# Conclusions — Bounded Multi-level Governance

# 8

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## 8.1. INTRODUCTION

The time has come to look ahead. What do we now know about EU governance based on the experiences described in this dissertation? How can the EU move forward with energy and climate policy and which recommendations can be given to the Port of Rotterdam Authority? This dissertation started with outlining the 'problem' at hand: the EU's quest to mitigate climate change by substantially reforming energy policies with attention for greenhouse gas emission reduction targets. The largest port in Europe, the Port of Rotterdam, was shown to contribute to a large amount of emissions through its transport and industrial operations. Rotterdam Energy Port was introduced as the Port Authority's vision on the future role of energy in the port along the lines of LNG, coal and biomass, $CO_2$, energy efficiency, and (sustainable) electricity. The LNG and $CO_2$ hubs were chosen in chapter three as illustrative cases within Energy Port. The main research question this chapter will answer is as follows: *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?*

Chapter two outlines the onset of research on EU governance and discusses the core elements of multi-level governance as a theory, contrasting it to network governance and dealing with earlier criticisms directed at MLG. Theoretical expectations are drawn from Piattoni's MLG framework based on three shifts in governance, which are further operationalised in

chapter three. The third chapter also discusses the retroductive approach followed in this dissertation and introduces the in-depth case study performed in chapters five and six.

Chapter four explores the EU's policies and initiatives in the field of energy and climate governance and discusses how these policies feed back into member states. The EU's policy-making efforts up to 2020 are shown to be guided by the overarching Climate and Energy Package adopted in 2009. The CCS Directive is a direct part of this package, whereas legislation on small-scale LNG flows from one of the flagship programs under the package. Both are mainly governed through EU efforts at soft coordination, particularly because of member state sensitivity regarding their sovereign right to govern their own territory and energy mix choices. The chapter also shows that the EU and Dutch goals regarding energy and climate change, at face value, seem to be aligned. One would not expect coordination issues to arise based on these goals. Yet they do.

Chapters five and six, and to some extent chapter seven, dive into the empirical part of the dissertation, each opening the black box of the governance of CCS and small-scale LNG respectively. Both chapters discuss the key elements of MLG: the necessity of supranational governance which cannot be ignored by national governments (the domestic - international shift), the quest for empowerment of local actors (the centre - periphery shift), and governance through and with non-governmental actors (the state - society shift). The PoR is found to be active at all levels of governance, bringing actors together making use of its position as regionally bound intermediary between the public and private sector. The empirical chapters also discuss secondary findings, paying much attention to the role of power and uncertainty. Chapter seven discusses the aggregated results of both cases in an effort to review the theoretical expectations formulated in chapter three and reflects on their consequences for the governance of Rotterdam Energy Port. Whereas the state - society shift in a broad sense is concluded to be instrumental to EU governance, chapter seven argues that the domestic - international shift has the highest impact on the cases. The development of CCS is locked into a EU-level system (ETS) that is hard to change, making it dependent on national efforts to stimulate carbon capture and storage, which are absent. This shift also has implications for the empowerment of local actors, which are able to have significant agency in the implementation of small-scale LNG but are left largely powerless in CCS. Reflecting on the secondary findings of the nested case studies, chapter seven also discusses how power and uncertainty fit in MLG and argues that they are an intrinsic part of the framework. In other words, power and uncertainty are an important part of the explanation of shifts in multi-level governance.

This final chapter will summarise the answers to the sub questions formulated in chapter one, culminating in the answer to the main research question. The chapter starts (§8.2)

with a reflection on the empirical applicability of Piattoni's conceptualisation of multi-level governance, arguing that employing MLG showed how important governmental decision-making is in the area of climate and energy policies. Section §8.3 moves on with the introduction of a bounded notion of MLG to improve how Energy Port is governed. The chapter concludes (§8.4) with recommendations for the Port of Rotterdam Authority and governments, a methodological reflection, and suggestions for future research.

## 8.2. BRIDGING THE GAP BETWEEN THEORY AND PRACTICE

Piattoni's conceptualisation of multi-level governance provided the theoretical framework applied in this dissertation. The purpose was to see how Piattoni's framework behaves in practice and try to build on it further. The analyses of small-scale LNG and CCS have shed light on how EU governance works in the context of climate and energy policies. Power and uncertainty came up as crucial parts of the explanation of how governance works in these cases. In essence, they are part of the agency of actors, which complements the structural part of MLG. This finding leads to a further nuancing of figure 3.1 from chapter three.

As shown in figure 8.1, the base of Piattoni's model provides a useful tool with which to investigate EU governance. The interaction between the EU-level, the domestic level and third parties leads to identifiable shifts in governance along three dimensions: the domestic - international dimension, the state - society dimension, and the centre - periphery dimension. Zooming in on each dimension shows the most important elements of the shift. Multi-level governance is very helpful in identifying governance mechanisms and outcomes, as shown in this dissertation for the unsuccessful governance of CCS and the more successful governance of small-scale LNG. Both these cases, and climate and energy policies more generally, are nested in a context characterised by high uncertainty. Knowledge on the extent to which acting leads to benefits (financial, political, climate-related, and so on) is constrained by uncertainty. Power ultimately dictates whether actors move ('act') or remain where they are, and what the effects of their decisions are on the whole. Power, and thus agency, moves along the dimensions of MLG and impacts all aspects of governance. Conflicting interests and values are at the heart of the governance of climate and energy policies. Trade-offs are abundant and inform any actor's (also the PoR's) choices. It is therefore important to consider these factors when studying the governance of climate change. I recommend incorporating these factors more explicitly in Piattoni's multi-level governance framework as I have attempted to do in this dissertation and summarised in figure 8.1. Chapter seven has discussed how these concepts are interrelated and explained the differences found between both nested cases. Especially the need for a long-term vision on cleaner energy

appears to clash with the short term effects of power and politics. The next sections discuss these effects in more detail while answering the sub questions posed in this dissertation.
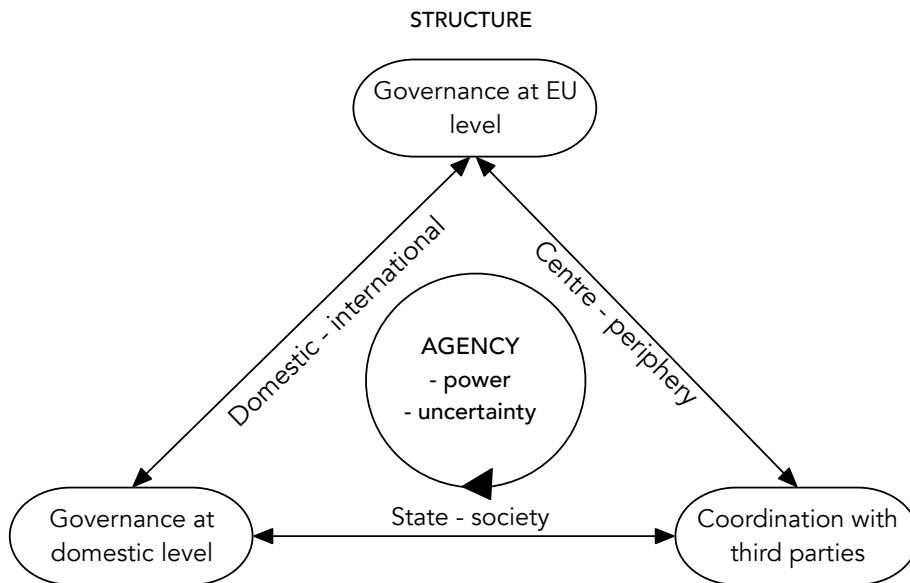
STRUCTURE



**Figure 8.1.** Agency and structure in multi-level governance
Source: author's own composition. Structure is based on Piattoni, 2010.

## 8.2.1. Tackling Uncertainty: the Importance of Clear Policy Decisions

The first sub question asked in this dissertation is: w*hich EU climate and energy policies are relevant for Rotterdam Energy Port?* Furthermore, it is imperative to know how these policies affect the domestic level and whether national and supranational goals are aligned (the underlying two questions). For a full overview of relevant policies I refer to chapter four, which introduced the pillared structure of the EU's Europe 2020 strategy for smart, sustainable and innovative growth, partly summarised in figure 4.1. Most of the identified policies are Directives requiring the domestic level to translate them to their own national policies within a certain timeframe. At face value, EU and Dutch goals are aligned. The next part of this section provides more nuance to the answer to the first sub question.

The 2009 Climate & Energy package, including the CCS Directive, is part of the Europe 2020 strategy. The *Clean Power for Transport* Directive flows from the Flagship program 'A resource-efficient Europe' formulated under Europe 2020. The EU has identified several

coordination goals within these initiatives[318]. Domestic and EU coordination goals are quite aligned (see table 8.1), especially as both the Commission and the Dutch government want CCS to happen (CCS could play a large role in Dutch $CO_2$-reduction efforts) and are in favour of a modal split towards inland waterway transport including the greening of the fleet. A misfit between these grand targets therefore cannot provide an explanation why CCS has not lifted off in The Netherlands and small-scale LNG has. As discussed in chapter seven, applying the multi-level governance framework to both cases does provide a plausible explanation. Still, a reflection from the policy analysis is in order.

**Table 8.1.** Alignment of EU and domestic coordination goals for CCS and LNG-related policies

| Level | Climate and Energy package | A resource efficient Europe |
|---|---|---|
| **EU-level** | - Ensure safety of CCS (for public and environment)<br>- Drop of total emissions (43% in 2030) of ETS sectors<br>- 20% $CO_2$ reduction (80% by 2050)<br>- 20% energy efficiency<br>- 20% renewable energy<br>- revise ETS | - -1% yearly reduction (average) of transport-related GHG emissions beginning in 2012<br>- Development of alternative fuels for (commercial) transport<br>- Use potential of water transport to reduce emissions and reduce pollution from water transport<br>- Revise TEN-T |
| **EU + domestic level** | - CCS permits given by national authorities but EC can give its opinion first<br>- Fully integrate the European energy market | - Integration of resource efficiency into European Semester<br>- Definition of right indicators and targets with stakeholders |
| **Domestic level** | - 20% $CO_2$ reduction (80-95% by 2050)<br>- 16% renewable energy in 2023<br>- CCS demonstration<br>- Only use CCS if no other options are available | - Periodically report on resource efficiency<br>- 60% GHG emissions reduction from transport by 2050<br>- Level playing field for ports and supporting sustainable initiatives |

External sources: COM(2011) 571 final (2011d in bibliography) and COM(2010) 2020 final.

The three pillars of European energy policy — security of supply, competitiveness, sustainability — are mutually conflicting and lead to trade-offs[319]. Sustainability often loses to the more immediately pressing goals of actually having energy and being able to pay for it. If it is the role of governments to guide proper policy implementation, they will need to be clear about what they want in terms of sustainability and provide pathways for society to reach those goals. In practice, that amounts to funding R&D and pilots so that initially expensive technologies can be further developed and become less costly, which explains why the ROAD CCS demonstration project is so important to the Dutch government and

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**318** See chapter 4 for a full overview.

**319** See also section 4.2.5.

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the European Commission. However, their commitment should go even further. The IEA estimates that global coal supply will last another 3050 years at current rates (Schubert, Pollak & Kreutler, 2016:4). Lacking clear decisions on the future of coal usage, it is likely that coal will continue to be burnt unabated. Governments should therefore either decide to phase out coal entirely, or develop CCS to mitigate carbon emissions. They have to realise that in the current situation technology neutrality implicitly means they have chosen not to develop CCS. As discussed in the previous chapter, climate change is often seen as a (super) wicked problem (Levin *et al.*, 2012) and as a classic collective action problem requiring "carefully managed policy coordination and multi-level governance" (Esty & Moffa, 2012:777). A strong role for governmental authorities could be what is needed to solve this problem. Especially the expert interviews revealed that both governmental authorities and the private sector want a long-term policy vision with clear goals. Technology neutrality does not work, and is even illogical, when a clear vision is lacking and just one part of the energy sector (renewables) is subsidised heavily. The trade-off, as shown in chapter five, is a dysfunctional ETS. Furthermore, business risks to fundamentally change the energy system are too high when long-term policy is lacking. The Dutch Energieagenda 2016 seems to contain steps in the right direction, but its effect is yet to be seen. The question we need to ask ourselves is whether we, as a society, consider it part of our national government's duties to provide a clear climate and energy vision.

Here is also when power comes up as an issue; some member states have different conceptions of the climate change problem, making it unlikely that an EU-level approach with sanctions could follow. For Eastern European countries that are heavily dependent on coal or Russian gas, it may be difficult to phase out coal, mitigate emissions from coal-fired power plants, or diversify their gas supply. Their short term interests are to secure their energy supply and make it affordable for their citizens. Large-scale LNG can suit their interests whereas CCS may not. Yet some countries hardly have an inland waterway transport sector, making investments into LNG as fuel unlikely unless it is used in road transport. The Netherlands, however, has a relatively high contribution of inland shipping to its overall transport and could potentially market CCS technology if CCS pilots can be used as a learning vehicle to make the technology (especially the capture process) cheaper. The Dutch have something to gain whereas other member states may not. EU coordination efforts in both these cases therefore appear to have a higher chance of success in The Netherlands than in most other member states, effectively making the Dutch a test case. Yet the Dutch government has chosen not to specifically incentivise CCS or small-scale LNG deployment, instead referring to agreements made at EU level. It appears that the Dutch government does not want to seek solutions at the national level. How can the 2020 targets be reached if national governments choose to hide behind only partially effective supranational agreements?

## 8.2.2. Successful Governance or Government?

The second sub-question asked in this dissertation was: *which (multi-level) governance mechanisms are present in the implementation of these policies?* Underlying questions dealt with the role and position of the Port of Rotterdam Authority, how non-governmental actors are involved in the process and to what extent governance is successful. The first three mechanisms that were analysed were the three theoretical expectations. First, civil society is active at international level, though the cases found more supranational coordination due to global market developments and nation states willingly creating international interdependencies. Especially around COP negotiations it seems that EU members are more likely to join the EU's climate policy harmonisation efforts. Second, subnational authorities and other local actors were active at EU level — especially the PoR — but not necessarily efficient, as Piattoni expects. This mechanism seems heavily influenced by the context created in the domestic - international dimension. Third, non-state actors were found to be very active at national level, especially since their expertise appears to be crucial for national governments to devise fitting climate and energy policies. Furthermore, national governments depend on private sector activity to meet the goals of the policies, strengthening mutual interdependencies. However, contrary to Piattoni's expectation of a far-reaching blurring of state and society, the public and private sector mostly remain in their traditional roles furthering their own traditional interests. These three mechanisms will be further elaborated on below, ending with an additional mechanism that was found.

One of MLG's most common criticisms is its assumption that the inclusion of decentralised governments in the EU governance process is abundant and effective. The cases studied in this dissertation show that subnational authorities are hardly involved in the policy-making phase, but definitely have a role to play in the implementation phase. That last phase is also where the Port of Rotterdam Authority is able to add to the success of governance; as a semi-public authority it is a natural partner for both governmental authorities and the private sector. The PoR can function as a spider-in-the-web and bring actors together, which was seen in the small-scale LNG case. The municipality of Rotterdam has a similar function but, in the CCS case, is hampered by internal disagreements on the usefulness of CCS and by national political debates regarding the status of coal-fired power plants. The municipality has been largely powerless in the story of CCS, which is a painful conclusion considering the fact that it was mainly the city that counted on CCS deployment to reach its highly ambitious $CO_2$ reduction targets formulated under RCI auspices. Yet as soon as the centre — now basically polycentric with the EU at the head and leaving a dual role for the national government —establishes workable frameworks, peripheral actors can take strides in the implementation of policies. Decentralised coordination of efforts should therefore not be discounted, but it needs conditions set by the other governance

layers in order to be a driving force behind successful governance. An inductive theoretical expectation following from this dissertation therefore is that local actors lack empowerment when supranational coordination works differently than intended. The criticism of MLG is therefore partly founded.

Both cases have shown quite extensive involvement of non-governmental actors: from businesses at multiple scales and in multiple sectors, to NGOs, and to academia. Still, the CCS case was shown to be an example of failed multi-level governance, mostly because of choices made by governmental authorities. It has become difficult to incentivise CCS with policy tools because of its 'lock-in' the ETS system that is now hard to change. That being said, this does not mean CCS has now become impossible. Financial participation of a few member states now seems sufficient to start ROAD, after which other CCS projects might follow in the EU. Extensive advocacy from the Dutch government and the European Commission was needed to get this far. Public authorities can therefore block progress but also enable it. When exogenous factors (such as COP-15) are at play, national authorities sometimes willingly spur supranational coordination. A second inductive theoretical expectation flowing from this dissertation therefore is that supranational coordination can be necessitated by nation states willingly creating or maintaining international interdependencies. As such, MLG does not always provide the strongest explanation.

At the same time it is important to note that technological development moves at a higher pace than governmental regulation. While clear policy goals and frameworks are needed, it is difficult for governments to keep up with their regulatory processes. Here is where non-hierarchical governance — including non-state actors — shows its strength. Flexible governance arrangements such as the Green Deals have enabled small-scale LNG deployment in The Netherlands, even while proper regulation was still lacking. This area is also where decentralised governments become crucial; much of the success of small-scale LNG deployment hinged on the willingness of municipalities to let it happen on their territory, for example by ensuring safety through proper instruction of their fire departments. The commitment of the Dutch government was also instrumental in speeding market development along. For such practical purposes singular governmental action can be successful when collective action in European context is not. The binding factor in this mechanism appears to be connected to (global) market developments, as investments (and EU policy coordination!) follow the ebb and flow of prices. The third inductive theoretical expectation is that global market developments can create international interdependencies which necessitates supranational coordination.

Aside from the theoretical framework, another mechanism was found. The CCS case shows that a governance mechanism at EU level is to answer unsuccessful attempts at harmonisation

(where the engine of figure 7.2 grinds to a halt) with subsequent attempts to harmonise to restart the engine. For the Commission as an actor, such a strategy makes sense to increase influence. When regulations are out of the question, a directive will be proposed. The CCS Directive was even accompanied by the goal to have twelve CCS demonstration projects and supported by two funding mechanisms at EU level. If the directive fails to deliver, the Commission will try to revise it. When there is no interest to do that, and earlier funding attempts have borne no fruit, the Commission will propose different funding options and, a novelty for CCS, stimulate intergovernmental funding efforts so that the CCS Directive will not be a complete failure. In the small-scale LNG case the Commission could rely on past experiences with attempts to harmonise the composition of fuels, which were problematic. However, the *Clean Power for Transport* Directive could benefit from its infrastructural component, especially coupled with TEN-T funding and the harmonisation goal geared at TEN-T core ports. Member states that build the LNG infrastructure are likely to want to use LNG as fuel. The international component of transport has also made policy harmonisation for small-scale LNG easier at EU level.

## 8.3. BOUNDED MULTI-LEVEL GOVERNANCE

The third sub-question asked in this dissertation was: *how can the governance of climate and energy in the Rotterdam port area be improved?* As figure 8.1 shows, the governance of Rotterdam Energy Port can neatly be placed into the MLG framework identified earlier in this dissertation, with the addition of serious consideration of the importance of concepts such as power and uncertainty. Uncertainty was translated in chapter seven to be comprised of the continuous tension between short term interests and long term interests. In the longer term, political power loses its power in democracies due to the very nature of the electoral process. Presenting society with very concrete long term visions, especially including budgetary frameworks, can therefore be challenging for governmental authorities. I pose that these concepts are an intrinsic part of the MLG framework, though its bounded nature should be recognised explicitly: current EU governance is characterised by the inability to radically change direction due to previous governance arrangements resonating through all layers of governance (which are mutually interdependent), creating a type of path dependency and making change difficult.

Path dependency is an interesting and much debated concept in political science and public administration literature (cf. Kay, 2005; Levin *et al.*, 2012; Lipset & Rokkan, 1967; Pierson, 2000). Its narrow conception of the effect of increasing returns was discussed in chapter seven and linked to the aspect of uncertainty that was identified in the empirical part of this dissertation: policy-makers have a tendency to choose the pathway that provides the

most apparent benefits on the short term, which potentially undermines future efforts to devise clean energy policies. The increasing returns can lock-in policy options and technology choices by virtue of having high start up costs but subsequent learning and coordination effects. However, this is not necessarily a cause for great concern. As Levin *et al.* argue, path dependency can also be turned around to lock-in *desirable* options for the future so that they are more likely to be achieved. In that respect, governance can be improved by creating an even deeper link between climate and energy policies: sustainability should be a <u>core assumption</u>, not a goal. CCS has been unsuccessful because not implementing it only endangers the sustainability aspect in energy policy goals. In contrast, large-scale LNG is in the interest of the EU's and Dutch diversification strategies, so small-scale LNG can ride on that success. Treating sustainability as a core assumption could 'lock-in' policy choices that will positively affect climate change governance. In effect, the EU and its member states could bind themselves to a policy pathway that will aid in climate change mitigation. Needless to say, doing so at EU level ensures further harmonisation of policies in a creeping fashion, but it remains to be seen whether member states will allow this to happen. Within the European Commission this thinking is already visible with the merger of DG ENER and DG CLIMA under one Commissioner in the most recent Juncker Commission. Perhaps the departments will fully merge into one in the next iteration. In essence, the bureaucratic (or, non-political) nature of the Commission appears to be perfectly suitable for the initial proposal of long-term goals, which can then feed into domestic governance.

### 8.3.1. The Port of Rotterdam Authority as Policy Actor

If governance entails "the various institutionalized modes of social coordination to produce and implement collectively binding rules, or to provide collective goods" (Börzel & Risse, 2010:114), making solutions work makes governance effective. Drawing on table 7.7, the solutions it contains to deal with the uncertainties hampering CCS and small-scale LNG development are all geared towards making governance work better. In fact, these solutions have a decidedly multi-level nature: long-term climate and energy policies, demonstration projects, global agreements, new financial mechanisms, regulatory changes, standardisation; all these options require collaboration between governmental authorities at multiple levels and often also with the private sector. They potentially reduce regulatory and economic uncertainty, allowing solving technological uncertainties in cooperative fashion. What role does the Port of Rotterdam Authority play in this multi-layered governance?

The PoR is a publicly owned landlord with a system overview of the port area, extensive connections with companies vested in the port, a deep understanding of global logistics and innovative developments and of the effects of contiguous markets. This position makes

the PoR an excellent candidate to act as a spider-in-the-web bringing actors together and helping them build coalitions. The PoR has the capacity to understand companies, provide infrastructure, and liaise with governments. Its status as the largest port of Europe makes it an interesting partner for the European Commission as well: a true Port of Europe. That said, the PoR is heavily dependent on all these actors to implement sustainable changes. In and of itself, it is not a large emitter nor is it a provider of overarching policy. The CCS and LNG case show that the PoR needs to take into account that the EU is becoming a more and more important provider of policies relevant to the port area. Likewise, the funding instruments provided at EU level make it imperative for the PoR to keep its EU knowledge up to date *and* remain close to the national government to secure support for EU projects. The cases also show that the PoR can help companies legitimise their projects by throwing in their own support and forge coalitions. In that sense, the PoR is not so much a policy actor but could rather be a catalyst. The PoR therefore has the potential to be a strong actor in the multi-level governance of climate and energy in Rotterdam. It can improve current governance processes by ensuring that the right actors work on the right things at the right time. To give two practical examples: in the case of small-scale LNG the PoR can improve the regulatory process by providing responsible governmental authorities with technical expertise gathered from within its own ranks and those of its private partners. In the CCS case the PoR can support adoption of the technology in the port's industry and electricity sectors by providing adequate $CO_2$ infrastructure in cooperation with the Dutch government. In short, the PoR can potentially glue together the various actors involved in the multi-level governance of climate and energy. This insight is especially important in light of how interdependent actors in multi-level governance are; every blockade in one dimension can potentially block other processes as well. In the area of policy-making, the PoR can lobby for a lock-in of preferences that will make use of the port's strengths (good infrastructure, good logistics, interwoven industrial cluster), thereby enabling the private sector to adopt sustainable solutions that also improve our energy security and competitiveness.

### 8.3.2. The Importance of Strategy: Shared Vision

Systemic changes, such as the energy transition, take a lot of time and are very difficult to accomplish. Governments and the private sector cannot realistically be expected to solve the climate change problem in the next few years. With the addition of the notion of bounded multi-level governance, we can ultimately answer the main research question: *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?* I conclude that the multi-level governance of the EU's efforts to address climate change is:

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1) inevitably supranational and polycentric but, precisely because of that, leading to inter-dependencies across levels of governance which can facilitate coordination but block it as well;

2) of necessity a public - private affair because of resource interdependencies and the required systemic changes;

3) impacted by global economic, (geo)political and technological developments which further complicate decision making processes by virtue of adding more uncertainty to already highly uncertain visions of the future;

4) limited by short term considerations of those in power, often favouring economic benefit over the more long term benefits of sustainability;

5) bounded, so we cannot and should not expect radical changes to happen, but it does stress the importance of a *clear framework* of policies and goals with *clear pathways* to reach them.

The port community needs to be included in climate and energy governance by virtue of having the expertise policy-makers need, but is also dependent on governmental authorities for the provision of enabling policies. The Port of Rotterdam Authority should try to be a catalyst for sustainable development in the port area, bringing together actors across multiple levels of government and making sure that the aggregated interest of the port is heard by governmental authorities. The PoR also needs to be aware of its tenuous dependence on all these actors to achieve its own goals.

The above also means that, if governments are to realistically expect the actors present in the Port of Rotterdam to make investments based on profit *and* sustainability, it does not suffice to simply stress the importance of sustainability in policy documents and to add strict $CO_2$ reduction goals. Steering mechanisms, based on realistic pathways to reach the goals that ensure widespread support of these frameworks, are necessary. The necessity to govern with societal actors does not excuse governments from their traditional task as policy-makers. In addition, even though local governments have a limited role in the policy-making process, they are able to provide crucial practical conditions to implement policies. Decentralised governments are important for EU governance as implementers and facilitators, and can gain traction with the Commission through their experience with policy implementation and technology deployment. However, the CCS case explicitly shows that a subnational authority can be left powerless when agreements at EU level do not work as intended. This insight adds nuance to Piattoni's claim that local governments exist because of the benefits territorialised governance brings with it. It also shows that the influence of sub-national authorities should indeed not be over-exaggerated (cf. Jordan, 2001). For a port authority this conclusion implies continued dependence on the national government and the necessity of an additionally strong focus on the EU as a source of fundamental policies

and guidelines. If the governance of EU climate and energy policies is to run smoothly, all levels of governance (including the private sector) need to cooperate. Such cooperation will only work if actors know what they can reasonable expect from one another. In short, a strong, broadly shared vision on climate and energy is needed. The Port of Rotterdam Authority can contribute to this vision.

## 8.4. LOOKING FORWARD

### 8.4.1. Recommendations for the Port of Rotterdam Authority

The time has come to answer the last, very practical, sub-question: *what are lessons the Port of Rotterdam Authority can learn for its public affairs management of future rounds of climate and energy policy-making?* Or, to put it differently, what can the PoR learn from these cases for its management of the energy transition?

First, a reflection on the concept of Energy Port is in order. While Rotterdam Energy Port provides an interesting and marketable catchphrase, its components — the various hubs and the PoR's energy efficiency goals — are advocated loosely. Energy Port is therefore not a 'whole'. It does, however, serve as a way for the PoR to show that there is more to a port than logistics. The emissions associated with port activities are not merely comprised of logistical activities, especially not in a landlord port such as Rotterdam. The large (petro-) chemical cluster is a source of considerable emissions as a consequence of considerable energy use. Any policies geared towards making energy cleaner thus impact the day-to-day operations within the port. Raising awareness for this fact with policy-makers can help the PoR in their access to EU institutions. Their status as a semi-public authority should work to their benefit in this case. Furthermore, the PoR could use the Energy Port as a visionary instrument towards the companies in the port, giving them insight in the direction in which the port authority wants to go in the future. Such insight is given in the *Havenvisie 2030* document, which also provides a clear overview of which authorities are in the lead for which action. The same exercise could be performed with Energy Port-specific topics, by, for example, adding visionary targets for small-scale LNG and actively steering towards their completion in the PoR's business development activities. Keeping in mind how a lock-in of preferential sustainable developments could help the area edge towards lessening their emissions, the PoR could adopt sustainability as a core assumption of their operations rather than as a separate goal, and advocate doing the same at national and European level.

Second, the PoR also needs to have a clear strategy and vision on its role in the future. Currently it seems to be struggling with *who* it will be in 2050 and *what* it will do. It is not unthinkable that the PoR will take up activities not traditionally associated with it, such as stimulating energy efficiency by acting like a broker on the electricity market. The energy transition team the PoR set up in 2016 is tackling questions pertaining to its future role and visionary development. In parallel the PoR should discuss these issues with the city of Rotterdam, the Dutch government, and perhaps even the European Commission. It should be clear for all parties what the PoR's core business is and will be in the future. In the absence of clear guidance from governmental authorities, the PoR can provide some of the necessary leadership. In the end, however, it is also entrenched in the national context. Many companies will look at governments or at their international headquarters for guidance and vision. The Port of Rotterdam Authority can be a catalyst and should maintain its position as a good partner for both governments and businesses. It should capitalise on its ability to be a facilitating party leading coalitions of the willing. To do so effectively, the PoR's antennas need to be honed in all possible directions.

Third, stimulating a CCS project is not really part of the PoR's core business because it is a purely energetic business case. Stimulating small-scale LNG makes more sense because it makes port operations cleaner, especially if LNG is also used to power cold ironing facilities until they can be reliably powered by renewables. Yet, from a strategic point of view, an argument can be made for PoR involvement in CCS. The potential for the Port of Rotterdam lies in large-scale application of CCS, in which case Rotterdam could become the $CO_2$ hub it aspires to be. While supporting a single project such as ROAD is risky, stimulating (or even laying down) $CO_2$ *infrastructure* could help get CCS going for the whole area. It could end up providing a unique selling point for the Port of Rotterdam, enabling heavy industry to settle in the port and plug into a $CO_2$ pipeline. Providing the necessary infrastructure for companies to be able to settle into the port while meeting sustainable goals is considered part of the PoR's core business, so this approach would fit[320]. One important hurdle for the international hub function is the ban on $CO_2$ trade for purposes of storage under the London Protocol. As the amendment to this ban has not yet been ratified by the required number of parties, the PoR could urge the Dutch government to lobby other governments for ratification as soon as the outlook for CCS becomes more promising.

Fourth, the PoR needs to be aware of which underlying trade-offs keep actors in place or get them moving, and know how to use these trade-offs to keep desired policy coordination engines running. Recall that figure 7.2 in chapter seven shows that when a stakeholder decides not to participate, *all* dimensions of MLG are impacted. While the PoR cannot

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**320** This argument also goes for other types of infrastructure, such as steam and hydrogen pipelines.

singlehandedly motivate everyone to take action, it needs to be aware of this mechanism and use its power to either keep the engine running, or, when desirable, block it. The PoR's position in the multi-level governance of climate and energy policies is such that it can bring parties together and facilitate cooperation. Much of the PoR's efforts in this dossier should go towards capitalising on this position. There is no point fighting lost battles, so the PoR needs knowledge on how governance levels interact and what causes blockages. The many uncertainties and interdependencies guiding global climate efforts and business decisions require monitoring and analysis. The PoR's Corporate Strategy department should therefore work closely with the Business Intelligence and External Affairs departments to keep track of trends and actions of other stakeholders. This knowledge is crucial for its management of the energy transition, and that is not even mentioning other pressing challenges such as digitalisation, automation, and the recent silk road developments. Unfortunately, the Corporate Strategy department has been reduced drastically since 2013, though its participation in the recently established energy transition team is promising.

Finally, there seems to be no real strategy the PoR has with respect to Europe. The manpower covering European affairs is small and they focus too much on individual dossiers rather than the larger picture. As such, a comprehensive vision concerning the EU and what to do with it seems to be lacking. There is little coordination between projects in the same domain. An example is the LNG hub, where there were three projects running with EU subsidy in 2014, but there was no uniform communication toward the EC about them. What happened was that multiple people spoke with the Commission about their own project, amounting to delivering bad news three times in a row in September and October 2014. The leaders of one project did not know they were speaking with the Commission around the same time as the leaders of another project. Needless to say, the EC was less inclined to be lenient towards these projects after having been disappointed three times in quick succession. The internal coordination within the PoR could therefore be set up in a better way, perhaps by ensuring participation of the external affairs department in meetings discussing projects funded by the EU. Another solution might be to always include an external affairs employee in the project lead. The disconnect between departments goes even further. For example, people outside of Corporate Strategy often do not know that developing LNG has been identified as 'no regret action' in the PoR's energy scenarios. In short, multiple processes that are more than just tangentially related to one another run parallel in the PoR, whereas they should at least have bridges between them to ensure communication and a more coherent vision and strategy. In that respect, the PoR still very much looks like a public authority rather than a corporation.

## 8.4.2. Recommendations for Governmental Authorities

If Europe is to achieve the three pillars upon which European energy ambitions rest — competitive, sustainable and secure energy — it will have to look beyond just the energy sector, beyond dependency on Russian gas and oil and towards other options. Hypothetically speaking, if the availability of oil would drastically decline, the whole transport sector (and the chemical sector as well, for that matter) would need to change fundamentally. As long as that does not happen and oil-based fuels remain affordable and within emission norm limits, the incentive to change the transport system is limited. Whichever (geo-)political direction the EU and its members choose with respect to energy policy *will* impact transport. Especially in countries where large-scale LNG infrastructure is lacking, EU emphasis on the importance of LNG for environmental purposes may help in its introduction as a fuel (Arteconi & Polonara, 2013:511). CCS may be revitalised if fossil fuels continue to be the main resource in the electricity and chemical sectors. Guided by a more streamlined EU ETS, investments into CCS may be more fruitful in the future.

Due to the connection between multiple policy areas, changes in, for example, the transport regime will also change European energy policy. Furthermore, exactly because transport is based on energy, more attention for sustainability in transport policy will impact energy policy as well. If proponents of competitive energy policy remain in the lead in the battle between energy ambitions and climate protection, an attention shift from energy to transport policy may prove more fruitful for climate and environment enthusiasts. On the other hand, the largest push is coming from the energy sector, as companies such as Shell try to cement their market share in the LNG business. They find themselves in a safer position than shipping companies due to the other potential uses for LNG besides as fuel for shipping. For transport companies, investing into LNG propulsion remains risky. Likewise, should a cluster of companies find a business case for shared CCS infrastructure to smooth their path toward fewer emissions, they might not need stricter climate norms to move green investments forward. Yet an incentive to look for such business cases is probably necessary. The heavy reliance on public funding in the initial phases does indicate that governmental steering is effective; however, it is a result of a cooperation between the EU and *national governments*. The EU's coordination attempts will yet have to prove their effectiveness.

The EU has not become an all-powerful agent of policy harmonisation and national governments do still matter. Especially in the area of climate policies these power (im)balances can lead to ineffective governance because of the EU's tendency to rely on compromises. The natural environment, however, does not compromise (Levin et al., 2012:127). The urgency to act effectively will only become more pressing. A proactive attitude at the national level is vital. Even more vital is the reshaping of long-term goals into short-term targets and

providing clear frameworks at the appropriate level of governance to reach those targets. Involving society in governance does not excuse governments from their job as policy-maker. According to the majority of people interviewed, this adequate policy is lacking in both CCS and small-scale LNG. With hard targets lacking altogether, a patchwork of loosely coupled policies and soft coordination is what governs Rotterdam Energy Port. Governmental authorities seem to want to ensure societal transition towards more environmentally friendly energy, but at the same time they seem incapable (or unwilling) of governing this transition. The strongest recommendation this dissertation can give to governmental authorities is to work together on a comprehensive climate and energy vision, including realistic pathways and appropriate policy tools to reach it. In doing so, governments should consult actors such as the Port of Rotterdam Authorities, the private sector, knowledge institutes and NGOs for the needed knowledge regarding feasible decarbonisation options and which institutional frameworks need to be in place to develop them. In a situation where everyone is vying for vision, governmental authorities need to aggregate interests and formulate this vision on a sustainable future.

### 8.4.3. Methodological Reflection

This dissertation started with a comprehensive discussion of multi-level governance, identifying its theoretical premises and deriving tentative theoretical expectations from it whilst acknowledging that there is much academic debate surrounding whether MLG actually constitutes a theory. A retroductive approach was chosen in an effort not to ignore the criticism directed at MLG while testing its practical applicability, which led to a strengthening of Piattoni's structural MLG model with very explicit attention for agency driven by uncertainty and power. The three theoretical expectations proved to provide useful conceptual lenses through which data was collected in an in-depth nested case study. This approach had several limitations. First, it drew heavily on expert interviews which provided a richness of data yet made looking for patterns difficult. Each expert was questioned according to a general list of questions and a tailor-made list of questions, so some questions were only answered once. This limitation was handled as much as possible through extensive coding using a coding mechanism. A second limitation is that the results of this dissertation are highly specific to the CCS and small-scale LNG developments — even though they are contrasting cases — in the Port of Rotterdam. Generalising them is difficult due to how far the nested cases have zoomed in and the relatively low amount of studied cases. However, for these two developments the findings seem able to describe and explain the real mechanisms guiding them. For the Port of Rotterdam Authority the findings provide an opportunity to learn from past outcomes. It is likely that the results of this dissertation can be used for future cases as well, for example when the hydrogen economy will be developed and the

first ships sailing on hydrogen are planned. Many of the challenges in the small-scale LNG case will be applicable for that situation as well. Likewise, future CCS (and perhaps CCU) projects will likely encounter the same problems as ROAD did thus far, underlining the importance of what we can learn from this case. A third limitation was the choice for cases that are still ongoing, making it difficult to draw conclusions in a continuously changing landscape. The benefit of this choice is that this dissertation remains very close to current issues relevant for the PoR, hopefully increasing its practical value. A strong benefit of the chosen methodological approach was its richness of detail and ability to flesh out how governance has affected the Rotterdam area. It is my hope that this dissertation was able to tell a compelling story because of its thick descriptions.

### 8.4.4. Reflection on Recent Developments

Data collection for the empirical cases ended in 2016, one year after the adoption of COP-21. Since then, much has happened. The adoption of LNG engines for inland shipping slowed down, and the ROAD CCS project was cancelled. In its place, the Port of Rotterdam and its public and private partners are developing Porthos: a $CO_2$ pipeline to facilitate CCS in the port area. The pipeline will only be useful if industrial partners capture their $CO_2$, but the mere existence of a pipeline increases the value proposition of settling in Rotterdam in an era where climate issues are being taken more and more seriously. In MLG terms this pipeline could provide an impetus to restart the CCS engine by virtue of removing a blockade at the local level.

The Dutch government has begun its own climate talks in spring 2018, which should lead to an agreement and action plans to reduce $CO_2$ emissions by 49% in 2030. This agreement could also lead to removing blockades to further CCS and small-scale LNG deployment. The Dutch ambition goes beyond EU ambition, and it remains to be seen what the effects will be. Thus far, the Dutch track record is not great in this respect. In response to citizen protest caused by earthquakes, the Dutch government decided to turn down Slochteren gas production, increasing the prospects of LNG import. If governments double down on the emissions of shipping, LNG ships may become more interesting again, although without the transition to bio-LNG their emissions will be too substantial to reach the climate goals formulated in the EU's roadmap to 2050. The Port of Rotterdam can stimulate regional action through the active climate and energy vision it has been formulating since 2017, supported by a strong energy transition team. Still, the PoR remains dependent on all its partners to achieve its goals, and that is not likely to change in the future.

Dutch efforts to mitigate climate change have picked up rather than slowed down, adding much potential new data ripe for analysis. While I would have gladly included all these recent developments in my analysis, my data collection had to stop at some point. Yet there is still much to do, and this dissertation can help shed light on when coordination works (and at what level) and when it does not. The last section of this chapter focuses on suggestions for future research.

## 8.4.5. Suggestions for Future Research

This dissertation attempted to apply Piattoni's MLG framework to empirical cases to understand how governance works. The framework lends itself well to such an application, however, in itself it does not provide explicit ways to look at the role of power and uncertainty, which came up organically during the research process. In hindsight it can be argued that power and uncertainty are an intrinsic part of MLG by virtue of adding agency to structure and explaining how the various layers of governance are mutually interdependent. It became very clear that power and uncertainty affect how the three dimensions of governance play out on a case by case basis. In wicked problems such as climate change, oftentimes short-term considerations (mostly economical, more certainty) win against long-term considerations (mostly sustainable, more uncertainty). Power and uncertainty are therefore crucial for the governance of climate and energy policies and should be considered integrally when approaching a problem from a multi-level governance point of view. I have argued that, acknowledging that EU governance has a bounded nature, sustainability should be made a core assumption of energy policy instead of a goal. Future research could explore the effect of doing so in more detail, following the research started by Levin et al., with special concern for how governments will act and whether the private sector will be able to bear the burdens that will inevitably be placed on it. In short, the structural analysis MLG is known for can be further improved on through specific recognition of the interplay between structure and agency, especially since the analysed contrasting cases both found these concepts to be crucial for their explanation.

A second issue for future research is concerned with generalisation based on my case work. Whilst the conclusions are not easily generalised, theoretical generalisation has potential. Drawing back to the theoretical expectations that were found inductively — the role of nation states willingly creating or maintaining international interdependencies necessitating supranational coordination, the role of global market developments necessitating supranational coordination, and the lack of empowerment of local actors when supranational coordination works differently than intended — it would be interesting to study these mechanisms in other cases to test their validity and applicability. These mechanisms can potentially strengthen the MLG framework and are therefore academically interesting to explore further.

A third potentially fruitful research endeavour considers further exploring the slow to change nature of climate and energy policy-making and compare it with the theory of punctuated equilibrium (cf. Benson & Russel, 2015) to gain more insight in how climate and energy policies have evolved over time and which strings can be pulled (and by whom) to increase the chances of further preferential evolution. Since many conflicts surround the climate change debate, framing theory could help understand why change happens. Framing theory highlights the variety of attributes present in each and every policy issue. Based on their own perception of the issue and on their preferences, actors engage in framing; they select and emphasise certain attributes over others (Daviter, 2009:1118; Scholten & Timmermans, 2010:529). Frames, then, are not necessarily the same as preferences: "interests are shaped by frames, and frames may be used to promote interests (Schön & Rein, 1994:29). Such frames, when they clash with one another, can lead to conflict (Schön & Rein, 1994; Daviter, 2009:1120; Dewulf et al., 2009:156; Scholten & Timmermans, 2010:529). Change is slow, and certainly difficult in (super) wicked problems — such as climate change — where a multitude of actors and a multitude of competing frames exists (Post, Raile & Raile, 2010:663). New ideas can be perceived as threats, unless "they emanate from the community itself or can be adapted to suit the existing needs of the community" (Richardson, 2000:1018). Frame analysis is useful in uncovering frames, their meanings, and effects, and can help explain (mis)matches between actors in governance processes. This dissertation has discussed two often-mentioned frames in practice: the green growth (win-win) frame and the economic trade-off frame. Supplementing this analysis with a more extensive frame analysis could lead to interesting insights that would help public and private actors alike formulate their public affairs strategies better.

My last, very personal, recommendation for future research concerns ways to plot pathways to reach a goal that is still far away. How do we, as a national and European society, plan our road towards a sustainable future given high technological, political and economic uncertainty? This dissertation shows the importance of clear long-term goals upon which private actors can base their investment decisions. Especially in the energy and industry sectors such goals are important given the long lifespan of investments. We know that we can engineer the needed technology to make industry, energy and transport cleaner, but we need the right institutional framework to get developments going. Social sciences can add tremendous value to these developments through furthering our understanding of how legislation and governance can ensure that technological progress is made in an economically sustainable way. Without the right institutional framework in place — without vision — it will be very difficult to pull our society through the energy transition. More research has to be done into finding ways to make (multi-level) governance act as a catalyst for reaching climate and energy goals.