Case Study Research Design

3

Case Study Research Design

3.1. INTRODUCTION

The previous chapter discussed the theoretical debates surrounding governance and European governance in particular. The theoretical approach that was ultimately chosen to inspire analysis of the Energy Port case was multi-level governance. The starting point of multi-level governance as an analytical framework is provided by Marks & Hooghe's work, and has seen wide application in studies of European policy and governance. Several scholars, such as Bache, Flinders and Piattoni, have tried to take multi-level governance a step further and reconceptualised the theory. Chapter two ended with the formulation of three theoretical expectations that will act as a searchlight for data collection and analysis.

The chosen research approach will be covered in this chapter. It will start (§3.2) with a discussion of retroductive research and its ontology and epistemology, then discuss the chosen research strategy of performing case study research. The case studied in this thesis should logically fit within the existing typology of case study designs. Then, the chapter will assess whether Rotterdam Energy Port is actually a case of multi-level governance. Following that, the chapter (§3.3) turns toward the operationalisation of the theoretical expectations, and the resulting research approach (§3.4). The expectations are linked to the sub-questions (see chapter one) guiding the thesis to ensure consistency and coherency of the analysis. Finally, the nested case selection process will be elaborated on in the last part of this chapter (§3.5) to include detailed information on the considerations that led to Energy Port being chosen as the case, and why CCS and small-scale LNG were chosen

as its nested cases. The conclusions (§3.6) provide a brief overview of the key decisions guiding the research design.

3.2. RETRODUCTIVE RESEARCH AND CASE STUDY DESIGNS

Blaikie (2000:91-99) provides an interesting view on the multiple strategies a researcher can use to answer research questions. He mentions four approaches: inductive, deductive, retroductive, and abductive, each with an appropriate set of research questions and methods of data collection and analysis[32]. Using the analogy of an alien civilisation studying human interactions taking place at a university, Blaikie discusses several ways to get an answer to how human social interactions in enclosed spaces can be understood. The inductive method generates many observations and attempts to generalise them into a theory. The deductive method works the other way around, starting with theory-infused hypotheses and testing them methodically in the field. Retroductive research is a mix of both inductive and deductive reasoning, starting with tentative mechanisms that could have produced the observed regularities and refining these mechanisms using empirical data in order to find the 'real' mechanism. The fourth approach, abductive research, allows the researcher to be 'abducted' by the studied object, often following it closely in an attempt to uncover how sense-making and the attribution of meaning occurs (fe., anthropological research). Given the lack of academic knowledge on climate and energy policy processes within port areas and the open-endedness of multi-level governance as a conceptual framework, I have chosen the retroductive approach. A purely deductive approach was not desirable due to the multiple blind spots this dissertation addresses. To name a few: the governance of port-industrial complexes, the quick evolution of climate and energy policies as one terrain[33], the system-wide consequences of the introduction of a new fuel. Explorative research was therefore an important part of my initial approach to discover which factors to include in the analysis and which to exclude. At the same time, the PoR had the wish to better understand how they should approach the EU, so an EU-oriented theoretical framework was preferable over a purely inductive approach. Retroduction combines both requirements, allowing for theoretical expectations to be drawn while leaving enough room for unexpected twists and turns. Chapter two posited three tentative theoretical expectations and social mechanisms, which I explore in chapters five and six, and further refine in chapter seven. As such, the retroductive approach leaves room to *work* with a theory, testing its merits and iteratively refining it during the research process.

32 Though it must be noted that what is deemed 'appropriate' is partly personal preference and not set in stone.

33 At the start of my research period (February 2013) climate and energy policies were often seen (or experienced) as separate. In the last few years views on their intertwinement have changed at an extremely rapid pace.

3.2.1. Ontological and Epistemological Statement

Retroductive research is an alternative to positivism and critical rationalism, which constitute the logics behind inductive and deductive research (Blaikie, 2000:101). Its ontology — its understanding of reality — has three domains: the empirical (observable), the actual (events that happen, even if unobserved), and the real (underlying structures and mechanisms). Its epistemology — the way in which knowledge is perceived to be obtained — consists of 'laws' that express the tendencies of things, or models which reveal underlying mechanisms. It is less about causality and more about underlying powers and opportunities, allowing the researcher to reveal mechanisms even when there is no observable change. A distinction is made between transitive and intransitive objects of science, the former being about concepts, theories and models while the latter refers to real entities and their relations. Retroductive research does not assume that prediction is possible in social sciences due to the open nature of social systems (Blaikie, 2000:108-113). As a researcher I share the belief that prediction is impossible in social sciences, and pose that trying to understand the consequences of European climate and energy policies for the Port of Rotterdam is most interesting to study from a perspective of unraveling social mechanisms and building a narrative around them, rather than by proving statistical causality. Causality is not always quantifiable. This dissertation qualitatively measures the key concepts discussed in section 3.3, but to determine their individual statistical impact on the Rotterdam port community lies beyond the nature of this case study. If one understands the underlying social mechanism, one has the tools in hand to influence outcomes. In a sense, I value the practical implications and usefulness of this academic research highly and it is my hope that this dissertation gives the studied actors insight in how they can help shape their own world. It is now time to turn toward the research strategy and discuss types of case study research.

3.2.2. Energy Port: A Case of Multi-level Governance?

The question why a case study strategy was chosen begins with the research problem as defined in chapter one. In order to gain knowledge regarding why climate and energy goals continue to be set yet not met, and in order to understand what consequences the formulation of climate and energy policy at European level has for an industrialised region such as the Port of Rotterdam, one needs to delve into a shining example of the problem. Case studies provide context-dependent knowledge that assists human beings in learning processes (Flyvbjerg, 2006:221). It can provide information that can illustrate a phenomenon by 'force of example' and test hypotheses or propositions. By virtue of being able to dig deep into a given case, a researcher is enabled to seek for deep causes of a problem (*ibid.*:228-229), which is the objective of this thesis so that lessons may

be drawn for the future. Flyvbjerg counters several misunderstandings about case study research in his 2006 article 'Five Misunderstandings About Case-Study Research', though single case studies could remain vulnerable because the case may not turn out to be what is needed for proper analysis. Even doing two cases increases the researcher's chances to arrive at valid results (Yin, 2009:60-61). For reasons of executability, the depth that is necessary for this dissertation cannot be established when doing more than one case. Therefore an embedded single-case study has been chosen instead of a holistic design. Within the main case (Energy Port), two nested cases (LNG hub and CO_2 hub) have been chosen. While still performing a single case study, the nested cases can counter some of the criticism thrown at single case studies, such as non-generalisability (Yin, 2009:61). The research approach can thus still benefit from cross-case analysis of the nested cases *and* ensure the required depth within the case. But is Energy Port a representative case of multi-level governance?

When selecting cases for a single case study, there are five general information-oriented designs which can guide the selection process. First, the critical case can test a theory's propositions to support, falsify, or extend the theory. It can also act as a critical case to establish which theory of multiple theories comes closest to explaining a phenomenon. Second, the extreme or deviant case can provide information on cases that have an unusual nature, for example by being extremely problematic or extremely good (Flyvbjerg, 2006:230). An extreme case can test a theory in a setting where there are no other similar cases to be compared with. Third, the representative or average case shows takes an average example (for example, one project among many similar projects) to explain the general occurrence of a phenomenon (Yin, 2009:48-49). Fourth, the revelatory case is used when previously researchers have not had access to the study of a certain phenomenon. An example can be the study of drug cartels from within. Fifth, the longitudinal case studies a case at two (or more) points in time, which allows for the study of intra-case dynamics (Yin, 2009:49).

Identifying what type of case we are dealing with requires a discussion of how Energy Port fits within the MLG paradigm. Applying the reconceptualised form of multi-level governance theory leads to the general expectation that multi-level governance arrangements put pressure on and reconfigure politics, policy and polity in the EU. Applying the former to the studied case, the expectation would be that the Rotterdam Energy Port, due to its context and its multi-level and multi-actor nature, operates in a dynamic constellation which defies hierarchy and challenges politics, policy, and polity on several levels of government. In the scholarly literature on MLG, several criteria are identified if an empirical case is to be judged a case of MLG. The first three are suggested by Piattoni (2010:83), the latter by Zürn, Wälti & Enderlein (2010:2-4):

1. different levels of government are simultaneously involved in policy-making;
2. non-governmental actors are involved at different governmental levels[34];
3. interrelationships that are created defy hierarchies and take on the form of non-hierarchical networks;
4. all private actors present in the governance arrangements may offer private solutions but must do so to solve a public problem, and;
5. the governance arrangements have a certain degree of durability.

The first criterium is easily defended and met. The involvement of the European Commission[35] for the establishment of EU-wide energy and sustainability targets (most notably the emission targets) is obvious. Furthermore, the EU grants subsidies to promising projects and accepts policy advocacy documents in return. The Dutch national government is in charge of port policy and also governs through climate and energy targets coupled with financial support to Energy Port-related businesses planning projects. The municipality of Rotterdam is responsible for the port bye-laws (in Dutch: *Havenbeheersverordening*) which can be seen as the day-to-day port management rules for the Port of Rotterdam. They are relevant for the Energy Port since certain energy carriers that are part of Energy Port (such as LNG) can also be used as fuels for ships and therefore fall under Rotterdam's bye-laws. Governments active in the Energy Port case are thus active on at least three levels. However, they must also simultaneously be involved in policy-making in order to fully meet the first criterium. In negotiations surrounding energy and climate policies, the EU welcomes input from its member states. Consequently, the Dutch government is active during the policy-making process to ensure that EU rules and targets do not exceed Dutch preferences or possibilities. The city of Rotterdam, in turn, is a prime information source for the Dutch government since about 20% of Dutch GHG emissions originate in the port of Rotterdam. Any regulations adopted by the EU or the Dutch government therefore have an enormous impact on the city of Rotterdam. The importance of local collaboration in order to meet local and international climate targets has led to the establishment of the Rotterdam Climate Initiative (RCI), in which both the municipality and the PoR take part. A network organisation such as provided by RCI facilitates negotiations and can therefore be

34 In this dissertation the inclusion of non-governmental actors is mostly considered at the local/regional level rather than the EU level.

35 Recognising that the EU is not a unitary actor, this thesis focuses solely on the European Commission. The reasoning behind a specific focus on the Commission is the fact that it is the main body for policy preparation and initiatives, and because it funds projects carried out under the Energy Port. This dissertation does not wish to step into the debate on which EU institution is most important or most powerful and therefore does not claim that the EC is 'the' institution to target at the EU level. However, for the chosen case, analysing the role of the Commission is the most logical choice.

a welcome actor at other governmental levels. It is safe to say that in the Rotterdam Energy Port multiple levels of government are simultaneously involved in policy-making.

The second criterium of non-governmental actor involvement is also met by Rotterdam Energy Port. Several examples can be considered to support this claim. The Rotterdam Port Authority itself is a prime — but also ambiguous — example of the involvement of a non-governmental actor at different governmental levels. Even though all 100% of the shares of the PoR are government-owned, the PoR is governed by private law. It is therefore allowed to make a profit and to invest that profit where it sees fit. At the same time, the PoR also has certain responsibilities that traditionally belong to public authorities. As a landowner the port authority is responsible for port infrastructure. Specialised employees of the port also function as police officers, first aid givers and firemen when patrolling port waters. As one of the most important motors of Dutch economy, the PoR is also aware of its contribution to Dutch society. Whether the PoR is advocating its business preferences or its public duty, however, it makes sure to be present at the local, regional, national and supranational levels of government. The port's private 'renters' and partners in the Energy Port are companies such as Uniper, Engie, Shell, Air Liquide, Vopak, and many more. These companies often not only operate within the city of Rotterdam, but also advocate their goals at the national and supranational level. They can do so on their own or through membership of think tanks, advocacy networks, or European associations. An actor such as the LNG Platform (with membership of, for example, the PoR, Shell, and employer's organisation Deltalinqs) is a bridge between local levels and the national level. Membership of European associations further increases the multi-level nature of non-governmental participation through advocacy of country-based firms at the supranational level.

The third criterium flows from the consequences of the first and second criterium. Networks are established harbouring the participation of both governments and non-governmental actors. The Dutch government sometimes acts in concordance with Energy Port actors in order to secure subsidies at the European level. Dutch policy officers then support private parties when submitting their tenders. Backing from the national government also helps non-governmental actors gain access to Commission funds, as it is important for the EC to be shown that a project can be trusted and be carried through to its end. In the LNG case, Dutch policy officers from the ministry of Economic Affairs effectively advocated private interests when they helped secure major funding that made small-scale development of LNG as a fuel possible. The non-hierarchical entwinement in networks does not end there. In the same LNG case the Dutch government backed using LNG as fuel for inland-faring ships, but also had to officially sanction it. Safety studies were needed to ensure the new technology would not endanger citizens, so private parties, research institutes and government officials cooperated in studies geared towards finding out what the risks of LNG use in ships are.

Such studies need not only data but also resources required to collect and analyse it. A non-hierarchical cooperation made the successful completion of the safety studies possible. The findings have been shared throughout the network of actors and have also reached international actors such as the International Maritime Organisation (IMO). They are also used to change legislation and as source of inspiration for policy advocacy at the European level. Here is where hierarchy does seep back in.

The fourth criterium is a very interesting one, because it incites a discussion on what constitutes a 'public' problem and what constitutes a 'private' problem, and when a proposed solution is deemed private or public. It is not the aim of this dissertation to provide an answer to this philosophical discussion. According to the definition of governance adopted by Zürn, Wälti & Enderlein (2010:2), governance only occurs when public problems are solved collectively by actors, through processes and in structures. While their definition of governance is not exactly the same as, but very similar to, the one adopted in this dissertation, it offers a good way to limit the possibilities of governance as a concept; it excludes purely business-oriented processes. This limitation is helpful because it suggests that, if governance occurs in this case, and non-governmental actors are present, they will be contributing to solving a public problem. There will probably be no doubt about whether climate change is a public problem or not.

The fifth criterium of durability of governance arrangements helps distinguish MLG from issue networks. The public problem Energy Port seeks to solve is very similar to the goals of European Union climate and energy policies: battling the cross-border issue of climate change coupled with ensuring safe, adequate and affordable energy provision[36]. Part of the solution offered by Energy Port is the development of LNG and CCS. While the durability of the governance arrangements falling under the Energy Port is not as certain as the durability of a nation state, and while actors operating in the port change over time, big projects such as the development of LNG from the ground up (before 2010 there was no LNG in Rotterdam whatsoever) require a relatively stable set of actors — both public and private — operating in a relatively stable network. Furthermore, businesses do not invest in land and infrastructure to build up their operations just to move away again a year later. A measure of stability can be assumed. It is thus safe to say that the durability criterium can be defended.

36 Of course there is an economic argument for Energy Port actors to be found here as well: businesses will always be businesses. But that does not erode efforts made by them to minimise the climate effects of their day-to-day operations.

All in all, it can be concluded that the Rotterdam Energy Port is a case befitting MLG, which validates the use of MLG theory to generate research questions and theoretical expectations to further guide this dissertation. For the remainder of this thesis, Energy Port will thus be treated as an example of multi-level governance. It is, however, not a unique case to MLG, and neither is it revelatory. The method of data collection does not include longitudinal data collection, so Energy Port is also not an example of a longitudinal case. This process of elimination leaves two possible case types: the critical case and the average case. Part of the rationale of the critical case is that if a theory holds in the critical case, it will probably also hold in average cases. However, nothing in the Energy Port case suggests that the case may have such critical and exemplary value that whatever it shows for MLG, other cases should also show. The case is therefore an *average case*; an example of how multi-level governance works in the European Union in terms of bringing multiple hierarchical levels together in both public and private settings. The unique value of the case lies in the academic novelty of it (ie. no previous known application of MLG to a port-related situation).

3.3. OPERATIONALISATION

The theoretical framework proposed in chapter two and specified in this chapter provides theoretical understanding and background for what I expect to find in the case study. Several important concepts can be identified in the three propositions. These concepts will each be discussed and operationalised in this section.

3.3.1. Measurement of Key Concepts

Chapter one presented a very brief overview of the major players in the Energy Port community. Figure 1.2 will be further fleshed out per nested case in chapters five and six. What results is a qualitative social network analysis (QSNA) providing the reader with a information regarding the most important actors in the network, shown from the point of view of the Port of Rotterdam Authority. It will therefore be an ego-network (cf. Freeman, 1982) in which the organisations (separate DGs, the PoR, ministries, companies, etc.) make up the nodes. The edges (or the connections between the nodes) symbolise governance ties between actors, ie., direct coordination with the purpose of providing collectively binding rules or collective goods. The ego network graph will be controlled for betweenness centrality (the number of shortest paths going through a node - gauging how important a node is within the network), modularity (checking for separate communities within a network) and degree, or how many other nodes a node is directly connected with (Freeman, 1982: 293; Borgatti, Meyra, Brass & Labianca, 2009:892). The actors present in Energy Port, along with their

interests and interdependencies, have mostly been discerned through active participation and observation and confirmed either through desk research or interviews. The relationships between actors are based on resource flows which structure their (inter)actions through their preferences and interests (Eising & Kohler-Koch, 1999:5). The preferences and goals of actors have been identified through a careful reading of the public statements they made and other relevant desk research, along with interview questions geared towards uncovering implicit preferences. Since social network analysis does not help much in uncovering agency and meaning in a network, concepts requiring more content will be studied through different means. Extensive observation and participation in the Energy Port network, coupled with data from fifty-one interviewed experts[37], allowed for thick descriptions to be incorporated into the social network analysis. Thick descriptions thus supplement the social network analysis and provide information for the measurement of concepts such as the agency and the role of territorial government. Table 3.1 gives a grand overview of the theoretical expectations, the underlying key concepts and their qualitative measurement.

I will discuss the key concepts one by one in this section, starting with interdependency between actors on an international level. This concept encompasses transnational advocacy networks or other substantial cross-border cooperation between business, civil society, and government. Therefore, a specific focus will be placed on the existence of cross-border networks (and the participation of Energy Port actors in these networks) and on actor representation in international organisations or associations. For the sake of feasibility, only clear examples of interdependency have been taken into account where expert interviews have pointed towards the existence and importance of an organisation or association. This decision was made to exclude obscure networks and dormant participation[38]. Policy coordination at the X level of government, the third concept, is used to analyse the specific governmental level at which policy coordination takes place. Input for the measurement of this concept is provided by the contextual analysis of the policies relevant for the Energy Port (see also chapters one and four) and by collecting data on policy output at the national and supranational level of government. Wessels' (1997:275) indicator for increasing harmonisation may be of use here, since a higher policy output at the supranational level could indicate necessity of policy coordination at that level. Therefore, only binding decisions will be taken into account. To further strengthen the validity of this concept, data has also been gathered on national references to EU policy, or the necessity for EU policy. If the Dutch government explicitly states that EU decisions are needed in a certain area, it would

37 39 interviews. Some interviews were dual interviews while some were written up as fieldwork.

38 By 'dormant participation' I mean official participation in a transnational network or organisation without actually contributing to it. It can be beneficial for one's image to be included in certain organisations or networks, but that does not necessarily imply active and meaningful exchanges, which are necessary for interdependencies to arise.

Table 3.1. Key concepts, indicators and measurement

Theoretical expectation	Key concepts	Indicators	Measurement
1. Actors create interdependencies between business, civil society, and government on an international level, which necessitates policy coordination at not only the national level but also the supranational level *-> The PoR is one of many actors active at international level because the policy solutions the PoR needs cannot be provided at national level alone*	Interdependencies at international level	Substantial transnational/cross-border connections between business, civil society, and government	1. Cross-border networks 2. Representation in international organisation or associations
	Policy coordination at the X level of government	1. Relevant binding policy decisions at national and supranational level 2. National references to EU-level decisions	1. Policy output of national and EU level 2. National policy documents referring to EU decisions or to the necessity for EU decisions
2. Regional coordination in territorial matters is more efficient than national coordination, which leads to the strengthening of local policy actors *-> PoR is empowered due to being able to employ its resources effectively when stimulating activities in Rotterdam*	Coordination of activities	Development and implementation of activities at local versus national level	Level of government at which most policy activities or implementation occur
	Local empowerment	Local actors are empowered	1. Local coordination of activities (see previous concept) 2. Local actor(s) emerging as central (resource dependency in their favour) actor(s) in network analysis
3. Cross-linkages between private and public actors lead to private parties assuming public responsibilities and public parties acting like private groups *-> PoR develops economic activity in cooperation with the private sector and advocates its interests at EU level alongside Dutch governmental actors to obtain favourable policy conditions*	Cross-linkages between public and private actors	Formal cooperation between public and private actors of Rotterdam Energy Port	1. Resource flows 2. Joint goal/target setting
	Blurring of state and society	1. Private parties assuming public responsibilities 2. Public parties acting like private groups	1. Tasks with a public nature carried out by private actors 2. Lobby activity towards another level of government or coalition forming with various actors

Source: author's own composition.

imply that coordination is necessary at not only the national level but also the supranational level. Policy coordination and the interdependencies between actors together help draw conclusions regarding the first theoretical expectation.

The next key concept, coordination of activities, is not about policy coordination — otherwise it would overlap with the previous concept —, but about coordination of activities at the local level, be they carried out by a governmental authority or a private party. In this case, activities are defined as 'policy implementation or the creation of policy initiatives'. If activities are carried out by and coordinated on the local rather than the national level, somebody needs to be responsible for it. As the expectation is that local coordination is easier to organise due to greater homogeny (social efficiency), economic efficiency, and administrative efficiency (Piattoni, 2010:45-48), it is likely for a local actor to become the coordinating policy actor. My expectation is that the Port of Rotterdam Authority fulfils this role. The original idea was to identify core actors in the network by looking at the distribution of resources. However, it proved empirically difficult to get a representative picture of the distribution of resources among the various actors. To be able to draw conclusions regarding the empowerment of local policy actors, the fourth concept, then, I have relied on interview data checking for how experts talk about local actors. An authority can be important when it is *seen* as important. If the national government is lobbied by the local government, its position apparently is one of importance. The facilitation of Energy Port affairs by the city of Rotterdam would have to be publicly legitimised and should also be accounted for in official documents, such as a yearly financial report. Interviews with experts in the field will supplement the findings and methods such as observation and participation have also proven to be especially useful to unearth power relations, because such information is often of a sensitive nature and therefore not easily documented. If the PoR or the city were *perceived* as (potentially) empowered, it was deemed enough. The empowerment of local actors leads to a shift in the centre - periphery divide, and consequently puts pressure on central government.

The third expectation is divided in cross-linkages between public and private actors and the blurring of state and society. An important part of the reconceptualisation of MLG is the explicit recognition of public and private linkages, which makes the study of multi-level governance dynamics even more interesting (Zürn, Wälti & Enderlein, 2010:3). For the purposes of this thesis, it is important to look at these linkages, but they must fit the chosen definition of governance. Therefore, the cross-linkages must have a formal aspect. A private actor sending a public actor an email with a newsletter therefore does not qualify as a cross-linkage. A measure of *cooperation* will be looked for when measuring this concept, which is expressed in resource flows from one actor to another. Resources flow when actors cooperate through cooperative agreements, joint projects, and joint participation in think tanks or platforms. Furthermore, joint goal or target setting, such as mutual agreements on climate and energy targets, can also express cross-linkages between public and private actors. The Port of Rotterdam Authority itself already provides and interesting example of cross-linkages at play due to its status as a hybrid organisation: publicly owned but governed by private law. The PoR has a dual public and private function and can prove to be an important link between purely public and purely private actors. The sixth concept,

blurring of state and society, essentially has two indicators: private actors assuming public responsibilities and public actors behaving like private groups. These indicators can be found wherever cross-linkages are identified. As stated previously in this chapter, an example of a private actor performing a public task is advising a governmental authority on policy matters. Therefore, documents can be a reliable source of information for the measurement of this indicator. The second indicator will most likely be expressed in public statements, contracts, agreements, and actions showing lobby activity (whether or not in coalition with others) towards another level of government. Desk research is well-suited to collect the data for these concepts due to the often codified nature of cooperation. Additionally, other methods of data collection such as interviews, observation and participation have been employed to triangulate the findings. Taken together these two concepts provide qualitative evidence testing the third theoretical expectation.

The three theoretical expectations end up uncovering the dynamics of European climate and energy governance applied to the port of Rotterdam context. In trying to identify how the agency of actors matters, Piattoni's three shifts will provide necessary information regarding who has played a role where, when and how. Power may play a facilitating role as it structures the relationships between actors. Hierarchical relations are at play in the background of this dissertation and these relations are of a dynamic nature. At the same time, these relationships are infused with power and therefore so is this thesis. Chapters five, six and seven will show how power comes up retroductively. Governance is not static and can vary across themes, platforms, policies, and so on. It is highly likely that various ways of dealing with policies will be observed in the case study, sometimes showing a strong hierarchical aspect and at other times showing much defiance of hierarchy.

3.3.2. Levels of Analysis

Applying multi-level governance implies analysis at multiple levels of hierarchical authority. Each nested case has been analysed at three levels of governance (see figure 3.1): the supranational level, the domestic level, and the private level. Doing so allows for a reconstruction of two distinct narratives: a political and an industrial narrative. The supranational and domestic level show how governmental authorities, guided by politics, construct policies and coordinate their implementation. The private level will show how third parties view these policies and what their consequences are for them. Narration was chosen to illustrate the data buried within the cases because of their function as sense-making tools. We humans are story-telling animals. The narrative is "an ancient method and perhaps our most fundamental form for making sense of experience" (Flyvbjerg, 2006:240). The narratives, added into the chapters as boxes, will provide the reader with an inside view of a formative event within

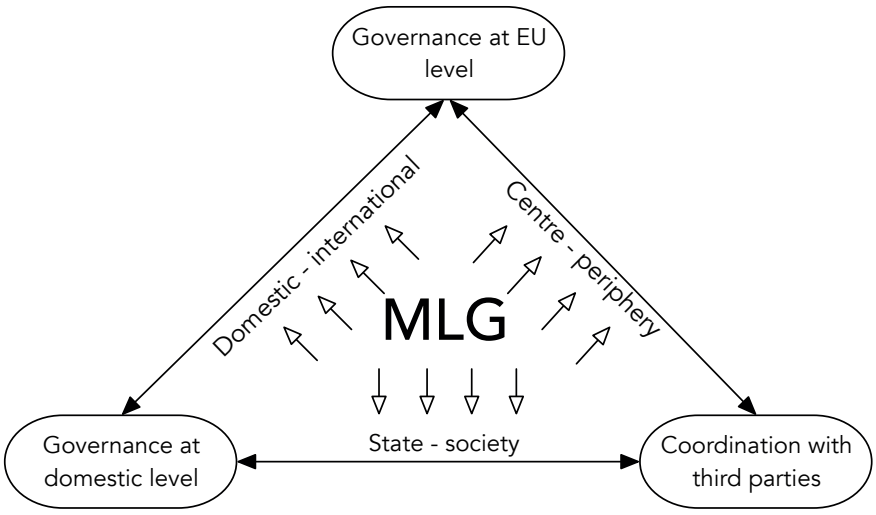

Figure 3.1. Three levels of analysis along three pressures on the nation state
Source: author's own composition.

LNG or CCS and serve to illustrate why certain theoretical claims are made in this thesis. In a situation where both the political and private narratives are not in concordance, governance might not be successful. However, changes in politics, policy and polity are conceivable in both a situation where the narratives are aligned and a situation where they are not. What the addition of these narratives then does, is shed light into why changes happen instead of just showing that they happen.

The empirical cases also make extensive use of interview quotes to illustrate how the interviewed experts view important mechanics guiding the case. It is important to note that, wherever the interviews took place in Dutch, the quotes have been translated to English as precisely as possible for ease of readership.

3.4. APPROACH

Data for each key concept is presented in chapters five and six. Chapter seven compares the data for both cases and derives governance mechanisms, thereby providing conclusions per theoretical expectation. Chapter eights brings everything together and delivers an answer to the main research question. The theoretical expectations can be numbered one through three and linked to the crucial factor they embody. Table 3.2 shows the consolidated approach of this dissertation.

Table 3.2. Methodological approach

Sub-question	Theoretical expectation	Methods of data collection	Method of analysis	Chapter
I: Which EU climate and energy policies are relevant for Rotterdam Energy Port?	Exploration of policy context needed for all theoretical expectations	Desk research, interviews, participation and observation	-	4
II: Which (multi-level) governance mechanisms are present in the implementation of these policies?	1. Spreading out of policy coordination over several governmental tiers 2. Local policy actors and coordination 3. Far-reaching blurring of state and society	Desk research, interviews, participation and observation	Content analysis using thick descriptions and QSNA	*Single case*: 5, 6 *Comparison*: 7
III: How can the governance of climate and energy in the Rotterdam port area be improved?	Examines the usefulness of MLG as analytical framework for prescriptive purposes	Data gathered in fieldwork conducted for sub-question I & II	-	8
IV: What are lessons the Port of Rotterdam Authority can learn for its public affairs management of future rounds of climate and energy policy-making?	Examines the usefulness of MLG as analytical framework for prescriptive purposes and builds a connection to public affairs management	Data gathered in fieldwork	-	8

Source: author's own composition.

The starting point is an exploration of the relevant policy context to illustrate within which policy domain the nested cases can best be placed and through which means this policy domain is governed (sub-question I). Chapter four provides a comprehensive overview of dominant EU climate and energy policies, how LNG and CCS fit within these policies, and how the EU's efforts to coordinate trickle down to the national level. Chapter four also provides insight in the progress made to reach EU goals and shows the inherent tension between the domestic and international level in the areas of climate and energy policy.

The chapters covering the nested cases start with a comprehensive qualitative social network analysis and a discussion of the context and key events driving the case. Data for the chapter on the CO_2 hub was collected over the period of October 2015 through March 2016, while data regarding the LNG hub was collected between February and September 2015. Empirical data collection for the LNG hub took longer, both because this case was investigated first

and because it is the least documented of the two topics[39]. Desk research has been the most important starting point to collect data for the analysis, including online archival research in the municipality of Rotterdam to gather information on how the city responded to CCS and LNG projects and to European and national policy measures. This data is complemented by audio-recorded interviews and, when too sensitive, more informal interviews[40] (51 experts total), observations and participation. The CCS case has data from 22 expert interviews and 6 field work reports. The LNG case was fed by 19 expert interviews and 13 field work reports. Interviews were held with representatives from multiple DGs within the European Commission (such as DG ENER, DG MOVE, DG CLIMA), two ministerial departments in The Netherlands (energy and climate), policy officers working for the province of South-Holland, civil servants from the city of Rotterdam, director-level employees of the Port of Rotterdam Authority, researchers at applied research institutes who also write reports advising the national government, environmental NGOs, and a variety of people working for private companies at different positions. All these people are experts within their field and have been recommended by people working for the PoR or the government. The interviews were anonymised insofar that readers of this dissertation will know if a statement was made by someone from the public or private sector and which type of government they work for, without being able to discern the exact department or person. Where specific people are quoted, permission has been asked beforehand.

The field work reports mainly consist of conversations with important stakeholders 'over coffee' but also include notes of my participatory observation activities, however only for the LNG case. The large difference in field work reports between CCS and LNG is explained by the enormous activity on LNG whilst the research was ongoing, whereas CCS was not in active development during the research phase. The interviews there had more of an *ex-post* nature while the LNG interviews dealt with topics that were in the midst of being legislated and developed. Both the interviews and field work reports have been coded using MAXQDA software. The coding scheme was developed both deductively (according to the operationalisation of MLG earlier in this chapter) and inductively (themes, like 'power', that kept popping up were eventually coded for) and can be found in annex I. The dataset ended up with close to 3000 coded segments; two-thirds of the codes are from the public sector and one-third is from private sector statements. Information gathered from publications, academic or otherwise, and websites was not coded.

39 In the end I decided to place the CCS chapter before the LNG chapter because CCS was further along in policy implementation than LNG and also an example of unsuccessful governance attempts.

40 Coded as 'field work'.

A 'map' of the PoR's ego network results from each nested case and serves to provide information about important actors and who they are connected to in governance processes. The next phase in each nested case study consists of content analysis using data gathered for the social network analysis in order to answer sub-question II. Thick descriptions (cf. Geertz, 1973) will serve to add content to the analysed network so that agency and meaning may be uncovered (Jack, 2005:1239; Rhodes, 2007:1252; Weber, 2012:1). Wherever necessary, additional data has been collected through interviews. The three theoretical expectations will be examined in this phase, uncovering governance mechanisms and their underlying drivers and challenges. The resulting data will be used to answer the second sub-question.

The third sub-question will be answered by comparing the results of both the CCS and small-scale LNG cases so that conclusions can be drawn with regards to improving governance in the port area. Attention will be paid to the validity of such a generalisation. The result will provide the answer to the main research question posed in chapter one: *How do the European Union's efforts to address climate and energy issues affect the Rotterdam port community, and what role can the Port of Rotterdam Authority play in its governance in order to reach climate and energy policy goals?*

At the end of the dissertation, MLG theory is evaluated using empirical data from this thesis. A specific focus on the assumed shifts in the dimensions and the role of various levels of government will allow for a reasoned evaluation of MLG as theory. Additionally, sub-question IV invites recommendations to be made to the Port of Rotterdam Authority with respect to its own position in the governance of Energy Port. These recommendations are based on the results of this dissertation and the opinion of the researcher and connect results from MLG analysis to public affairs management. The recommendations are not a formal part of the thesis, but rather a practical benefit of it. The choice was made to include them at the very end of the dissertation so that they are recognised as resulting from the work done for the thesis and to strengthen its societal relevance. Likewise, recommendations will be given to governmental authorities.

3.5. NESTED CASE SELECTION

Even though the research design involves a single case study, a choice was made to involve two embedded, or nested, cases. In order to reflect on the type of nested cases in the research design, two main approaches can be considered. The 'most similar' case design is geared towards explaining *X*. The researcher will therefore choose cases that strongly vary on the independent variable *X* to be investigated, but which are similar in their control variables (Blatter & Haverland, 2012:43; Sekhon, 2004). In contrast, the 'most different'

case design is geared towards explaining *Y*. The researcher will therefore choose cases that have a similar outcome so that the factors leading to that outcome can be established. There should therefore be no variation in *Y* (Blatter & Haverland, 2012:49; Sekhon, 2004). The most similar and most different case designs are not applicable to this dissertation because of the nested nature of LNG and the CO_2 hub. The cases exhibit, by definition of being nested, certain similarities. Furthermore, there is no clear delineation of variables and hypotheses to be tested. Rather, the research design allows for more general conclusions to be drawn about the 'governance of Energy Port' through guidance by several key concepts and theoretical expectations.

The thick descriptions that are used alongside the qualitative social network analysis come somewhat close to the technique of causal process tracing, without necessarily claiming causality. When doing process tracing, there is no emphasis on the co-variation of variables across cases, and so the case study design is less important. Most important is that the cases are *accessible* in terms of information and that they *meet the research goals*. *Internal validity* is also very important; a case that has practical and social importance and can show a lot that is relevant to the studied group (Blatter & Haverland, 2012:99-103). The nature of this dissertation calls for these criteria to be judged of highest importance. Accessibility and internal validity should help get at the necessary depth and detail within the nested cases and allow for thick descriptions to guide the analysis. Both nested cases are accessible and both the LNG and the CCS community can stand to benefit from this analysis. Lastly, it is important to note that there is significant knowledge about the nested cases prior to studying them. The choice is therefore well-informed.

As mentioned in the introductory chapter, Rotterdam Energy Port is concept spanning multiple energy sectors. It is not possible to study all of them within the scope of this dissertation (see also annex II). Therefore, this thesis will adopt two embedded cases which will be studied in-depth. In order to make it possible to answer the research question, the following case selection criteria have been applied. Both cases:

1. must fall in the period after the Port of Rotterdam Authority's corporatisation in 2004;
2. must fall under the Energy Port concept;
3. must have been brought to the attention of the European Commission;
4. must be local (include participation of the Port of Rotterdam Authority), and
5. can still be ongoing but must exhibit interaction (either positive or negative) between the European Commission and the Port of Rotterdam Authority.

The decision to only include cases after 2004 has two reasons. The first is that the Port of Rotterdam Authority had a different legal status before its corporatisation[41], which could potentially have an impact on network dynamics and would therefore muddle the results. The second reason is that 2004 roughly coincides with the emergence of the Energy Port concept[42] and therefore with policy surrounding it. The cases must be part of the Energy Port concept to enable the use of Energy Port as an illustrative case. Cases concerning the five pillars of the Energy Port fall under the Energy Port concept: the LNG hub, the coal and biomass hub, the CO_2 hub, (sustainable) electricity generation, and energy efficiency. Because the focus lies on studying the governance of Energy Port in its multi-level and multi-actor context, the case must have been taken to the European level (with most probably a concrete lobbying purpose). Purely Dutch affairs — if there still are any in this field — defeat the purpose of this research. On the local level, the researcher is interested in the role of the Port of Rotterdam as well, since it is at the heart of the main research question. Therefore, there must be participation of the Port of Rotterdam Authority, and so the case cannot solely be an industry affair. In order to be able to draw any conclusions, the case must have conclusive results in the sense that it is not enough for the EC to have been informed about the case (which could also occur through the national level), but there also has to be a response that is indicative of two-way communication. In short: a form of interaction must be present. Such interaction can also be negative (for example, the EC indicating it will not speak with the PoR directly).

The above discussion on the case study design has established that the design entails an *embedded single-case study depicting the average case for MLG and with accessibility of information and internal case validity being of importance to the overall case study design*.

Table 3.3. Embedded case selection results

	Present after 2004?	Part of Energy Port?	Brought to EC level?	Local?	Interaction?
LNG hub	Yes	Yes	Yes	Yes	Yes
Coal & biomass hub	Yes	Yes	No	Yes	Yes
CO2 hub	Yes	Yes	Yes	Yes	Yes
(sustainable) Electricity	Yes	Yes	No	Yes	No
Energy efficiency	Yes	Yes	No	Yes	No
Fuels hub	Yes	No	No	Yes	Yes

Source: author's own composition.

41 In effect, the Port of Rotterdam Authority went from being an actor governed by public law to an actor being governed by private law. Naturally, some behavioural changes are to be expected.

42 This information follows from conversations with R. Melieste and P. van Essen (both Port of Rotterdam Authority), June-July 2013.

It has also been mentioned that the nested cases will exhibit some natural similarities simply because they are part of one and the same main case. To conclude this methodological discussion it can therefore be interesting to look at the similarities and differences between the nested cases across the criteria identified above (see also table 3.3).

The first criterium is met by all considered cases, as they represent current hubs identified by the Port of Rotterdam Authority. The fuels hub is not part of Energy Port policy[43] and therefore does not meet the criteria. While the coal and biomass hub has been presented to the EC, no action has been undertaken by the Port of Rotterdam Authority to lobby on its behalf, thereby eliminating it from the list of possible cases. Sustainable electricity generation is mostly a national target and had not included interaction between the EC and the port until 2013. The same argument goes for energy efficiency. The two bottlenecks appear to be the criteria that a case must have been taken to the EC level and that interaction between the port and the EC must take place. Only two of the five pillars fit all criteria: the LNG hub and the CO_2 hub[44]. The LNG hub has been called a success by the Port of Rotterdam Authority, while the CO_2 hub so far has not. They have both been under the attention of the European Commission after 2004, and in fact very recently from about 2009 until 2013, when the case selection was made[45]. They are also closely tied to relevant EU policy. The Port of Rotterdam Authority has actively participated in both hubs, trying to bring the cases to the attention of the EC and the Dutch government. Since one hub has been called a success and the other a failure, conclusive results from the EC side are present and indicative of some form of interaction. The conclusion is that both hubs fit the case selection criteria and have therefore been chosen as the nested cases to be studied. The CO_2 hub mainly consists of the ROAD CCS project (and the cancelled Green Hydrogen project). Whereas the Green Hydrogen project did not receive EU funding, the ROAD project did. Due to the predominant focus on CCS I will call this case the CCS case from this point forward. The LNG hub consists of large-scale LNG, as energy commodity, and small-scale LNG; a fuel. I choose to focus on the small-scale LNG aspect due to its relative novelty. Small-scale LNG can be both maritime LNG (Highways of the Sea project) and LNG deployed on inland waterways (LNG Masterplan). Both projects have received EU funding, though the dynamics in each project are different enough to warrant a focus on just one of them. I will investigate the inland waterways aspect of the small-scale LNG case. Both nested cases can be related to

43 The fuels hub is not 'formally' part of Energy Port policy, which is odd since it would fit well within the concept. However, that would make it more difficult to claim that Rotterdam Energy Port is sustainable and green.

44 Confirmed by R. Melieste, October 2013.

45 Confirmed by J. Hoogcarspel (Air Liquide - CO2), H. Schoenmakers (ROAD - CO2) and E. Groensmit (VOPAK - LNG). October 2013.

statements issued by the EC in documents such as the *Green Paper on Energy Efficiency,* the 2030 climate and energy framework*,* and the *Energy Roadmap 2050*.

3.6. CONCLUSIONS

This chapter has sought to explain why a nested case study design was chosen to answer the main research question posed in the introductory chapter. Choosing Rotterdam Energy Port as the main case, it showed how governance of the Energy Port fits within the multi-level governance approach. The theoretical foundations and expectations laid in chapter two were operationalised to guide data collection and analysis in the empirical part of this dissertation. Most importantly, the three shifts identified by Piattoni — domestic - international, centre - periphery and state - society — were chosen as guiding lights to uncover what European efforts to coordinate climate and energy policies mean for the port community in Rotterdam, and what role the Port of Rotterdam Authority can play in the governance of Rotterdam Energy Port. Within the case two nested cases were chosen: CCS and small-scale LNG. These two nested cases will be investigated in chapters five and six. This chapter also discussed the research approach which is characterised by an in-depth qualitative analysis of governance mechanisms using thick descriptions, drawing heavily on expert interviews, and a depiction of the PoR's social ego-network showing governance ties between the most important actors per nested case. Where potentially illuminating, narrative boxes will be used to showcase key tensions between the public and private sector, but also their strengths when both sectors find themselves on the same side of the table. The next chapter will dive deeply into European climate and energy policies and show how the nested cases relate to overarching European policies and their domestic counterparts. This overview is necessary to understand the policy frameworks guiding the governance of CCS and small-scale LNG.