly made in the preliminary framework between advisory influence and decision-making authority, with relational trust becoming the primary compensatory mechanism between them.

Trade-offs were expected as competing priorities that limit the integration of resilience. The findings confirm that costs predominate but suggest that trade-offs are better understood as symptoms of governance failure rather than as independent constraints. When coordination is fragmented and resilience lacks institutional status as a core organisational goal, financial logic fills the resulting vacuum. This repositions the dimension as a by-product of how the other dimensions function together.

The Timing of Engagement was included as a dimension describing when stakeholders become involved. The main finding is whether stakeholder engagement occurs before or after the master plan is established. Additionally, the intermediary platforms reveal a fully developed pre-project influence phase that occurs during agenda-setting before formal structures are in place, which the initial framework did not account for.

Complexity was formulated to describe the multi-actor, cross-sectoral nature of UD. The findings develop this mechanism in more detail: as the number of actors increases, coordination becomes fragmented, and the trust networks upon which informal coordination relies are gradually eroded. Fragmentation appears to be the specific pathway through which complexity undermines resilience.

It was expected that coordination would occur through formal and informal mechanisms. However, the findings elevate the informal layer from supplementary to fundamental. Resilience considerations are most likely to be raised, examined, and sustained when the informal layer supports the formal coordination mechanisms. The PM was named as a key formal figure that mediates between these two tracks. Their orientation and relational competence determine whether collective expertise is effectively utilised or reduced to mere procedural compliance.

Based on our empirical findings, we propose a new framework (Figure 5) that illustrates the conditions that affect the integration of energy resilience into UD projects.

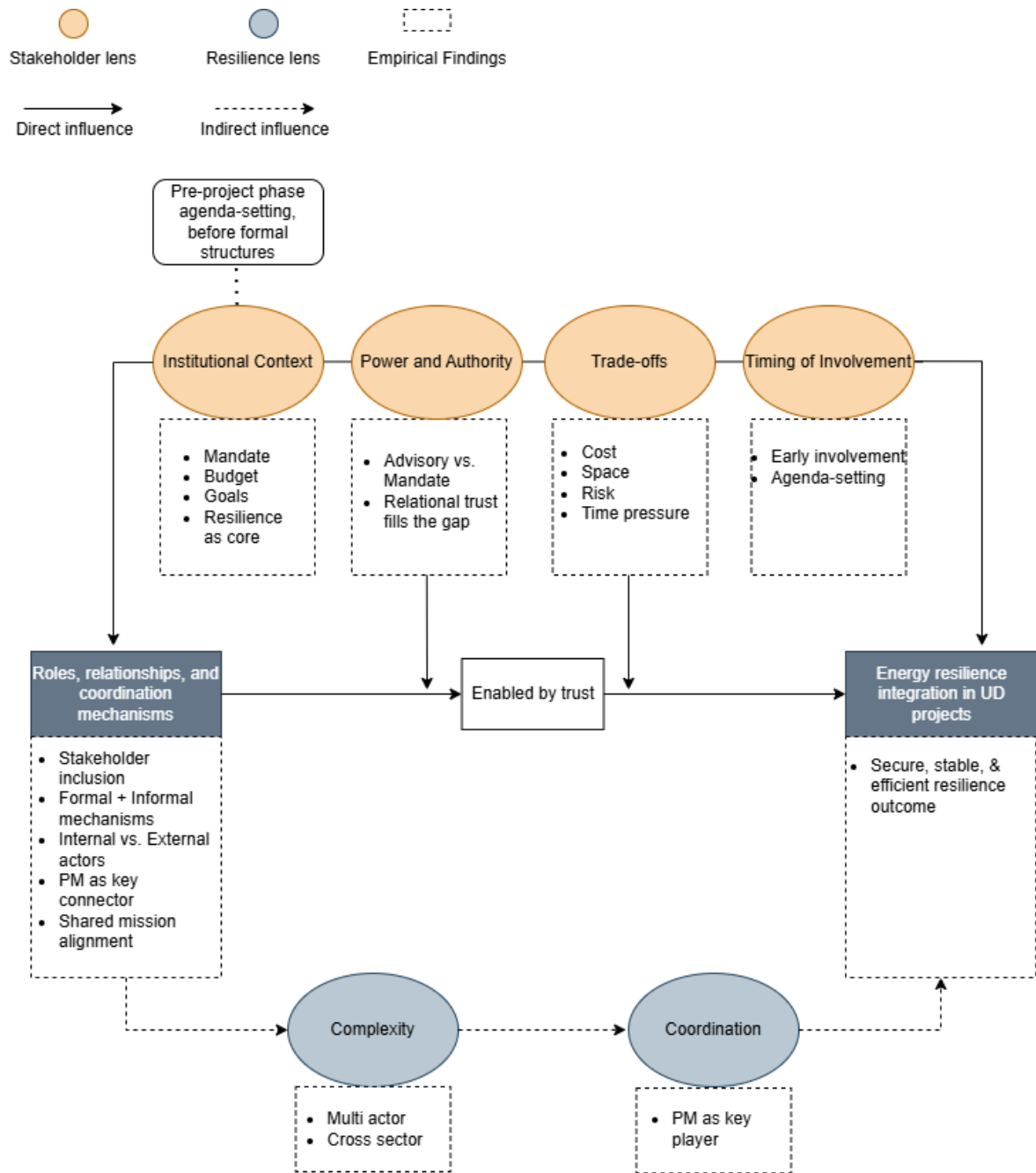


Figure 5 New Framework – Conditions for Energy Resilience Integration in Urban Development Projects

6. Conclusion

The purpose of this thesis was to investigate how the roles, relationships, and coordination mechanisms among stakeholders influence the integration of energy resilience into UD projects. Based on fifteen semi-structured interviews with practitioners from across the UD value chain and a comparative case study of Copenhagen and Stockholm, the research has yielded empirically grounded answers to each of the four sub-questions. In the following section, these are addressed one by one, after which we return to the main research question:

How do the roles, relationships, and coordination mechanisms among stakeholders shape the incorporation of energy resilience into urban development projects?

The chapter concludes by discussing practical recommendations, limitations, and directions for future research. To answer the main research question, four sub-questions were formulated in Chapter 1. The findings related to each are addressed below.

The first sub-question concerned how stakeholders perceive their own authority and influence over energy resilience decisions, and whose interests tend to prevail when trade-offs arise. The findings make clear that most respondents have an advisory role without decision-making authority. Their influence is determined by the relationships they maintain with clients rather than by their institutional position, and that depends more on trust than on a formal mandate. When weighing options, the client's financial interests structurally take precedence, regardless of the quality or societal value of the advice.

The second sub-question examined at what stages of UD projects energy resilience is introduced, and how the timing of stakeholder involvement determines whether resilience is embedded or sidelined. The findings show that integrating energy resilience at an early stage ensures it is treated as a requirement rather than an afterthought. Early integration consistently creates better conditions for incorporating resilience, and pre-project discussions translated into master plans are important mechanisms for protecting that incorporation. Once the master plan is finalised, its fundamental decisions are difficult to revise, ensuring resilience is securely integrated in UD projects.

The third sub-question concerned the formal and informal coordination mechanisms that stakeholders use and that most effectively facilitate the integration of resilience considerations. The findings show that coordination follows two parallel and complementary tracks. Formal mechanisms ensure accountability and compliance, while informal mechanisms provide the flexibility that formal structures cannot offer. Trust is the fundamental prerequisite for the informal layer to function, and the PM is the key figure who connects these two tracks.

The fourth sub-question asked which structural and institutional barriers most consistently prevent the prioritisation of energy resilience, and how these differ between Copenhagen and Stockholm. The findings indicate that the most persistent barriers are institutional. Resilience functions lack a mandate, budget, and authority, resulting in financial logic being prioritised by default, regardless of individual motivation. Where regulations limit this discretionary leeway, as in Denmark through binding carbon limits, resilience becomes a requirement rather than a choice. In Stockholm, the *klimatdeklaration* remains a reporting requirement, making integration more dependent on organisational culture and individual motivation, circumstances that are difficult to sustain under commercial pressure.

Taken together, these findings provide the following answer to the main research question. **Roles** determine who can influence decisions regarding resilience and from what position; most professional stakeholders have advisory influence without decision-making authority, while the authority to invest is concentrated among private actors and executive management. **Relationships** determine the extent of that influence; where trust has been built and working relationships are mature, advisory actors are given more room for action; where these are lacking, influence remains transactional and limited. **Coordination mechanisms** determine whether resilience endures the trade-offs that arise throughout the project lifecycle; informal mechanisms bear the burden, and their erosion through over-formalisation or late entry structurally undermines the integration of resilience.

Resilience is most effectively integrated when three conditions are met simultaneously: stakeholders are engaged early enough that fundamental decisions remain open; informal coordination is protected alongside formal structures, enabling trust-based problem-solving; and regulatory frameworks limit the discretionary power of financial logic by making resilience a requirement rather than an option. When these conditions are absent, which, according to the data, is the norm rather than the exception, energy resilience remains advisory, discretionary, and ultimately dependent on the willingness of those with financial authority to look beyond their immediate institutional interests.

6.1 Contribution and Implications

6.1.1 Theoretical contribution

This study makes three contributions to the existing literature.

First, it extends the stakeholder salience framework of Mitchell et al. (1997) by introducing a temporal dimension that distinguishes pre-project agenda-setting influence from decision-making authority during the project lifecycle. Mitchell et al.'s typology assumes that stakeholder influence operates within an established network, but the intermediary platforms identified in this study exert significant influence even before such a network is formed. This challenges a core assumption of the framework and introduces a new stakeholder category that current salience typologies overlook: the pre-project agenda-setter. The similarity of platforms in two different cities indicates a structural gap in the framework itself, rather than a city-specific anomaly. Since salience frameworks are commonly used across governance, management, and policy research, this extension has broader implications beyond the urban development context studied here.

Second, this study refines Ansell and Gash's (2008) collaborative governance model by demonstrating that trust is not a precondition that governance design can cultivate from the outside, but that is actively constructed through informal mechanisms themselves. Their over-formalisation erodes the necessary conditions for collaborative governance, risking the removal of the very layer where resilience is raised and sustained. This change corrects previous literature by explaining that relying solely on formal process compliance risks overlooking the most important layer of coordination.

Third, the study contributes to strategic resilience theory by identifying agenda-setting as a critical precursor to resilience integration. While resilience literature commonly conceptualises resilience as an organisational capability (Hamel & Välikangas, 2003), it offers a limited explanation of how resilience becomes embedded in organisational priorities. The findings show that resilience is often determined before project-level trade-offs emerge, through the establishment of strategic goals and decision-making authority structures. This suggests that resilience integration depends less on managing trade-offs during project delivery and more on securing resilience as a core strategic objective during project formation.

Taken together, these contributions point towards a broader theoretical insight: resilience is lost through the institutional and strategic processes that determine which objectives are recognised

as legitimate even before implementation begins. Existing theories of stakeholder management, collaborative governance, and strategic resilience tend to focus on interactions within established governance arrangements. This study shows that resilience outcomes are equally dependent on the preconditions that shape those arrangements, including agenda-setting influence, strategic prioritisation, and informal relationship-building. In doing so, the study provides a more complete explanation of why resilience is successfully integrated in some urban development projects while remaining marginalised in others.

6.1.2 Practical implications

Three implications follow directly from the findings. First, early and inclusive stakeholder engagement should be treated as a structural requirement rather than a procedural preference, particularly by organising roundtable discussions before the master plan is finalised and by ensuring that participants have actual decision-making authority rather than only substantive knowledge. Second, procurement practices must be revised to bring technical, financial, and supply chain actors into projects substantially earlier than the current norm of sixty to seventy per cent of the project duration. Third, project management orientation should be treated as a resilience variable in its own right; procurement criteria should account for a PM's relational competence, not only their administrative capacity.

6.2 Limitations of the Study

Several limitations affect the interpretation of this study's findings. The most relevant concern is the sample composition: the fifteen respondents are unevenly distributed across the two cities, with the Swedish participants drawn predominantly from design professions and the Danish participants from finance, consultancy, and research. The direct city-level comparisons should therefore be treated with caution, as any differences in perspective may reflect the professional role as much as the institutional context. Only two intermediary platform actors were included, limiting the generalisability of findings on the agenda-setting influence. Overall, the restriction to two Northern European cities with strong traditions of municipal governance means the findings may not transfer directly to more centralised or financially constrained urban contexts.

A related limitation concerns the range of actors represented. The study focuses on formal professional roles, so informal backroom networks that often facilitate decisive urban deals remain underrepresented. Describing most professionals as working solely in advisory-without-

authority roles may overlook important differences. While some individuals go beyond their formal roles, the specific situations that lead to this are not consistently analysed.

The study captures coordination dynamics at a single point in time, leaving open how trust is built and how resilience considerations are sustained or eroded across the full project lifecycle. The findings may also overrepresent cases where integration was disputed or incomplete, as projects in which resilience had been successfully embedded from the outset are less likely to have generated the coordination difficulties that tend to surface in retrospective accounts. Finally, two specific findings possess additional evidential caveats: the strategic orientation interpretation rests on a narrow evidential base drawn primarily from strategy-facing respondents, and the PM finding is largely inductive and should be treated as a proposition requiring broader testing rather than an established conclusion.

6.3 Suggestions for Future Research

Following the study's limitations, three directions emerge as suggestions for future research. First, longitudinal research tracking how early coordination decisions and platform influence translate into measurable resilience outcomes would strengthen the causal claims suggested here. This approach also offers a more balanced view than the existing data, which tends to focus more on disputed integration cases than on successful ones.

Second, new empirical data are needed, particularly comparative studies of regulatory frameworks across a broader range of European cities and case studies of projects in which resilience was successfully embedded from the outset. This would test whether the asymmetry between Copenhagen and Stockholm reflects a broader pattern, and whether binding obligations produce measurably different outcomes than reporting requirements.

Third, new theoretical perspectives are needed. Formally expanding Mitchell et al.'s salience framework to include a temporal dimension is a theoretically promising avenue that this study opens but does not pursue. Similarly, examining intermediary platforms as a deliberate governance mechanism across different institutional contexts, particularly outside Scandinavia, where the voluntary coordination mechanisms may function differently, would test the generalisability of one of this study's most unexpected findings.

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Appendices

Appendix A

The following table provides an overview of the generative artificial intelligence tools used in support of this thesis, including their respective functions and representative prompts drawn from actual use during the research process.

AI Tool	Usage	Source	Representative prompts
ChatGPT	Tool for language refinement and clarity, checking grammar, flow, and flagging repetition.	https://chatgpt.com	<i>“Find a synonym for X”</i> <i>“Is this sentence easy to understand?”</i> <i>“Does this sentence make sense grammatically?”</i>
Claude	Tool for language refinement and clarity, checking grammar, flow, and flagging repetition, as well as structural and argumentative support during drafting.	https://claude.ai/	<i>“How is this paragraph? Is it easy to understand or should something be clarified?”</i> <i>“Is this section repetitive?”</i> <i>“Translate this Swedish quote to English”</i> <i>“Organise the notes so that they follow a logical flow and there is a clear storyline about the most common patterns and outcomes identified from the interviews. Do not change the text, I am just looking for a reorganisation of my notes. Also, do you identify that something is missing from the text?”</i>
Sunet Scribe	Transcription of the interviews and focus groups.	https://scribe.sunet.se	

Appendix B

Interview Guide

Energy Resilience & Coordination in Urban Development

Date	Interviewee / Role	Organisation	Interviewer
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About this interview: We are researching how coordination between municipalities, developers, and design professionals influences the integration of energy resilience into urban development projects. This is a conversation; there are no right or wrong answers. We will anonymise all responses unless agreed otherwise.

A. Background & Role

1. Could you briefly describe your role and what the projects or processes you work on typically look like?
2. Who are the main actors you work with in these projects, and how would you describe those relationships?

B. Coordination & Collaboration

3. How is coordination typically organised between your organisation and other actors?
→ *Are there formal structures, or does it happen more informally?*
4. At what stage in a project are you usually brought in, and does this timing affect what you can influence?
→ *Early conceptual stage? After planning permission? During detailed design?*
5. When key decisions are being made, around energy systems, infrastructure, or design, how much influence does your organisation have, and what shapes that?
6. Can you think of a situation where coordination worked particularly well, or particularly poorly, in a project? What made the difference?

C. Energy Resilience in Practice

7. How do energy resilience or climate adaptation considerations typically come onto the agenda in a project, who raises them, and when?
8. Can you describe a situation where resilience considerations influenced a planning or design decision? What happened?
9. What kinds of trade-offs come up most often when resilience is on the table?
→ *Cost, space, timeline, technical feasibility? Who decides how those are resolved?*
10. Are there situations where resilience is deprioritised to meet other project goals, and how is that decision usually made?

D. Reflections

11. Looking across projects, do you *notice patterns in how coordination is set up*, and do certain patterns seem to lead to better or worse resilience outcomes?
12. What do you see as the main barriers to integrating resilience more effectively, and are any of those primarily about coordination rather than technical or financial constraints?
13. If you could change one thing about how actors coordinate in these projects to improve resilience outcomes, what would it be?

Confidential – research use only · Responses will be anonymised

Appendix C

Sample Coding Scheme

The table below presents a representative sample of the coding scheme applied during data analysis. It illustrates how open codes were grouped into axial codes and subsequently organised into seven thematic categories. A total of 282 unique open codes and 25 axial codes were identified across 15 interviews. Colour coding corresponds to the seven themes used to structure the analysis in Chapter 4, as shown in the legend below.

Colour legend

Colour	Theme
	1. Background & Role
	2. Coordination & Collaboration
	3. Influence on Decisions
	4. Energy Resilience in Practice
	4. Trade-offs / Barriers
	5. Patterns & Outcomes
	6. Context: Stockholm vs CPH

Sample coding table

Open Code	Axial Code	Theme	Respondent(s)
Wide architect role	Actor profile	1. Background & Role	R1
PM in sustainable urban development	Actor profile	1. Background & Role	R15
Early-stage entry preference	Entry point & influence	2. Coordination & Collaboration	R1

Open Code	Axial Code	Theme	Respondent(s)
Decisions locked in at every stage	Entry point & influence	2. Coordination & Collaboration	R10
Bi-weekly formal meetings	Formal coordination mechanisms	2. Coordination & Collaboration	R1
Vulnerability / openness enables innovation	Trust between actors	2. Coordination & Collaboration	R2
Cross-disciplinary language barrier	Shared language	2. Coordination & Collaboration	R2
Large meetings = formal / small groups = informal	Formal vs informal split	2. Coordination & Collaboration	R3
Advisory influence, no ownership power	Degree of influence	3. Influence on Decisions	R5
Energy company holds investment decision power	Actor influence	3. Influence on Decisions	R15
Municipality has goals but not investment authority	What shapes influence	3. Influence on Decisions	R15
Municipality sets resilience demands	Agenda-setting for resilience	4. Energy Resilience in Practice	R1
Resilience embedded from start	Agenda-setting for resilience	4. Energy Resilience in Practice	R1
Solar facade mobility hub = seasonal energy independence	Resilience in design	4. Energy Resilience in Practice	R3
Requirements embed resilience as status quo	Agenda-setting for resilience	4. Energy Resilience in Practice	R5
Cost as trade-off	Resilience trade-offs	4. Trade-offs / Barriers	R1, R2, R3

Open Code	Axial Code	Theme	Respondent(s)
Split project/maintenance budgets hinder resilience	Resilience trade-offs	4. Trade-offs / Barriers	R14
Sustainability siloed = no mandate / no budget	Barriers to resilience	4. Trade-offs / Barriers	R14
Lack of trust = coordination failure	Coordination barriers	5. Patterns & Outcomes	R3
Good results do not guarantee follow-through investment	Coordination barriers	5. Patterns & Outcomes	R15
Copenhagen = more green-blue DNA	City-level resilience	6. Context: Stockholm vs CPH	R1
Regulation drives sustainability more than culture	Regulatory environment	6. Context: Stockholm vs CPH	R10
Sweden regional level has no binding instruments	Regulatory environment	6. Context: Stockholm vs CPH	R14

Note: Respondent identifiers correspond to Table 3.1 in Chapter 3. The full coding matrix is available upon request.